

Technical Reference

Upgrading MW11/12/15, MW21 and MW31 to
Vaisala DigiCORA® Sounding System MW41



VAISALA

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1. About This Document

1.1 Version Information

This manual describes how to upgrade the older Vaisala sounding systems to MW41. These instructions cover the upgrade of sounding systems MARWIN MW12 and DigiCORA MW11, MW15, MW21, and MW31.

Table 1 Document Versions

Document Code	Date	Description
M211477EN-P	February 2019	Updated for MW41 software version 2.14.
M211477EN-N	June 2018	Updated for MW41 software version 2.11.
M211477EN-M	February 2018	Updated for MW41 software version 2.9. Updated system architecture figure.

1.2 Related Manuals

Table 2 Related Manuals

Document Code	Name
M211429EN	<i>Vaisala DigiCORA Sounding System MW41 Getting Started Guide</i>
M210843EN	<i>Vaisala Portable Antenna Set CG31 User Guide</i>
M210538EN	<i>Vaisala Telemetry Antenna RB31 User Guide</i>
M211725EN	<i>Vaisala Telemetry Antenna RM32 User Guide</i>
M210546EN	<i>Vaisala GPS Antenna GA31 User Guide</i>
M211633EN	<i>Vaisala GPS Antenna GA41 User Guide</i>
M211596EN	<i>Vaisala Sounding Processing Subsystem SPS311G Technical Reference</i>
M212199EN	<i>Vaisala Sounding Processing Subsystem SPS341AG Technical Reference</i>
M211577EN	<i>Parallel Sounding with MW41 and MW31/MW21 Technical Note</i>
M211731EN	<i>AUTOSONDE AS15 Installing and Configuring Software Technical Reference</i>
M212225EN	<i>AUTOSONDE AS41 Installing and Configuring Software</i>
DOC235403	<i>Vaisala Observation Network Manager NM10 Field Installation for MW41</i>
DOC232980	<i>Vaisala Observation Network Manager RDP Over HTTPS Server Installation Technical Reference</i>

1.3 Documentation Conventions



WARNING! **Warning** alerts you to a serious hazard. If you do not read and follow instructions carefully at this point, there is a risk of injury or even death.



CAUTION! **Caution** warns you of a potential hazard. If you do not read and follow instructions carefully at this point, the product could be damaged or important data could be lost.



Note highlights important information on using the product.



Tip gives information for using the product more efficiently.



Lists tools needed to perform the task.



Indicates that you need to take some notes during the task.

1.4 Trademarks

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1.5 Safety



WARNING! Ground the product and verify outdoor installation grounding periodically. Failure to provide proper grounding can result in injury or death from electrical shock and can severely damage the equipment.



WARNING! Do not substitute parts or modify the system, or install unsuitable parts in the system. Improper modification can damage the product or lead to malfunction.

1.5.1 ESD Protection

Electrostatic Discharge (ESD) can damage electronic circuits. Vaisala products are adequately protected against ESD for their intended use. However, it is possible to damage the product by delivering electrostatic discharges when touching, removing, or inserting any objects in the equipment housing.

To avoid delivering high static voltages to the product:

- Handle ESD-sensitive components on a properly grounded and protected ESD workbench or by grounding yourself to the equipment chassis with a wrist strap and a resistive connection cord.
- If you are unable to take either precaution, touch a conductive part of the equipment chassis with your other hand before touching ESD-sensitive components.
- Hold component boards by the edges and avoid touching component contacts.

2. Upgrade Overview

2.1 General Information on the Upgrade

The upgrades can be performed locally at the customer's site by Vaisala service personnel, authorized Vaisala representatives, or customer's trained technical personnel.

After the upgrade, the sounding system is operated with a PC user interface. Compared with the old sounding systems, the MW41 user interface has been completely redesigned.

However, the user interface is intuitive to use and provides user guidance for the sounding procedure, so only some operator training is required for a current MW11/12/15 user for a successful system upgrade. In addition, the software includes an embedded online help. Other user manuals are available on the installation media for self-learning.

A comprehensive service offering including installation, training, technical support and service contracts are available from Vaisala to provide a smooth transition to MW41.



Unless otherwise mentioned, SPS3xx refers to all Sounding Processing Subsystem models (SPS31G and SPS341AG).

2.1.1 Sounding System MW41 System Architecture

The next figure presents Sounding System MW41 system architecture with optional components. For detailed information on the system components, see the appropriate documentation.

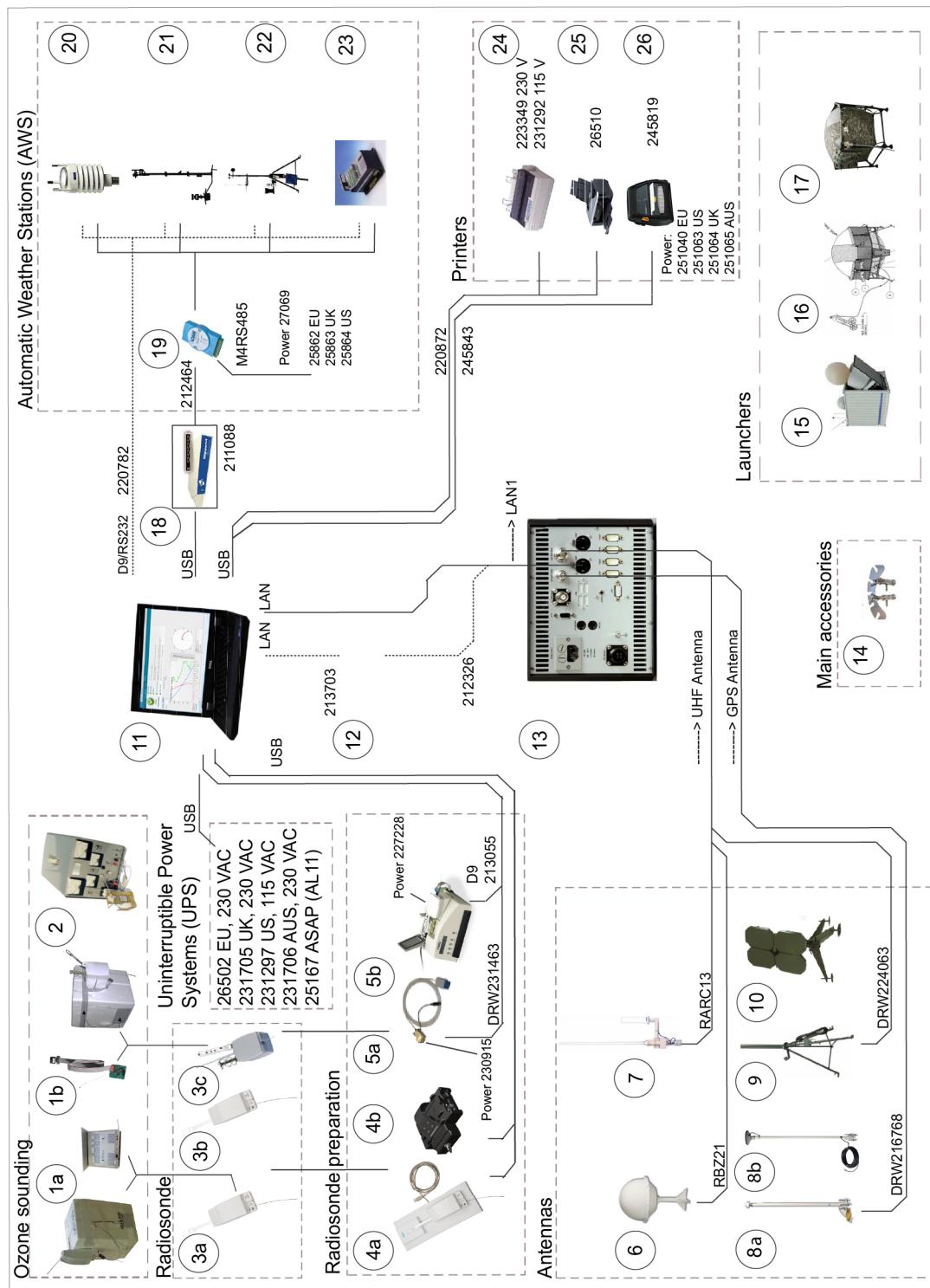


Figure 1 Sounding System MW41 System Architecture

- 1a** Radiosonde RS41-SG or SGP with flight box and Ozone Sensor Interface Card OIF411
 - 1b** Radiosonde RS92 with flight box and Ozone Sensor Interface Card OIF92
 - 2** Ozonizer/Test Unit TSC-1
 - 3a** Vaisala Radiosonde RS41-SG or RS41-SGP

- 3b** Vaisala Radiosonde RS41-SGM or RS41-D
- 3c** Vaisala Radiosonde RS92
- 4a** Ground Check Device RI41 for RS41
- 4b** Ground Check Device MWH322 for RS41
- 5a** Radiosonde RS92 cable DRW231463
- 5b** Ground Check Set GC25 for RS92
- 6** Directional Antenna RB31, ASAP-specific model RB31AL
- 7** Omnidirectional Antenna RM32 or RM31N, ASAP-specific model RM32AL
- 8a** GPS Antenna GA31/N, ASAP-specific model GA31AL
- 8b** GPS Antenna GA41
- 9** Portable Antenna CG31
- 10** Radiotheodolite RT20
- 11** Sounding workstation PC
- 12** Ethernet switch
- 13** Sounding Processing Subsystem SPS3xx
- 14** Vaisala Filling Balance FB13
- 15** ASAP Launcher ALS211
- 16** Balloon Launcher FB15 for 100 ... 350 g balloons, FB16A for 100 ... 600 g balloons
- 17** Balloon Launcher FB32
- 18** Edgeport. Not needed with desktop computer.
- 19** RS232/485 converter
- 20** Weather Transmitter WXT536
- 21** QML201-based station, for example AWS310 or AWS430
- 22** MAWS201M TacMet® Weather Station
- 23** MILOS 500/520
- 24** Matrix printer
- 25** Inkjet printer
- 26** Portable thermal printer

2.2 Upgrading MW31 to MW41

These steps explain the general process of upgrading MW31 sounding systems in ordinary manual use or in Automated Shipboard Aerological Program (ASAP) use. MW31 systems used in AUTOSONDE are not covered by these instructions.

- ▶ 1. Record, save and back up the following user-specific settings and other features of the old sounding system, when possible:
 - IP addresses for sounding processing subsystem and sounding workstation
 - WMO station name, number (three digits), block code (two digits), and WMO region number
 - Station altitude (from Mean Sea Level)
 - Local GPS antenna height offset (if any)
 - WMO message headers and footers



CAUTION! It is particularly important to record, save and back up data from the old sounding system if you are going to install the MW41 sounding software on your current sounding workstation and will have no access to the old sounding data after the upgrade.

- 2. Assemble the MW41 sounding system.

For instructions, see [Connecting SPS3xx and Sounding System MW41 \(page 21\)](#).

- 3. Take the new computer into use, or upgrade the old computer:

- A new computer is taken into use: In this case, a computer in which MW41 is preinstalled is shipped from Vaisala. Or, if the user organization installs MW41, the installation must be done as instructed in *Installing Hardware* and *Installing MW41 Sounding Software*.
- An old DigiCORA computer is used: First make a backup image of MW31 just in case. Next, uninstall the MW31 sounding software and install MW41.

- 4. Take the ground check device into use:

- If you are using Radiosonde RS92, update the Ground Check Set GC25 software.
- If you are using Radiosonde RS41, take Ground Check Device RI41 into use. Ground Check Device MWH322 is also an option with RS41.

- 5. Upgrade Sounding Processing Subsystem SPS311V/SPS311GV to SPS311G or SPS341AG by replacing the necessary plug-in units.

For instructions, see [Upgrading SPS311V/SPS311GV \(MW31 to MW41 Upgrades\) \(page 63\)](#).

6. Update the sounding processing subsystem software.
For instructions, see [Updating SPS3xx Software \(page 69\)](#).

After the software update, you can attach a label "Compliant with MW41 only" to SPS311G, to help distinguish between SPS311G devices which are MW41-compliant and those which are not.



After the software update, SPS311G is not backward-compatible with MW31.

7. Make sure that the sounding processing subsystem uses the default IP address 192.168.0.10.
For instructions, see [Changing SPS311G IP Address \(page 72\)](#) and [Changing SPS341AG IP Address \(page 77\)](#).
8. Start the **User Management** application and add users to the system.
9. Configure the MW41 sounding software according to your needs and using the documentation saved in step 1.
10. Test and verify the MW41 sounding system functionality.

2.3 Upgrading MW21 to MW41

These steps explain the general process of upgrading MW21 sounding systems in ordinary manual use or in Automated Shipboard Aerological Program (ASAP) use to MW41. MW21 systems used in AUTOSONDE are not covered by these instructions.

In these instructions it is assumed that the sounding processing subsystem is a new one delivered by Vaisala, and that the computer is always changed to a new one.

- ▶ 1. Record, save and back up the following user-specific settings and other features of the old sounding system, when possible:
 - IP addresses for sounding processing subsystem and sounding workstation
 - WMO station name, number (three digits), block code (two digits), and WMO region number
 - Station altitude (from Mean Sea Level)
 - Local GPS antenna height offset (if any)
 - WMO message headers and footers



CAUTION! It is particularly important to record, save and back up data from the old sounding system if you are going to install the MW41 sounding software on your current sounding workstation and will have no access to the old sounding data after the upgrade.

2. Assemble the MW41 sounding system.
For instructions, see [Connecting SPS3xx and Sounding System MW41 \(page 21\)](#).

3. Take the new computer into use.
A computer in which MW41 is preinstalled is shipped from Vaisala. If the user organization installs MW41, the installation must be done as instructed in *Installing Hardware and Installing MW41 Sounding Software*.
4. Upgrade the telemetry and radionavigation antennas to be compatible with MW41:
 - Upgrade RB21 by switching the RBD121 switching unit.
 - Upgrade GA21 to GA31.
 - CA21 is not compatible with MW41 and cannot be used after the upgrade.
 - Replace other possible antennas.
5. Take the ground check device into use:
 - If you are using Radiosonde RS92, update the Ground Check Set GC25 software.
 - If you are using Radiosonde RS41, take Ground Check Device RI41 into use. Ground Check Device MWH322 is also an option with RS41.
6. Take the new Sounding Processing Subsystem SPS311G or SPS341AG into use.
7. Start the **User Management** application and add users to the system.
8. Configure the MW41 sounding software according to your needs and using the documentation saved in step 1.
9. Test and verify the MW41 sounding system functionality.



If necessary, you can reverse the process by taking the old equipment back into use and returning the old antenna configurations.

10. Depending on details agreed earlier, return the old SPS220 to Vaisala.

2.4 Upgrading MW11/12/15 to MW41

These steps explain the general process of upgrading MW11, MW12 or MW15 Sounding System to MW41.

- ▶ 1. Record, save and back up the following user-specific settings and other features of the old sounding system, when possible:
 - IP addresses for sounding processing subsystem and sounding workstation
 - WMO station name, number (three digits), block code (two digits), and WMO region number
 - Station altitude (from Mean Sea Level)
 - Local GPS antenna height offset (if any)
 - WMO message headers and footers



CAUTION! It is particularly important to record, save and back up data from the old sounding system if you are going to install the MW41 sounding software on your current sounding workstation and will have no access to the old sounding data after the upgrade.

2. Assemble the MW41 sounding system.
For instructions, see [Connecting SPS3xx and Sounding System MW41 \(page 21\)](#).
3. Take the new computer into use.
A computer in which MW41 is preinstalled is shipped from Vaisala. If the user organization installs MW41, the installation must be done as instructed in *Installing Hardware* and *Installing MW41 Sounding Software*.
4. Upgrade the telemetry and radionavigation antennas to be compatible with MW41:
 - Upgrade RB21 by switching the RBD121 switching unit.
 - Upgrade GA21 to GA31.
 - CA21 is not compatible with MW41 and cannot be used after the upgrade.
 - Replace other possible antennas.
5. Take the ground check device into use:
 - If you are using Radiosonde RS92, update the Ground Check Set GC25 software.
 - If you are using Radiosonde RS41, take Ground Check Device RI41 into use. Ground Check Device MWH322 is also an option with RS41.
6. Take the new Sounding Processing Subsystem SPS311G or SPS341AG into use.
7. Start the **User Management** application and add users to the system.
8. Configure the MW41 sounding software according to your needs and using the documentation saved in step 1.

9. Test and verify the MW41 sounding system functionality.



If necessary, you can reverse the process by taking the old equipment back into use and returning the old antenna configurations.

3. Installing Hardware

3.1 MW41 Sounding Workstation Requirements



CAUTION! When taking computers not delivered by Vaisala into use, pay special attention to energy saver and similar settings on your computer. On many computers, the default settings can cause shutdown of computer parts if there is a long time period with no input from the user, for example, during a sounding. This might result in a lost sounding.



CAUTION! Make sure that your computer name follows the URI RFC syntax. Internet Explorer does not recognize some characters as valid URI and might prevent MW41 from starting. For example, the name may not contain an underscore _.

3.1.1 Operating System Compliance

- Windows 7 Professional SP1 64-bit (English)
- Windows 8.1 Pro 64-bit (English)
- Windows 10 Pro 64-bit (English)
- .NET version 4.5 or later

3.1.2 Web Browser Compliance

- Microsoft Internet Explorer 11
- Mozilla Firefox (latest version)
- Google Chrome (latest version)

Adobe Flash Player is required.

3.1.3 Minimum Hardware Requirements

- Processor Intel Pentium Dual Core or equivalent, Quad core recommended
- Memory 8 GB RAM
- Hard Disk Space 160 GB
- Display 1366 × 768
- Serial ports, either integrated or via USB/RS232 converter: 1 for GC25/RS92 cable and 1 for possible Automatic Weather Station (AWS)
- USB port for RI41
- Ethernet adapter

3.2 Requirements for Remote Client

It is recommended to use devices that fulfill the same requirements as for sounding workstations. However, it is likely that devices with lower hardware specifications, other operating systems or other browsers can be used, as long as the browsers have Adobe Flash Player installed.

3.3 Using UPS with MW41

If the MW41 input power source, typically mains power, fails for some reason, an optional UPS (Uninterruptible Power System) can be used to provide emergency power. The UPS provides near-instantaneous protection from input power interruptions by supplying energy to the connected devices.

To avoid any power interruptions, make sure that all sounding equipment are connected through a UPS system. The sounding computer and the UPS are connected with a USB cable. The correct USB connector is marked with a UPS sticker at the back of the computer.



CAUTION! Make sure to select the correct, country-specific output voltage on the UPS display. See the manufacturer's instructions for more details.

The UPS includes internal batteries to provide power in case AC input power is not available. Make sure to inspect the condition of the batteries regularly and, if necessary, replace the batteries according to the manufacturer's instructions.



CAUTION! Before taking the UPS into use, make sure the UPS internal batteries are connected.

During a power interruption, the UPS provides power for 25 minutes, after which Windows is run down. The rundown takes a maximum of 5 minutes. All other values are the default values provided by the UPS.

3.4 Connecting SPS3xx and Sounding System MW41

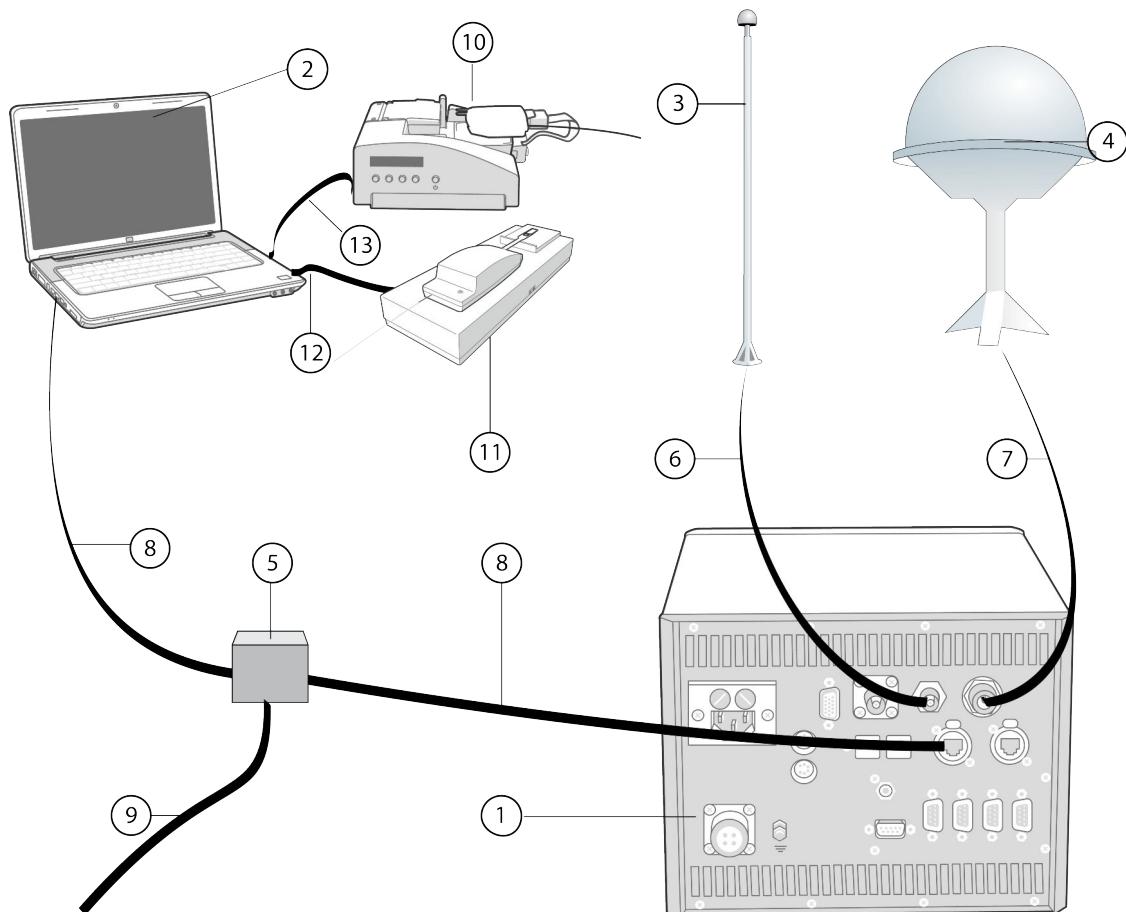


Figure 2 MW41 Connections

- 1 Sounding Processing Subsystem SPS3xx
- 2 Sounding workstation
- 3 GPS antenna
- 4 UHF Antenna
- 5 LAN switch (optional)
- 6 GPS cable (TNC connector)
- 7 UHF cable (N connector)
- 8 Ethernet cable (RJ45 connector)
- 9 Line to external network (optional)
- 10 Ground Check Set GC25 for RS92
- 11 Ground Check Device RI41 or MWH322 (not pictured here) for RS41
- 12 USB cable
- 13 RS-232 cable

To connect antennas, the sounding workstation, and optional equipment to the sounding processing subsystem, do the following:

- ▶
 1. Connect the antennas to the subsystem. Refer to the instructions in the appropriate antenna user guide.
 2. If you are connected to an external network, connect the Sounding Processing Subsystem LAN1 connector via the LAN switch to the workstation's LAN card using the 210973 cable (Ethernet cable with RJ45 connectors).
 3. Connect the Ethernet cable to the computer's Ethernet port.
 4. Connect either Ground Check Device RI41 or MWH322 for RS41, or Ground Check Set GC25 for RS92 to the sounding workstation.
 - If you use Ground Check Set GC25 to prepare the radiosonde for the sounding, connect the GC25 RS-232 cable to the sounding workstation.
 - If you use Ground Check Device RI41 to prepare the radiosonde for the sounding, connect the RI41 USB cable to the sounding workstation.
 5. If the system has a direct cable connection to radiosonde RS92, connect the radiosonde cable (DRW231463) to the workstation's COM port. Connect the AC/DC adapter to the radiosonde cable's DC connector.

4. Installing MW41 Sounding Software

4.1 Operating System Settings



If Vaisala has provided the computer for your Sounding System MW41, the software installation has been done by Vaisala. In this case, you can move on to upgrading the antennas.

For the operating system to function properly, make sure that the following settings have been selected and installed:

- The workstation has a network with TCP/IP Protocol installed.
- Time zone is UTC.

More Information

- [Antenna Upgrade Process \(page 51\)](#)

4.2 User Requirements for Installing the Software

To perform the needed installations, you need administrator rights for Windows. Vaisala recommends that after the sounding software has been installed, you access the sounding workstation computer with operator-level privileges (not administrator).



When you install the MW41 sounding software, you must belong to the **Administrators** level. See your operating system documentation for more information.



On computers delivered from Vaisala, you need to give a password to log in the computer as **Administrator**. The Administrator password is **adpw_VA1**.
Vaisala recommends that you change the password after the first login.

4.3 Dividing Workstation's Hard Disk

It is not absolutely necessary to divide the workstation's hard disk into two partitions. However, by default, the sounding file and message output folders are placed on the D: partition, if available. Having the archives separate from the system partition can make the files easier to back up.

On computers delivered by Vaisala, the partitions are done as described below. You can also use the instructions below as a recommendation for partitioning other sounding workstations. Follow the Windows operating system's instructions and the instructions below.

- ▶ 1. Make sure that the C: partition is at least 140 GB in size.
C: partition is the default installation location for the MW41 sounding software. You can change the path during the software installation.
- 2. Make the D: partition to contain the rest of the hard disk. Format this partition to use the NTFS file system. This way you can use the Windows backup feature to secure the content of the hard disk.

4.4 Installing Peripheral Devices

4.4.1 Installing Serial Port Extension

It is likely that a serial port extension device is needed to meet the MW41 sounding workstation requirements. For computers not delivered by Vaisala, this is your responsibility. Refer to the instructions supplied with the device.

4.4.2 Installing Printer

If your MW41 sounding system includes a printer, set it up to work with Windows. Refer to the instructions supplied with Windows and the printer.

For instructions on adding a new printer, see *DigiCORA Sounding System MW41 Technical Reference*.

4.5 Installing MW41 Sounding Software

These instructions provide information on installing the MW41 sounding software for the first time. For updating instructions, see *Vaisala DigiCORA Sounding System MW41 Technical Reference*

For instructions on how to install AUTOSONDE AS15 or AS41 Control software, see:

- *AUTOSONDE AS15 Installing and Configuring Software Technical Reference*
- *AUTOSONDE AS41 Installing and Configuring Software*



Before installing the software, check the requirements for the MW41 workstation.

If some components needed for installing the MW41 sounding software, for example Flash Player, are missing, the Installer prompts you to install them first and possibly restart your computer.

The software installation consists of three phases:

1. Installing the MW41 sounding software.
2. Activating a software license.
3. Installing a security certificate.

If you are also installing AUTOSONDE Control software, Vaisala recommends that you do not restart the computer after installing the MW41 software and license. When the restart window opens, click **No**, close the window, and proceed with the AUTOSONDE software installation. When you restart the computer after the AUTOSONDE software installation, both MW41 and AUTOSONDE software installations are ready.

AUTOSONDE Control software is installed in the same location on your computer as the MW41 sounding software.

4.5.1 Installing Adobe Flash Player to Windows 8.1 and Windows 10 Operating Systems

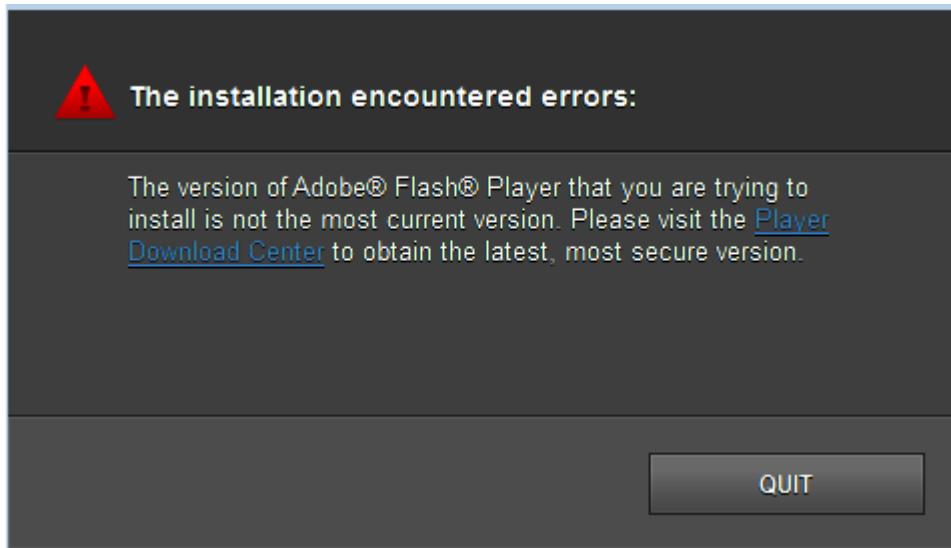
In Windows 8.1 and Windows 10, Adobe Flash Player is built-in in Internet Explorer and cannot be updated by an external software such as the MW41 installer. To run MW41, it is recommended to update Adobe Flash Player to the latest version available via Windows update.

If you are not connected to the Internet while installing the MW41 software, and therefore, you cannot use the Windows update, the Adobe Flash Player Windows update packages are included on the MW41 software installation media. To install the update package:

- 1. Go to folder *MW41\3rdPartySoftware\FlashPlayer* on the installation media and select the appropriate update package.
The package name ends with file extension *.msu* and it starts with the operating system version, for example,
windows8.1-kb3202790-
x64_7b1b81fb443fcc4ed5e06b8e66bb383ce0dca3fd.msu is an update package for the Windows 8.1 64-bit operating system.

4.5.2 Installing Adobe Flash Player to Other Operating Systems

During the MW41 installation procedure, Adobe Flash Player is automatically installed or updated. If you get the following error message when beginning the MW41 installation, follow the steps below to install Flash Player. These instructions do not apply to Windows 8.1 or 10.



- 1. To close the window, select **Quit**.



Do **not** click the link that appears in the error message shown in the figure above.

2. Go to folder *MW41\3rdPartySoftware\Flash Player* on the installation media.
3. Click the *uninstall_flash_player.exe* file to uninstall Flash Player.
4. After Flash Player has been uninstalled, restart MW41 installation.
5. Click the **Install Flash Player for Internet Explorer** link.

4.5.3 Selecting Type of Software Activation

Using the MW41 sounding software requires a software license. When you install the software for the first time, you have two options for using it. You can either use a trial version of the software or activate the license software.

4.5.3.1 Using a Trial Version

If you have no software license, you can start using the software as a trial version with standard features. The trial version is valid for 30 days.

After you have installed the sounding software and log in for the first time, the system detects whether you have a valid license or not, or whether the trial version has expired. If your trial version has not expired, you can continue to use it for the number of trial days remaining.

4.5.3.2 Activating Software License

If you have a software license, you can immediately activate the software with the features you have selected after you have installed the software. Activate the license using the Product Key delivered to you by Vaisala. It is recommended to activate the license as soon as possible.



Vaisala recommends that you activate the software license as soon as possible.

Activating the MW41 software license requires Internet connection. If the computer you are using for the software installation does not have Internet connection, make sure that there is another computer nearby with an Internet connection that you can use for the activation. Vaisala License Manager automatically detects whether you are connected to Internet or not.

More Information

- ▶ [Activating the License - Internet Connection Available \(page 29\)](#)
- ▶ [Activating the License - No Internet Connection Available \(page 31\)](#)
- ▶ [Installing MW41 Sounding Software Version 2.4.0 and Onwards \(page 27\)](#)

4.5.4 Installing MW41 Sounding Software Version 2.4.0 and Onwards



Starting from MW41 sounding software version 2.4.0, the required Internet Explorer version is 10 or higher.

If the current Internet Explorer (IE) version on your computer is older than 10, the MW41 installation program for software versions starting from 2.4.0 will update the IE version to 11. The IE version must be updated before MW41 can be installed.

The update consists of first installing the update packages for Windows, and then installing IE version 11. The extra steps require some extra minutes for the installation.

The installation proceeds as follows:

- ▶ 1. Insert the MW41 installation media. The installation main window opens. If the installer does not start automatically, run the *StartHere.exe* file.
When you run the *StartHere.exe* file, a confirmation dialog about installing software packages and applying firewall rules appears.
Click **Yes** to continue the installation. Clicking **No** cancels the installation.
- 2. If the IE version on your computer is older than 10, the installation program asks you to install IE version 11. Click **OK**.
- 3. Wait while the command prompt window runs the installation steps.
- 4. A window for updating Windows software opens. Click **Yes**.

5. Wait until the update installations are complete and click **Restart Now**. When the Windows updates have been configured, the update packages required for the IE version update have been installed on your computer.
6. The MW41 installation window opens again. Click **Install MW41 version 2.x.x** and **OK**, and **OK**.
7. Click **Install** to start installing IE version 11.
8. Click **Restart Now**. When the Windows updates have been configured, IE version 11 has been installed on your computer.
9. MW41 installation window opens. Click **Install MW41 version 2.x.x**. The installation now continues as explained in [Installing MW41 Sounding Software \(page 28\)](#), starting from step 3.



If you click **Cancel** at any time during the installation, the whole MW41 installation process is cancelled and you must start the installation process from the beginning.

4.5.5 Installing MW41 Sounding Software

- ▶ 1. Insert the installation media. The installation main window opens.
If the installer does not start automatically, run the *StartHere.exe* file.
When you run the *StartHere.exe* file, a confirmation dialog about installing software packages and applying firewall rules appears.
Click **Yes** to continue the installation. Clicking **No** cancels the installation.
- 2. Click the link **Install MW41 version X.X.x**
- 3. The Install Wizard for MW41 opens. Click **Next**.
- 4. Read the License Agreement and accept it. Click **Next**.
- 5. The installation begins. Click **Next** to accept the default destination folders for the MW41 program files and log files, or choose a new folder by clicking **Change**, and select a new location.
- 6. Click **Next** to accept the default destination folder for the MW41 database, or choose a new folder by clicking **Change**, and select a new location.
- 7. Click **Install** to begin the installation.
- 8. Wait while the Install Wizard installs the software.
- 9. When the software installation is finished, a window opens with the option **Launch Vaisala License Manager** selected.
- 10. Click **Finish** to start Vaisala License Manager and proceed to activating the license.
Vaisala recommends that you activate the software license as soon as possible.
Activating the license requires access to the Internet.
If you deselect the default option, you are prompted to restart the system. After the restart, the software installation is ready. In this case, you must launch the License Manager at a later stage.

More Information

- ▶ Activating the License - Internet Connection Available (page 29)
- ▶ Activating the License - No Internet Connection Available (page 31)
- ▶ Launching Vaisala License Manager (page 29)

4.5.6 Launching Vaisala License Manager

To activate the software license at a later stage, you must launch Vaisala License Manager:

Go to Windows Start menu and click **All Programs > Vaisala > Vaisala License Manager > Vaisala License Manager**. The License Manager is installed on your computer when the MW41 sounding software is installed.

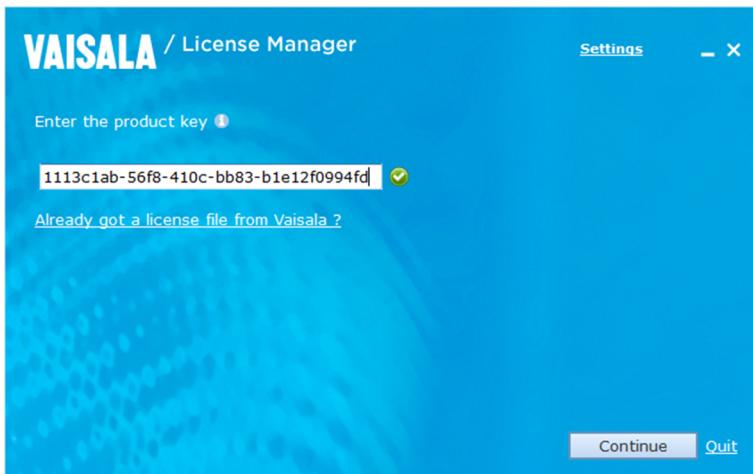
Next, proceed to activating the license.

4.5.6.1 Activating the License - Internet Connection Available

- ▶ 1. When the License Manager opens, click **Continue**.



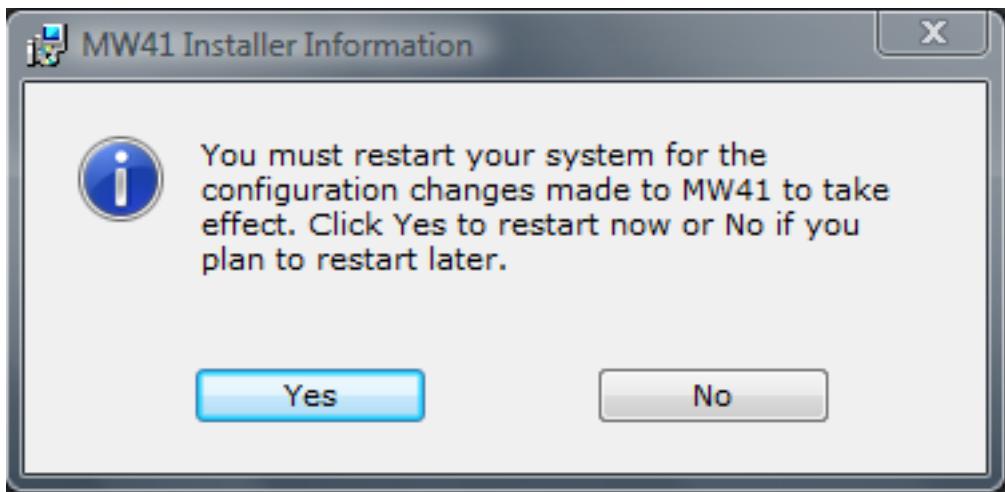
2. Enter the Product Key. Click **Continue**.



3. The product starts activating. Wait a while.
4. After a successful activation, the following window is displayed. The window displays a list of the activated features. Check that the features installed match your license. Click **Quit** to exit License Manager.



5. Click **Yes** to restart the system if prompted. If you have launched Vaisala License Manager manually, restart the system yourself.



6. After the system has restarted, the MW41 installation and license activation is complete. In case the activation fails, the reason and remedy for the failure are displayed. Should you need any further assistance, contact Vaisala Help Desk at helpdesk@vaisala.com.

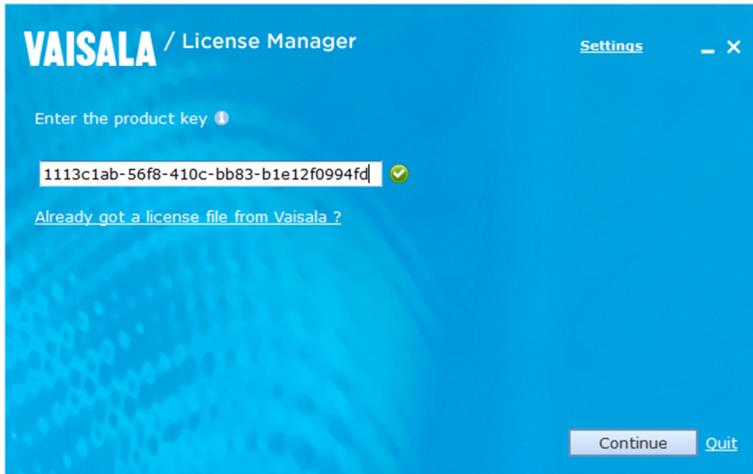
4.5.6.2 Activating the License - No Internet Connection Available

Before you begin, make sure that you have, for example, a memory stick for storing the license file obtained and transferring it to another computer.

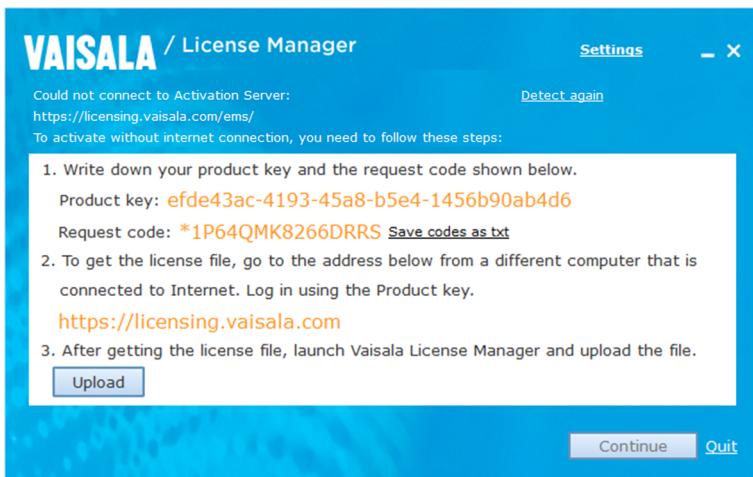
- 1. When the License Manager opens, click **Continue**.



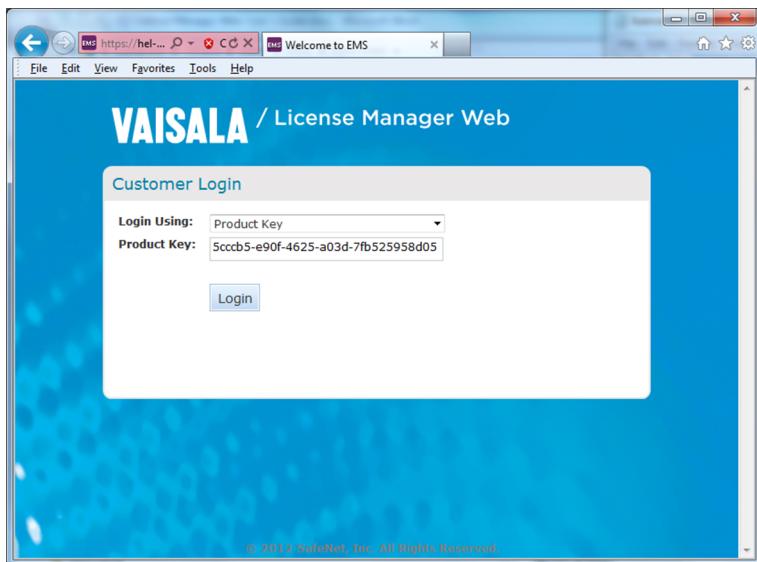
2. Enter the Product Key. Click **Continue**.



3. The following window opens with message “Could not connect to Activation Server”. Write down the Product Key and the request code shown, or click **Save codes as txt** to save the codes as a .txt file on a media that you can take with you, for example, a memory stick. Remember also to write down the Internet address you must go to. Do not close the License Manager window, you will need to upload the license file with License Manager.



4. Take the memory stick with you and go to another computer that is connected to Internet, and log on to the address provided. Select **Login Using Product Key** and enter the key in the window. Click **Login**.



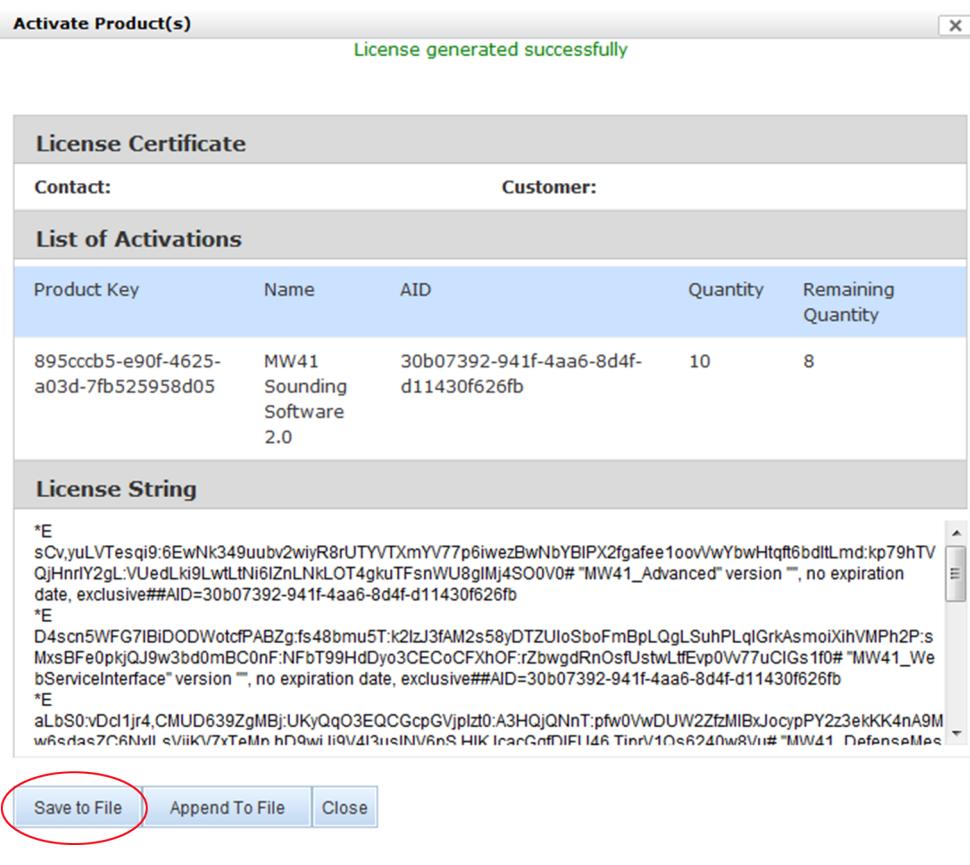
5. In the window that opens, click **Product Details** open and click **Activate**.
6. Enter the request code in the **Request Code** text box, manually add spaces after every 4 characters, and click **Generate**.



CAUTION! You have to manually add spaces after every 4 characters in the request code field.

A screenshot of a software application window. It contains a form with several fields. One field is labeled "* Request code:" and contains the text "*1DE MYAW KSD7 FYAP", which is enclosed in a red rectangular box. Below this field is a "Remarks:" label with an empty text input field. At the bottom of the window are two blue buttons: "Generate" on the left and "Close" on the right.

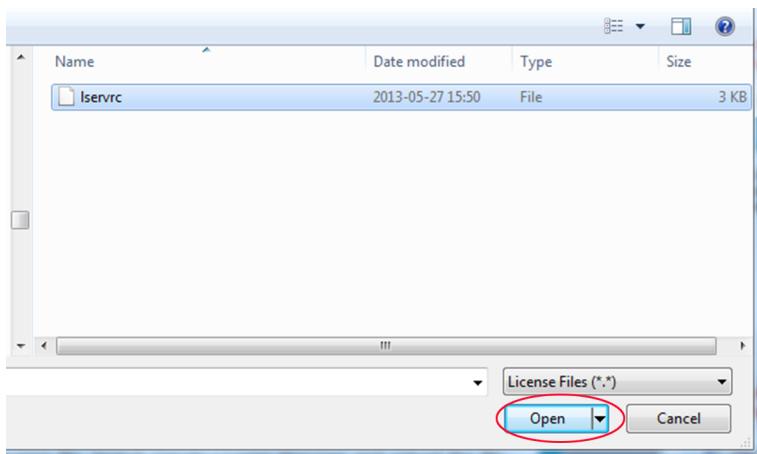
7. The license file is generated. Save the license file to a media that you can transfer to the system with the MW41 sounding software, for example, a memory stick.



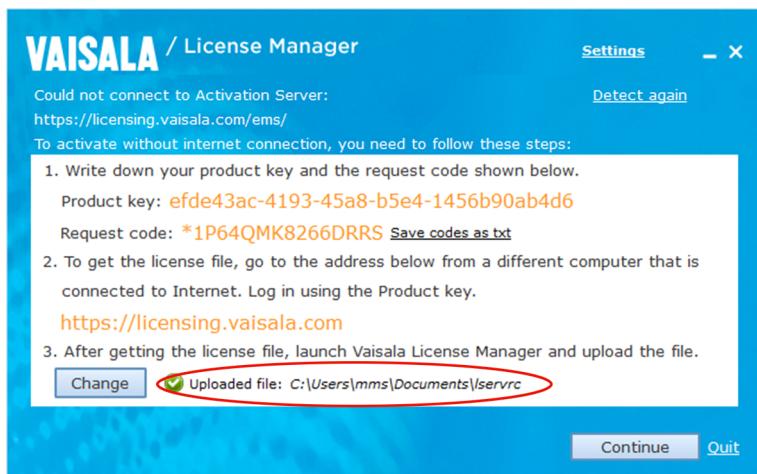
The way in which the file is saved depends on the browser used. For example, in Internet Explorer, a dialogue appears, asking you about the file. If you do not provide a specific location on your computer, files downloaded from the Internet are usually saved in a default location, for example, `C:\users\your name\downloads`.

8. Take the memory stick with you and go back to the computer where the License Manager window is still open, and the MW41 software is installed with no Internet connection. Click **Upload** to load the license file to the system.

9. Browse to the location where the license file is stored and click **Open**.



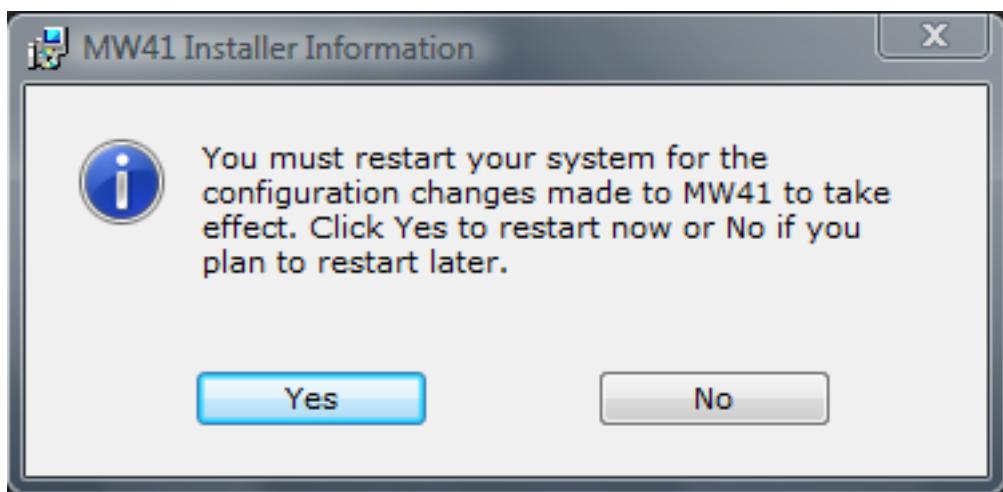
10. The green icon indicates that the upload was successful. Click **Continue**.



11. After a successful activation, the following window is displayed. The window displays a list of the activated features. Check that the features installed match your license. Click **Quit** to exit License Manager.



12. Click **Yes** to restart the system if prompted. If you have launched Vaisala License Manager manually, restart the system yourself.



13. After the system has restarted, the MW41 installation and license activation is complete. In case the activation fails, the reason and remedy for the failure are displayed. Should you need any further assistance, contact Vaisala Help Desk at helpdesk@vaisala.com.

4.5.7 Installing Security Certificate

The MW41 sounding software uses a security certificate to support HTTPS protocol in the web browser interface.



The security certificate is installed after the MW41 sounding software is installed for the first time. It is not required after a software update.

In Windows 7 and Windows Server 2008 R2, the security certificate is Windows user-specific, that is, it has to be installed separately for all Windows users. On Vaisala-delivered PCs, the security certificate is installed for the default Windows users. When creating new users, the security certificate needs to be installed separately for the new users. To install the security certificate, follow the steps below.

In Windows 8.1 and Windows 10, you must select whether you install the security certificate to a local machine instead of current user.

4.5.7.1 Adding MW41 Address to Trusted Sites

When installing the security certificate on a computer with Windows 8.1 or Windows 10 operating system and Internet Explorer version 10, you must first add MW41's address to Internet Explorer's trusted sites. Otherwise you will not be able to install the security certificate.

- ▶ 1. To find out the MW41 address, go to Control Panel and select **System and Security > System > Full computer name**.
- 2. To add the MW41 address to trusted sites, go to Internet Explorer, select **Tools > Internet Options > Security > Trusted sites**. Click **Sites, Add**, and enter the MW41 address.

4.5.7.2 Security Certificate Installation Steps

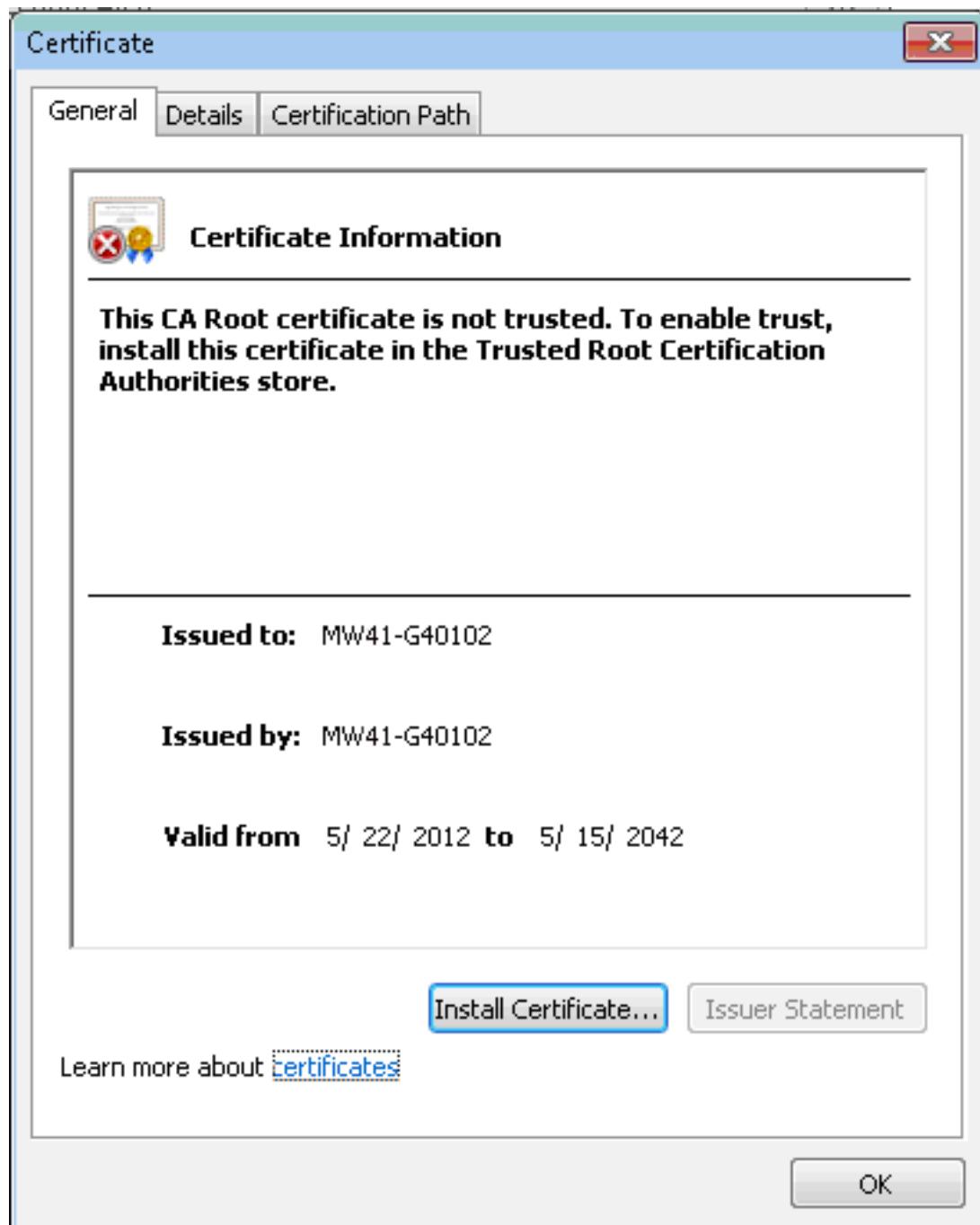
- ▶ 1. Click the icon on the desktop to start the MW41 sounding software.



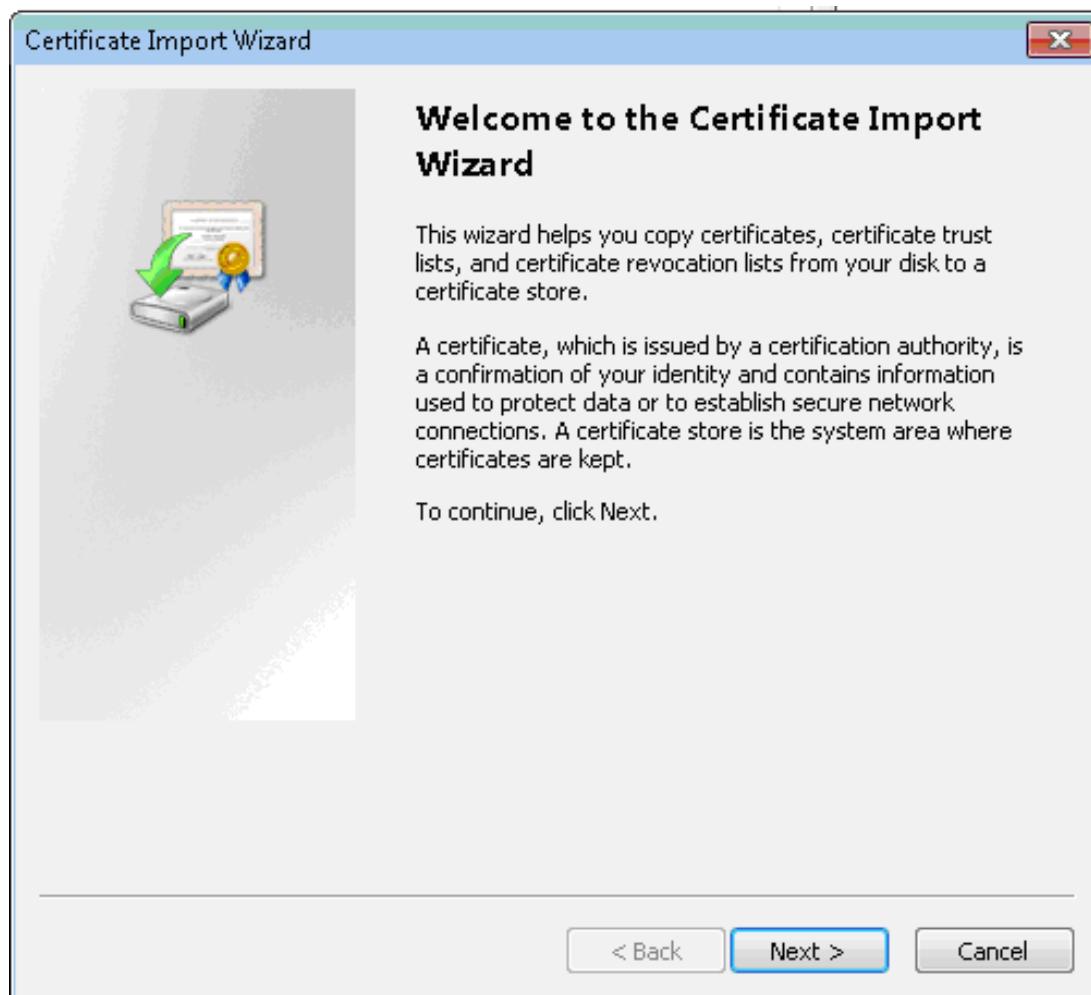
2. The **Security Alert** window appears. Click **View Certificate**.



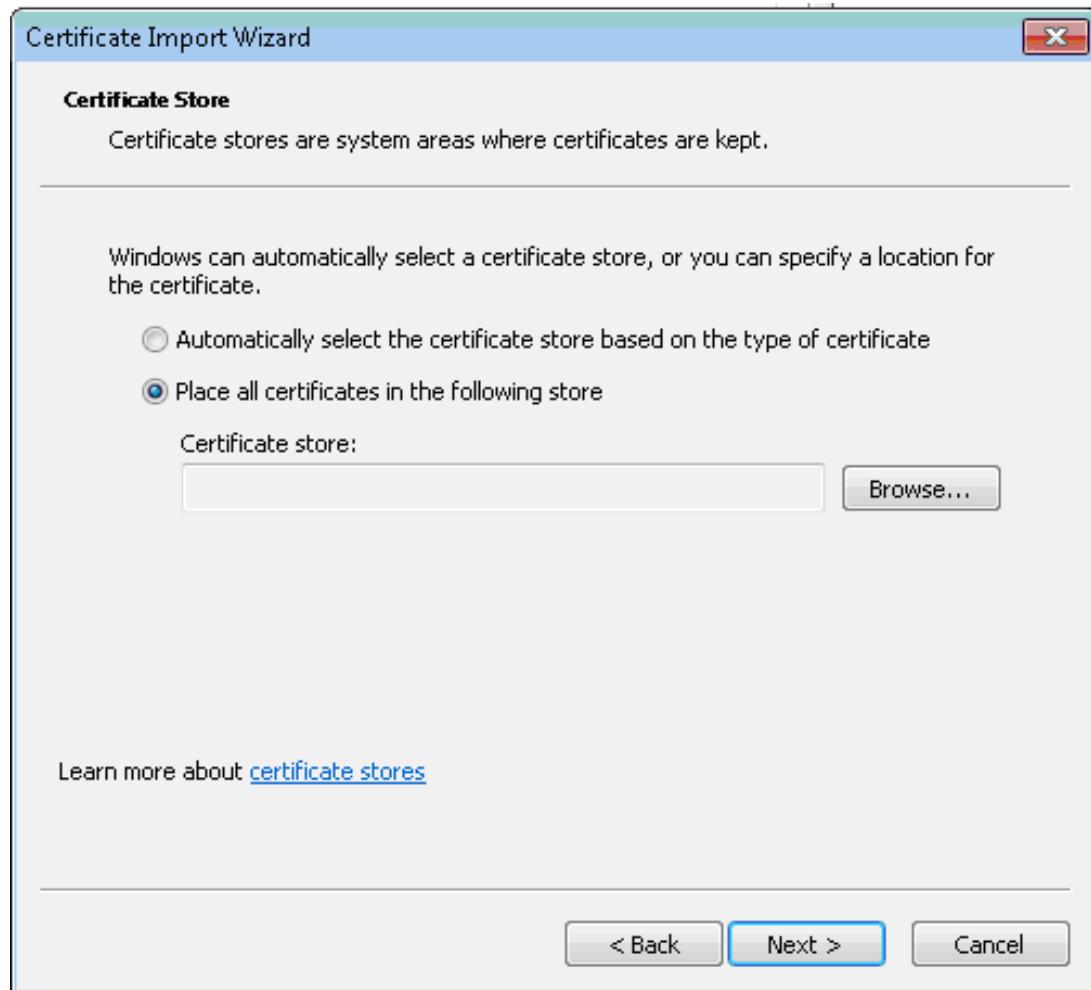
3. The **Certificate window** appears. Click **Install Certificate**.



4. Certificate Import Wizard opens. Click **Next**.



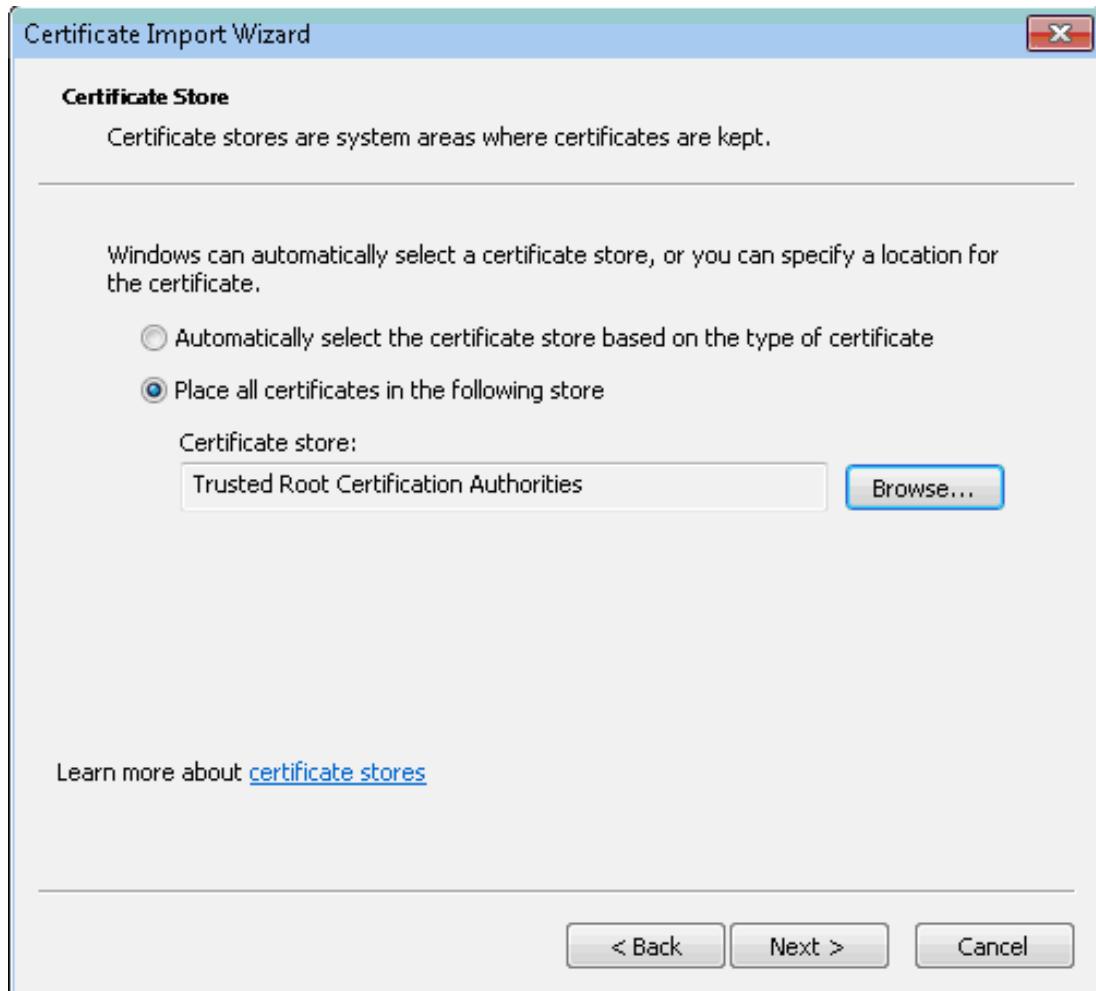
5. Select the **Place all certificates in the following store** option and click **Browse**.



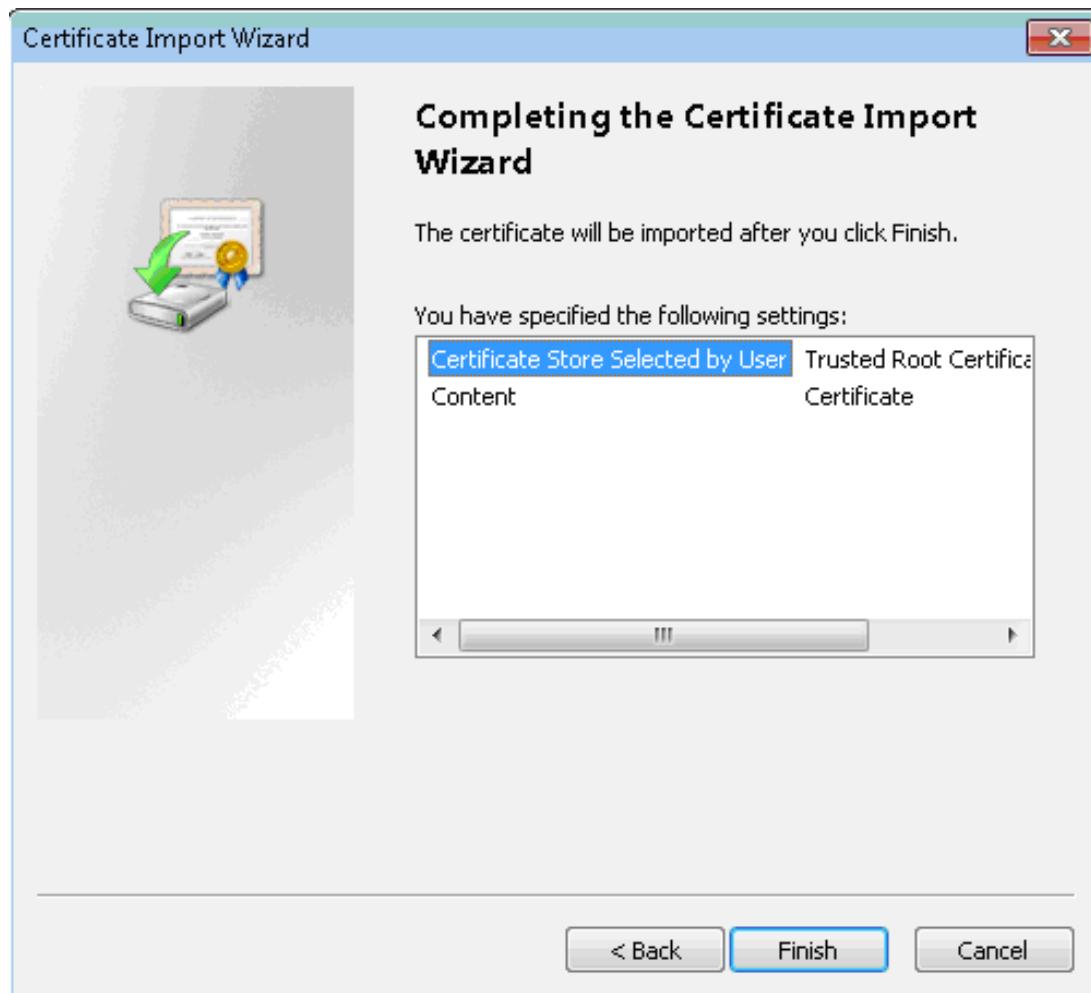
6. Select **Trusted Root Certification Authorities** and click **OK**.



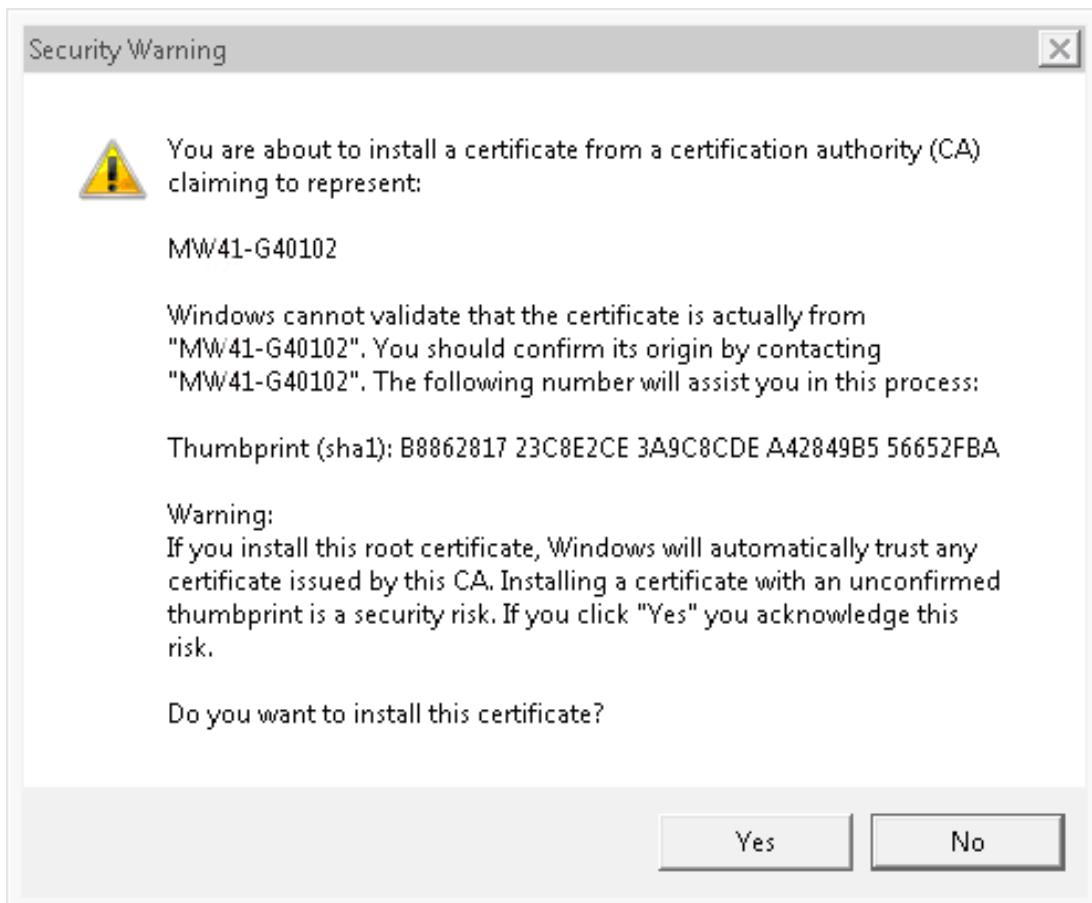
7. The **Certificate Import Wizard** window opens again. Click **Next**.



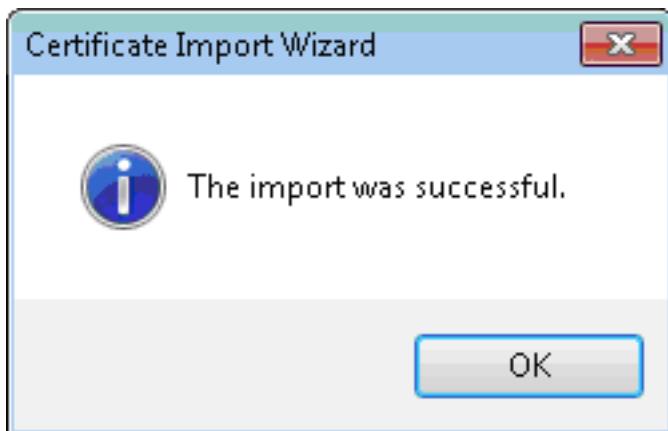
8. Click **Finish**.



9. In the **Security Warning** window, click **Yes**.



10. Click **OK**. The certificate has now been successfully imported.



11. Click **OK** to accept the installed certificate.

12. In the **Security Alert** window, click **Yes**.



The security certificate is now installed on the sounding workstation and the MW41 sounding software uses a safe HTTPS connection.



If you change the MW41 computer name, you must uninstall and then reinstall the MW41 software, and reinstall the security certificate.

4.6 Connecting Observation Network Manager

4.6.1 Installing Thinfinity Software

For remote desktop connection from Vaisala Observation Network Manager NM10, you must install and configure the Thinfinity Remote Desktop Workstation. The installation software is available on the software installation media in:

\MW41\3rdPartySoftware\Thinfinity

4.6.2 Installing NM10 Software

For instructions on how to install the NM10 software, see *Vaisala Observation Network Manager NM10 Field Installation for MW41*, available on the MW41 installation media.

4.6.3 Connecting Observation Network Manager and MW41

To create a secure connection between Vaisala Observation Network Manager NM10 and MW41 computers, you must install SSL certificates in both NM10 and MW41 computers and generate a security key for MW41.

4.6.3.1 Required Firewall Settings

Firewall ports must be open at both AUTOSONDE and MW41 ends for the purposes listed in the table below. Usually these outgoing ports are always open.

The NM10 software installer automatically opens the Windows Firewall for the ports and protocols marked with the asterisk symbol * .

Table 3 Firewall Settings (Open Ports)

From	To	Protocol	Target Port	Purpose
MW41	Network Manager DCP Server	TCP	22*	SFTP file transfer from MW41
MW41	Network Manager DCP Server	TCP	8443*	HTTPS connection from MW41
Network Manager DCP Server	MW41	TCP	8443*	HTTPS connection to MW41
Network Manager user's network	MW41	TCP	8443*	MW41 Web UI
Network Manager user's network	MW41	TCP	8081	MW41 RDP connection

4.6.3.2 Copying NM10 Certificate File to MW41

Before you start, make sure that both NM10 and MW41 computers are in the same network. You need a data storage device where you can copy the certificates temporarily, for example, a USB flash drive.

Start by copying the certificate file in the NM10 computer to the MW41 computer:

- ▶ 1. NM10 certificate files (file name ending in `.cer`) are stored in the NM10 computer's keystore directory in
`C:\Program Files (x86)\Vaisala\NetworkManager\config\jdcpc_conf\certificates`.
- 2. Copy the correct `.cer` file, for example, on a USB flash drive. The file is named `<ComputerName>_nm10-backend.cer`.

3. Take the flash drive with you and go to the MW41 computer. Save the file in directory *C:\ProgramData\MW41\observation-network-manager\trusted-servers*.
4. After saving the file, restart the MW41 computer. After the restart, the certificate has been taken into use in MW41.

Next, copy the MW41 certificate to the NM10 computer.

4.6.3.3 Copying MW41 Certificate File to NM10

- 1. The certificates are stored in keystore directory *C:\ProgramData\MW41\keystore*. The file is named <ComputerName>.cer.
2. Copy the correct .cer file, for example, on a USB flash drive. Take the flash drive with you and go to the NM10 computer.
3. Save the .cer file in the NM10 keystore directory
C:\Program Files (x86)\Vaisala\NetworkManager\config\jdcp_config\certificates.

4.6.3.4 Generating Security Key

- 1. If you have so far opened NM10 as read-only, log in to NM10 as an Administrator-level user.
2. Click the **Admin** button in the upper right corner.
3. Click **Security** and **Generate new key**.
4. Click **Export**. A .key ASCII file (for example, auth_key_20171112111501.key) is generated. Save the file, for example, on a USB flash drive.
5. Take the flash drive with you and go to the MW41 computer. Log in as an Administrator-level user and click **Administration > Devices and Systems > Observation Network Manager**.
6. In the **Server address** field, enter the NM10 computer name.
7. In the **Authentication Key** field, enter the NM10 authentication key. The key is available in the .key file you saved on the NM10 computer earlier. Open the file using Notepad.
8. In the **Authentication Secret** field, enter the NM10 authentication secret.
9. Click **Connect**.
- To change the information in the MW41 Observation Network Manager window, click **Edit** and **Disconnect**.



If you click **Save** only, the information is saved, but connection to NM10 is not registered. You must click **Connect** to register MW41 in NM10.

10. Go back to the NM10 computer and click the **Exit Admin** button.

11. Check the **Soundings** tab in NM10. When the connection works, a new station appears here. When you click the station, the first message you see is `Source registered`.



If you are using the MW41 sounding software with AUTOSONDE and have registered a connection between NM10 and AUTOSONDE, the Observation Network Manager configuration is not available in MW41. The configuration is also not available if the MW41 station has been configured as a station that moves during the sounding.

5. Upgrading Antennas

5.1 Antenna Upgrade Process

Upgrading RM21, RB20, RB21, CG25 and GA20 antennas so that they are compatible with the MW41 sounding system contains the following changes:

- To upgrade directional antenna RB20 or RB21 to RB31, you need to replace or upgrade the RBD121 switching unit.
- To upgrade omnidirectional antenna RM21 to RM32, you need to replace the antenna amplifier and use an adapter.
- To upgrade portable antenna CG25, you need to replace the antenna amplifier RAA20M with Antenna Amplifier and Switch RAA111G and use an adapter.
- To upgrade GPS antenna GA20, you need a TNC male adapter to connect the GPS antenna cable to SPS3xx.

If you would like to upgrade GPS antenna GA31 to GA41, see *Vaisala GPS Antenna GA41 User Guide* for instructions.

5.2 Antenna Upgrade Kit

The delivery includes an upgrade kit with the following contents:

Table 4 Antenna Upgrade Kit

Item	Code
Antenna Amplifier RAA111G and coaxial N-adapter	231507 224727
RB21 upgrade to RB31	231508
Antenna amplifier and switch for RB31	RBD121
Type label for RB31	212262
Two TNC male adapters	231509
Coaxial adapter TNC	213757
Coaxial adapter N	231155

5.3 Upgrading Directional Antenna RB20/RB21

In the upgrade process, you have to disassemble the antenna to replace or upgrade the RBD20 or RBD21 switching unit to RBD121 inside the cover dome of the antenna.

For RB20, you might also have to drill two new holes in the base cover of the antenna to attach switching unit RBD121. This is required when RB20 is in marine use. In other cases it is optional.

5.3.1 Attaching Switching Unit RBD121 to RB21

The following figure shows the location of the switching unit to be replaced inside the antenna cover.

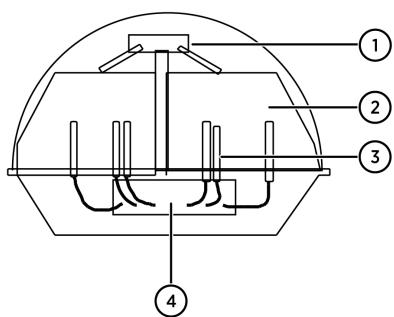


Figure 3 RB21 Antenna Internal Units

- 1 Cross dipole
- 2 Reflector plate
- 3 Radiation element
- 4 Switching unit

5.3.1.1 Disassembling RB21

- ▶ 1. Loosen the 8 rim bolts and remove the cover dome.
- 2. Tilt the reflector plate upwards and disconnect all cables from the switching unit. Take note of the positions of the cables, since you must reinstall them in exactly the same way.
- 3. Open the cover of the switching unit.
- 4. Loosen the 4 fixing bolts and remove switching unit RBD20.

5.3.1.2 Re-assembling RB21

- ▶ 1. Install switching unit RBD121 with 4 fixing bolts.
- 2. Close the cover of the switching unit.
- 3. Connect all cables following your notes on the cable positions.
- 4. Close the cover dome.

5.3.2 Attaching Switching Unit RBD121 to RB20

When RB20 is used in a fixed installation, it is not absolutely necessary to drill new holes in the antenna's base cover to attach switching unit RBD121. If you do not wish to drill any new holes, you can place the switching unit on the bottom of the antenna dipole and tie it down with the cables.



When RB20 is in marine use, the switching unit must always be attached to the antenna and two holes (6.6 mm in size) must be drilled in the base cover for attaching RBD121.

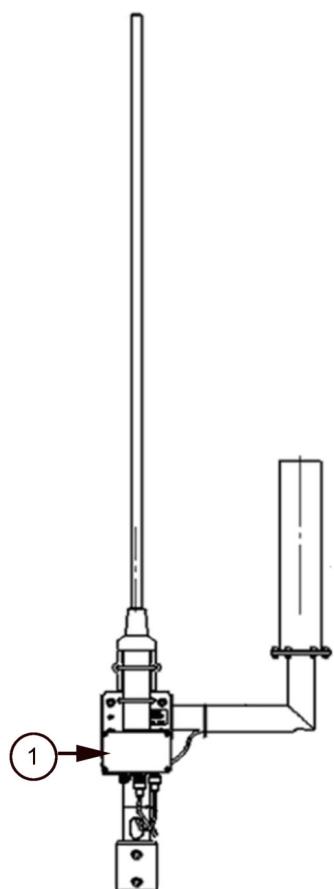
After replacing the switching unit, the old switching unit RBD20 control cable is no longer needed. The old RB20 input/UHF cable with coaxial N-adapters can still be used.

5.4 Upgrading Omnidirectional Antenna RM21

To distinguish between RM21 and RM31 antennas, check the antenna amplifier. If it has two connectors, you need to change the antenna amplifier RAA20M to RAA111G (1), and you need an adapter for the amplifier.

Figure 4 Omnidirectional Antenna RM32

1 Antenna Amplifier RAA111G



- ▶ 1. Remove the old antenna amplifier RAA20M from the RM31 antenna. The old antenna amplifier has two connectors.



Figure 5 Antenna Amplifier RAA20M

2. Attach RAA111G to the antenna. RAA111G has three connectors. Attach the adapter included in the delivery to the OUT connector in the amplifier (1).

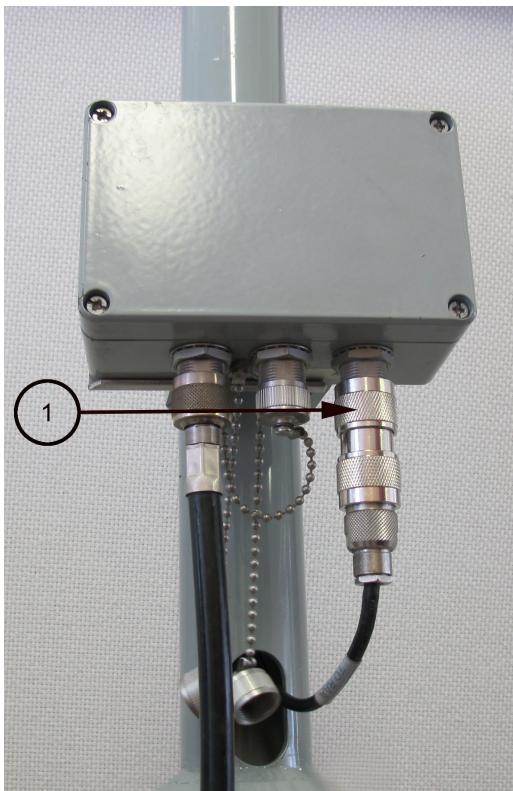


Figure 6 Antenna Amplifier RAA111G with Adapter

1 OUT connector

For more information on connecting the antenna cables to the amplifier, see *Vaisala Telemetry Antenna RM32 User Guide*.

5.5 Upgrading Portable Antenna CG25

To make the portable antenna CG25 compatible with MW41, you must upgrade the antenna amplifier RAA20M (1) to Antenna Amplifier and Switch RAA111G, and you need an adapter for the amplifier.

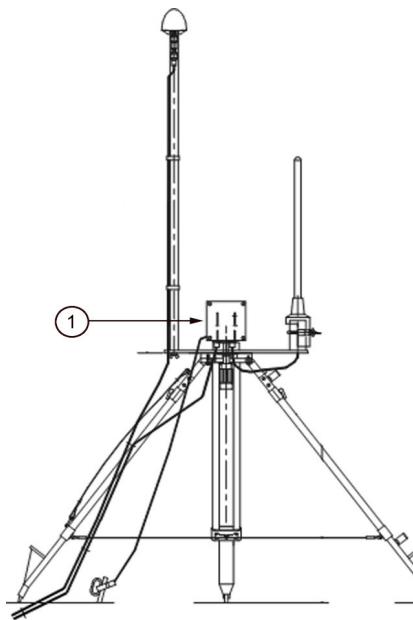


Figure 7 Portable Antenna CG25

1 Antenna Amplifier RAA20M

- ▶ 1. Remove the old antenna amplifier RAA20M from the antenna. The old antenna amplifier has two connectors.

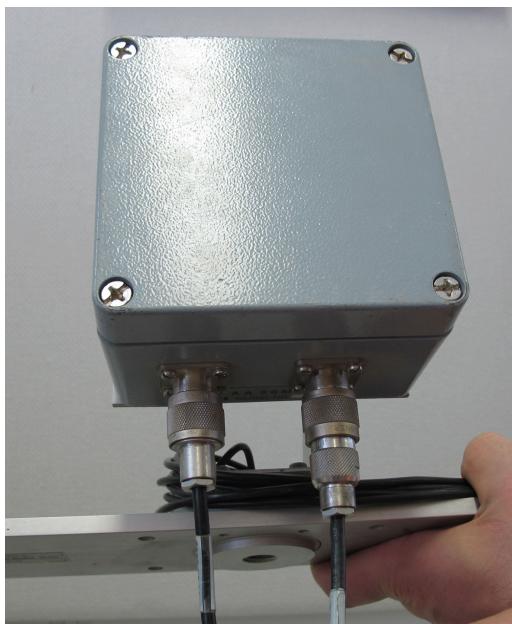


Figure 8 Antenna Amplifier RAA20M

2. Attach RAA111G to the antenna. RAA111G has three connectors. Attach the adapter included in the delivery to the OUT connector in the amplifier (1).

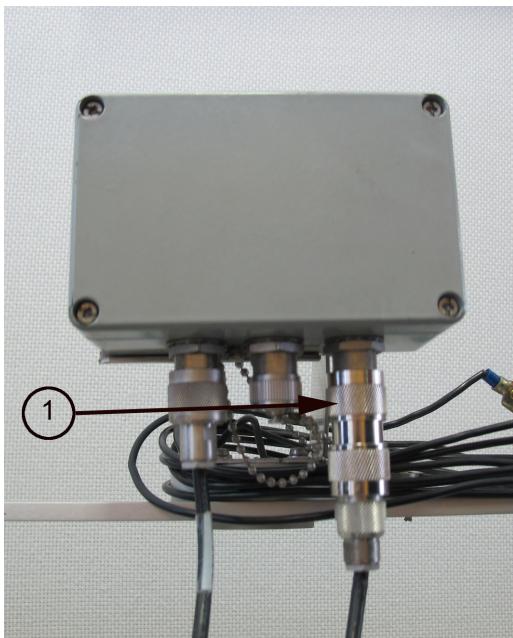


Figure 9 Antenna Amplifier RAA111G with Adapter

1 OUT connector

For more information on connecting the antenna cables to the amplifier, see *Portable Antenna CG25 Instruction Manual*.

5.6 Upgrading GPS Antenna GA20

GA31 includes an N-to-TNC cable for connecting the antenna to the sounding system. For the upgrade, GA20 needs one of the two TNC male adapters: either coaxial adapter TNC 213757 or coaxial adapter N 231155.

- ▶ 1. Attach the TNC adapter to Sounding Processing Subsystem SPS3xx.
- 2. Connect the GPS antenna cable to the TNC adapter.

6. Using Ground Check Set GS25 in Serial Communication mode

6.1 Connecting Ground Check Set GC25

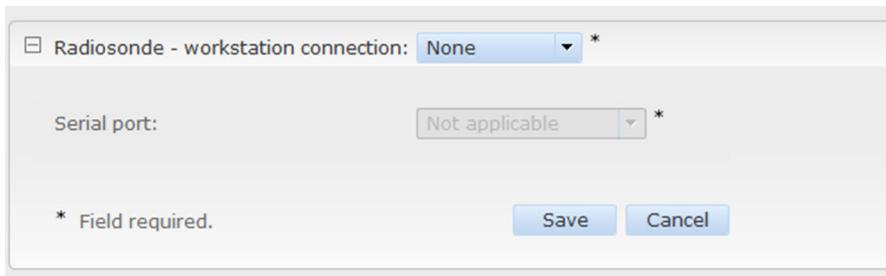
After the upgrade, GC25 is connected to the sounding workstation via a cable, and it is operated using only the sounding system user interface instead of the panel on GC25.

- ▶ 1. Connect the GC25 power supply connector to the power socket.
- 2. Connect the power supply cable.
- 3. To use GC25 with MW41, connect the RS-232 cable to the slanted serial connector (on the back of the GC25) and to the PC's serial port. Secure the cable with screws.
The RS-232 cable is delivered with GC25.
- 4. Press the power switch.
GC25 is ready for use when the display shows the message **Connect Cable to Sonde**.

6.2 Updating GC25 Software

If you have installed the MW41 sounding software before updating the GC25 software, the COM port needed for GC25 update is reserved for MW41. Before you start the update, you must free the COM port by configuring the MW41 software settings.

- ▶ 1. Select **Administration > Devices**.
- 2. Open **Radiosonde - workstation connection** and set the connection type to **None**.



6.2.1 Performing the Update

To update the GC25 software, GC25 must be connected to MW41 sounding workstation with the RS-232 cable provided with GC25.

The GC25 software is updated with the help of GC25 Flash Programmer **GC25Upgrade.exe**, available in folder *EmbeddedSoftware\GC25* on the MW41 installation media.

- ▶ 1. Turn off GC25.
- 2. Go to folder *EmbeddedSoftware\GC25\3021\DISKW32* on the MW41 installation media and click file **GC25Upgrade.exe**.
- 3. Press the **Back** button and the power switch on GC25 front panel at the same time. GC25 is switched on. The upper line on the GC25 display is a row of dark squares, indicating that the unit is in software update mode. At this stage, do not press any other buttons or turn off GC25.
- 4. On the Flash Programmer window, select the correct COM port and click **Update**.
- 5. The update begins. When complete, a window will be displayed, indicating that the update is complete.

7. Taking RI41 or MWH322 into Use

7.1 Connecting Ground Check Device RI41 or MWH322

7.1.1 Disabling GC25

If you have used Ground Check Set GC25 for preparing the radiosonde in the previous soundings, you must disable it before taking Ground Check Device RI41 or MWH322 into use.

- ▶ 1. In MW41, select **Administration > Devices > Radiosonde – workstation connection**.
 - 2. From the drop-down list, select **None**.
 - 3. Select **Save**.
 - 4. Switch off GC25 and disconnect the cable from the sounding workstation.
 - 5. Disconnect the GC25 power cable.

7.1.2 Connecting RI41 or MWH322

- ▶ 1. Connect the ground check device USB cable to the PC's USB port.
The ground check device is powered on when it is connected to the PC.
- 2. Configure RI41 or MWH322 as the ground check device to be used as the connection between the radiosonde and the sounding workstation:
In MW41, select **Administration > Devices > Radiosonde – workstation connection**.
 - 3. From the drop-down list, select the correct device. Select also the correct serial port.
 - 4. Select **Save**.

7.2 Updating RI41 or MWH322 Software

To start the update, click *UpdateGC41.exe* in directory *C:\Program Files (x86)\Vaisala\MW41\GC41Update*.

To update the software, the ground check device must be connected to the sounding workstation PC with the USB cable during the entire update process.



CAUTION! Do not disconnect the ground check device USB cable from the sounding workstation PC during the update, or interrupt the update in any way. Switching the ground check device off before the update is finished may cause serious malfunction.

- ▶ 1. In the GC41/RI41 Updater window, click **Update**.
- 2. The update command has now been sent to RI41 and you must wait for 10 seconds.
- 3. The update begins. A progress bar is displayed in the Updater window.
- 4. When the software has been successfully updated, click **Close**.
A pop-up window displaying information on the updated device is shown.
- 5. Click **OK** to close the pop-up window.

The software has now been updated.

7.2.1 Software Version Already Exists

If the ground check device already contains the software version you are about to update, click **Exit** to cancel the update.

If you wish to update the software anyway, click **Update anyway**.

7.2.2 RI41 or MWH322 Cannot Be Found

If the message `Cannot find any connected GC41 device` is shown, connect the ground check device to the sounding workstation PC with the USB cable and click **OK**.

If the message is displayed again after you have connected the cable, wait a while and then click **OK** again.

8. Taking Sounding Processing Subsystem SPS3xx into Use

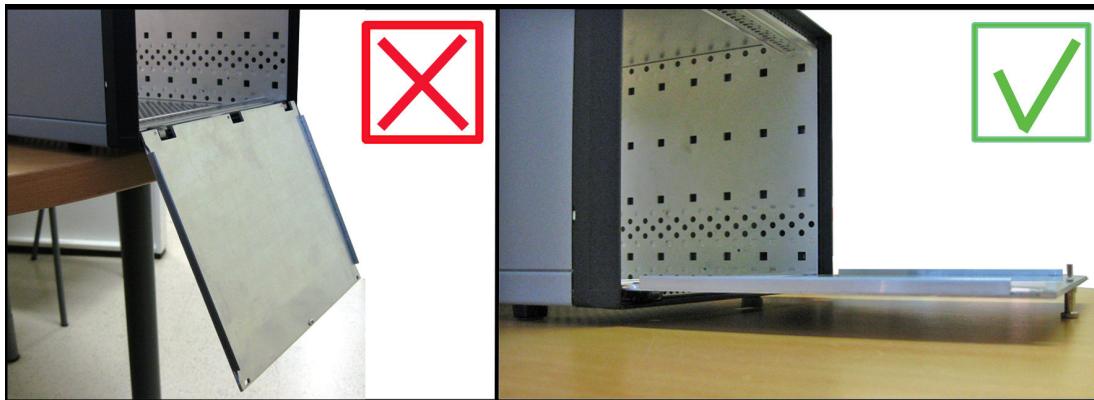
8.1 Upgrading SPS311V/SPS311GV (MW31 to MW41 Upgrades)

8.1.1 Opening the Subsystem Front Panel

- ▶ 1. Switch the subsystem POWER OFF.
- 2. Open the front panel.



CAUTION! To avoid damaging the front panel hinges, always open the front panel so that it is supported on a flat surface.



8.1.2 Replacing Plug-in Units



WARNING! Switch the subsystem POWER OFF before replacing any plug-in units.
Unplug the mains connector before replacing the AC power supply MWP411.
Switch External 24 VDC supply OFF before replacing the DC power supply MWP312.



CAUTION! Do not damage the EMC strips in the front panel of the unit or in the adjacent front/blank panel when pulling out or pushing in a plug-in unit. Move the unit slowly in the card guides and avoid bending them.

- ▶ 1. To remove a unit:
 - a. Disconnect the unit cable in the front panel.
 - b. Open the upper and lower attachment screws.
 - c. Push first the handle lock button to release the latch and then push the whole handle down to unplug the unit.
 - d. Pull out the unit.
- 2. To install a unit:
 - a. Place the unit into lower and upper card slide rails in the correct card slot.
 - b. Unlock the handle latch and push the unit almost completely into the slot.
 - c. Finally, lift the handle up to complete the push until the card is fully in the slot and the handle latch is locked.
 - d. Fasten the attachment screws.
 - e. Connect the cable.

8.1.3 Upgrading SPS311V/SPS311GV to SPS311G

- ▶ 1. Remove LORAN-C plug-in units MPU111/MPU112, MWV202 and MWP302.
- 2. If the SPS model is SPS311V, add the MWG114 and MWP411 plug-in units.
- 3. If the SPS model is SPS311GV, add the MWP411 plug-in unit.
MWP411 is an internal AC power supply and if it is not assembled, then an external AC/DC power supply is in use.
- 4. Insert blank panels to the empty slots (included in the upgrade package).

More Information

- ▶ [Replacing Plug-in Units \(page 63\)](#)

8.1.4 Upgrading SPS311V/SPS311GV to SPS341AG

- ▶ 1. Remove LORAN-C plug-in units MPU111/MPU112, MWV202 and MWP302.
- 2. Replace the MRP111 and MWG11X plug-in units with MRP121A and MPU121A.
- 3. Add the MWP411 plug-in unit.
MWP411 is an internal AC power supply and if it is not assembled, then an external AC/DC power supply is in use.
- 4. Insert blank panels to the empty slots (included in the upgrade package).

More Information

- [Replacing Plug-in Units \(page 63\)](#)

8.2 Connecting SPS3xx and Sounding System MW41

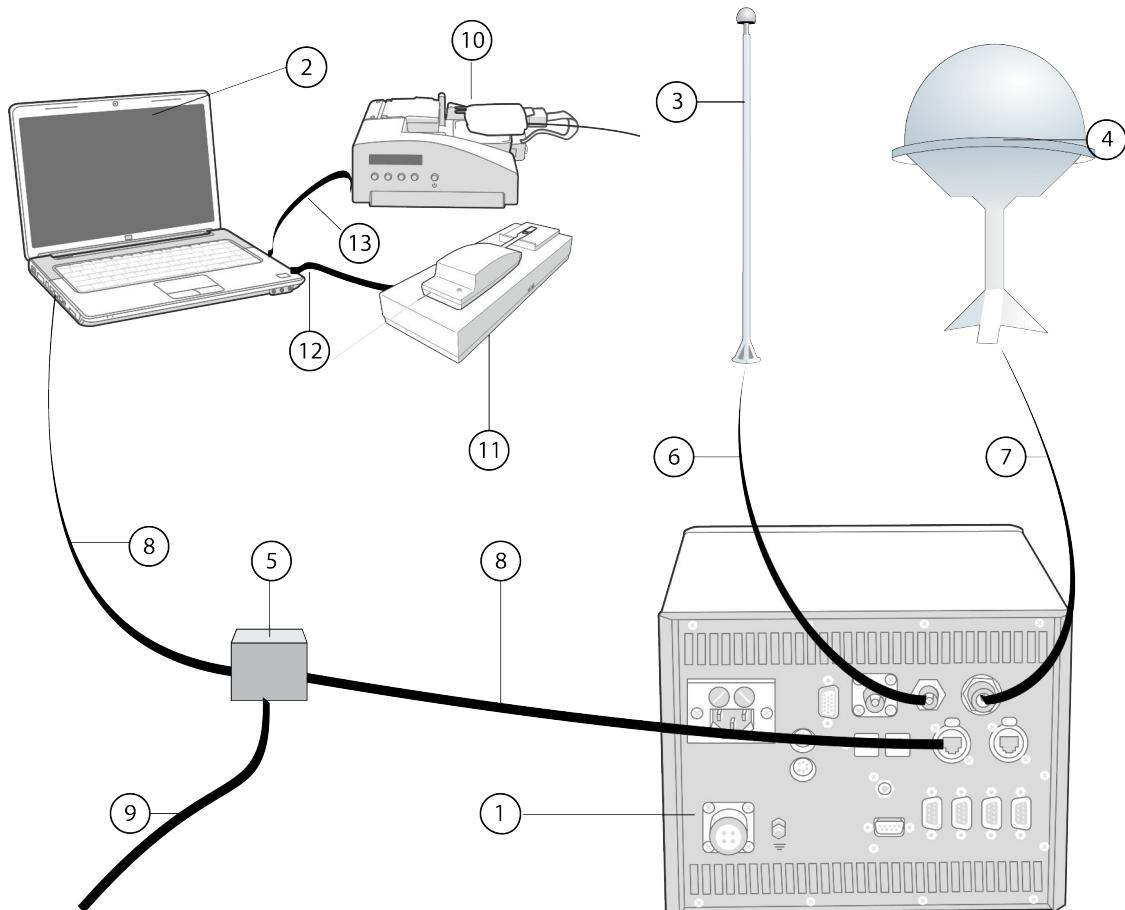


Figure 10 MW41 Connections

- 1 Sounding Processing Subsystem SPS3xx
- 2 Sounding workstation
- 3 GPS antenna
- 4 UHF Antenna
- 5 LAN switch (optional)
- 6 GPS cable (TNC connector)
- 7 UHF cable (N connector)
- 8 Ethernet cable (RJ45 connector)
- 9 Line to external network (optional)
- 10 Ground Check Set GC25 for RS92
- 11 Ground Check Device RI41 or MWH322 (not pictured here) for RS41
- 12 USB cable
- 13 RS-232 cable

To connect antennas, the sounding workstation, and optional equipment to the sounding processing subsystem, do the following:

- 1. Connect the antennas to the subsystem. Refer to the instructions in the appropriate antenna user guide.
- 2. If you are connected to an external network, connect the Sounding Processing Subsystem LAN1 connector via the LAN switch to the workstation's LAN card using the 210973 cable (Ethernet cable with RJ45 connectors).
- 3. Connect the Ethernet cable to the computer's Ethernet port.
- 4. Connect either Ground Check Device RI41 or MWH322 for RS41, or Ground Check Set GC25 for RS92 to the sounding workstation.
 - If you use Ground Check Set GC25 to prepare the radiosonde for the sounding, connect the GC25 RS-232 cable to the sounding workstation.
 - If you use Ground Check Device RI41 to prepare the radiosonde for the sounding, connect the RI41 USB cable to the sounding workstation.
- 5. If the system has a direct cable connection to radiosonde RS92, connect the radiosonde cable (DRW231463) to the workstation's COM port. Connect the AC/DC adapter to the radiosonde cable's DC connector.

8.3 Connecting the Power Supply and Grounding SPS3xx



WARNING! Make sure that the SPS3xx power cable is grounded.

- 1. Connect SPS3xx to mains power 100 ... 240 V, 1.2 A maximum, 50/60 Hz or to a 24 VDC power system. The DC power input connection is floating.
-  Mains power and 24 VDC system power are alternative power sources and need not be used at the same time.
- 2. Ground SPS3xx using the external chassis ground screw provided for system grounding.

8.4 Switching the SPS3xx Power On and Off

The power switch is located on the lower left corner of the front panel. Before the subsystem power can be switched on, the system must be in the standby state. This is indicated by the yellow standby LED. For more information on the indicator LEDs, see *Vaisala DigiCORA Sounding System MW41 Technical Reference*.

- ▶ 1. Check that the standby LED is lit yellow. When the standby LED is lit yellow, the system is ready for power-up.
- 2. To switch the subsystem power on or off, press the power switch once.
 - After the power is switched on, the standby LED is blank.
 - During the power-up, the power/status LED blinks green. When the power/status LED turns into steady green, the system is ready for operation.



With SPS341AG, it can take up to 4...5 minutes until the subsystem is ready for operation.

- Red color indicates an error in one or more units during the power-up or operation. See the applicable Sounding Processing Subsystem *Technical Reference*.

8.5 Connecting Sounding Processing Subsystem SPS3xx



Unless otherwise mentioned, SPS3xx refers to all Sounding Processing Subsystem models (SPS31G and SPS341AG).

To connect the MW41 computer to Sounding Processing Subsystem SPS3xx, create the following settings:

- ▶ 1. Make all the physical connections as instructed in [Connecting SPS3xx and Sounding System MW41 \(page 21\)](#).
- 2. Check that a firewall does not hinder the connections.
- 3. Update the sounding processing subsystem software.
- 4. Make sure that the sounding processing subsystem uses the default IP address.



The default IP address of the sounding processing subsystem is 192.168.0.10. The workstation's default IP address is 192.168.0.1.

More Information

- [Connecting SPS3xx and Sounding System MW41 \(page 21\)](#)
- [Using Firewall \(page 69\)](#)
- [Updating SPS3xx Software \(page 69\)](#)
- [Changing SPS311G IP Address \(page 72\)](#)
- [Changing SPS341AG IP Address \(page 77\)](#)

8.5.1 Using Firewall



It is recommended to use a firewall between the MW41 workstation and the sounding processing subsystem.

Windows Firewall

You do not have to disable the Windows firewall to be able to create MW41 connections. The MW41 installer automatically opens the necessary ports.

Other Firewalls

Other firewalls require you to open the following ports manually:

- Inbound TCP port 42990 for SPS3xx
- Outbound TCP port 42900 for SPS3xx
- Inbound TCP port 8443 for HTTPS web service

You might also have to open the following ports:

- Inbound TCP port 8081 for Thinfinity remote desktop
- Inbound TCP port 443 for Axeda

8.5.2 Updating SPS3xx Software



Unless otherwise mentioned, SPS3xx refers to all Sounding Processing Subsystem models (SPS311G and SPS341AG).



CAUTION! Power must be on all the time while the software update is in progress. Switching the unit off before the update is finished may cause serious malfunction.

Updating the SPS311G software means updating the software in MRP111 Receiver Processor.

Updating the SPS341AG software means updating the software in MPU121A Main Processor Unit.

8.5.2.1 SPS311G MRP111 Software Update

The folder *EmbeddedSoftware\MRP111* on the installation media contains the latest version of the unit software for MRP111.

- ▶ 1. Switch on the sounding workstation and the sounding processing subsystem, and wait until the system is ready for operation.
- 2. Locate the *EmbeddedSoftware\MRP111* folder and click the *update.exe* file.
- 3. A command line window opens with text `Enter the hostname or the IP address of the updated Embedded PC.`
Type the IP address of MRP111 and press **ENTER**. The default IP address for the unit is 192.168.0.10.



CAUTION! The maximum number of characters for the hostname is 15. If this number is exceeded, the unit stops working.
Vaisala recommends that you do not change the hostname.

- 4. For the question `Verify previous update?` press **n** and **ENTER**.
- 5. When the update is completed, text `Vaisala Embedded Software Update complete` is displayed. Press any key and the window will close.
- 6. Switch the sounding processing subsystem power off and on again to complete the update.

Vaisala recommends that you verify the update.

8.5.2.1.1 Verifying the SPS311G MRP111 Software Update

After the MRP111 software is updated, you can verify the update as follows:

- ▶ 1. Switch on the sounding workstation and the sounding processing subsystem, and wait until the system is ready for operation.
- 2. Locate the *EmbeddedSoftware\MRP111* folder and click the *update.exe* file.
- 3. A command line window opens with text `Enter the hostname or the IP address of the updated Embedded PC.`
Type the IP address of MRP111 and press **ENTER**. The default IP address for the unit is 192.168.0.10.



CAUTION! The maximum number of characters for the hostname is 15. If this number is exceeded, the unit stops working.
Vaisala recommends that you do not change the hostname.

- 4. Text `Verify previous update` is displayed. Press **y** and **ENTER**.
- 5. The system checks that all files are correctly updated. When this is done, you will see text `Vaisala Embedded Software Update complete` and `Press any key to continue.`

6. Press any key and the window will close.

If the update was not successful, text `Embedded PC update was incomplete` is displayed. See [SPS311G MRP111 Software Update \(page 70\)](#).

8.5.2.1.2 Checking the Software Version of MRP111

To check the software version installed on the MRP111 card, do the following:

- ▶ 1. Switch on the sounding workstation and the sounding processing subsystem, and wait until the system is ready for operation.
- 2. Locate the `EmbeddedSoftware\MRP111` folder and click the `verinfo.exe` file.
- 3. A command line window opens. Type the IP address of the unit and press **ENTER**. The default IP address for the unit is 192.168.0.10.
- 4. The program checks the version of the embedded software. Version information of hardware, embedded NT image and application is displayed.
- 5. Text `Press any key to continue` is displayed.
- 6. Press any key and the window will close.

8.5.2.2 SPS341AG MPU121A Software Update

The folder `EmbeddedSoftware\MPU121A` on the installation media contains the latest version of the unit software for MPU121A.

- ▶ 1. Switch on the sounding workstation and the sounding processing subsystem, and wait until the system is ready for operation.
- 2. Locate the `EmbeddedSoftware\MPU121A` folder and click the `update.exe` file.
- 3. A command line window opens with text `Enter the hostname or the IP address of the updated Embedded PC`.
Type the IP address of MPU121A and press **ENTER**. The default IP address for the unit is 192.168.0.10.



CAUTION! The maximum number of characters for the hostname is 15. If this number is exceeded, the unit stops working.
Vaisala recommends that you do not change the hostname.

4. For the question `Verify previous update?` press **n** and **ENTER**.
5. When the update is completed, text `Vaisala Embedded Software Update complete` is displayed. Press any key and the window will close.
6. Switch the sounding processing subsystem power off and on again to complete the update.

Vaisala recommends that you verify the update.

8.5.2.2.1 Verifying the SPS341AG MPU121A Software Update

After the MPU121A software is updated, you can verify the update as follows:

- ▶ 1. Switch on the sounding workstation and the sounding processing subsystem, and wait until the system is ready for operation.
- 2. Locate the *EmbeddedSoftware\MPU121A* folder and click the *update.exe* file.
- 3. A command line window opens with text `Enter the hostname or the IP address of the updated Embedded PC.`
Type the IP address of MPU121A and press **ENTER**. The default IP address for the unit is 192.168.0.10.



CAUTION! The maximum number of characters for the hostname is 15. If this number is exceeded, the unit stops working.
Vaisala recommends that you do not change the hostname.

- 4. Text `Verify previous update` is displayed. Press **y** and **ENTER**.
- 5. The system checks that all files are correctly updated. When this is done, you will see text `Vaisala Embedded Software Update complete` and `Press any key to continue.`
- 6. Press any key and the window will close.

If the update was not successful, text `Embedded PC update was incomplete` is displayed. See [SPS341AG MPU121A Software Update \(page 71\)](#).

8.5.3 Changing SPS311G IP Address

There are two ways of connecting to SPS311G: VNC and PuTTY. The primary method is VNC, but, if that fails, you can use PuTTY.

After you have created the connection to the unit, you can change the SPS311G IP address using the RegConfig program. RegConfig is an internal program in SPS311G plug-in units for setting the communication parameters of the unit.

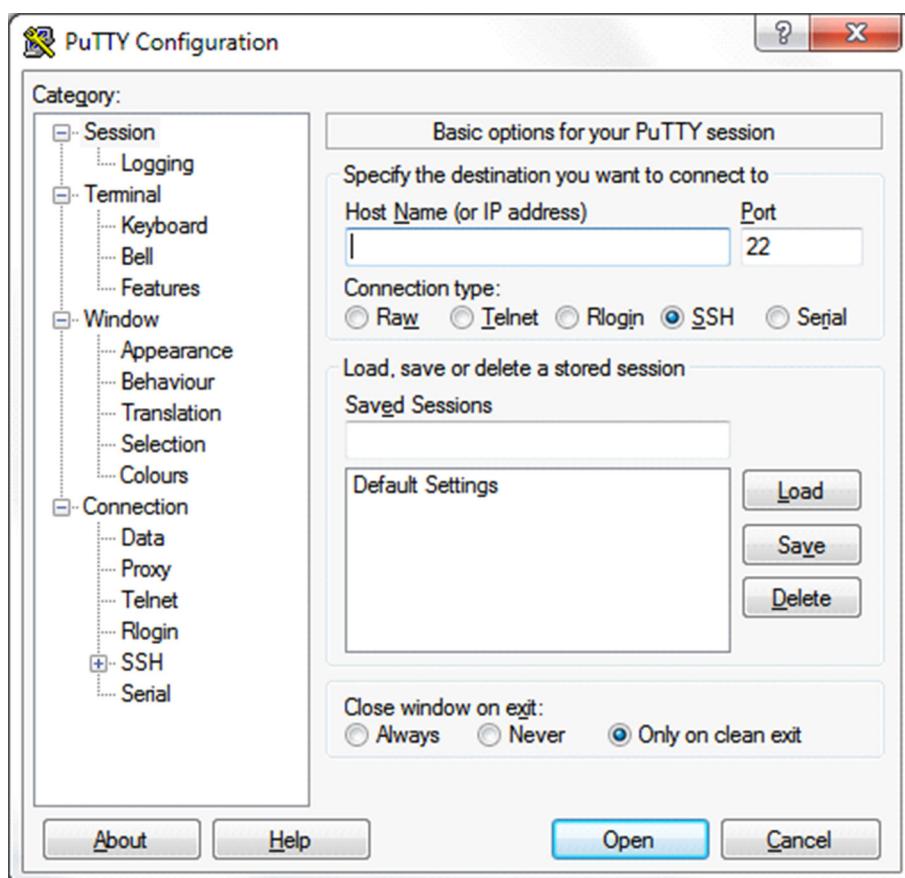
8.5.3.1 Connecting to Plug-in Unit with VNC

- ▶ 1. Switch on the power to the sounding processing subsystem.
- 2. Start VNCViewer by selecting **Start > Run...** and type
`<MW41 Install Directory>\Utils\VNCViewer\VNCViewer.exe.`
(The default MW41 install directory in 64-bit Windows 7 is `C:\Program Files (x86)\Vaisala\MW41\`).
- 3. Type the unit's default IP address in the VNC server box and click **OK**.
SPS311G: 192.168.0.10
- 4. Log in to the system by typing the following information:
Session password: Administrator
- 5. Click **OK**.

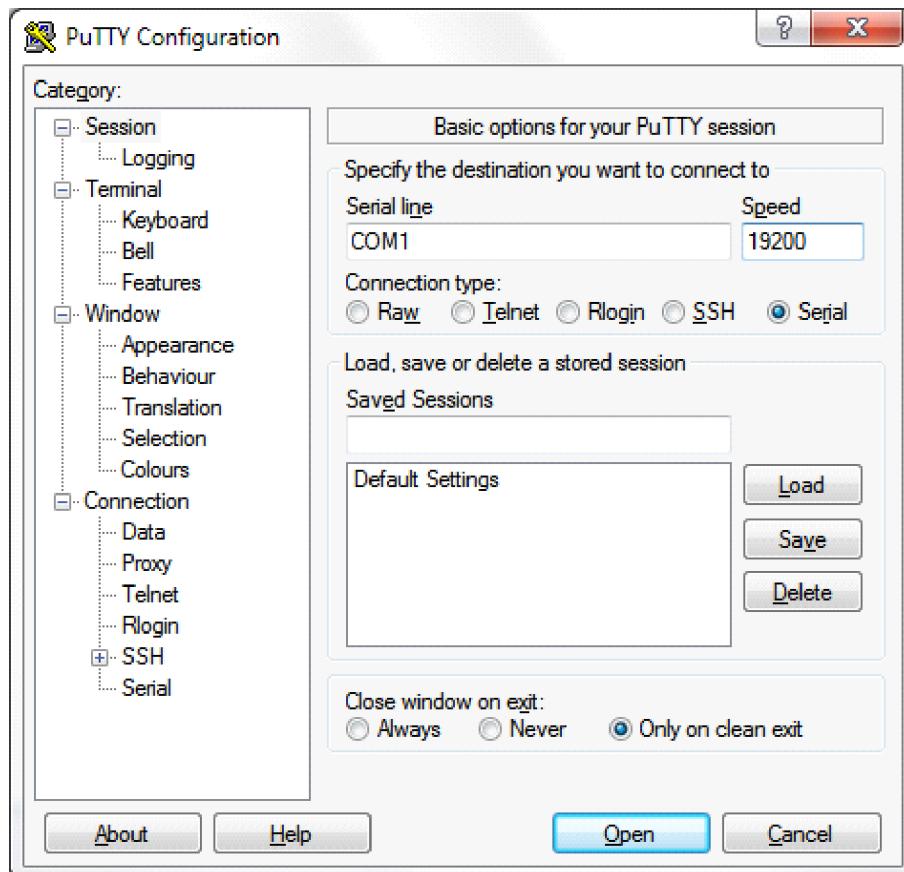
6. Start the RegConfig program on the unit by clicking the **Start** button and selecting **Run**.
7. Type **regconfig** in the **Open** text box and click **OK**.
8. If you have made changes with RegConfig, you are prompted to save the changes. If you choose to save your changes, the unit restarts automatically and the VNC connection ends.
9. If you did not make any changes, end the connection by clicking **Close**.

8.5.3.2 Connecting to Plug-in Unit with PuTTY

- 1. Open the SPS311G front cover to access the MRP111 unit's COM1 port.
2. Connect the workstation's COM port to the MRP111 unit's COM1 port with cable MW45042.
3. Start the program by selecting **Start > Run...** and type
 <MW41 Install Directory>\Utils\Putty\PuTTY.exe
 (The default MW41 install directory in 64-bit Windows 7 is C:\Program Files (x86)\Vaisala\MW41\).
4. Click **Connection - Serial** on the left, and set the properties of the new connection on the right. See the next step for details.



5. In the **Serial line** field, type the workstation's COM port to which the cable is connected. In the **Speed** field, type the baud rate.



6. Configure the settings:

Speed (baud):

19200

Data bits:

8

Stop bits:

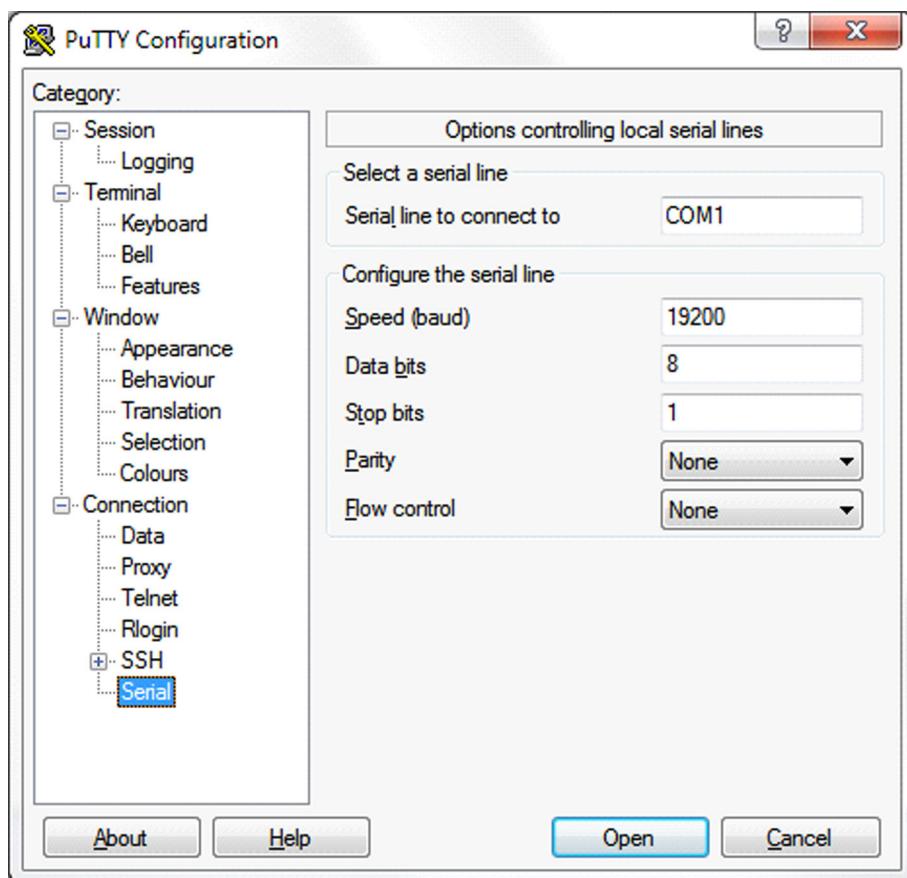
1

Parity:

None

Flow Control:

None



7. Click **Open**. The terminal opens.

8. The system prompts you for:

UserName:

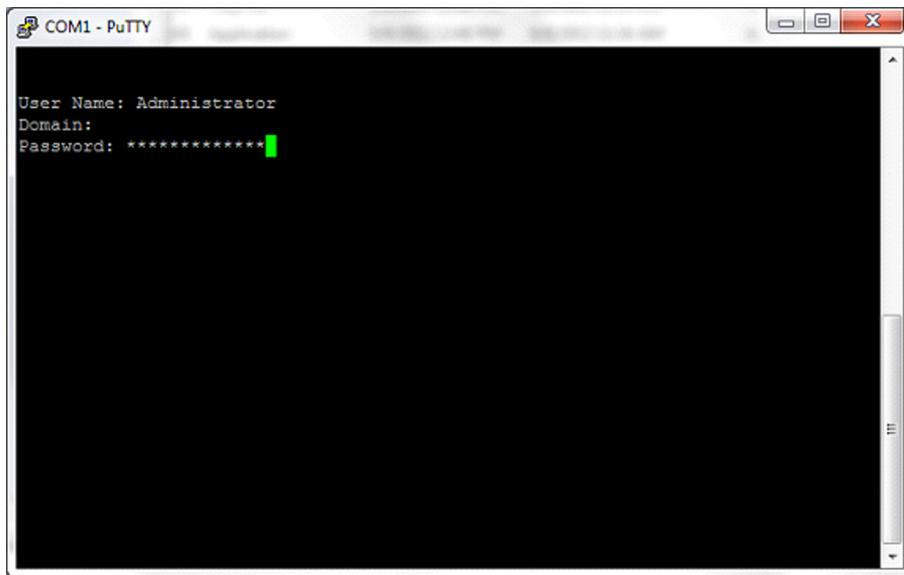
Administrator (ENTER)

Domain:

(empty) **(ENTER)**

Password:

Administrator (ENTER)



9. Start the RegConfig program by typing **regconfig** and press **ENTER**.
10. If you have made changes with RegConfig, you are prompted to save the changes. If you choose to save your changes, the unit restarts automatically and the PuTTY connection ends.
11. If you did not make any changes, end the connection in the following way:
- a. SPS311G: Type **exit** and press **ENTER**.
 - b. Close the program.

8.5.3.3 Using RegConfig to Change SPS311G IP Address

Table 5 SPS311G Settings for RegConfig

Setting	Value	Description
Hostname/Computer name	MRP111-<serial number>	Unit's hostname
IPAddress	192.168.0.10	Unit's IP address
SubnetMask	255.255.255.0	Unit's subnet mask
DefaultGateway	0.0.0.0	Unit's default gateway
VaisalaNameServer	MMW	Cannot be edited, for viewing only.



VaisalaNameServer cannot be edited, the information can only be viewed.

RegConfig also displays hardware information: the serial number of the plug-in unit and the hardware version.

```
RegConfig edits basic communication parameters of this embedded PC.
```

```
Hostname/ComputerName MRP111-X23208
IPAddress          192.168.0.10
DefaultGateway     0.0.0.0
SubnetMask         255.255.255.0
VaisalaNameServerIP MMW
```

Hardware info:

```
X23208
000
```

8.5.3.3.1 Changing the Administrator Password on SPS311G

Plug-in unit MRP111 has a username **administrator**, whose default password is **Administrator**. To change the password:

- ▶ 1. Open a connection to the unit. For details, see [Using RegConfig to Change SPS311G IP Address \(page 76\)](#).
- 2. Start User Manager by selecting **Start > Run**. Type **cmd** to open a Command Prompt and then type **usermgr.cmd**.
- 3. Double-click **Administrator** in the **Username** list.
- 4. Type the new password to **Password** and **Confirm Password** boxes.



Do not change other options for this user. Memorize the new password carefully.

- 5. Close User Manager by selecting **User > Exit**.

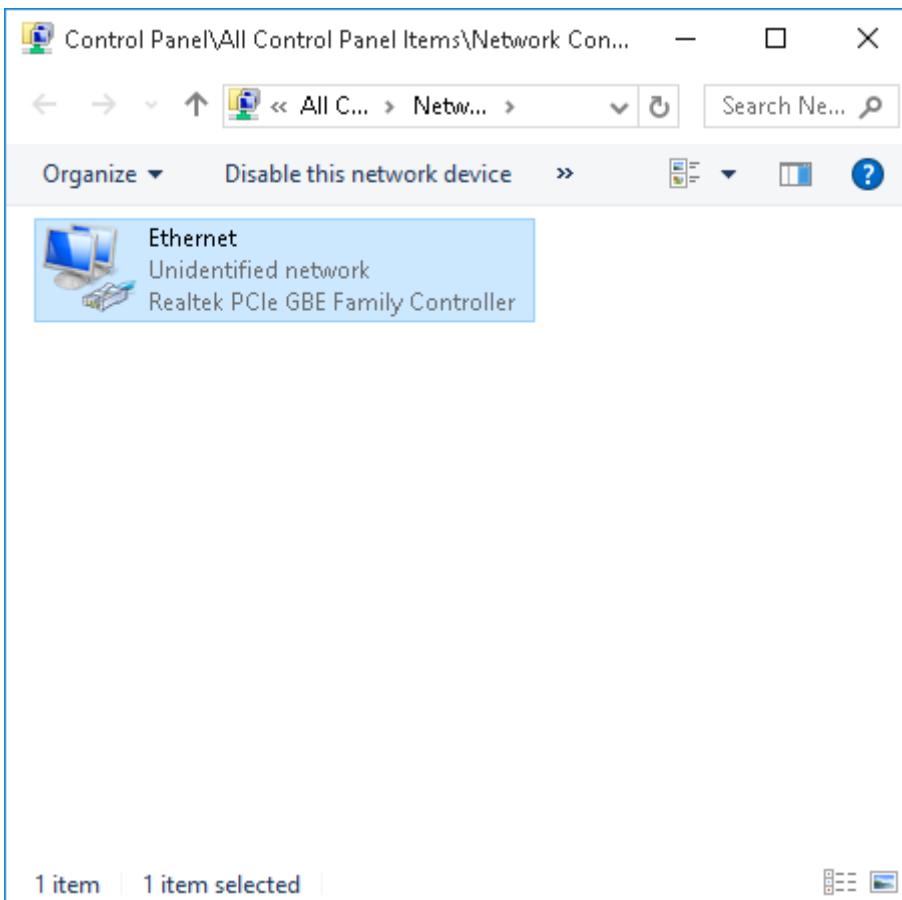
The unit will now restart. Starting the unit takes about two minutes.

8.5.4 Changing SPS341AG IP Address

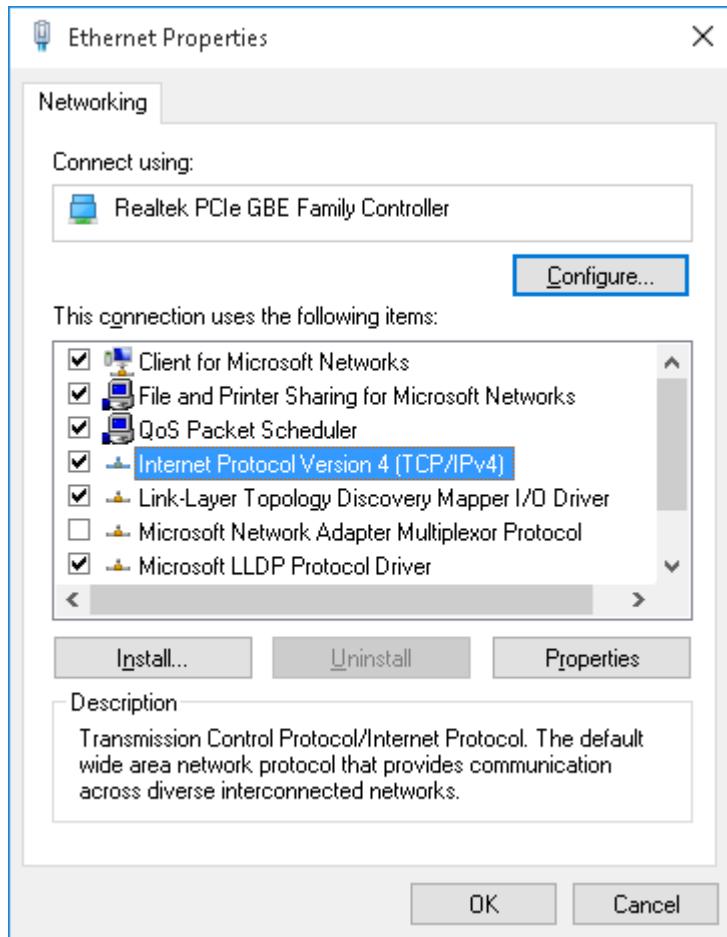
You can change the SPS341AG IP address either by using a local keyboard, mouse and display, or a remote desktop connection.

8.5.4.1 Changing IP Address Using Local Keyboard, Mouse and Display

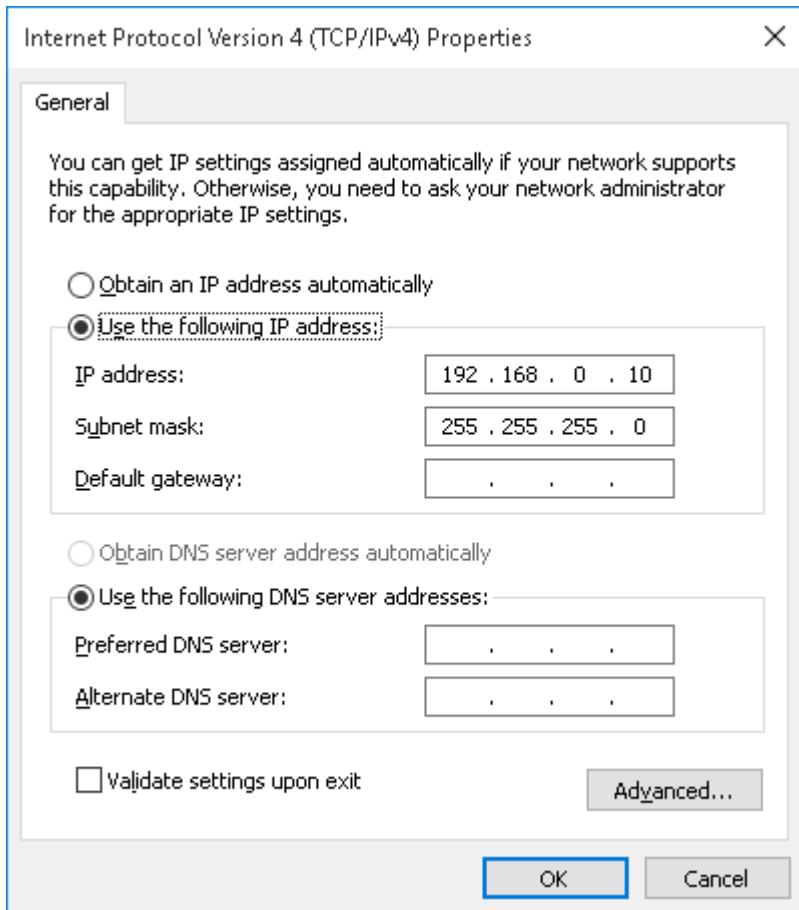
- ▶ 1. Open the front cover of the SPS341AG unit. Connect a keyboard and a mouse to the USB connectors on the MPU121A front panel.
- 2. At the back of the SPS341AG unit, connect a VGA display to the VGA connector.
- 3. Log in to the SPS341AG unit.
Username: **Administrator**
Password: **adpw_VA1**
- 4. Click the **StartIPchange** icon on the desktop.
The IP address change starts.
- 5. Wait about 30 seconds for the SPS341AG unit to reboot, and then log in to the unit again.
- 6. Click the **ChangeIP** icon on the desktop.
- 7. Right-click **Ethernet** and select **Properties**.



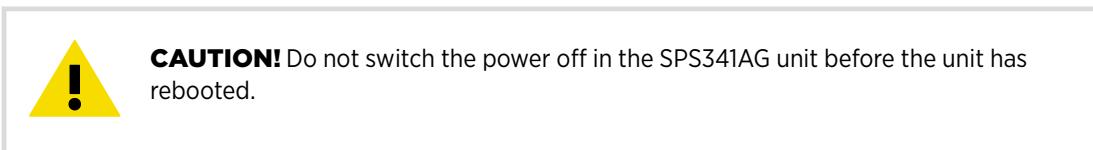
8. In the **Ethernet Properties** window, select **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.



9. In the **Internet Protocol Version 4 (TCP/IPv4 Properties)** window, change the TCP/IPv4 properties as required by your network, and then click **OK**.



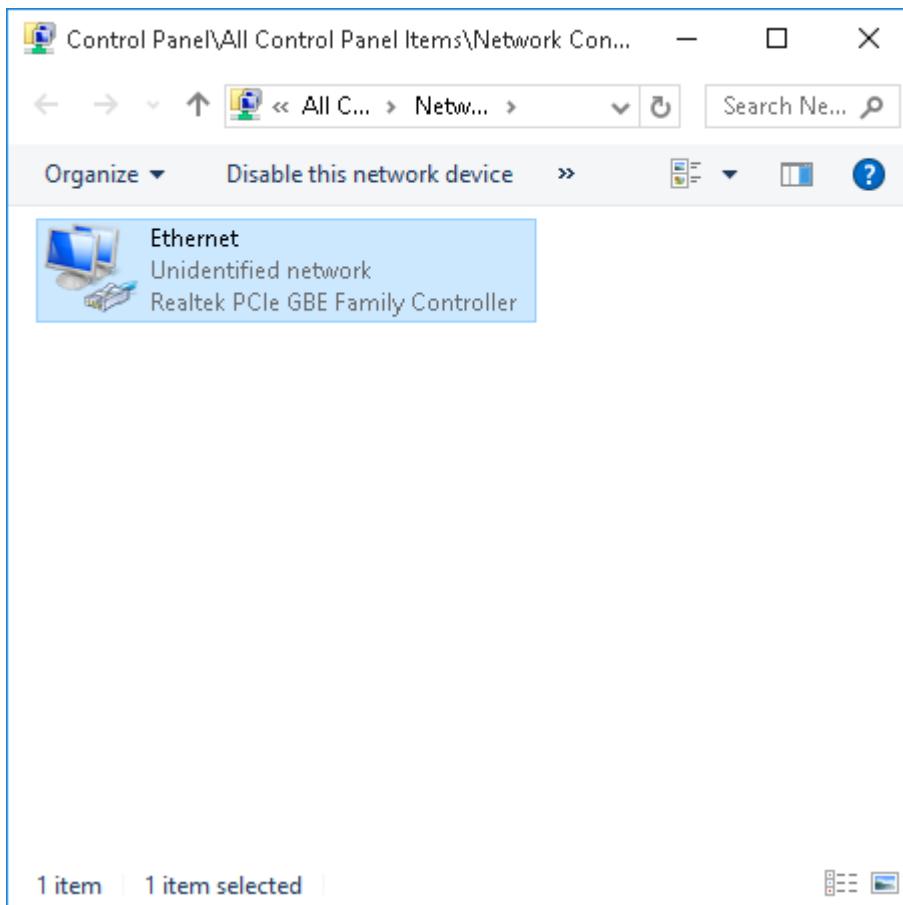
10. In the **Ethernet Properties** window, click **OK**.
11. Click the **EndIPchange** icon to finalize the IP address change.
12. Wait 3 minutes for the SPS341AG unit to reboot.



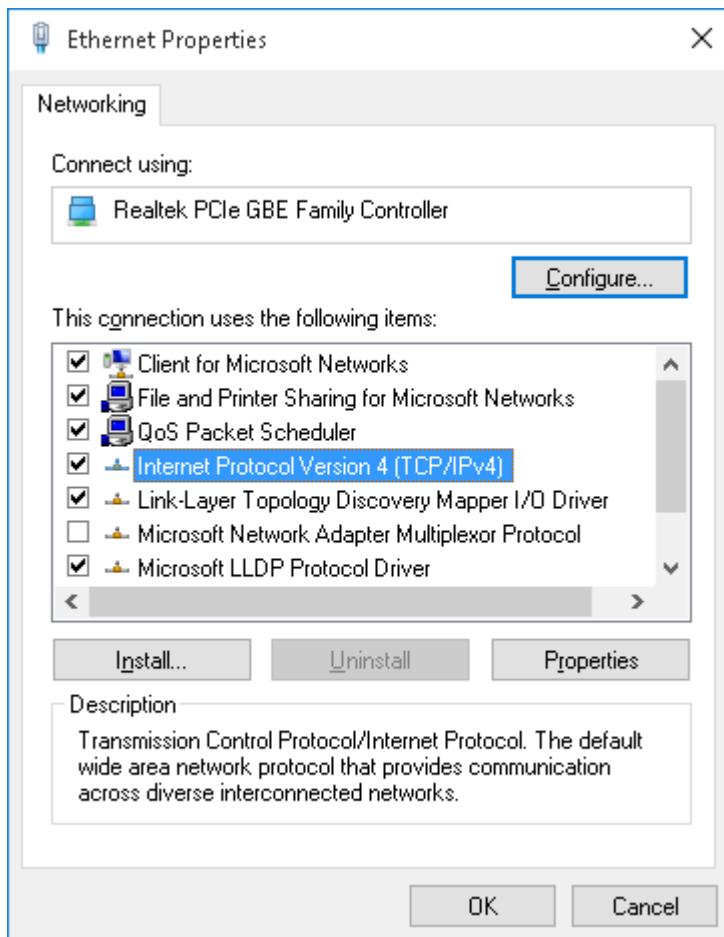
13. Switch the power off in the SPS341AG unit, wait 10 seconds, and then switch the power back on.
The SPS341AG unit is now ready for soundings.
14. Disconnect the keyboard, mouse, and display.
15. Close the SPS341AG front cover.

8.5.4.2 Changing IP Address using Remote Desktop Connection

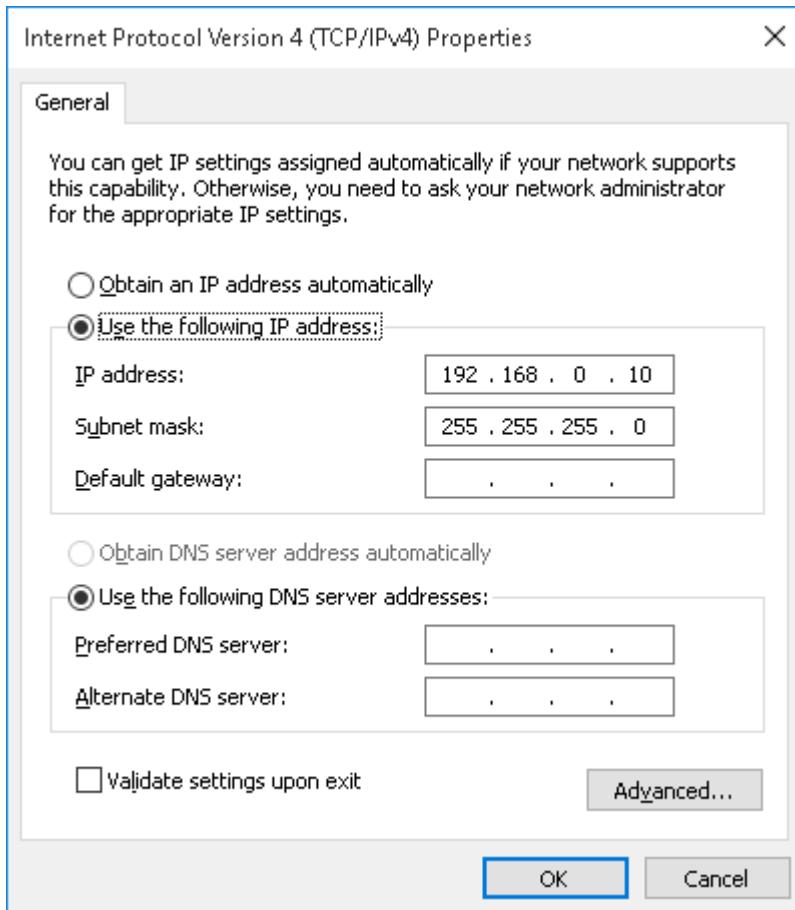
- ▶ 1. Change your computer to use IP address **192.168.0.1** and subnet mask **255.255.255.0**.
- 2. Connect an Ethernet cable from your computer to the SPS341AG unit.
- 3. Open a remote desktop connection to the SPS341AG unit. Use IP address **192.168.0.10**.
Username: **Administrator**
Password: **adpw_VA1**
- 4. Click the **StartIPchange** icon on the desktop.
The IP address change starts.
- 5. Wait about 30 seconds for the SPS341AG unit to reboot, and then log in to the unit again.
- 6. Click the **ChangeIP** icon on the desktop.
- 7. Right-click **Ethernet** and select **Properties**.



8. In the **Ethernet Properties** window, select **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.



9. In the **Internet Protocol Version 4 (TCP/IPv4 Properties)** window, change the TCP/IPv4 properties as required by your network, and then click **OK**.



10. In the **Ethernet Properties** window, click **OK**.
11. Your remote desktop connection to the SPS341AG unit is terminated because your computer is no longer in the same address space as the SPS341AG unit. Change the IP address of your computer so that it can communicate with the SPS341AG unit.
12. Open a remote desktop connection to the SPS341AG unit again. Use the new IP address of the SPS341AG unit.
13. Click the **EndIPchange** icon to finalize the IP address change.
14. Wait 3 minutes for the SPS341AG unit to reboot.



CAUTION! Do not switch the power off in the SPS341AG unit before the unit has rebooted.

15. Switch the power off in the SPS341AG unit, wait 10 seconds, and then switch the power back on.
The SPS341AG unit is now ready for soundings.

9. Creating Remote Connection

To connect remotely to an MW41 workstation, you must create a trusted HTTPS connection.

By default, the security certificate is a self-signed HTTPS certificate. For instructions on changing the default certificate to that of a Certificate Authority, see *DigiCORA Sounding System MW41 Technical Reference*.

9.1 Creating Trusted HTTPS Connection

These instructions are for remote client use, that is, when you create a remote connection to the sounding workstation from another PC.

The procedure is slightly different for different browsers.



Remote access HTTPS connection to the MW41 computer requires inbound port 8443 to be open in all firewalls active in the system.

9.1.1 Creating Trusted HTTPS Connection with Internet Explorer

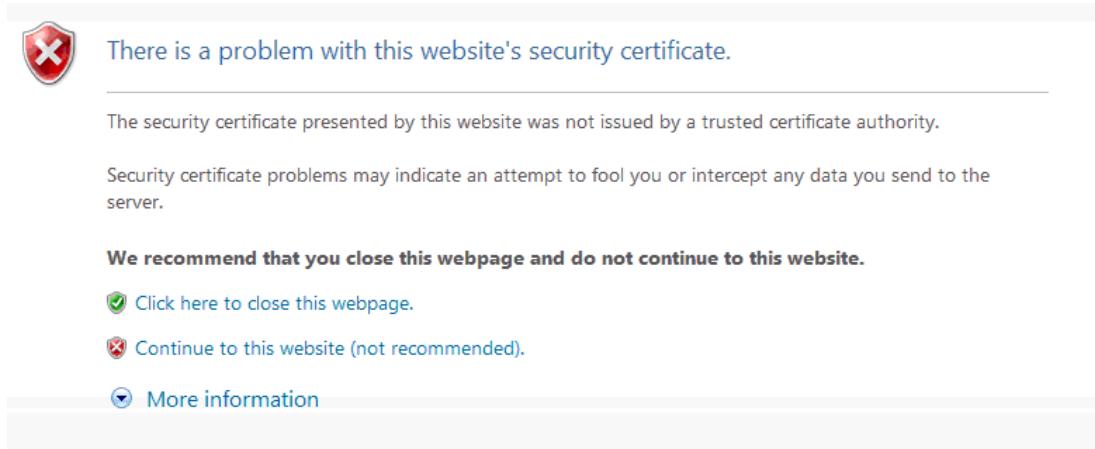
After you have installed the security certificate, you can create a remote connection to the sounding workstation using https.

- ▶ 1. Go to address *https://<computer name>:8443*.

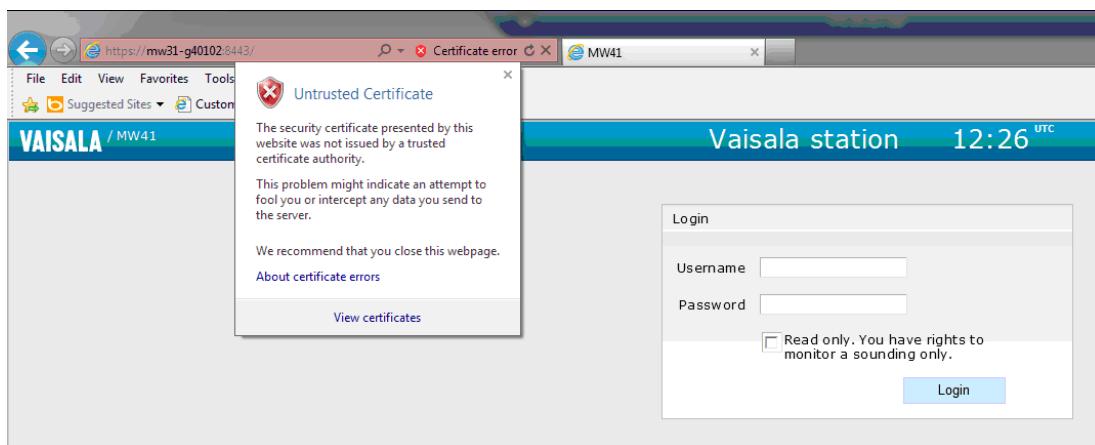


Use the computer name, not the IP address. To find out the name of your computer, check the information in the **System Properties** window. You can access the window, for example, by pressing the Windows and Pause key simultaneously.

2. Click **Continue to this website (not recommended)**.



3. The MW41 login window opens with a "Certificate error" error message in the browser's address bar. Click the error message and select **View certificates** at the bottom.



4. To proceed with the installation, follow the steps for security certificate installation.
5. Restart Internet Explorer and go to *https : \ <computer name> : 8443*

More Information

- ▶ [Security Certificate Installation Steps \(page 37\)](#)

9.1.2 Creating Trusted HTTPS Connection with Firefox

If you have already installed the certificate for Internet Explorer, you only have to click **Confirm Security Exception** in [step 4](#) below, and the HTTPS works for Firefox.

If you have not yet installed the certificate for Internet Explorer, start from [step 1](#) in the following step list.

- ▶ 1. Go to address *https : \ <computer name> : 8443*.

2. Click **I Understand the Risks**.

 **This Connection is Untrusted**

You have asked Firefox to connect securely to **mw31-g40102:8443**, but we can't confirm that your connection is secure.

Normally, when you try to connect securely, sites will present trusted identification to prove that you are going to the right place. However, this site's identity can't be verified.

What Should I Do?

If you usually connect to this site without problems, this error could mean that someone is trying to impersonate the site, and you shouldn't continue.

[Get me out of here!](#)

► [Technical Details](#)

► **I Understand the Risks**

3. Click the **Add Exception** button.

 **This Connection is Untrusted**

You have asked Firefox to connect securely to **mw31-g40102:8443**, but we can't confirm that your connection is secure.

Normally, when you try to connect securely, sites will present trusted identification to prove that you are going to the right place. However, this site's identity can't be verified.

What Should I Do?

If you usually connect to this site without problems, this error could mean that someone is trying to impersonate the site, and you shouldn't continue.

[Get me out of here!](#)

► [Technical Details](#)

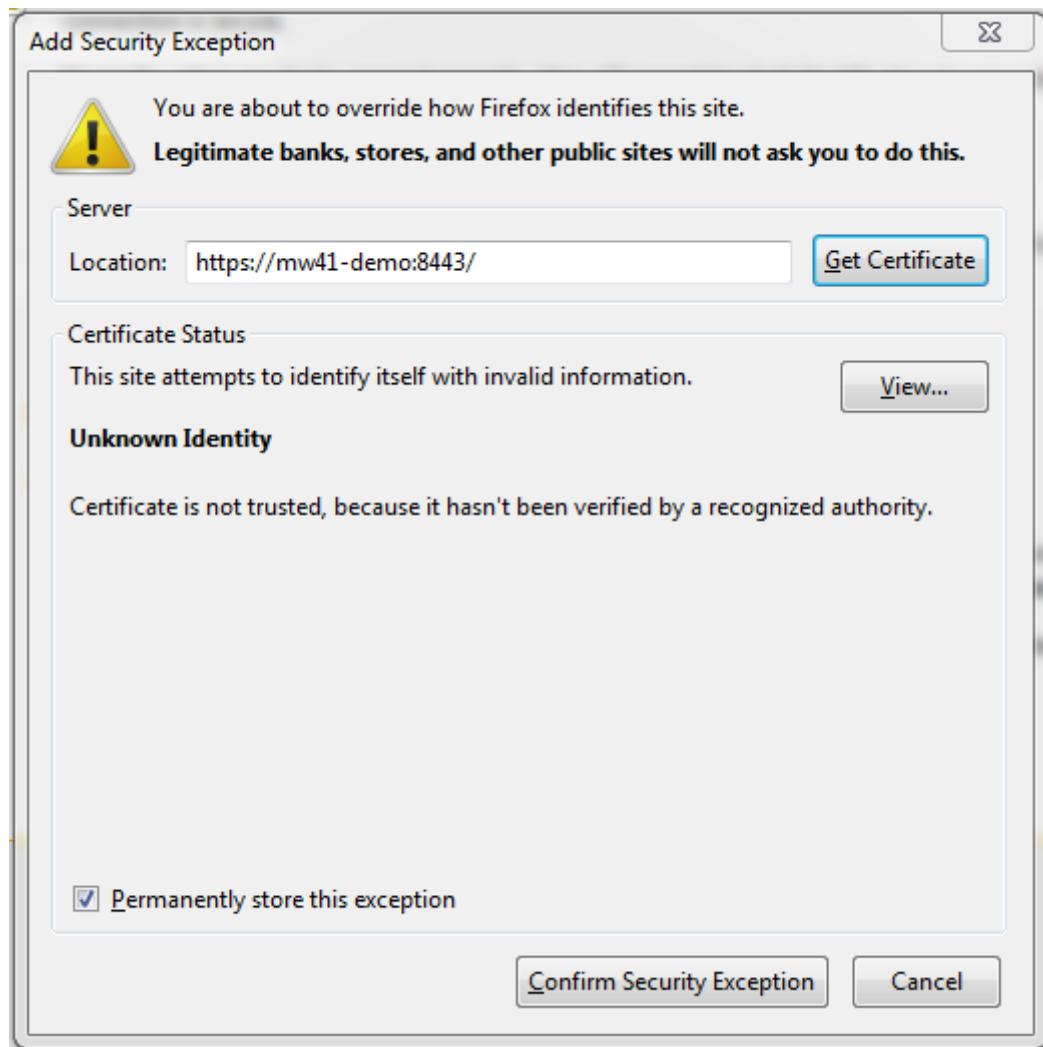
▼ **I Understand the Risks**

If you understand what's going on, you can tell Firefox to start trusting this site's identification. **Even if you trust the site, this error could mean that someone is tampering with your connection.**

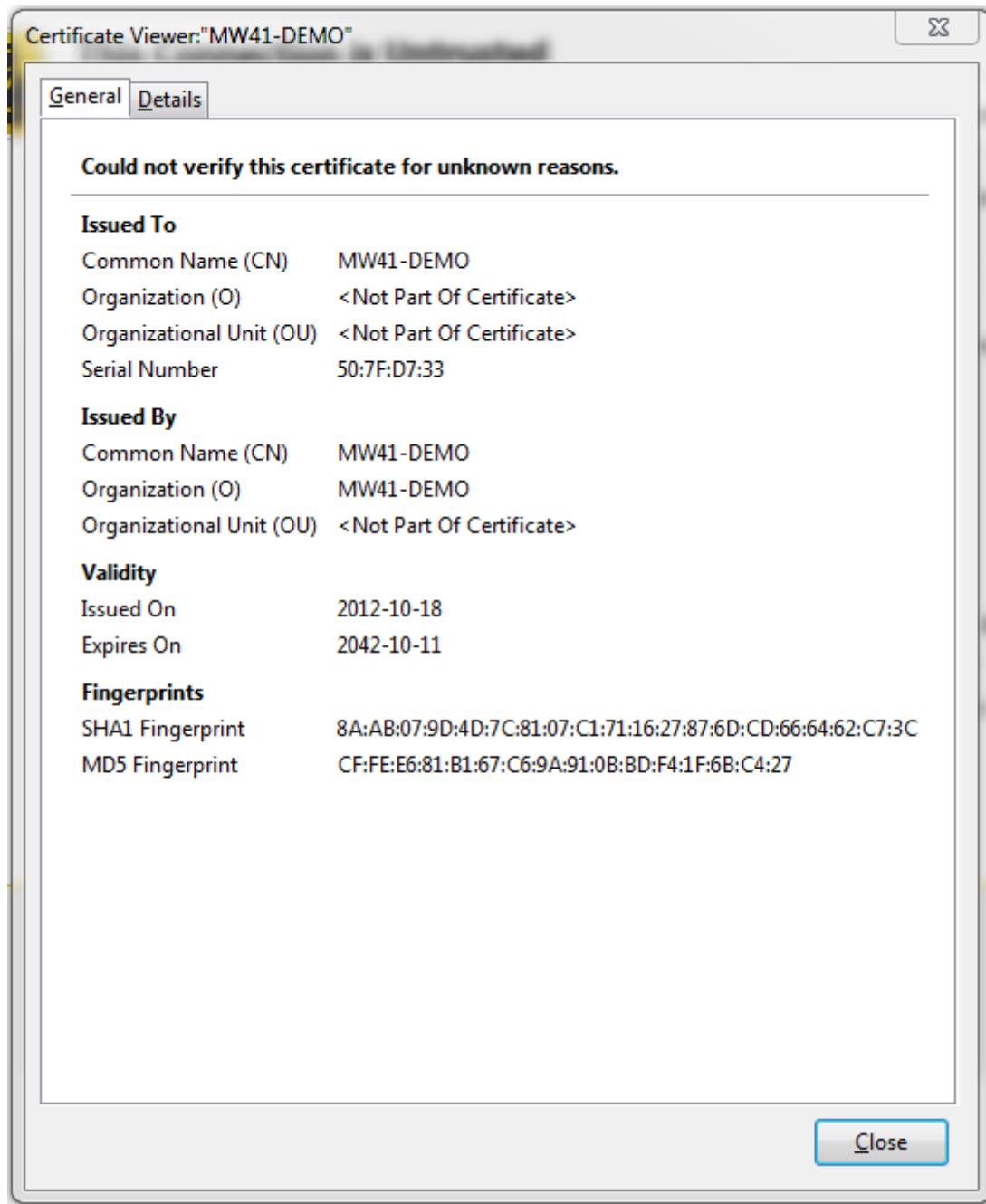
Don't add an exception unless you know there's a good reason why this site doesn't use trusted identification.

[Add Exception...](#)

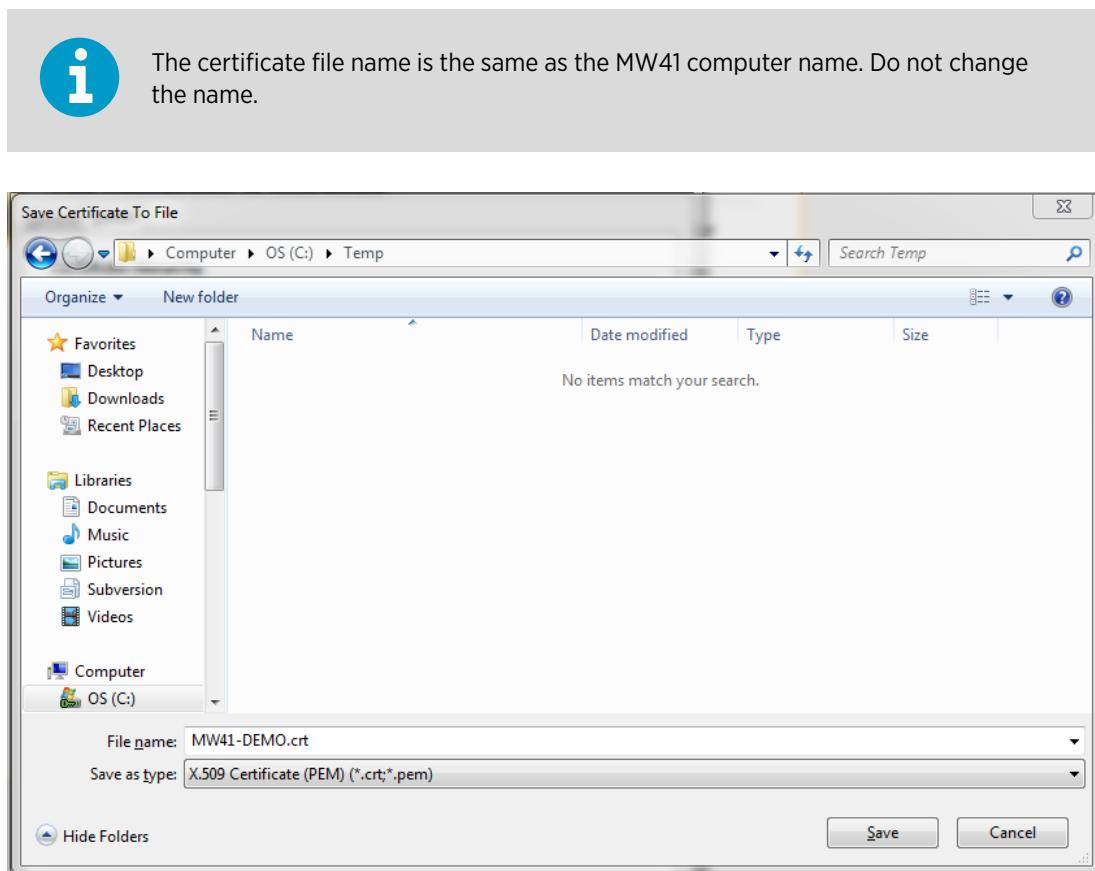
4. First click the **Get Certificate** button, then click the **View** button.



5. Select the **Details** tab and click **Export**.

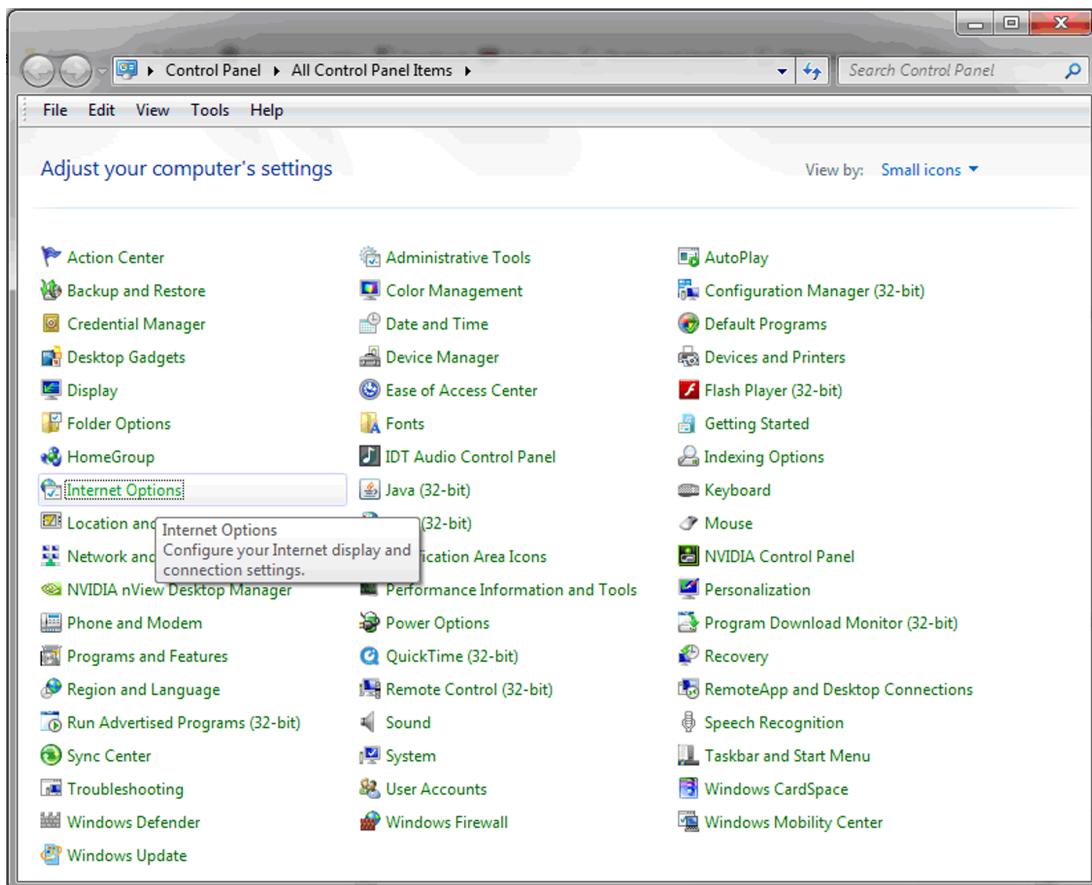


6. Select a directory where you wish to save the certificate and click **Save**.

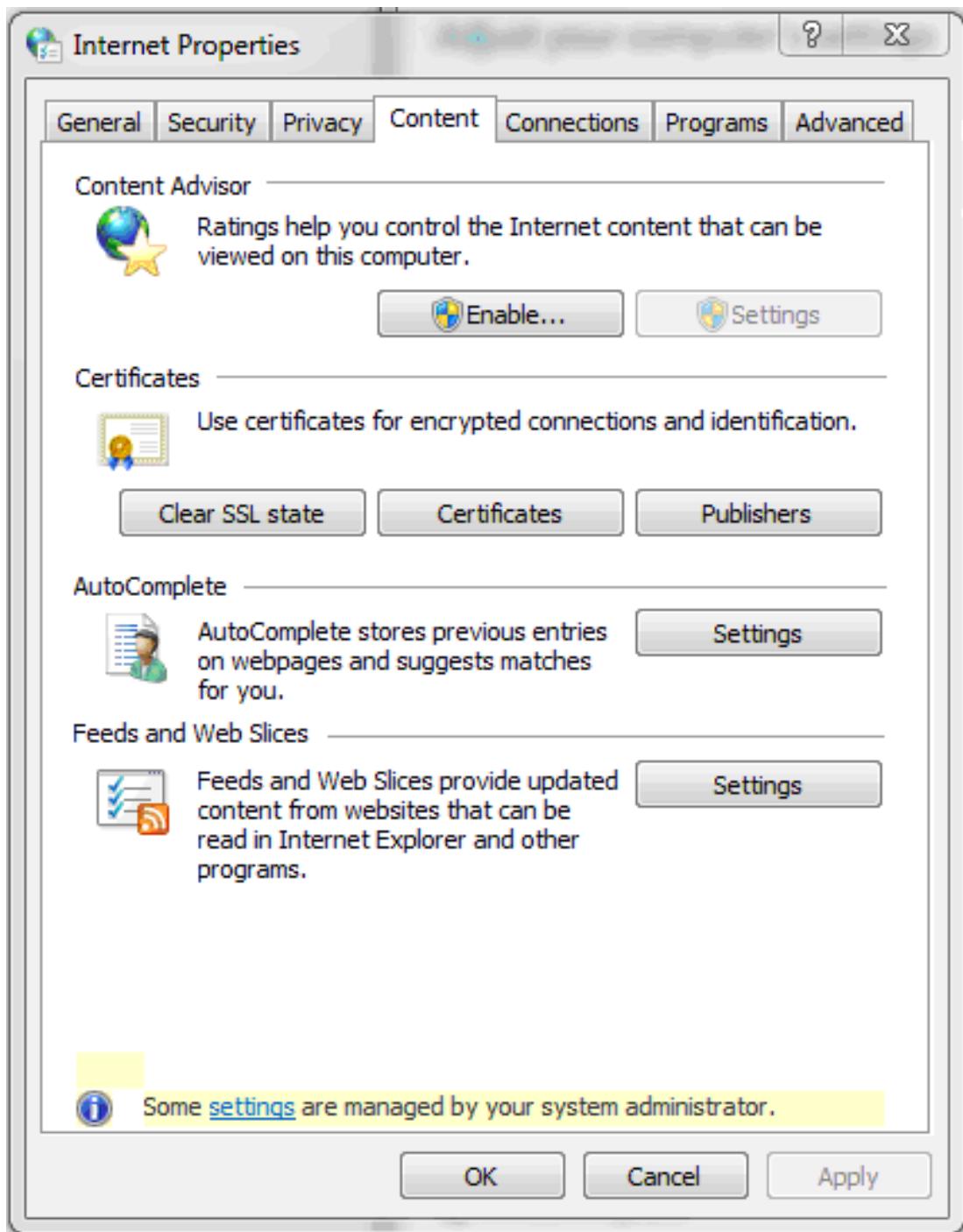


7. Click **Close**.

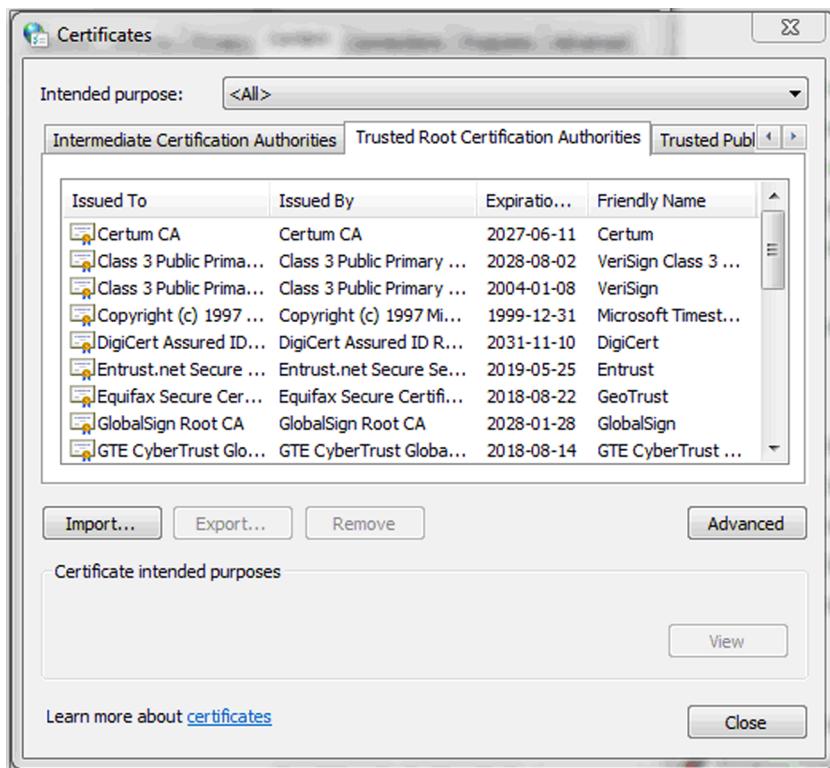
8. The saved certificate must be added as Windows's Trust Root Certificate. Go to Control Panel and select **Internet Options** on the left.



9. Select the **Content** tab and click **Certificates**.



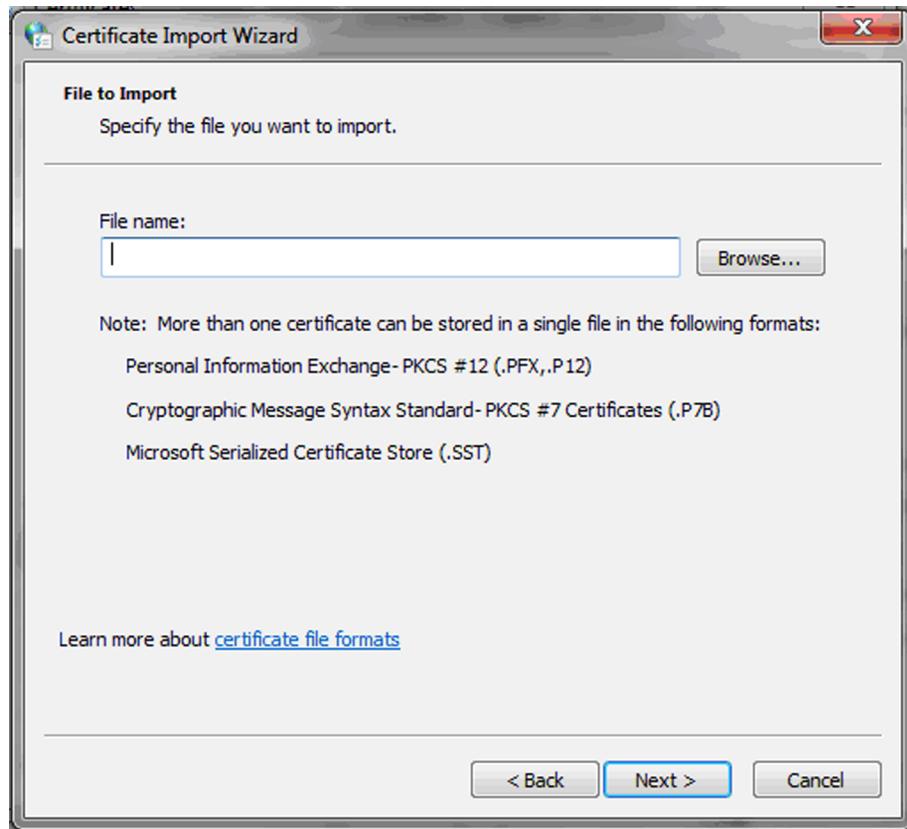
10. Select the **Trusted Root Certification Authorities** tab and click **Import**.



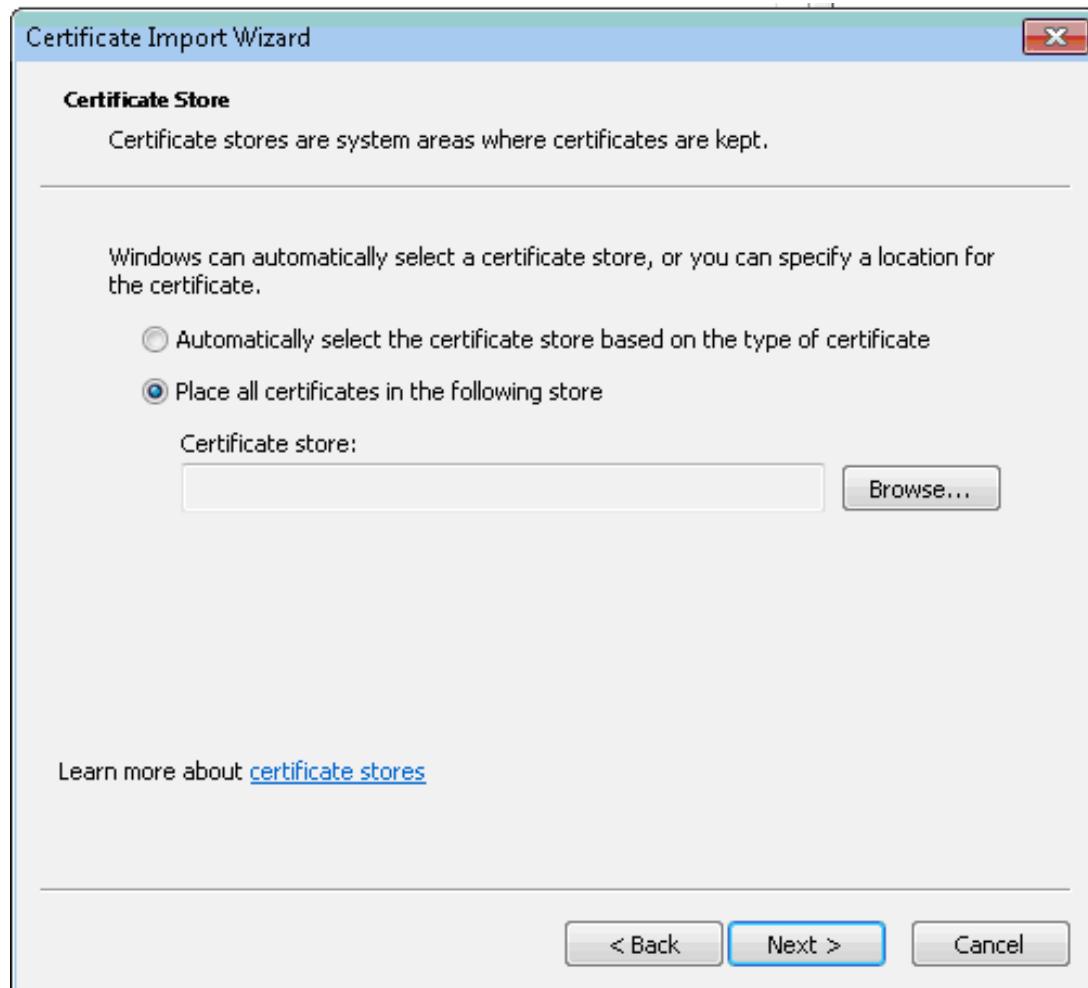
11. The **Certificate Import Wizard** window opens. Click **Next**.



12. Click **Browse** and select the certificate file you saved in step 6 above. Click **Open** and **Next**.



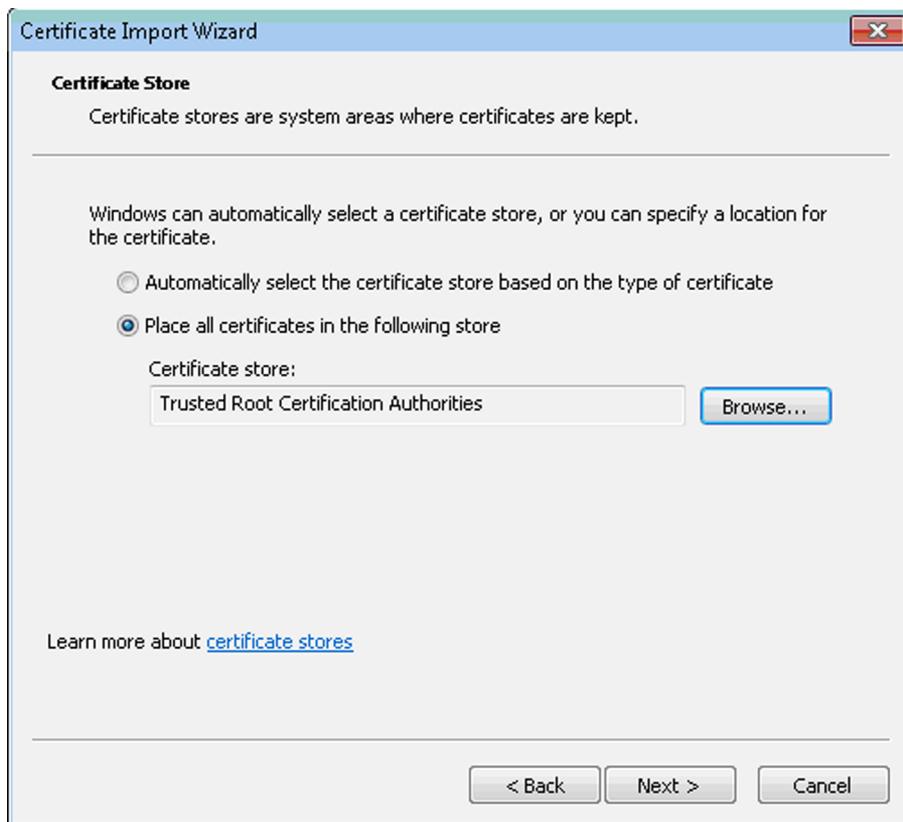
13. Select **Place all certificates in the following store** and click **Browse**.



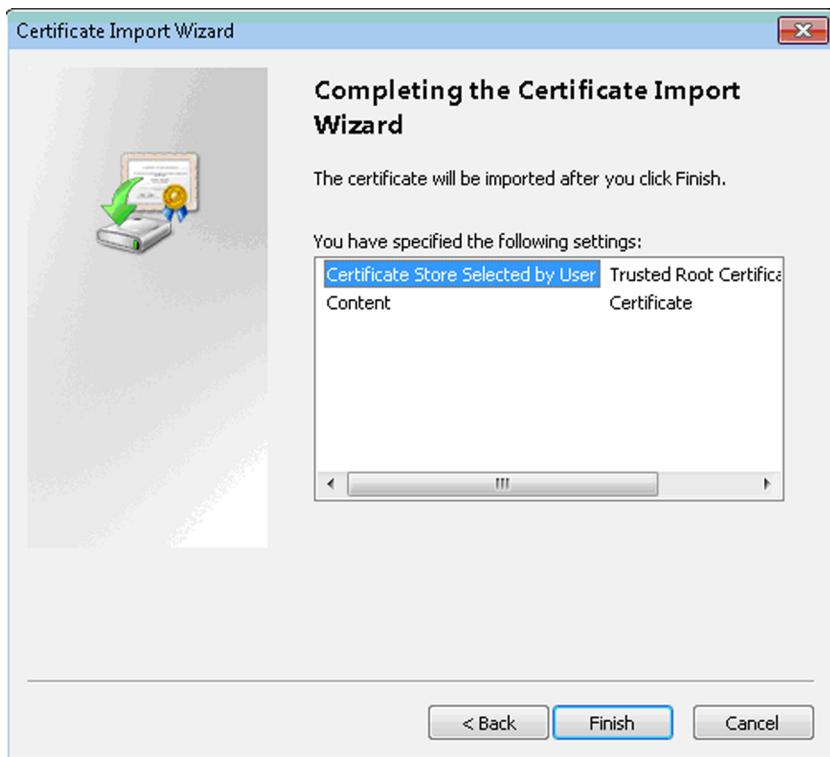
14. Select **Trusted Root Certification Authorities** and click **OK**.



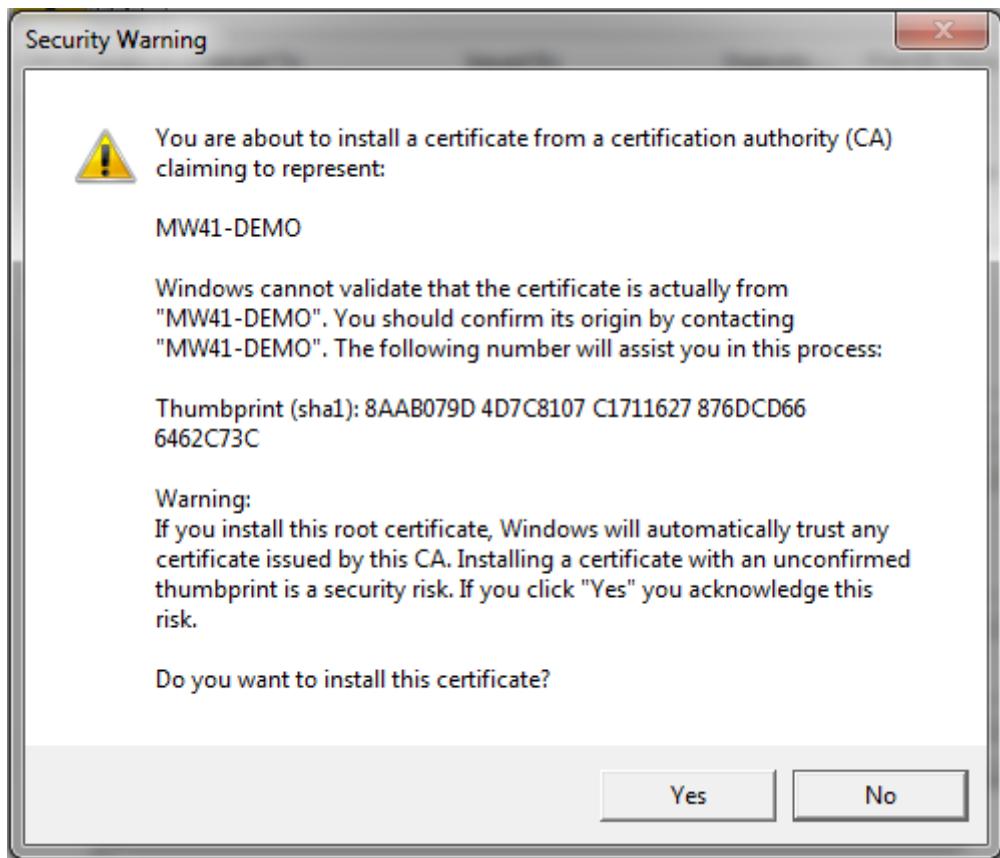
15. Click **Next**.



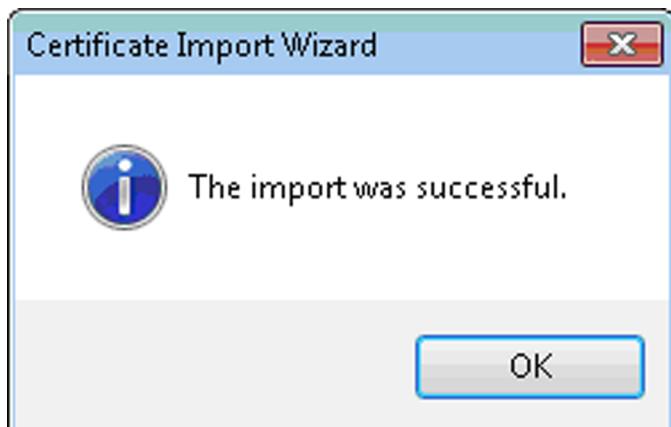
16. Click **Finish**.



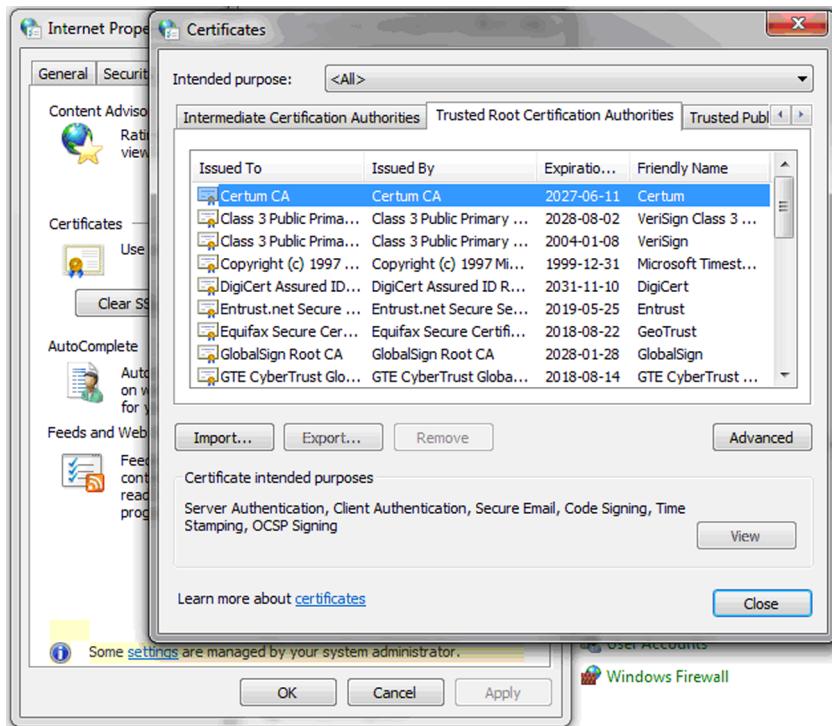
17. The **Security Warning** window opens. Click **Yes**.



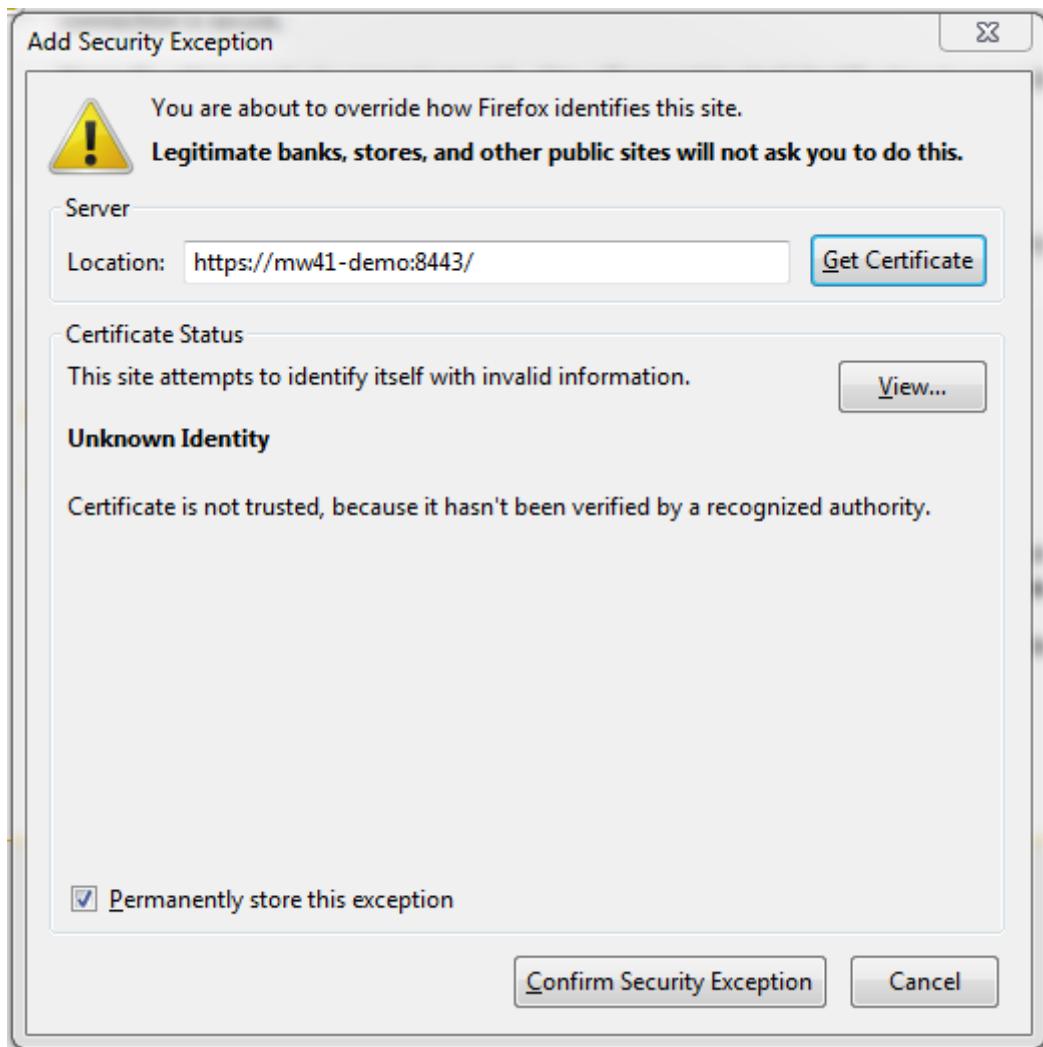
18. Click **OK**.



19. In the **Certificates** window, click **Close**, and in the **Internet Properties** window, click **OK**.



20. Go back to Firefox and click **Confirm Security Exception**.



9.1.3 Creating Trusted HTTPS Connection with Google Chrome

If you use Google Chrome as your web browser, you must install the security certificate using Internet Explorer. The security certificate cannot be installed with Chrome.

After you have installed the certificate with Internet Explorer and start using Chrome, Chrome will also start using a safe HTTPS connection.



In Chrome, **https:** is crossed out with a red line and a red cross appears on the lock icon in the browser's address bar. However, you do not have to worry about this: Chrome still uses the security certificate in the same way as the other browsers.
If you are using a certificate signed by Certificate Authority and not the default certificate, the markings will not appear in the address bar.

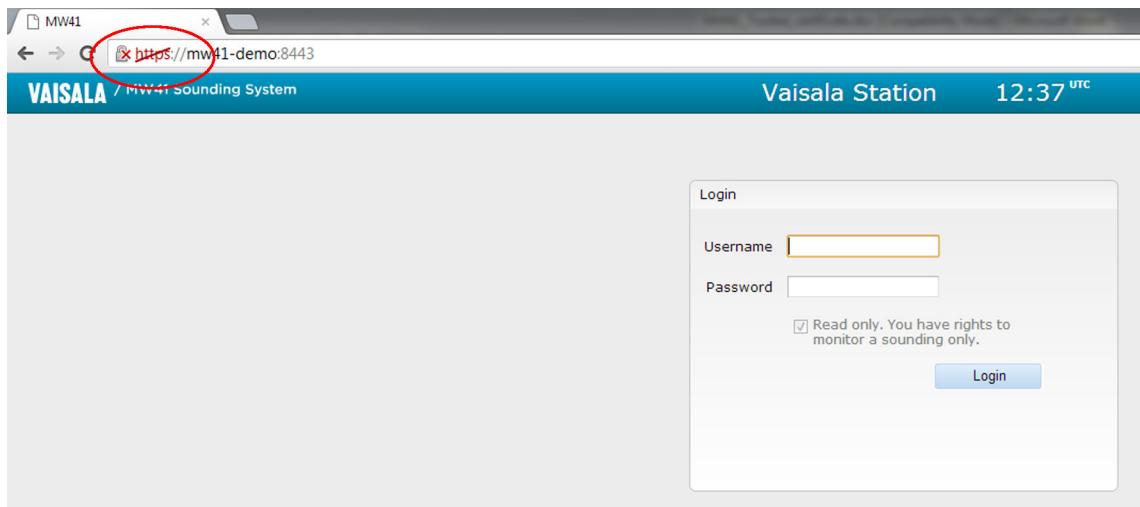


Figure 11 Security Certificate with Google Chrome

More Information

- ▶ [Creating Trusted HTTPS Connection with Internet Explorer \(page 85\)](#)

10. Getting Started with MW41 Sounding Software

10.1 Starting User Management

10.1.1 User Management Overview

When you install the MW41 sounding software, an icon for starting the **User Management** application appears on the desktop.

In **User Management**, a user with the **User Administrator** role can manage MW41 users: add, edit and delete users. If you use MW41 together with AUTOSONDE, you can also assign AUTOSONDE user roles to the users.

The application includes the following views:

Users Logged In

For viewing information on active users and sessions

Users

For adding, editing and deleting users

Password Configuration

For configuring password settings

Identity Configuration

For configuring identity settings

Audit Trail Log

For viewing information on the past login and logout events

The screenshot shows the Vaisala User Management application. The left sidebar has a navigation menu with the following items: VAISALA, Users (selected), Users Logged In, Password Configuration, Identity Configuration, Audit Trail Log, and User Management. The main content area is titled "Users" and contains a table with one row of data. The table columns are: Username (admin), State (Active), Email (admin@vaisal), First name, Last name, Roles (User Admin...), and Actions (Edit Delete). There is a blue "Add new user" button at the top left of the main content area, and a "Filter" section with "Search" and "Search users" input fields. The top right of the screen has Language, Help, and User dropdown menus.

Username	State	Email	First name	Last name	Roles	Actions
admin	Active	admin@vaisal			User Admin...	Edit Delete

Figure 12 User Management Main View



Only a user with the **User Administrator** role has the rights to manage users.

10.1.1.1 User Roles

In MW41, users are categorized into four groups with different privileges.

Table 6 MW41 User Roles

Role	Description
User Administrator	Has the rights to manage users in the User Management application.
MW41 Administrator	Has full access rights to the system, including the Advanced configuration.
MW41 Manager	Has extended operator rights. Allowed to perform system configuration.
MW41 Operator	Has normal sounding rights. Not allowed to delete a sounding from the archive or upload or download a sounding, or perform system configuration.



CAUTION! Make sure that the system has **User Administrator** and **MW41 Administrator** at all times. Without **User Administrator**, you are unable to do user management tasks. Without **MW41 Administrator**, you are unable to do system configuration tasks, and may need to reinstall the MW41 software.



The same user may have roles for both AUTOSONDE and MW41 software and log in to both. For example, it may be convenient that administrator level users have both **AS41 Administrator** and **MW41 Administrator** roles.

Vaisala recommends assigning one software-specific user role per a user. If a user is assigned more than one of the MW41 user roles, only the role with the most extensive privileges is active.

10.1.1.2 Default Username and Password

The system comes with one preconfigured user having the **User Administrator** role and access rights to the **User Management** application. The default password is in the **Password expired** state, which means that you must change it when you log in to **User Management** for the first time.



The password is case-sensitive. You must write it in exactly the same way as shown below.

Table 7 Default Username and Password

Username	Password	Role
admin	A4uEmaCc	User Administrator

10.1.2 Starting User Management



Only a user with the **User Administrator** role has the rights to manage users.

User Administrator needs to take the following steps in **User Management** before other users can start using the MW41 sounding software.

- ▶ 1. Log in with the default username and password.
 - When prompted, change the default password into an individual password of your own choice.

For instructions, see [Logging in \(page 105\)](#).
- 2. Log in again with your new password.
- 3. Add users to the system:
 - Create individual username-password pairs for each user.
 - Select **Password expired** as the initial state for the new user accounts.
 - Assign the users the user roles that your operations need.

For instructions, see [Adding Users \(page 107\)](#).



To maintain sufficient level of security, Vaisala recommends that you always select the default state **Password expired** as the initial state for all user accounts. This means that users must change their passwords into an individual password of their own choice when logging in for the first time.

Users can now start using the MW41 sounding software.

For detailed instructions on managing users and editing existing users when updating the MW41 sounding software to the new version including the **User Management** application, see *Vaisala DigiCORA Sounding System MW41 Technical Reference*.

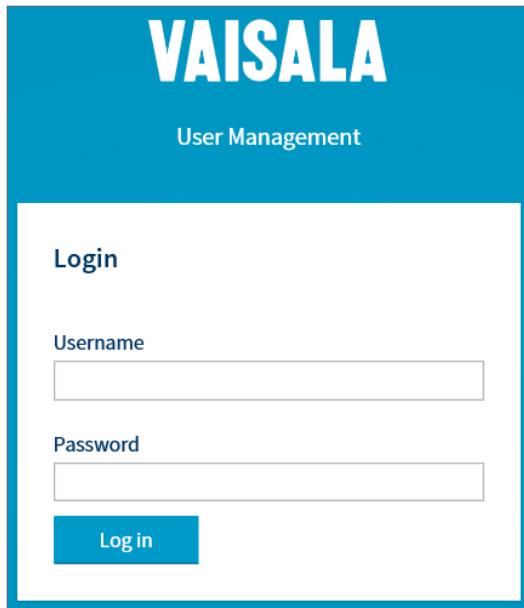
10.1.2.1 Logging in

- ▶ 1. Select **User Management** on your desktop.



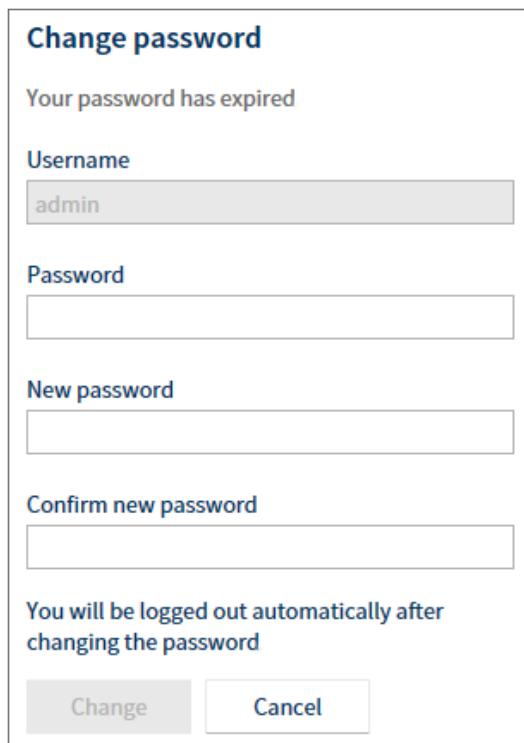
2. Log in with your username and password.

If you are logging in for the first time, type the default username and password.



The screenshot shows the Vaisala User Management login interface. At the top, the Vaisala logo is displayed in white on a blue background. Below it, the text "User Management" is visible. A large white rectangular area contains the word "Login" in bold black font. Inside this area, there are two input fields: one for "Username" and one for "Password", both with placeholder text. Below these fields is a blue rectangular button labeled "Log in".

3. If you are logging in for the first time, you are prompted to change the default password. Type the default password, the new password, confirm the new password, and select **Change**.

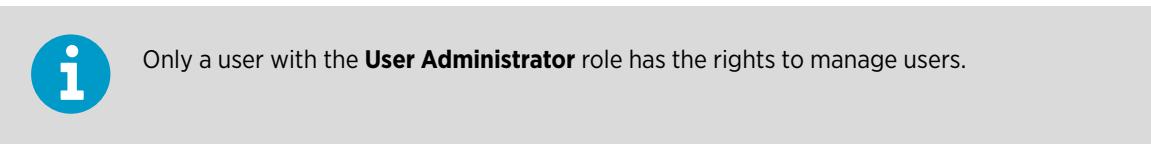


The screenshot shows the "Change password" dialog box. At the top, the title "Change password" is displayed in blue. Below it, a message states "Your password has expired". The form contains four input fields: "Username" (with "admin" typed in), "Password", "New password", and "Confirm new password". At the bottom of the dialog, a message reads "You will be logged out automatically after changing the password". Two buttons are at the bottom: a grey "Change" button and a white "Cancel" button with blue text.

More Information

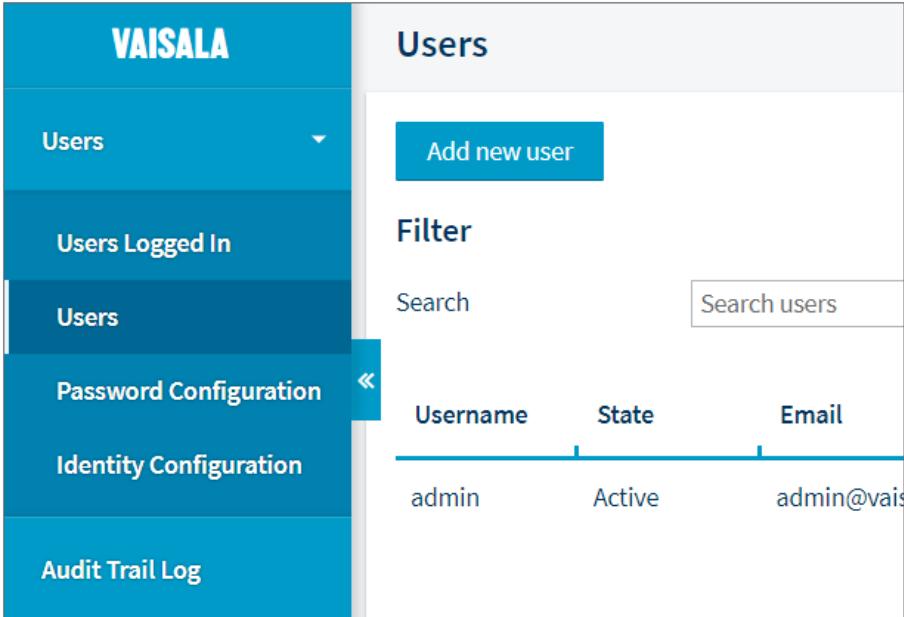
- ▶ Default Username and Password (page 104)

10.1.2.2 Adding Users



Before you add a user to the system, determine which user role(s) the user will need.

- ▶ 1. In the **Users** view, select **Add new user**.



Username	State	Email
admin	Active	admin@vaisala.com

2. In the **Add user** window, fill in the user account information. The mandatory fields are marked with a circle.

Add user

• Username

• Password

[Generate password](#)

Type in new password or generate it automatically Note!
New password will not be delivered to the user automatically

• State

Email

First name

Last name

• Roles

[Save](#) [Cancel](#)

Username

Username for the user.

Vaisala recommends that you give users individual usernames instead of generic names linked to the user role, such as operator.

Password

The user's password. Type a password or select **Generate password** to get an automatically generated password. The password must fulfill the requirements defined in **Password Configuration**.

State

The state of the user account. By default, **Password expired**.



To maintain sufficient level of security, Vaisala recommends that you always select the default state **Password expired** as the initial state for all user accounts. This means that users must change their passwords into an individual password of their own choice when logging in for the first time.

Table 8 User Account States

State	Description
Password expired	Default state. The user must change the password on the first login.
Active	User account is active with the password defined in the Password field. The user can log in with the password.
Locked	User account is locked. The user cannot log in.

Email, First name, Last name

Optional fields

Roles

Role(s) for the new user. Make the selection(s) from the multi-selection drop-down list.



The same user may have roles for both AUTOSONDE and MW41 software and log in to both. For example, it may be convenient that administrator level users have both **AS41 Administrator** and **MW41 Administrator** roles.

3. Select **Save**.

A confirmation message appears.

The new user appears in the list of users.

Username	State	Email	First name	Last name	Roles	Actions
admin	Active	admin@vaisala.cor			User Administrator	Edit Delete
Test user	Password expired				MW41 Operator	Edit Delete

More Information

- [User Roles \(page 104\)](#)

10.2 Starting the Sounding Software

10.2.1 Starting the Software and Logging in

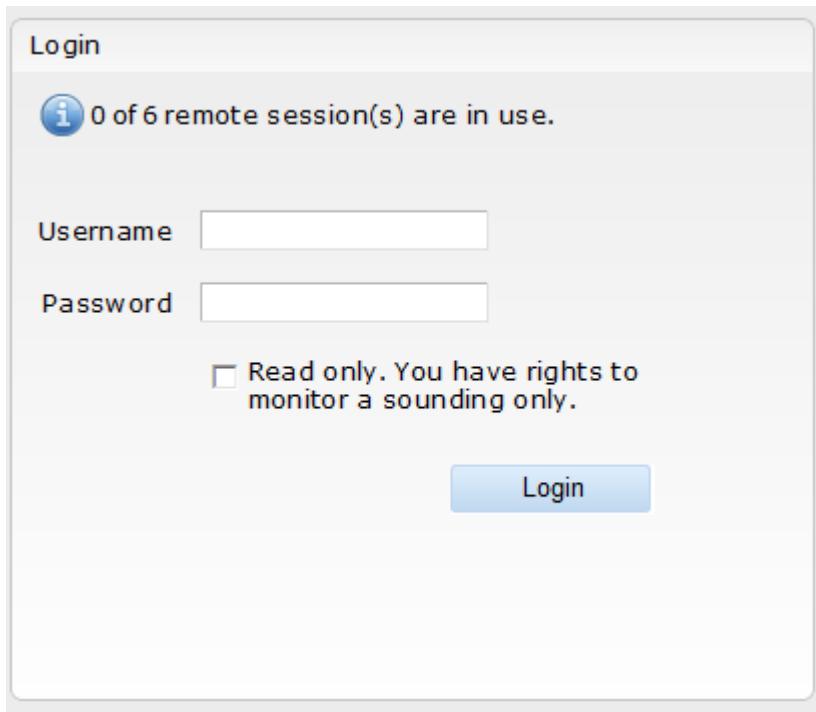


For a normal sounding, you need the **MW41 Operator** rights.

- ▶ 1. Power on Sounding Processing Subsystem SPS3xx before turning on the computer with the MW41 sounding software.
- 2. Turn on the computer.
- 3. Click the icon on the desktop to start the MW41 sounding software.

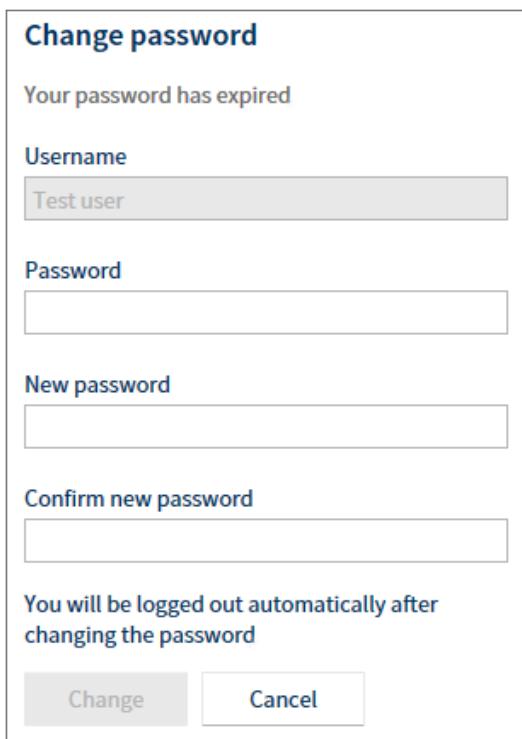


4. Log in with your username and password.



- The number of concurrent user sessions available depends on the type of the software license. The local user is always able to access the software. Local user here means a user who started the software on the local workstation where the software is installed, and who is performing the sounding.
- If the **Read-only** check box is selected, you have read-only rights to the system, not full control. The check box is selected if another user already has full control of the system when you log in.
- When a login message has been configured in the MW41 **Advanced** settings, you can see a notification message under the login window. For more information, see *Vaisala DigiCORA Sounding System MW41 Technical Reference*.

5. If you are logging in for the first time, you are prompted to change your password.
 - a. In the **Change password** window, type the old password, the new password, confirm the new password, and select **Change**.



- b. The MW41 sounding software login window reappears. Log in with your new password.
6. All MW41 services are automatically started and a message is displayed to indicate that the system is starting.

10.2.2 Configuring the Sounding Software



You need **MW41 Administrator** rights to be able to configure the MW41 sounding software.

When you first start the MW41 sounding software, the system prompts you to make the necessary configurations to the sounding system. Click the text links on the bottom of the window to directly access the settings you need to configure. At minimum, you must configure the station position settings and Sounding Processing Subsystem SPS3xx IP address before you can start a sounding.

If you have already made all the necessary configurations during a previous session, the software opens directly to the **Radiosonde Selection** tab.

Before you start a sounding, set the following in the **Administration** window:

- 1. In **Devices and Systems > Sounding Processing Subsystem**, give an IP address for SPS3xx.
- 2. In **Devices and Systems > Radiosonde - workstation connection**, set a serial port for the ground check device or the cable.
- 3. In **Soundings > Station**, set the station parameters:
 - WMO station name
 - WMO station number (three digits; in case of a ship or a mobile station, enter 0.)
 - WMO block number (two digits; in case of a ship or a mobile station, enter 0.)
 - WMO region number
 - Message type
 - Station position
- 4. In **Soundings > Messages**:
 - a. Set WMO message destinations.
 - b. Modify WMO message headers and footers.
- 5. In **Soundings > Radiosonde selection mode**, select the radiosonde preparation mode, if necessary.

For advanced-level configurations, see *Vaisala DigiCORA Sounding System MW41 Technical Reference*.

10.2.3 Creating System Backup

An MW41 sounding PC purchased from Vaisala includes a backup of the PC hard drive on an external hard drive.

When customized settings are ready, a new backup is recommended.

On a PC not acquired from Vaisala, it is recommended to create a backup when the system setup is ready.

Backup and restore procedures are explained in the following documents, available on the installation media:

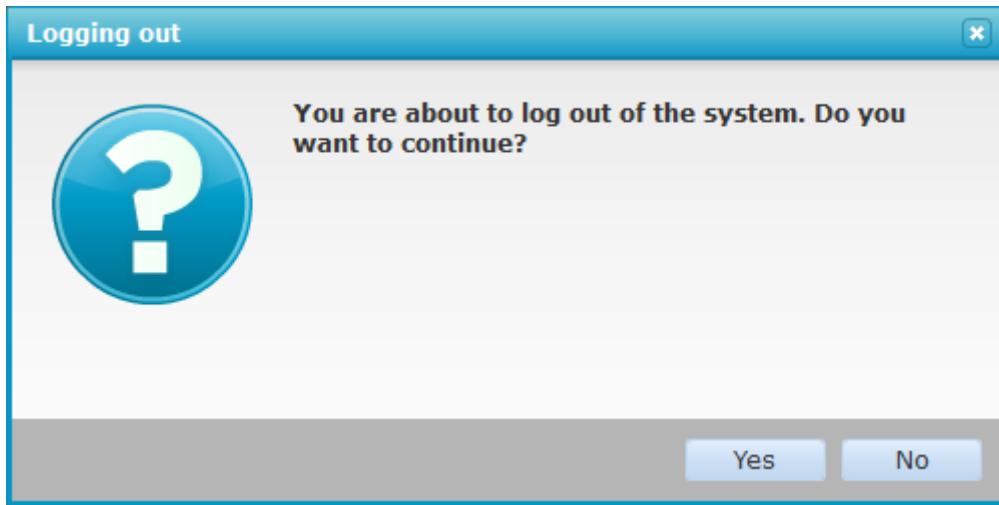
- *Backing Up and Restoring Windows 7 for MW31/MW41 Sounding System*
- *Backing Up and Restoring Windows 10 for MW41 Sounding System*

10.2.4 Logging out

- ▶ 1. To log out of the sounding software, click the **Log out** button in the application header.



A confirmation message is displayed.



Technical Support



Contact Vaisala technical support at helpdesk@vaisala.com. Provide at least the following supporting information:

- Product name, model, and serial number
- Name and location of the installation site
- Name and contact information of a technical person who can provide further information on the problem

For more information, see www.vaisala.com/support.

Warranty

For standard warranty terms and conditions, see www.vaisala.com/warranty.

Please observe that any such warranty may not be valid in case of damage due to normal wear and tear, exceptional operating conditions, negligent handling or installation, or unauthorized modifications. Please see the applicable supply contract or Conditions of Sale for details of the warranty for each product.

Recycling



Recycle all applicable material.



Follow the statutory regulations for disposing of the product and packaging.

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