

solutions for the real world

*AMS111*

***AWS Service***

*Version: 2*

***User's Guide***

*April 2015*



[www.microstep-mis.com](http://www.microstep-mis.com)

***MicroStep - MIS***



© Copyright 2015, by MicroStep-MIS

All rights reserved. No part of this publication may be reproduced, stored in retrieval system, or transmitted by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of MicroStep-MIS.

### **Trademarks**

Windows is a registered trademark of the Microsoft Corporation.  
All other trademarks or registered trademarks mentioned belong to their respective owners.

### **Version of edition**

Version of edition: 1.6A  
Date of the edition: 2015-04-10

### **Authors**

Editorial team: Mr. Csaba Ruman, MicroStep-MIS

### **Address**

MicroStep-MIS  
Monitoring and Information Systems  
Čavojského 1  
84104 Bratislava 4  
Slovakia  
Tel.: +421 2 602 00 100  
Fax: +421 2 602 00 180  
[info@microstep-mis.com](mailto:info@microstep-mis.com)

MicroStep-MIS develops, manufactures and markets monitoring and information systems. The key fields of our activities are meteorology, aviation, environmental sciences, seismology, power engineering, civil defense but also information systems in tourism.

MicroStep-MIS operates worldwide. Our core customer groups are airports, meteorological and seismological institutes, environmental authorities, industry, power stations and electricity distribution companies.

## Table of contents

Table of contents .....	2
Typographical conventions .....	3
1. Introduction .....	4
2. Installation .....	4
2.1 System requirements .....	4
2.2 Installation .....	4
3. Using AWS Service.....	7
3.1 Connect to data logger.....	8
3.1.1 USB Connection .....	8
3.1.2 Serial Port Connection.....	9
3.1.3 Network Connection .....	10
3.1.4 Open connection from file.....	12
3.1.5 Save connection to file.....	13
3.1.6 Close the connection .....	13
3.2 Configure station .....	14
3.2.1 Automatic Identification.....	14
3.2.2 Select station .....	15
3.2.3 Select configuration version.....	15
3.2.4 Execution of configuration steps.....	15
3.2.5 Manually set variables .....	16
3.3 Backup configuration.....	18
3.4 Restore configuration .....	20
3.5 Advanced access .....	21
3.5.1 Clear console .....	21
3.5.2 Show Protocols command .....	21
3.5.3 Version command.....	21
3.5.4 Task info command .....	21
3.5.5 Get date command .....	22
3.5.6 Set date command.....	22
3.5.7 Restart data logger .....	23
3.5.8 Terminal .....	23
3.6 File Manager .....	24
3.6.1 Send or receive files .....	24
3.6.2 Receive configuration .....	25
3.6.3 Send configuration .....	25
3.6.4 Reload data logger files .....	25
3.6.5 Delete files .....	25
3.6.6 Rename file.....	25
3.6.7 Copy file.....	25
3.7 Measurements .....	26
3.8 Station list.....	27
3.8.1 Add station / Edit station .....	27
3.8.2 Edit configuration types .....	28
3.8.3 Add/Edit configuration type.....	29
3.8.4 Edit configuration versions.....	29
3.8.5 Add configuration version .....	30
3.9 Update firmware.....	31
3.10 Communication .....	33
References.....	34

## Typographical conventions

Throughout this guide, several typographical conventions are used to help reader to follow instructions and identify the important information.

Items from graphical user interface:

Button **Settings**, **File > Exit**, ...

Filenames, directories, commands:

200911.LOG, C:\AWSService\, ...

Note, attention, warning:

**Note:** *If you have associated the .tgz file extension with the **AWS Service** in Windows, then the configuration process starts after double clicking the compressed configuration file.*

**Attention:** *If any parameter from the top is set to Default, the parameters below it will be ignored.*

**Warning:** *By removing the configuration type, it will also remove the **stations** associated with this configuration type and their **backups**!*

## 1. Introduction

MicroStep-MIS data loggers (AMS 111, AWS 111, AWS 200) measure, process and store various measured quantities. Some models of the data loggers are equipped with LCD display (AWS 111) or with touch-screen display (AMS 111), where currently measured values can be seen.

**AWS Service** is software used to maintain data loggers.

It allows you to:

- configure station and back-up configuration of station automatically,
- display and transfer files on data logger,
- show and change variable values
- execute commands
- update firmware

## 2. Installation

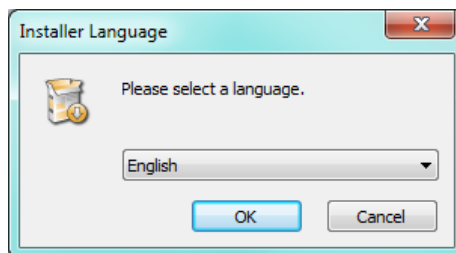
### 2.1 System requirements

Minimum system requirements:

CPU: 1 GHz  
RAM: 512 MB  
OS: Microsoft Windows 7 or higher  
Framework: .NET Framework 4.6.2

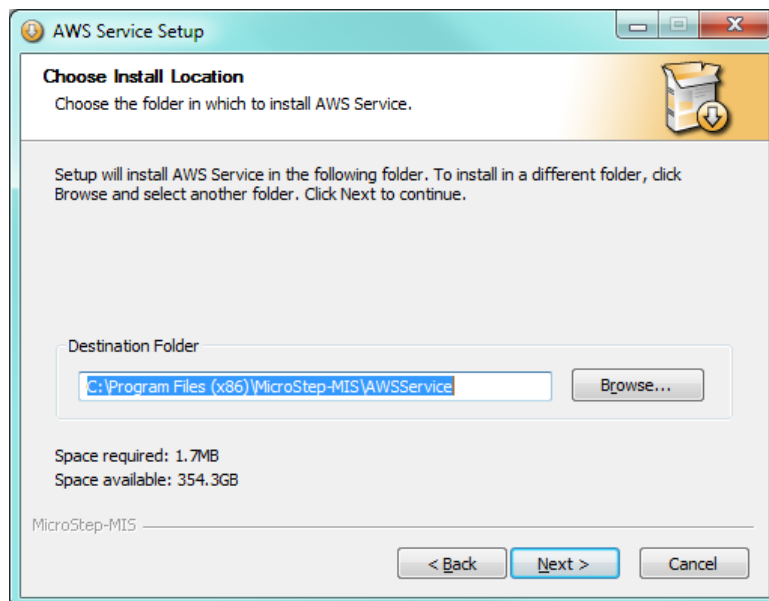
### 2.2 Installation

Run `AWS_Service_installer.exe` to start installation. Administrator privileges are required. You will be prompted to choose installer language.

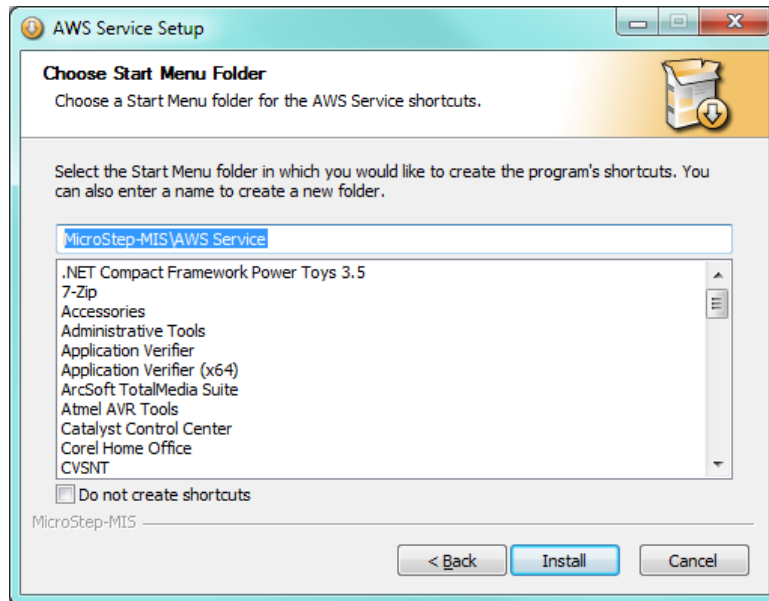




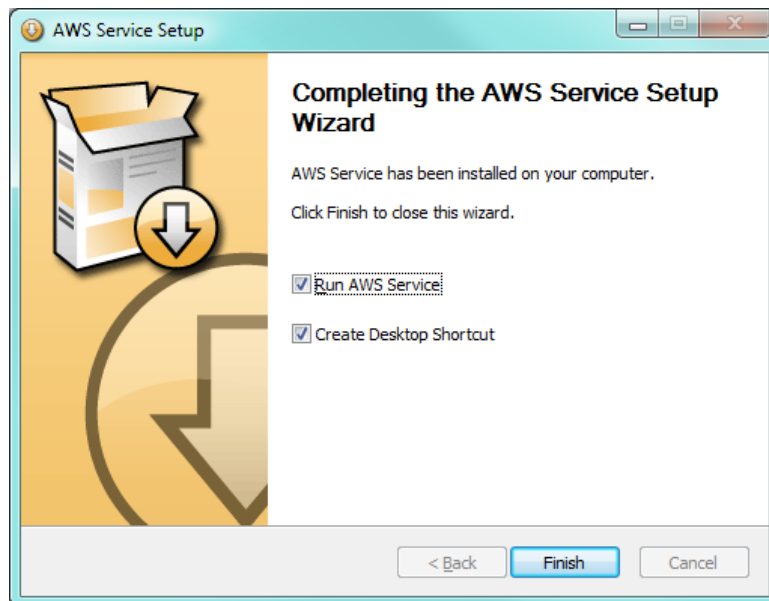
Choose destination folder, then click next.



Choose start menu folder, then click Install.

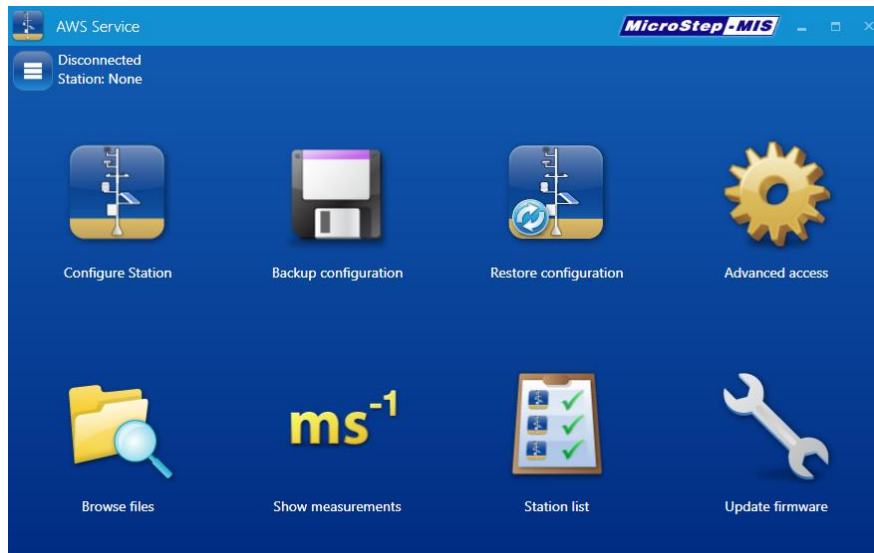



After wizard completes installation, you can run program and create desktop shortcut by selecting checkboxes and clicking Finish button.

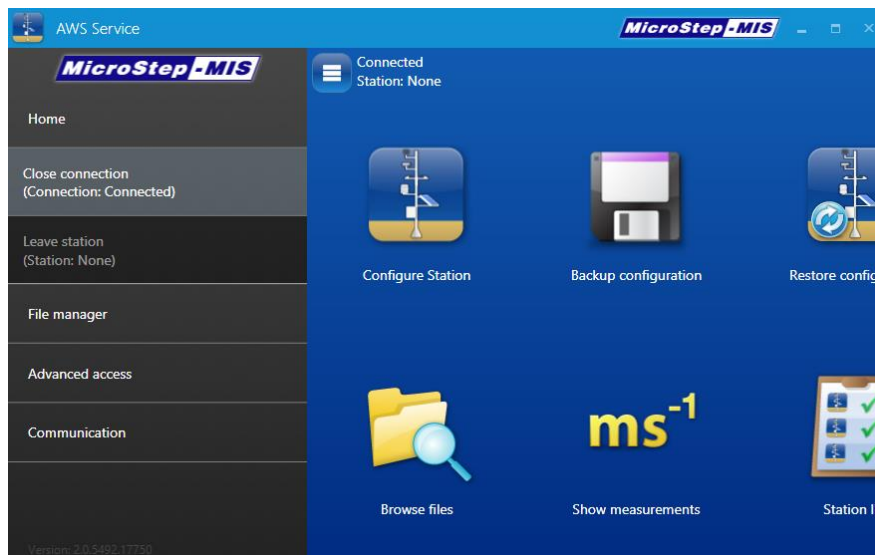


### 3. Using AWS Service

To Start AWS Service application on your computer click on shortcut in start menu or launch AWSService.exe file and wait until the **Main Screen** appears. Every function is accessible by the icons. First 3 icons (**Configure**, **backup** and **restore**) are intended for manage data logger's configuration. The **Advanced access** provides direct access to data logger.



**Main menu** can be accessed by clicking the **Main menu**  button. You can return to **Main Screen** from any screen by the first option in menu: **Home**. If the home menu is not accessible, it means that the current screen cannot be closed, because it has to finish the current operation.

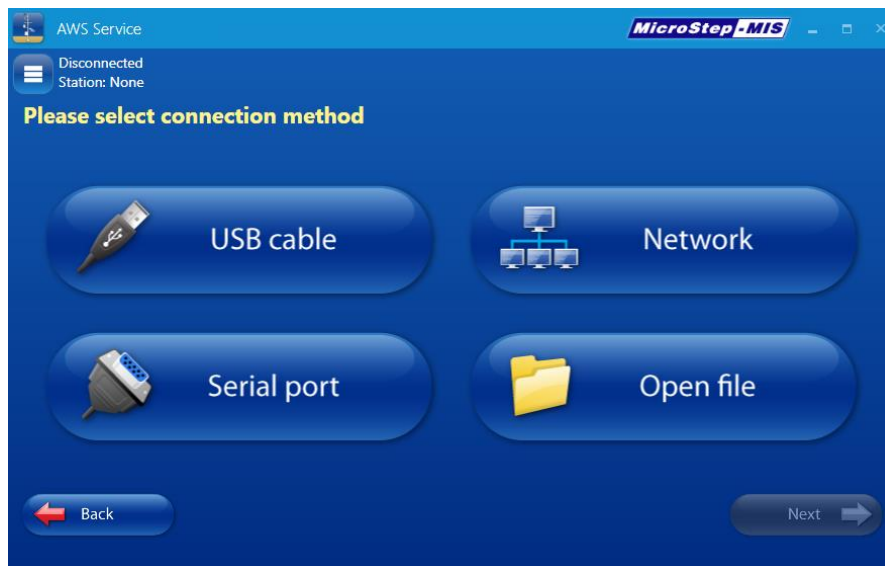


The **Close connection** menu closes and forgets the last used communication channel. The **Leave station** menu forgets the lastly used station. It is useful if you have multiple stations close to each other and you want to configure each without closing the serial port. Then the connection may remain open, but another station can be selected after you are connected to different station.



### 3.1 Connect to data logger

Some parts of program require connection to the data logger. If the connection is required, the AWS Service will show the following screen.



You can choose these types:

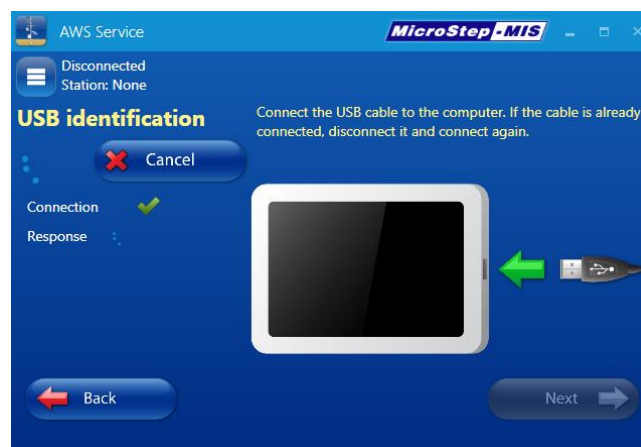
- USB cable
- Serial port
- Network
- Open file

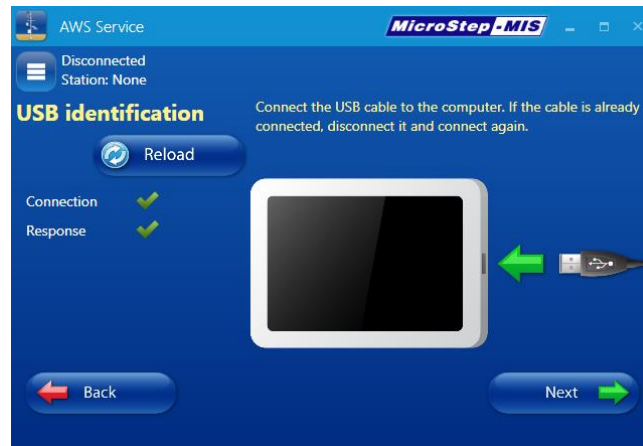
The **Open File** option enables you to open Serial port or Network type, if it was previously saved to connection file.

The selection of the connection will not be prompted further if the connection is alive.

#### 3.1.1 USB Connection

The program will detect if there is a data logger connected with USB connection. If the data logger is not recognized within few seconds, you should disconnect the USB cable and connect it again to computer.





### 3.1.2 Serial Port Connection

To connect to data logger through serial port you have to know the **Port Name** of this interface. Before proceeding you should pass the basic test of connection. You can also change the other parameters of the connection too. The predefined settings are the factory default parameters of the data logger. These are the following:

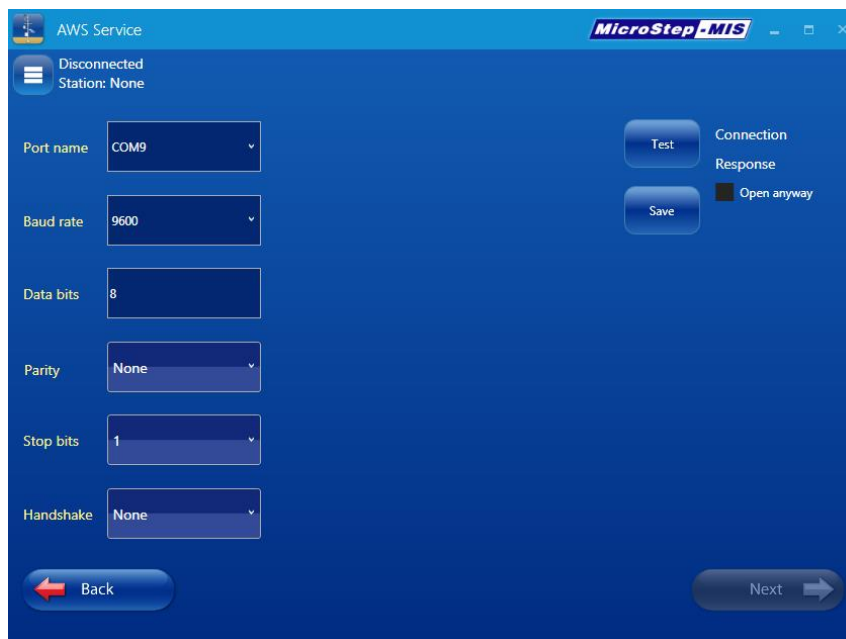
**Baud Rate** – 9600

**Data Bits** – 8

**Parity** – None

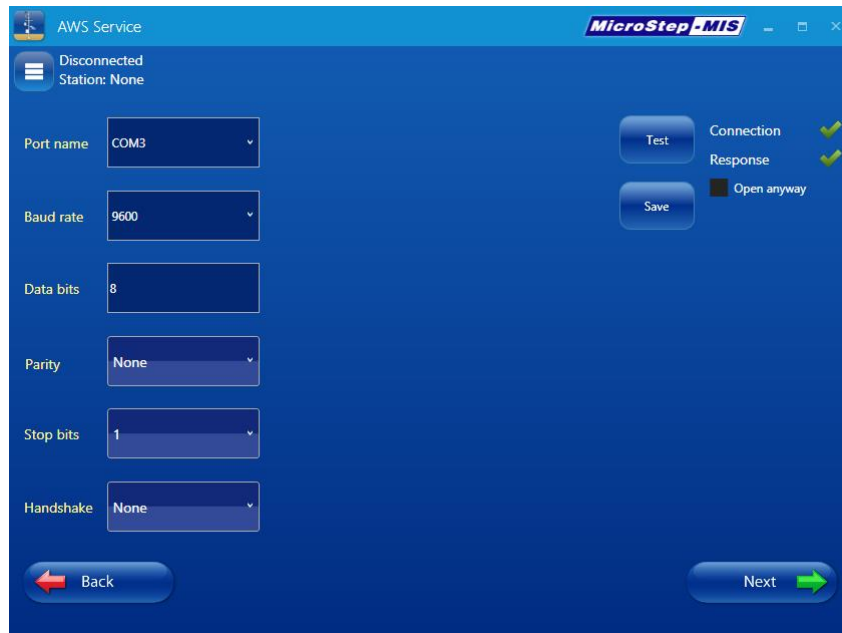
**Stop Bits** – 1

**Handshake** – None



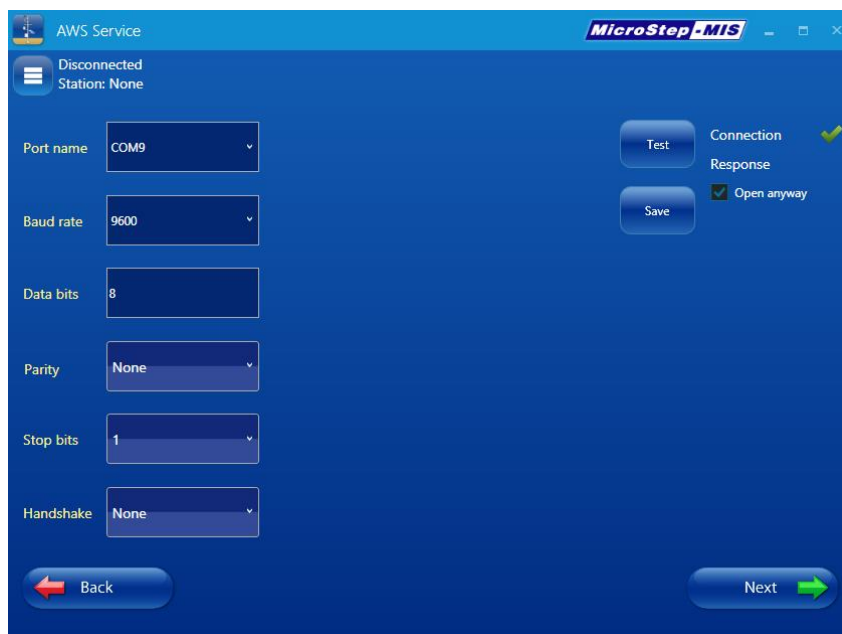
Click **Test** button to perform a test. It will try to open the chosen port and detect whether a data logger is connected and responding.

**Note:** *You can not continue until a test of connection has not been performed. The majority of connection errors happen because of wrong settings (e.g. wrong Port selected). This screen is the best place to test whether the connection works.*



If the connection is opened on another line of the data logger, you can force to close that line and open this connection.

If the data logger does not respond, you can try another serial port, or try to change the parameters of the connection. If the connection is very slow (response time more than 5 seconds, e.g. modem connection) then you can check **Open anyway** even if the data logger does not respond. In this case you can continue, but the response from data logger is not guaranteed.



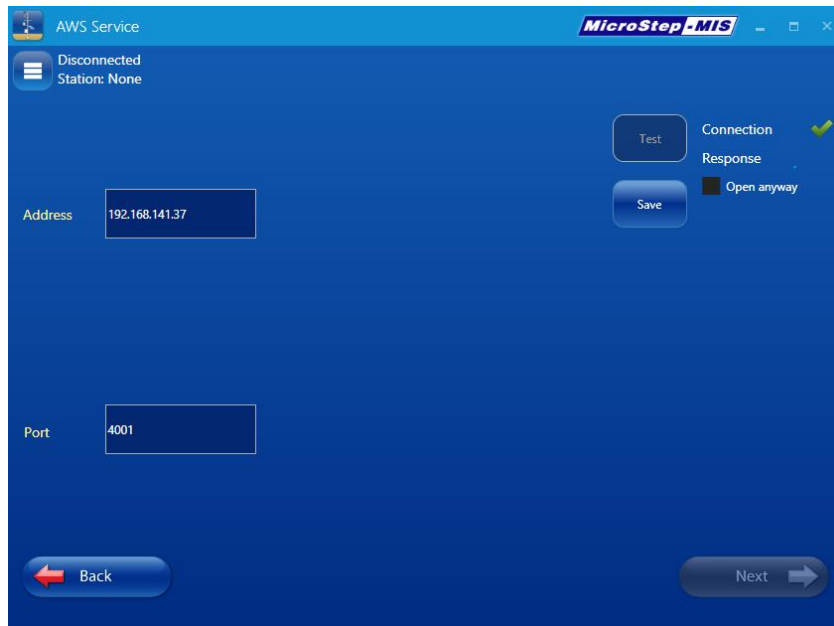
Once you get a functional connection, you can **Save** it to file, to be able to open it quicker in future.

### 3.1.3 Network Connection

In order to use a network connection, the data logger has to be already set up for networking. If your data logger is not connected to the network, choose **Serial Port** or **USB** options instead. (Use **Back** button to the previous screen)

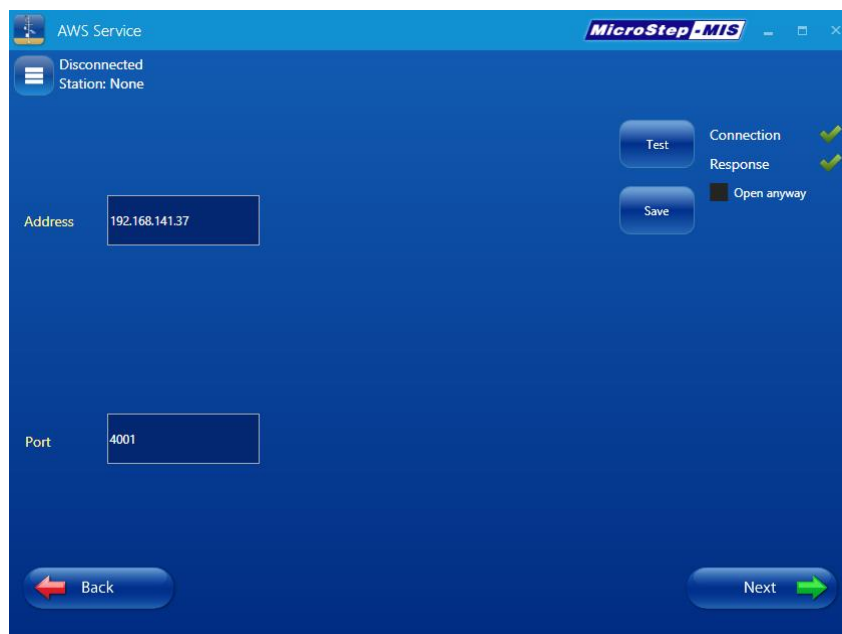
Be careful about configuring the data logger through network, because by wrong settings you can lose further access from network. The serial line or USB options will remain accessible even in case of misconfiguration.

Click **Test** button to perform a test. It will try to open the entered TCP connection and detect whether a data logger is connected and responding.



If the connection is opened on another line of the data logger, you can force to close that line and open this connection.

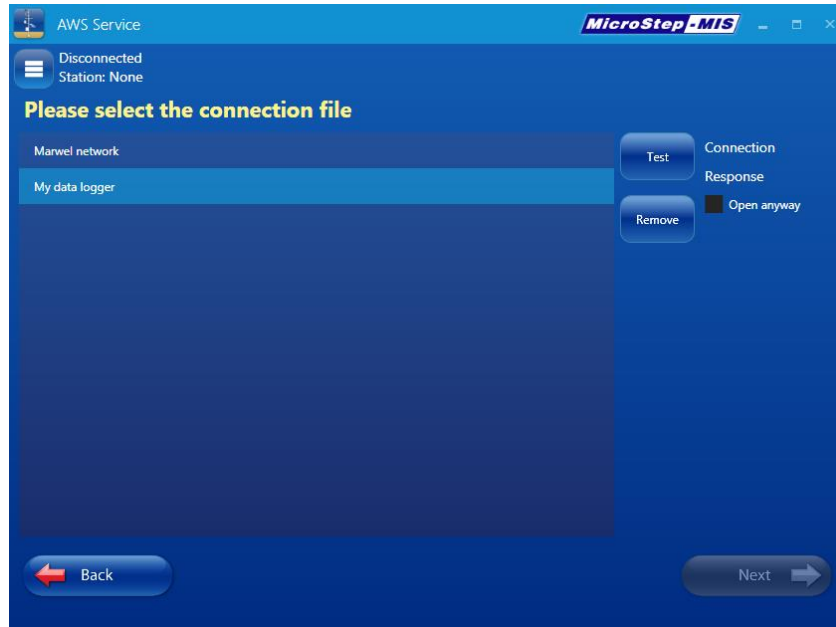
If the data logger does not respond, you can try another network port (if the data logger is configured to handle multiple ports). If the connection is very slow (response time more than 5 seconds, e.g. modem connection) then you can check **Open anyway** even if the data logger does not respond. In this case you can continue, but the response from data logger is not guaranteed.



Once you get a functional connection, you can **Save** it to file, to be able to open it quicker in future.

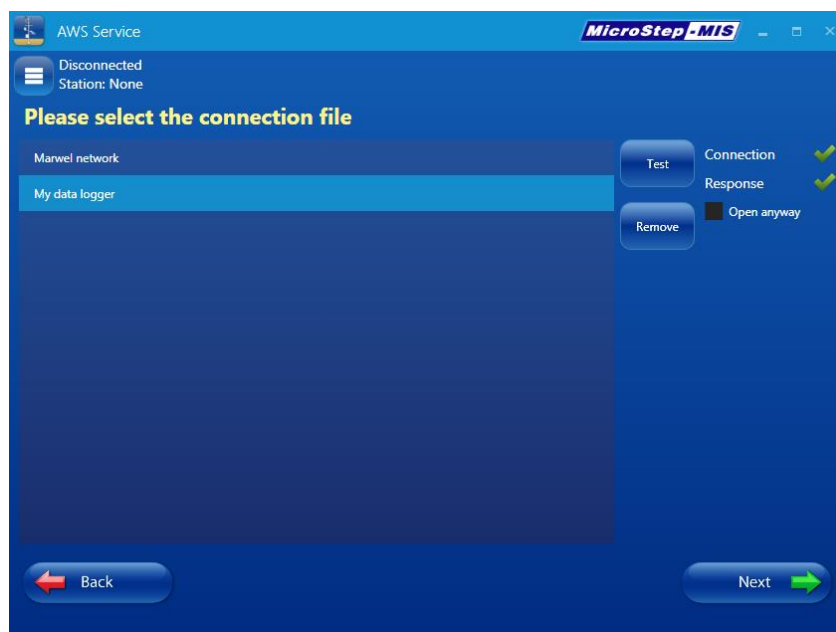
### 3.1.4 Open connection from file

To open a previously saved connection, select it from the list. You should pass a basic test whether the communication line can be opened or not and whether the data logger responds to commands. To perform this test, click the **Test** button. It will try to open the saved connection and detect whether a data logger is connected and responding.



If the connection is opened on another line of the data logger, you can force to close that line and open this connection.

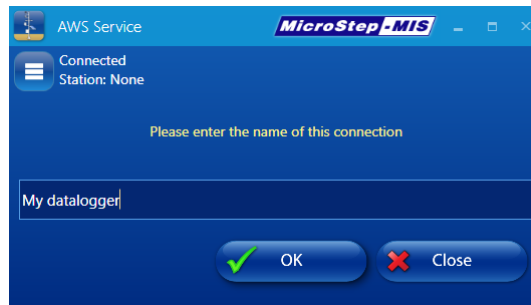
If the data logger does not respond, you can try another saved connection. If the connection is very slow (response time more than 5 seconds, e.g. modem connection) then you can check **Open anyway** even if the data logger does not respond. In this case you can continue, but the response from data logger is not guaranteed.



If the connection is established, you can continue by clicking the **Next** button.

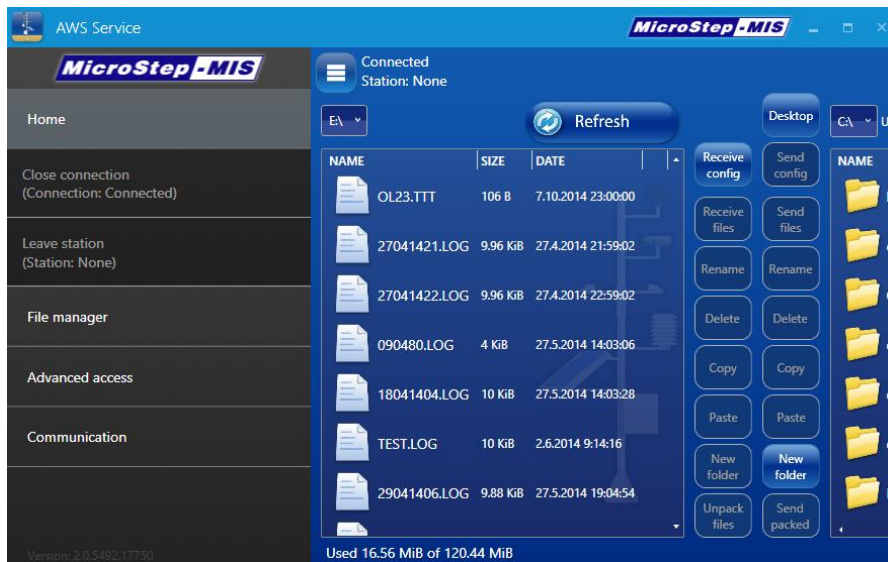
### 3.1.5 Save connection to file

In **Serial Line** and **Network** options you can save the entered connection parameters to file. Click on the **Save** icon on toolbar, or select **File > Save Connection** from main menu and then enter the file name to save. The file will be saved to location that can be edited in **Tools > Options** menu.

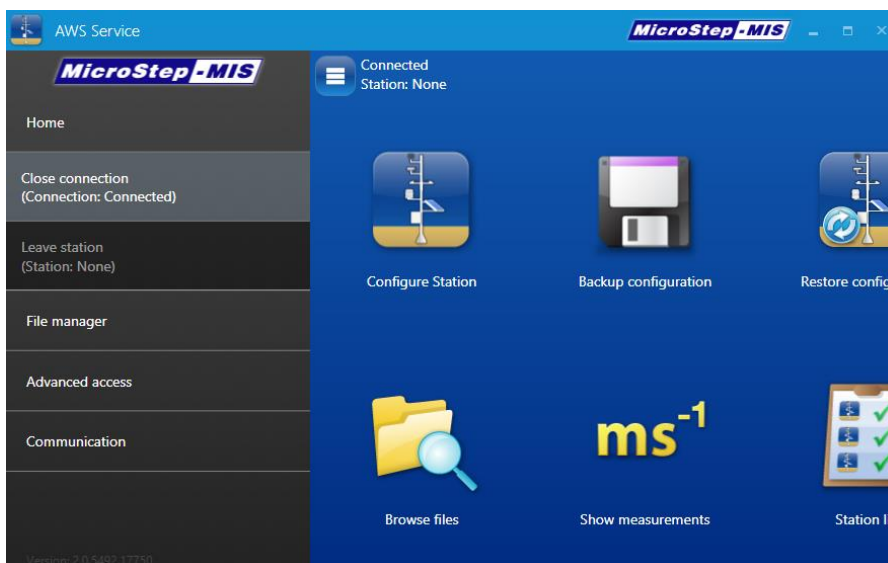


### 3.1.6 Close the connection

In order to close the connection, you have to leave any screen which uses the connection. Select the **Home** button in menu



If you are already on the home screen, you can select **Close connection**.



## 3.2 Configure station

Data logger's configuration is application software which differs from station to station. Configurations are created using **AWS Setup** program. Please refer to AWS Setup User's Guide [2] for creation of data logger configurations. The **AWS Setup** program creates a compressed `.tgz` file with all the necessary files needed for defining the data logger behavior.

**Note:** *The data logger's **configuration** is different from the data logger's **firmware**. The configuration is created by user (system integrator) and varies from station to station, whereas the **firmware** is created by MicroStep-MIS and it is common for all data loggers.*

The **Configure station** option is intended for updating the configuration to newest version or for overwriting the configuration of the data logger with the default settings. It is a wizard which navigates you through the steps of configuration. Before configuration we recommend to create a backup (chapter 3.3)

**Note:** *If you have associated the `.tgz` file extension with the **AWS Service** in Windows, then the configuration process starts after double clicking the compressed configuration file.*

The configuration process consists of few steps:

1. Open the connection to the data logger
2. Choose the station and a version of configuration. This step is skipped when configuration was opened from the file (because we know exactly which version should be used). This step consists of these sub-steps:
  - a. Automatic identification
  - b. Manual selection of station (with preselected default from previous step)
  - c. Selection of version (with preselected default of the newest version)
3. Execution of configuration steps
4. Manual definition of selected variables (Optional)

**Note:** *If the connection is already open, then the first step is skipped. Similarly if the station is already remembered, then the second step is also skipped. To change the station in this case, select **Leave Station** from **Main menu** and repeat the process.*

For opening the connection please refer to chapter 3.1.

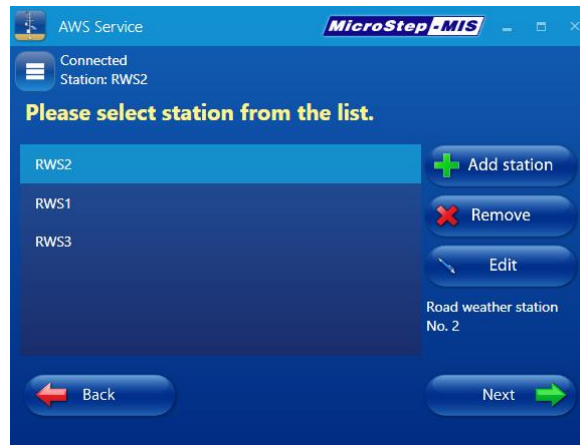
### 3.2.1 Automatic Identification

In this step the software will try to select the right station depending on the database of Station identifications (defined in chapter 3.8.1) and the actually stored value in the data logger's variable. If it matches a station, it will be selected in the next step. Otherwise, you can select another station manually in the next step.



**3.2.2 Select station**

If the automatic identification was successful, the first station is the detected station and it is selected by default. If you think that this station is not the right station, you may select another one or **Add** a new station which is not listed in the list.

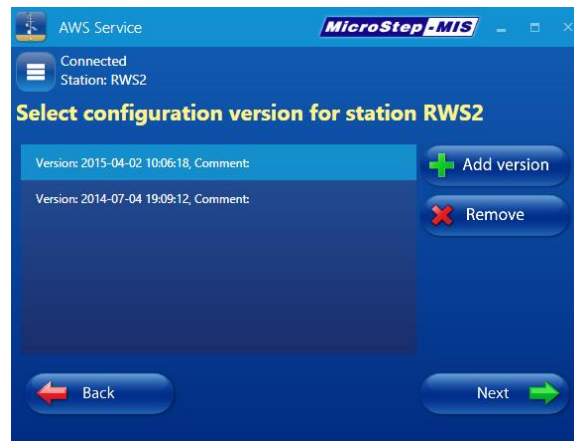


**3.2.3 Select configuration version**

In this view you can select historical versions of configuration file, but by default always the newest version is selected. If the right version is not in the list, you can add a new version.

**Note:** *The newly **added** configuration version will be available for **all** stations which share the common station type, not just for the actually selected station.*

**Note:** *The **removed** configuration version will be removed for **all** stations which share the common station type, not just for the actually selected station.*



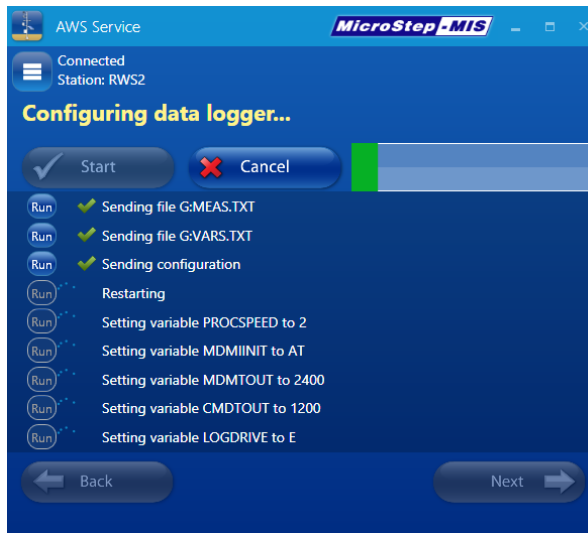
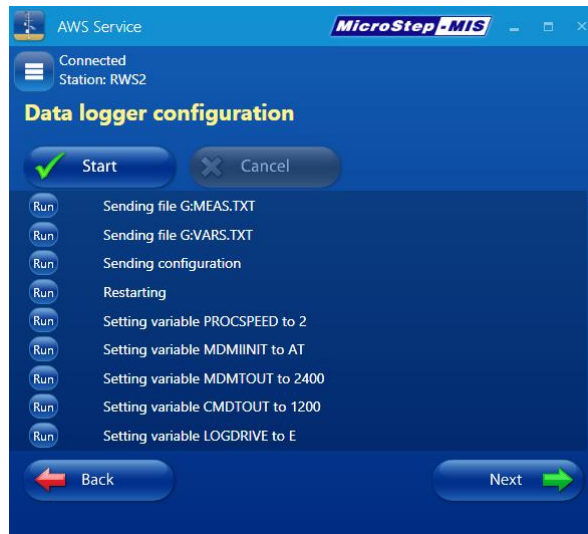
**3.2.4 Execution of configuration steps**

The configuration steps are defined in the .tgz configuration file (or configuration version). The configuration steps are shown below the buttons in a list. These steps can be started automatically by clicking the **Start** button. The progress will be shown next to the **Cancel** button. To abort the configuration, you can use **Cancel** button.

If you don't want to execute all of these steps, you can **Run** the steps individually. Each configuration step indicates a progress ring when it is executed or waiting for execution. The result of the step is shown next to the indicator. If the step was successful, it is marked by green tick ✓ sign. Failed steps are marked with red cross ✗ sign. You can repeat failed steps by clicking on the **Run** button.



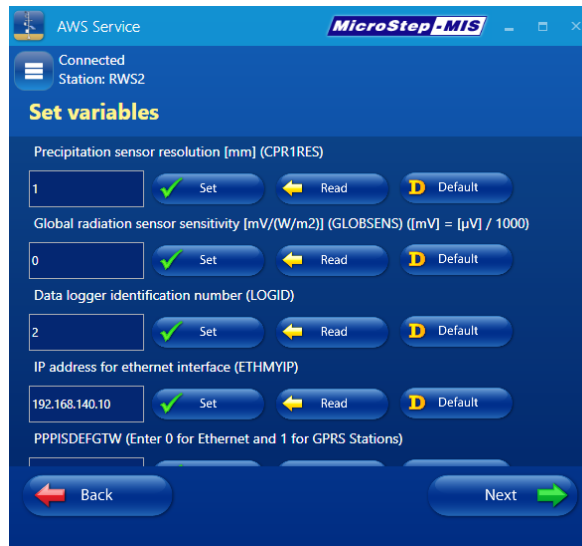
**Attention:** The list of steps is scrollable. In some cases you need to check whether all of the steps were successfully executed, but not all fits the screen.



You can continue to next step after it is finished with all of the steps, or you can continue even without performing any action.

### 3.2.5 Manually set variables

Some variables differ from station to station, some variables have to be set on the installation place, and therefore it is impossible to create a universal configuration. These variables can be set manually on the last step of the configuration.



**Attention:** *The list of variables is scrollable. In some cases you need to check whether all of the variables were successfully set correctly, but not all fits the screen.*

In each row there is an editable text box, which shows the actual value of the variable (name is above)  
There are 3 buttons:

The **Set** button will write the content of the text box into the variable in data logger.

The **Read** button will read the value of the variable and show it in the editable text box.

The **Default** button will overwrite the actual value by the default value defined in the configuration file.

The images after the buttons describe whether the command is working or not (working: progress ring, not working: none) and the result of the last command:

- Green tick ✓ sign: Command executed and the value in the text box corresponds to the variable in the data logger.
- Red cross ✗ sign: Command not executed and the value in the data logger is not known.
- No sign: unknown state, variable not changed

### 3.3 Backup configuration

Station state can be backed up into the database of the computer. These backups can be later used to restore the configuration of system.

**Warning:** *Backups do NOT include log files. Backups are just for configuration. Log files should be backed up differently. For example copy the contents of internal SD card to an external one. Or when replacing the data logger, just simply replace the SD card from old data logger to new one.*

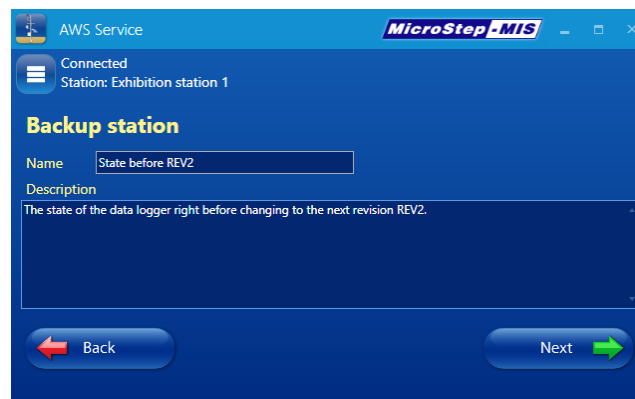
Backup is a reverse configuration process. That means that state of every step during the configuration is retrieved from the data logger and stored in the database. Only that kinds of information are stored, which are required for the current configuration type. This is the reason why the program should know about the configuration version.

Backup process follows these steps:

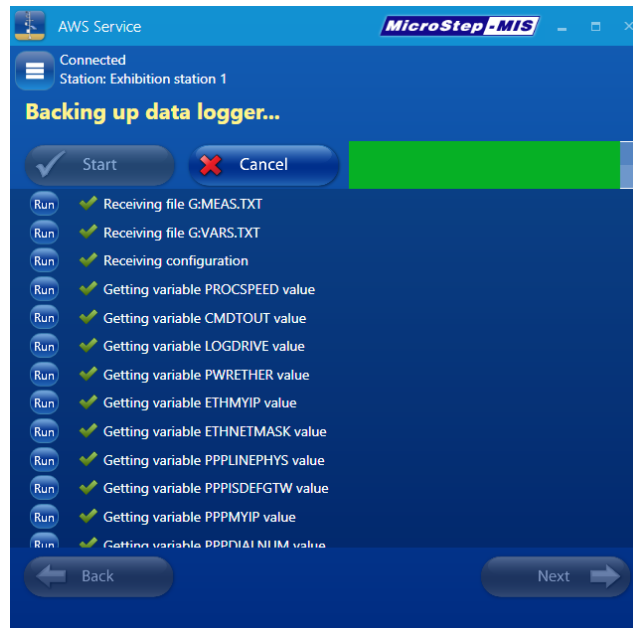
1. Open the connection to the data logger
2. Identify the station
3. Select the station from the list (previously identified station is automatically selected)
4. Select a version of the actually used configuration (skipped if there is only one version defined)
5. Enter a short name of backup and optionally a longer description with more details.
6. Start the backup process

**Note:** *If the connection is already open, then the first step is skipped. Similarly if the station is already remembered, then the second and third steps are also skipped. To change the station in this case, select **Leave Station** from **Main menu** and repeat the process.*

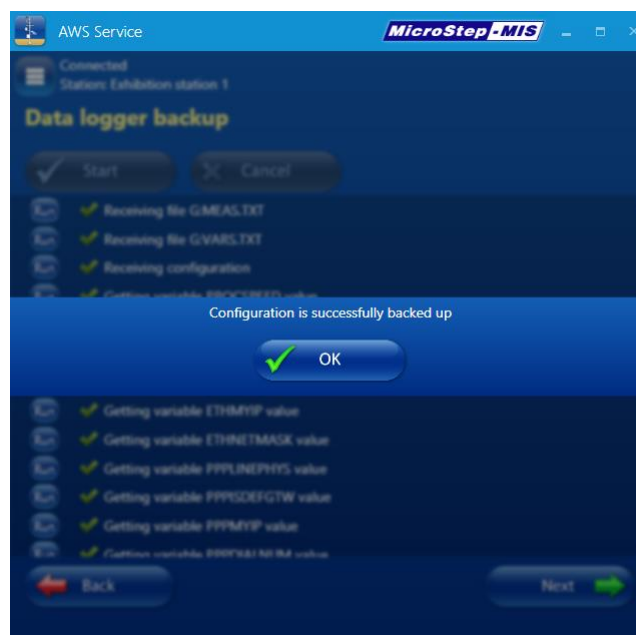
For opening the connection please refer to chapter 3.1.



Enter a short **Name** which will mark the backup, so you can distinguish the stored backups. The **Description** is not needed, but we recommend entering the details, why are you creating the backup.



Click the **Start** button to start the backup process. When successfully finished, a “*Configuration is successfully backed up*” message appears. If there were errors, then this message does not appear until every step is not successful. You can repeat the failed steps by clicking **Run** button. Once all steps show green tick, the “*Configuration is successfully backed up*” message will appear.



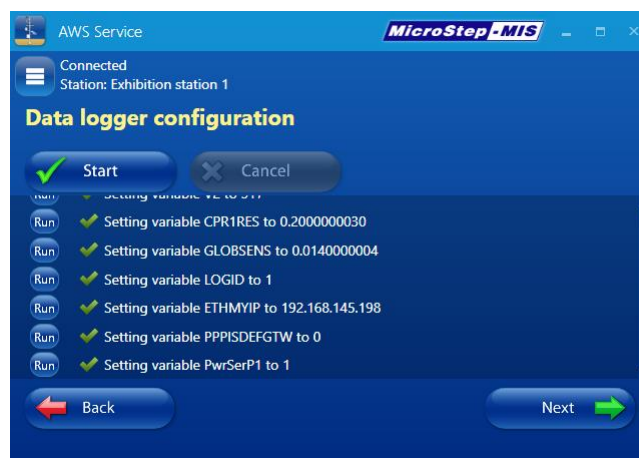
You can continue to **Main screen** by clicking **Next** button.  
The backups are stored in the database in the computer. You can use them to restore configuration.

### 3.4 Restore configuration

Restore configuration is in fact the same process as the configuration (described in chapter 3.2). The main difference is that it does not use the default configuration files, but the files created during backup. Manually configurable variables are in this step configured automatically depending on the state of the backed up variables, so the restoration process can be fully automatic.

The restoration process consists of few steps:

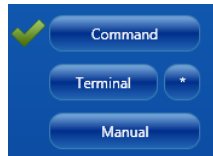
1. Open the connection to the data logger
2. Identify the station
3. Select the station from the list (previously identified station is automatically selected)
4. Choose a backup
5. Execution of configuration steps



### 3.5 Advanced access

In advanced access you can write commands directly to the operating system of the Data Logger. There are some predefined commands on left side of screen. Custom commands can be entered into smaller text box under the console. Commands are sent to data logger by clicking **Send** button or by Enter key.

There are three modes which are selectable by buttons: **Command**, **Terminal** and **Manual**. Most of preprogrammed functions requires **Command** mode.



#### 3.5.1 Clear console

**Clear console** command clears the output screen. Click on the **Clear console** button to perform this command.

#### 3.5.2 Show Protocols command

**Protocols** command shows actual list of reports logged by each running task. Basic message informs about logger startup status. Click on the **Protocols** button to perform this command.

#### 3.5.3 Version command

**Version** command shows actual version of the data logger firmware. Click on the **Version** button to perform this command.

```
VER
ML-UNI 1.1C
MicroStep-MIS
August 2003
```

#### 3.5.4 Task info command

This command provides detailed information about running tasks status. **Task info** command shows status for all running tasks. It displays how many tasks are currently running at the system and how much time was dedicated to "IDLE task" (i.e. no activity task). All other tasks have calculated their processor time and information about the stacks. Click on the **Task info** button to perform this command.

```
SystemT: 21:58:26.938 100.00000% 0.00000% FreeStack:3608 UsedStack: 12%
Idle: 0:12:19.299 0.93456% 0.00000% FreeStack:1440 UsedStack: 6%
0.Task: 0:00:00.273 0.00035% 0.00000% FreeStack:1192 UsedStack: 22%
1.Task: 0:04:01.255 0.30497% 0.00000% FreeStack:0968 UsedStack: 37%
2.Task: 0:01:30.185 0.11400% 0.00000% FreeStack:0952 UsedStack: 38%
3.Task: 20:39:28.702 94.01035% 0.00000% FreeStack:1360 UsedStack: 28%
4.Task: 0:08:35.561 0.65173% 0.00000% FreeStack:1356 UsedStack: 11%
5.Task: 0:00:00.002 0.00000% 0.00000% FreeStack:1344 UsedStack: 12%
6.Task: 0:06:27.907 0.49036% 0.00000% FreeStack:1372 UsedStack: 10%
7.Task: 0:00:06.646 0.00840% 0.00000% FreeStack:0840 UsedStack: 45%
8.Task: 0:08:01.139 0.60821% 0.00000% FreeStack:1188 UsedStack: 22%
9.Task: 0:00:22.811 0.02884% 0.00000% FreeStack:1260 UsedStack: 18%
10.Task: 0:00:06.740 0.00852% 0.00000% FreeStack:1128 UsedStack: 26%
11.Task: 0:00:20.947 0.02648% 0.00000% FreeStack:1192 UsedStack: 22%
12.Task: 0:00:22.478 0.02841% 0.00000% FreeStack:1032 UsedStack: 33%
```

```

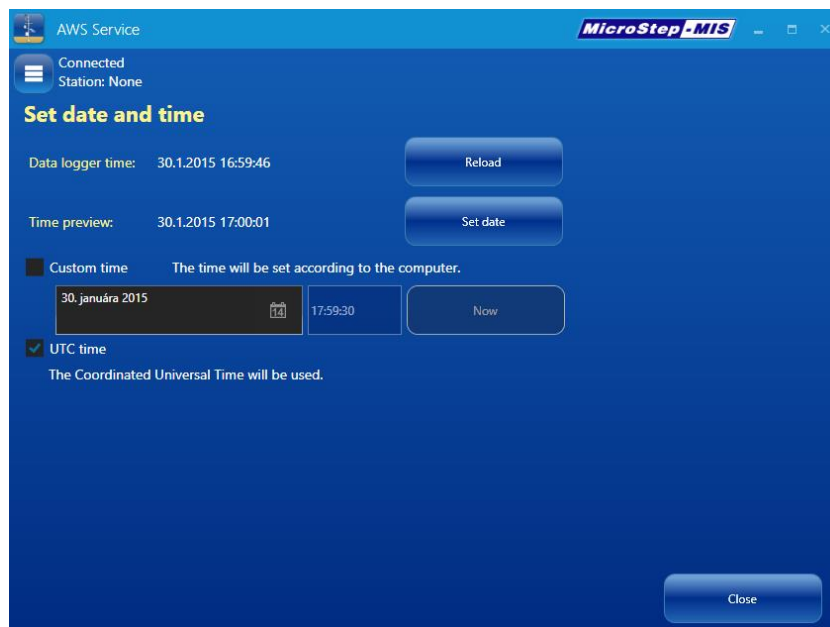
13.Task: 0:00:01.397 0.00177% 0.00000% FreeStack:1096 UsedStack: 28%
14.Task: 0:00:12.822 0.01621% 0.00000% FreeStack:1304 UsedStack: 15%
15.Task: 0:01:22.956 0.10487% 0.00000% FreeStack:0760 UsedStack: 51%
16.Task: 0:00:28.626 0.03619% 0.00000% FreeStack:1136 UsedStack: 26%
17.Task: 0:01:35.673 0.12094% 0.00000% FreeStack:1352 UsedStack: 12%
18.Task: 0:00:26.788 0.03386% 0.00000% FreeStack:0936 UsedStack: 39%
19.Task: 0:02:42.426 0.20532% 0.00000% FreeStack:1344 UsedStack: 12%
OffTime: 0:00:00.000 0.00000% 0.00000%
RtxExec: 0:29:52.305 2.26567% 0.00000% FreeStack:1424 UsedStack: 7%
IntLate:0 MemFreeAll:21819 MemFreeBlkMax:21819 MemFreeBlkCount:1.
OK
    
```

**3.5.5 Get date command**

Click **Get date** button to display actual date and time in data logger in the console.

**3.5.6 Set date command**

Click **Set date** button to open **Set Date and Time** dialog.



In this dialog you can see the actual time in the data logger and the time which you are going to set. To change this time, there are few options:

**Custom time** – when checked, you can enter any custom time to data logger. To define a date and time, use the selector below this check box. When the custom time is not checked, the time will be the actual time of the computer.

**UTC time** – when checked, the Universal Coordinated Time will be set. This is the basic time on Earth and the different time zones can be calculated from this time (e.g. by the data processing server). If the UTC time is not checked, it will use the local time zone of the computer.

**Note:** *If your time zone uses daylight saving time, the data logger will not use it to avoid data confusion. It will always use standard time.*

After the settings, you can set the time by clicking the **Set date** button.

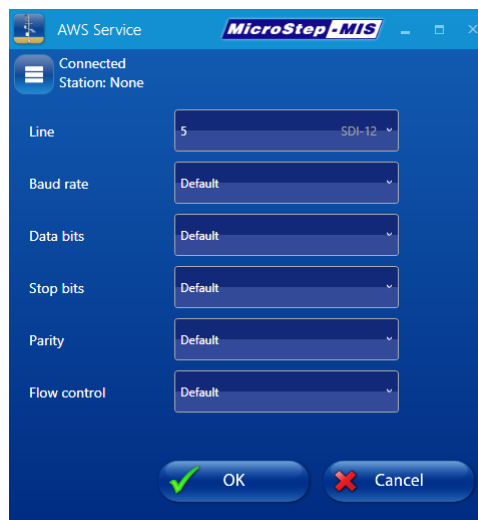
### 3.5.7 Restart data logger

Command **Restart** causes *software restart* of the data logger.

**Note:** *The **Restart** command can be even used to restart the logger remotely (via modem). Any changes in the configuration and software performed before logger reset will take effect, therefore in case of misconfiguration the logger may stop answering.*

### 3.5.8 Terminal

Terminal mode is direct connection to data logger's serial port (pass-through mode) or to command line interpreter of data logger. In this mode each letter character typed to text box is sent to data logger and the response is automatically showed in this text box (like Microsoft HyperTerminal). It can be accessed by clicking the **Terminal** button. If settings of terminal mode were not loaded, a form will be shown.



Choose the serial **line** number in the list. The additional arguments are optional. To change these settings click \* **button** (which is located next to the **Terminal** button).

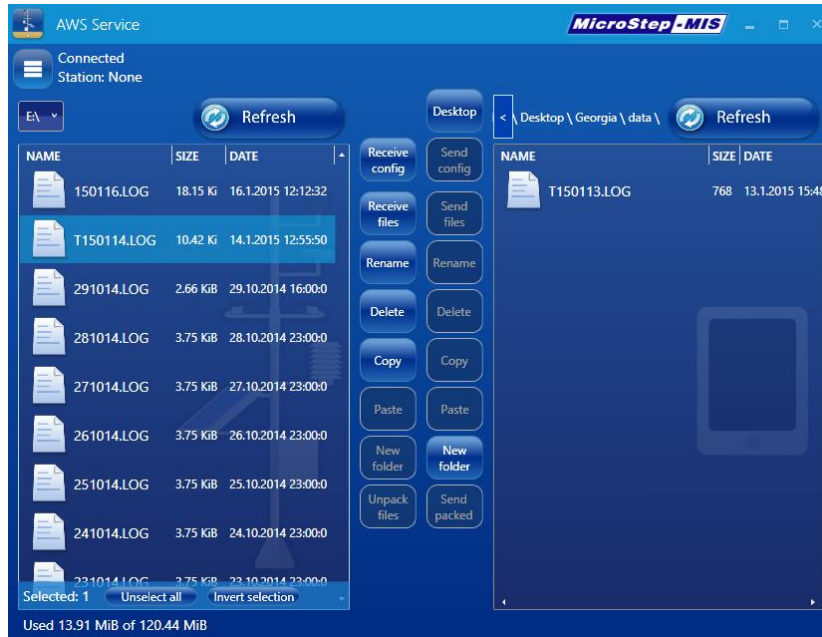
**Attention:** *If any parameter from the top is set to Default, the parameters below it will be ignored.*

**Example 1:** *To set **Stop bits** to non-default, you have to define the **Baud rate** and **Data bits** to non-default.*



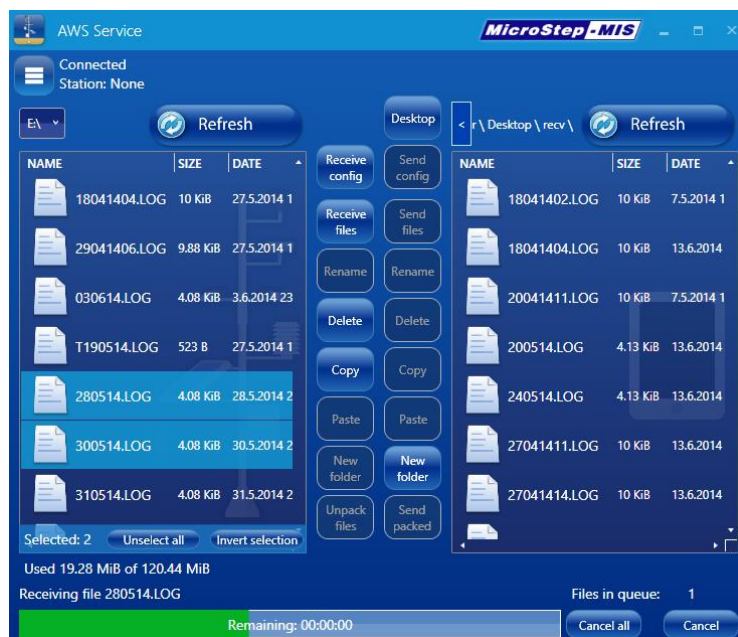
### 3.6 File Manager

File Manager is used to view and work with files on remote data logger and local computer.



#### 3.6.1 Send or receive files

To send or receive file select the files. Selected files can be dragged and dropped to another side of file manager. Also files can be copied to applications clipboard (**Ctrl + C**, **Ctrl + V**), so it is possible to copy files between data logger disks. Files can be transferred by clicking on **Receive files** or **Send files** buttons. In case of existing file in target directory the user is prompted to take an action. This can be overwriting, choosing another name or skipping the file. This action can be remembered for all files.




### 3.6.2 Receive configuration

Configuration file (\*.dat) on data logger is not shown in list, therefore it requires another method to receive file. In order to receive configuration file from data logger, click **Receive config** button. The file name in computer will be `config.dat`.

### 3.6.3 Send configuration

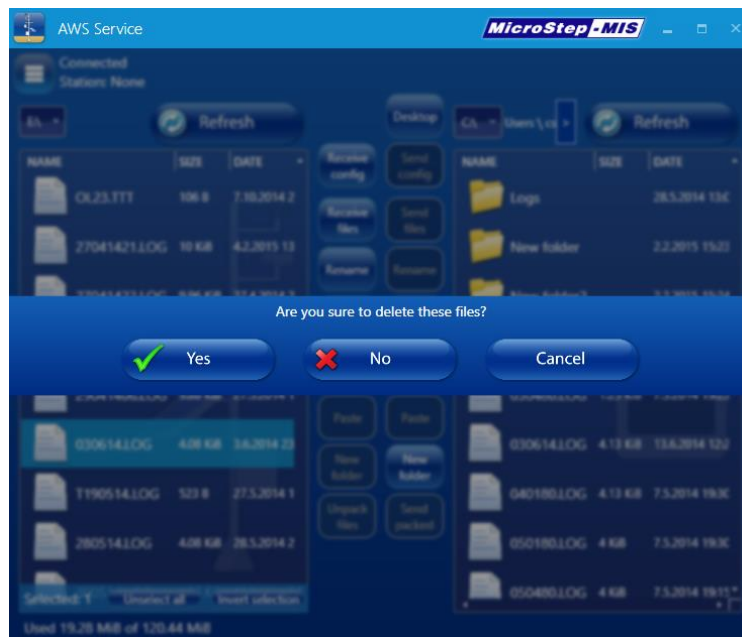
In order to send configuration file to data logger, select local file with `.dat` extension, click **Send config** button and then wait for file transfer to complete. If configuration file is dragged and dropped to data logger, then user can choose between sending file as regular file or as configuration file. In order to apply the configuration, additional **Restart** is needed on **Advanced access** screen. (See 3.5.7 for details)

### 3.6.4 Reload data logger files

List of data logger files can be reloaded by clicking on  **Refresh** button above the files on the left side (Data logger side).

### 3.6.5 Delete files

Files can be deleted by selecting the files and clicking on **Delete** button. Confirmation will appear.



### 3.6.6 Rename file

Rename operation on data logger is performed by copying source file to new name; therefore it may take longer, depending on file size. Local files are renamed immediately. To rename file, select the file to rename then click **Rename** button.

### 3.6.7 Copy file

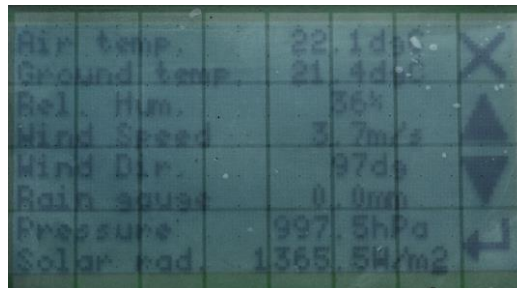
The files can be copied from one disk to another within data logger using **Ctrl + C** or click **Copy** in source directory, then **Ctrl + V** or click **Paste** in destination directory. If the source and destination devices are different, then file transfer is initiated instead of copying.

### 3.7 Measurements

On this page the measured quantities are shown.

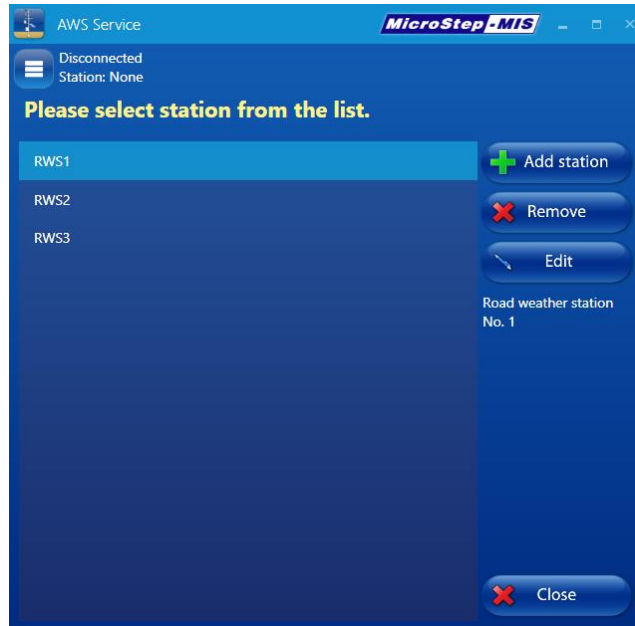


The quantities shown in AWS Service are the same as on the display of the data logger. This view is useful for connections over network or for data loggers without Touch LCD Display.



### 3.8 Station list

AWS Service can maintain multiple stations. These stations can be automatically configured, what can be useful when data logger is replaced.



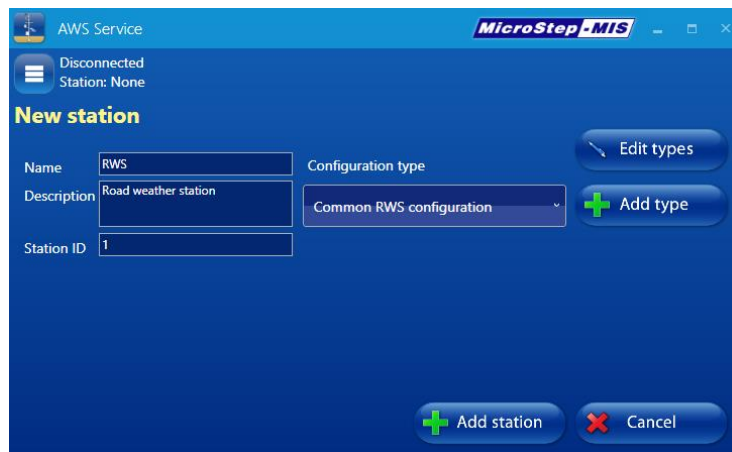
Every **Station** must be associated with a **Configuration type**. This configuration type describes the operations related to the station. The configuration type has at least one **Version** of configuration. It is possible to **Add** new versions and **Remove** old versions for a configuration type, but at least one version should always remain. By changing a version of a configuration type all stations associated with this configuration type can access this new version.

Configuration versions are created using **AWS Setup** program. Please refer to AWS Setup User’s Guide [2] for creation of data logger configurations.

Stations are identified by an identification number (or text)  
 New stations can be added by clicking **Add Station** button and removed by **Remove** button.  
 To edit a station select a station from list and click **Edit** button.

#### 3.8.1 Add station / Edit station

Add station view:



Edit station view:



**Name** is the name of station which is shown in lists. **Description** can be longer text which helps to identify the station.

**Station ID** is the value of identification variable in the data logger. Most commonly this variable is LOGID variable in the data logger, but the configuration may define another variable for the identification. If the variable is a numeric type (and the IDs are numbers), then do not include leading zeros in this field. (E.g. if the Station number is 7, enter value 7, and not 007).

**Configuration type** is the type of the associated configuration. Some stations can share a common configuration type, some station have dedicated configuration types for just one station. If the configuration type is not in the list, you can add type by clicking **Add Type** button. For changing the name of configuration type, removing a type entirely or adding new versions to that type, click **Edit Types** button. See chapter 3.8.2 for details.

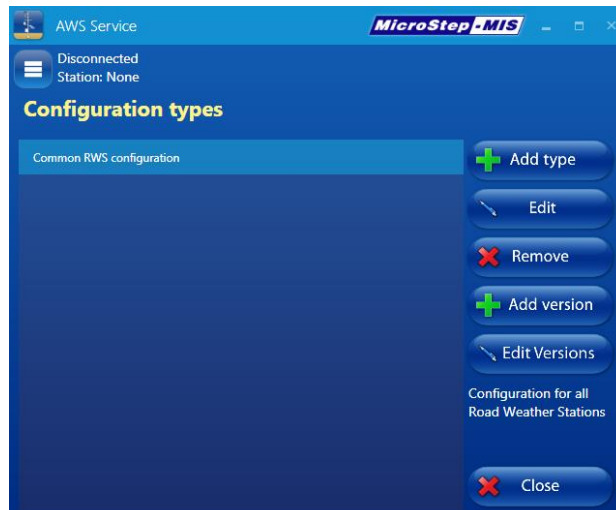
If you entered all of the required fields, you can add a new station by clicking **Add station** button or update the currently edited station by clicking the **OK** button. By clicking **Cancel** button, no changes will be made (no new station and no changes in the existing one).

### 3.8.2 Edit configuration types

Some stations can share a common configuration type, some station have dedicated configuration types for just one station. So configuration type's version is available in all associated stations. That means change of configuration version is needed only in one place.

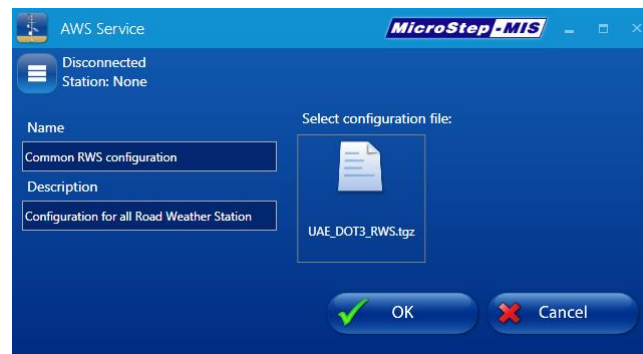
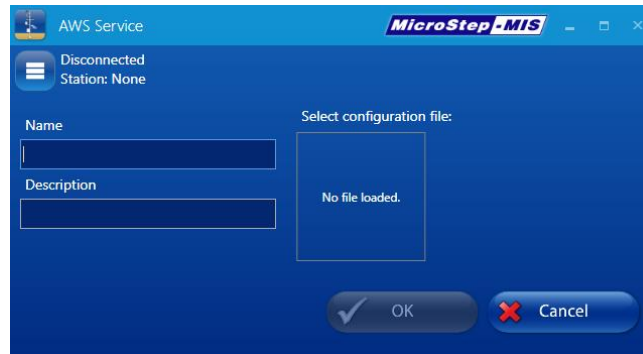
AWS Service supports multiple configuration types. You can **Add** new types, **Edit**, **Remove** them, add new versions (**Add versions**) of files or manage the versions (**Edit Versions**).

**Warning:** *By removing the configuration type, it will also remove the **stations** associated with this configuration type and their **backups**!*



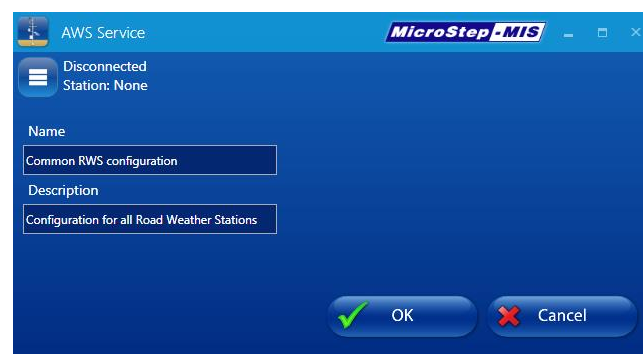
### 3.8.3 Add/Edit configuration type

To add a new configuration type, the first configuration file should be defined. The versions of this file can be later edited. To select this file click on the rectangle below **Select configuration file** label, then select the file from the computer's file system. This rectangle will indicate the currently opened file. If there is a problem with this file, the description of problem will be shown next to the rectangle. You can't continue with creation of a new configuration type until a name and the file is not selected.



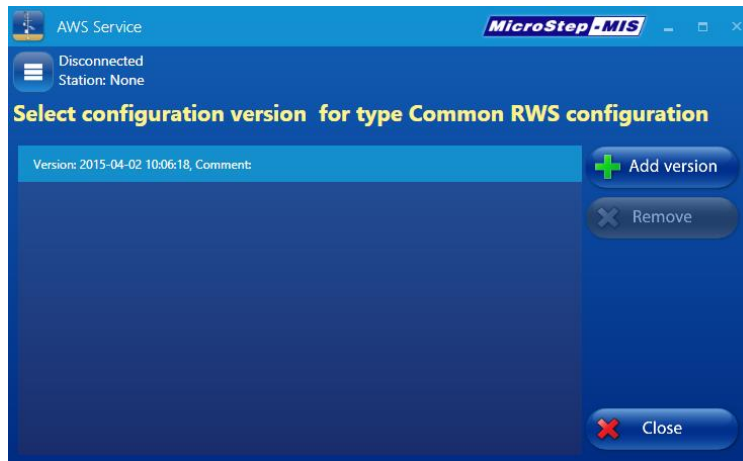
The **Name** is the name of the configuration type which is shown in lists. **Description** can be longer text which helps to identify the configuration type.

The upload feature is not available when editing the configuration type. Use Edit configuration versions instead.



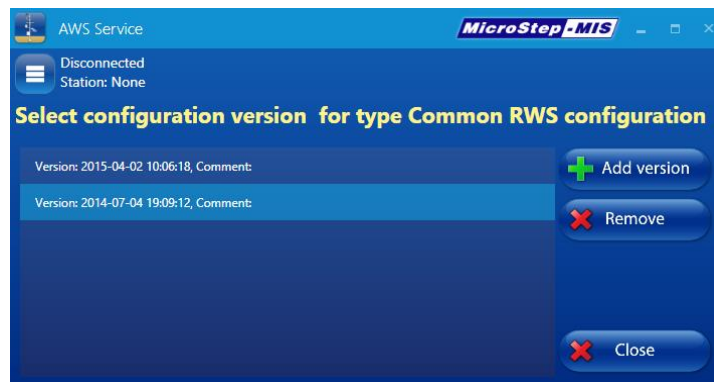
### 3.8.4 Edit configuration versions

Every configuration type should have at least one version of the configuration. The version is identified by the creation date and time. There is also a comment which describes changes in the configuration. These two fields are included in the configuration file created by the **AWS Setup** program.



The **Remove** functionality is enabled just when there are at least two configuration versions. If there is only one remaining configuration version, it cannot be removed.

To remove the last version, you have to remove the configuration type completely! Be careful with removing the configuration type, because it will also remove all associated stations and their backups. See chapter 3.8.2 for details.



### 3.8.5 Add configuration version

To select this file click on the rectangle below **Select configuration file** label, then select the file from the computer's file system. This rectangle will indicate the currently opened file. If there is a problem with this file, the description of problem will be shown next to the rectangle.



### 3.9 Update firmware

The data logger can contain up to 3 processors, which use software, which defines its tasks. This software is called firmware. MicroStep-MIS creates new firmware to support new data logger capabilities or fixing some issues. Every processor has its own firmware, which can be changed to newer version.

The AWS Service can be used to change the firmware in 3 processors:

**Main processor:** Its task is to log data, communicate with data collection system and user interface (Display, command line) and other tasks.

The firmware file has `.IEX` file extension. The firmware file name is `PIC3_<version>.IEX`

**Measurement processor:** Its task is to communicate with sensors, perform measurements and maintain power. The firmware file name is `ATMEG<version>.HEX`

**Serial extension:** (Optional) Its task is to create additional communication channels. Available only for data loggers with this serial extension board installed. The firmware file name is `SER_<version>.HEX`

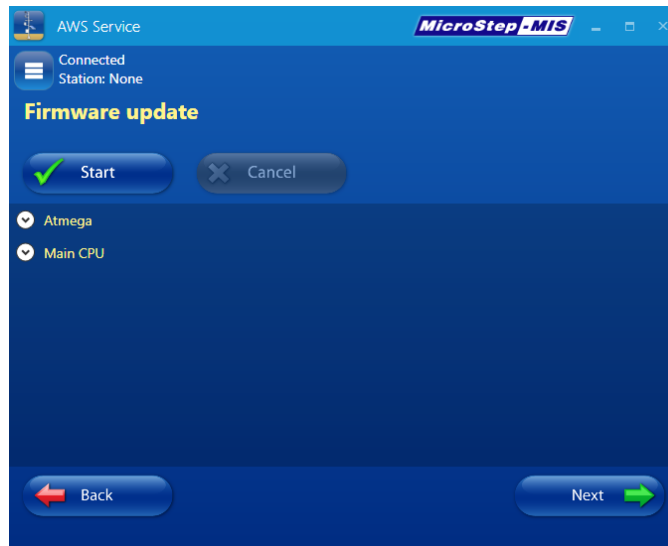
The **Update firmware** screen detects the data logger's file system for firmware files. The files can be even compressed, with extension `.GZ`. If the files are not present, use the **File Manager** to transfer the files into data logger's disk `E:`. The recommended process is to use an external SD card with all of the files present.



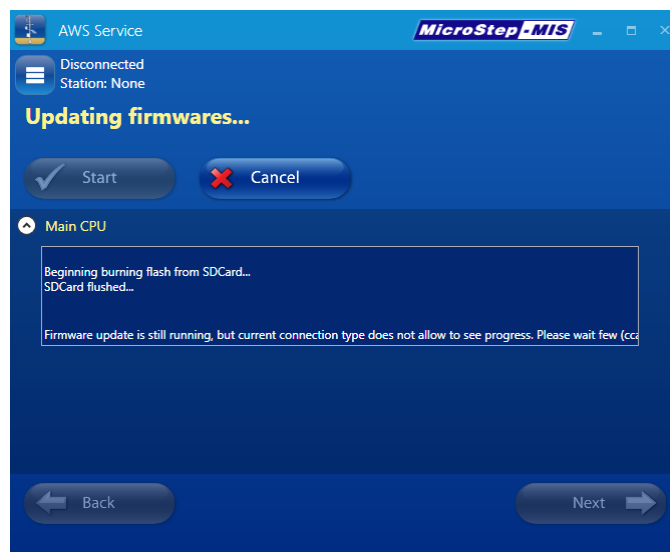
The actual version of the firmware is shown above the list of the available firmware files. For the serial card firmware it may show **Not connected**, if the serial extension is not installed.

If you have a firmware selected, but you don't want to update it, you can click **Unselect** button below the list.

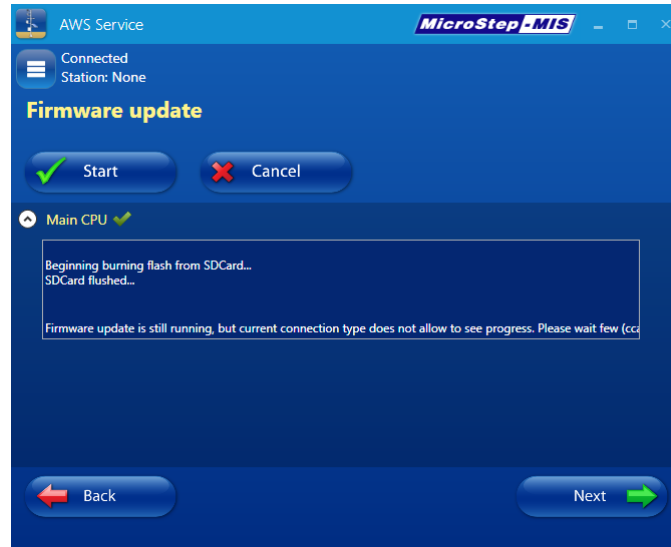




Each processor has its progress dialog. This dialog is visible after expanding the expander. Before updating the firmware, ensure that good power source is connected (or batteries charged). The update process is started by clicking the **Start** button. It will update the firmware in the right order (Main processor last). Some updates may require change firmware in the measurement processor first.



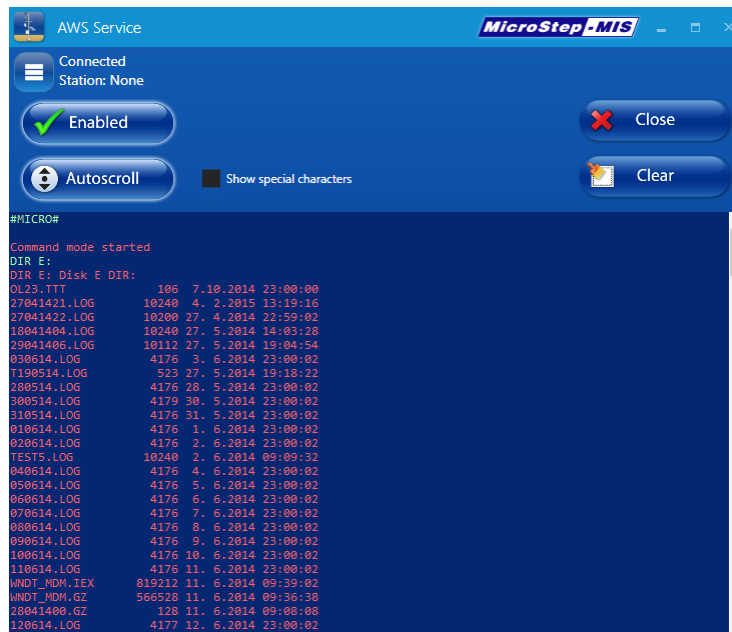
If the data logger is connected through service serial port, then a progress is shown for the update of the main processor. For other types of connection (USB port, Network) the progress is not available and the user has to wait long time, until the connection is available again.



If the update was successful, it is marked with green tick ✓ sign next to the processor name.

### 3.10 Communication

Communication between data logger and computer is remembered when the communication log is turned on. This could be helpful when detailed information about logger's behavior is needed. Select **Communication** from main menu to show the log view. To enable communication logging click **Enabled** button. Received data are red, sent data are green.



## References

- [1] MicroStep-MIS (2011): New AMS 111 II, User's guide.
- [2] MicroStep-MIS (2014): AWS Setup, User's guide.