Forward T Software

FDImageUpdater

Program for Organizing
Dynamic Data Update
in Titles

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User's Guide

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Table of Contents

Introduction 6

General Information 7

General Information on Program 7
1. Purpose, Scope of Application 7
2. Sources of Data 8
3. Scheme of Program Use 8
3.1. Output of Data From One Source 8
3.2. Successive Output of Data Received From Different Sources 9
3.3. Simultaneous Output of Data Received From Different Sources 9
3.4. Use of Title Object With TSF_IU Script (ImageUpdater) 9

Used Terms and Symbols 11
1. Procedure of Image Updating 11
2. Project 11
3. Resulting Graphic File 12
4. Task 12
5. Types of Tasks 13
6. Duration of Task Execution 13
7. Region File (Template) 14
8. Requirements to Regions Used in FDImageUpdater 14
9. Used Signs 15

Image in Resulting Graphic File 16
1. Content of Image 16
2. Text With Data 16
2.1. Structure 16
2.2. Design 17
2.3. Format of Data Displaying 17
3. Size of Image 18
4. Updating of Resulting Image 19

Program Interface 22

Launching and Finishing of Program Work 22
1. Ways of Program Launch 22
2. Format of Command Line 22
3. Finishing of Program Work 23

Program Interface 24
1. Main Window 24

2. Commands of the Main Menu 25
3. Table for Displaying of Tasks List 25
4. Buttons for Working with Tasks List 26
5. Buttons to Control Project Execution 26

Preview Window 27

Task Settings Wizard 28
Modes of User Interface 29

Modes of Program 30

Working with Program 31

General Workflow of Working With the Program 31

Customizing of Program Settings 32

Creation of a New Project 33

Opening of Recently Created Project 36

Editing of Project Settings 37
1. Editing of Target Graphic File Settings 37
2. Editing of Task Settings 37

Control Over Image Updating 39

Creation of Tasks of Different Types 41
1. Pause 41
1.1. Purpose 41
1.2. Features 41
1.3. Creation of Task 41
2. Text 43
2.1. Purpose 43
2.2. Data Source 43
2.3. Features 43
2.4. Creation of Task 44
3. Time 48
3.1. Purpose 48
3.2. Source of Data 48
3.3. Features 48
3.4. Creation of Task 48
4. Web 53
4.1. Purpose 53
4.2. Source of Data 53
4.3. Creation of Task 53
5. SensorEx 57
5.1. Purpose 57
5.2. Source of Data 57
5.3. Features 57
5.4. Text File for Substitution 58

5.5. Creation of Task 59

Sensors and Weather Stations 69

General Information 69
1. Definition 69
2. General Scheme of Working with Sensors and Weather Stations 69
3. The WeatherStationPluginConfig Program Configurator 70

Working With Sensors and Weather Stations 71
1. Heavy Weather Station 71
2. DIP Modular System Sensors (MA T, MA TPH Models) 75
3. Stream Labs USB_MS_RS485 Sensor 79
4. Oregon Scientific Weather Station 82
4.1. Working With Oregon Scientific Weather StationUsing Virtual Weather Station Software 82
4.2. Working With the Oregon Scientific Weather Stationusing Weather OS 87
5. IRT 5920 Sensor 91
6. Tundra Sensor 97
7. RMM–4095. Device for Collecting and Processing of Data Received from Weather Station 98
8. RMM–4095E. Device for Collecting and Processing of Data Received from Weather Station 99
9. Temperature Sensors that Work with the Temp. Keeper Program 103

Recording of Data on Weather Into a Text Fie 106
1. General Information 106
2. Recording of Data on Temperature 106
3. Recording of Data on Temperature, Pressure, Humidity 107

Introduction

The FDImageUpdater program is designed to form a content of graphic file automatically basing on data received from different sources.

The program deals with the following data sources:

- specially prepared text files;
- temperature sensors and weather stations;
- website pages;
- PC system time.

Data from source is transmitted into graphic file in a text form. Design of image and text is specified by user.

The program can appeal to different data sources in specified time periods and output these data into one file.

Use of the FDImageUpdater program with other programs from the Forward T Software set provides:

- organazing of output on air information that is changed timely, for example, air temperature;
- organizing of output on air information from different sources in turn and locate it in one place on the screen, for example, current time and air temperature.

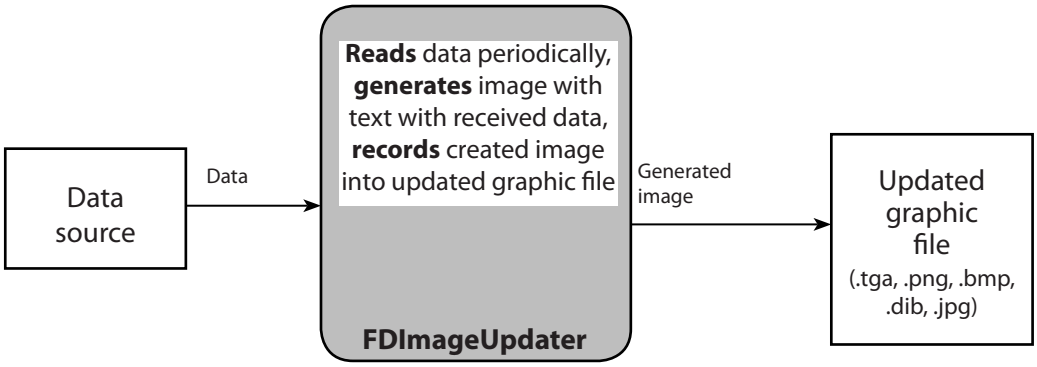
General Information on Program

1. Purpose, Scope of Application

The FDImageUrdater program is used with other programs from the Forward T Software set to output on air dynamcally changed information received from data sources.

For example, using the program you may organize output of information on time and temperature in titles (1).

The main purpose of the program is to generate and output periodically image into graphic file. The image includes a text with information received from some data source.



2. Sources of Data

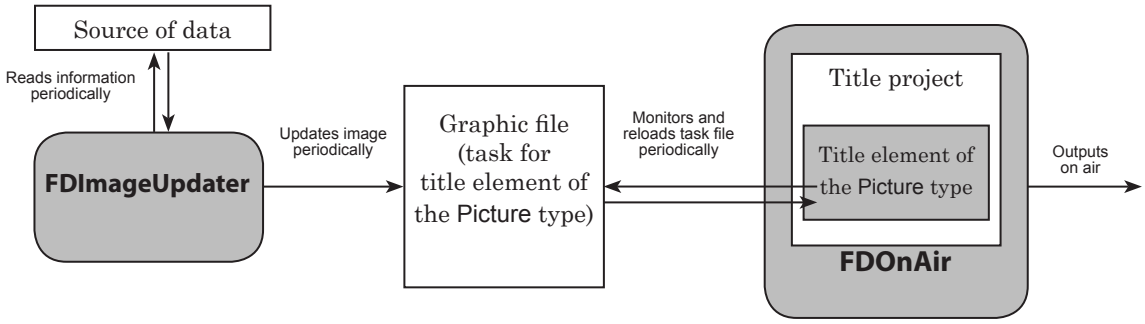
The FDImageUpdater program deals with the following sources of data:

- text file;
- website;
- source of time:
  - PC system time;
  - SLTimeServer;
- temperature sensors:
  - IRT 5920;
  - Tundra 73;
  - Stream Labs USB_MS_RS485
  - RMM–4095;
- weather stations:
  - HeavyWeather (models: WS2308, WS2310, WS2315; WS3610);
  - Oregon Scientific (models: WMR100, WMR200);
  - Davis Instruments (Vantage Pro2).

3. Scheme of Program Use

3.1. Output of Data From One Source

Picture below presents a general scheme of output on air information received by FDImageUpdater program from one source of data.



Complete the following to organize working of the above described scheme:

1. Customize creation and output of image with information received from necessary data source into a concrete graphic file in the FDImageUpdater program.
2. Create and save title project in the FDTitleDesigner program. The project must contain title element of the Picture type. Specify graphic file as a task for the title element. The FDImageUpdater program must be customized so that to update indicated graphic file.
3. Load created title project into FDOnAir.
4. Start a process of image updating in the FDImageUpdater program.
6. Start data playback in the FDOnAir program. The FDImageUpdater must work in mode of image updating during output of title project on air.

3.2. Successive Output of Data Received From Different Sources

One FDImageUpdater program instance can output data only from one source at once. Though, one project created for image updating may include tasks for a successive appeal of the program to different data sources.

For example, it is possible to get and output data received from PC system time during 30 seconds, then during the next 30 seconds to get and output data from weather station. In this case using one title element time and data on weather are successively displayed in the same place on the screen.

3.3. Simultaneous Output of Data Received From Different Sources

If you need to output data received from different sources simultaneously then you must work with a corresponding quantity of FDImageUpdater program instances.

For example, if it is needed to output data on both time and temperature simultaneously then 2 title elements of the Picture type must be present to output the data. Image for each of the elements must be generated by a separate FDImageUpdater program instance.

3.4. Use of Title Object With TSF_IU Script (ImageUpdater)

In cases when it is necessary to output data received from different sources simultaneously we recommend working with title objects with the TSF_IU script.

Title object with script is a title object where script assigned to this object controls its elements.

Note: Description of libraries of title objects with script see in the «Scripted title objects with open source code» and the «Scripted title objects without source code» user's guides.

Work of script applied to TSF_IU script object is similar to work of the FDImageUpdater program.

Use of TSF_IU script object at output of data on air does not require launching of the FDImageUpdater program.

One title project may contain several title objects with the TSF_IU script.

More information on use of title object with the TSF_IU script you can find in the «Scripted title object with open source code» user's guide.

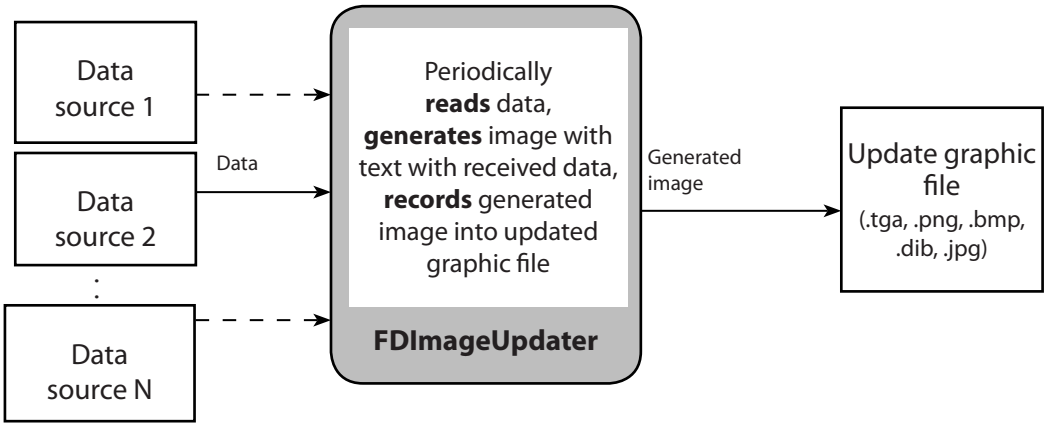
Used Terms and Symbols

1. Procedure of Image Updating

Procedure of image updating denotes a periodic implementation of the following steps (see picture below) by the FDImageUpdater program:

1. Reading of information from data source.
2. Generating of image that contains a text with received data.
3. Output of generated image into a graphic file.

When all described above items are implemented data sources can be changed at specified time periods.



2. Project

Project is a set of settings for working of program that are necessary for updating of image into a concrete graphic file.

The project includes:

- settings of a target graphic file (name and image size);
- tasks. Each task has settings of parameters for working with one data source. Quantity of tasks is not limited.

You can create and edit the project in the FDImageUpdater program. The project is saved into a text file with s4i extension.

Only one project can be opened and used in one launched FDImageUpdater program instance simultaneously.

3. Resulting Graphic File

Resulting graphic file is a file into which one the FDImageUpdater program periodically outputs generated image after its updating.

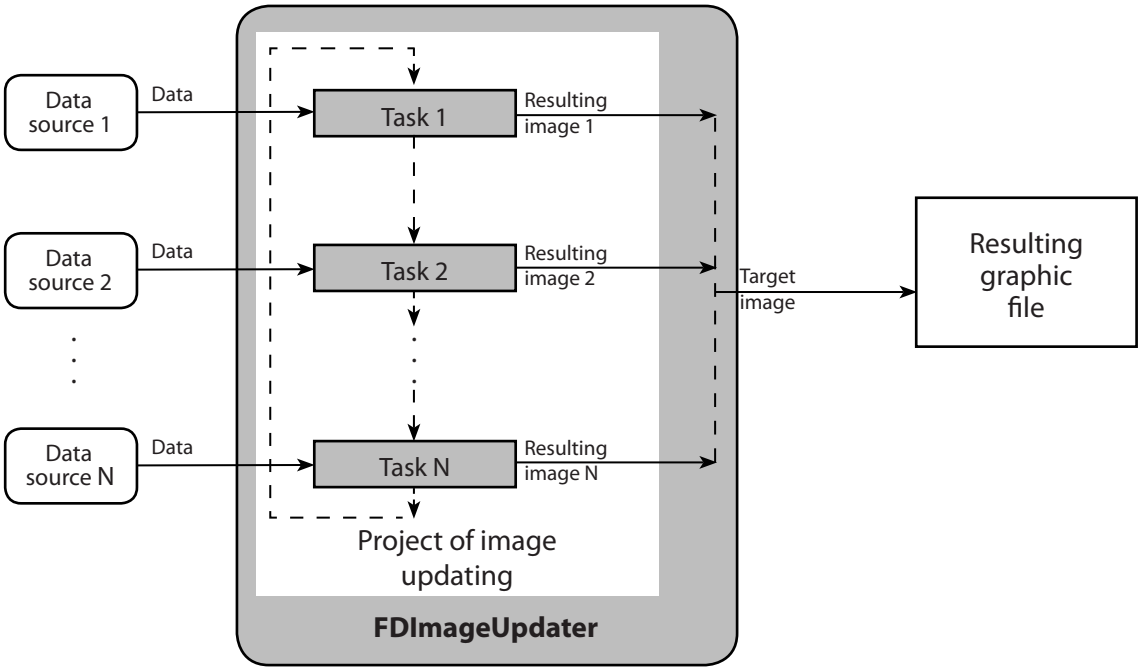
Files of the following formats can be used as a result graphic file: TGA; PNG; BMP; DIB; JPG.

4. Task

Task is a set of program settings used for generating of image with information received from a concrete source.

You must create several tasks to organaze a successive output of information into a graphic file from different sources.

When image is being updated the program successively, in a cycle executes project tasks.



5. Types of Tasks

There are different types of tasks to deal with different types of data sources.

The table below presents all existing types of tasks and corresponding data sources.

Type of task	Data source
Pause	–
Text	Text file (*.txt)
Time	Source of time
Web	Website page
SensorEx	Temperature sensor, weather station

6. Duration of Task Execution

Duration is one of the parameters that must be specified during configuration of project task (for all types of task).

Duration is a time period when program functions with specified data source in the task. During this period of time the program outputs into updated graphic file images generated according to the settings of the task that is being executed.

Example: For organazing of a successive output of the following information in titles:

- current time, during 10 sec;
- outside temperature (data is received from temperature sensor compatible with program), during 15 sec;
- «output nothing» during 30 sec

it is necessary to create a project in the FDImageUpdater program including 3 tasks:

- Task 1 for generating of image with time information. Type of task is Time; Duration is 10 sec;
- Task 2 for generating of image with information on outside temperature. Type of task is SensorEx; Duration is 15 sec;
- Task 3 to «output nothing». Type of task is Pause; Duration is 30 sec.

7. Region File (Template)

Region file is a graphic file with rgn extension.

The file is created by user in the Forward Titling program included in the Forward T Software set. Description on dealing with Forward Titling program you can find in «FDTitle program (Forward Titling). Creation of Titles» user's guide.

Region is an image that is in region file.

Region is a full-color and multilayer image with alpha channel.

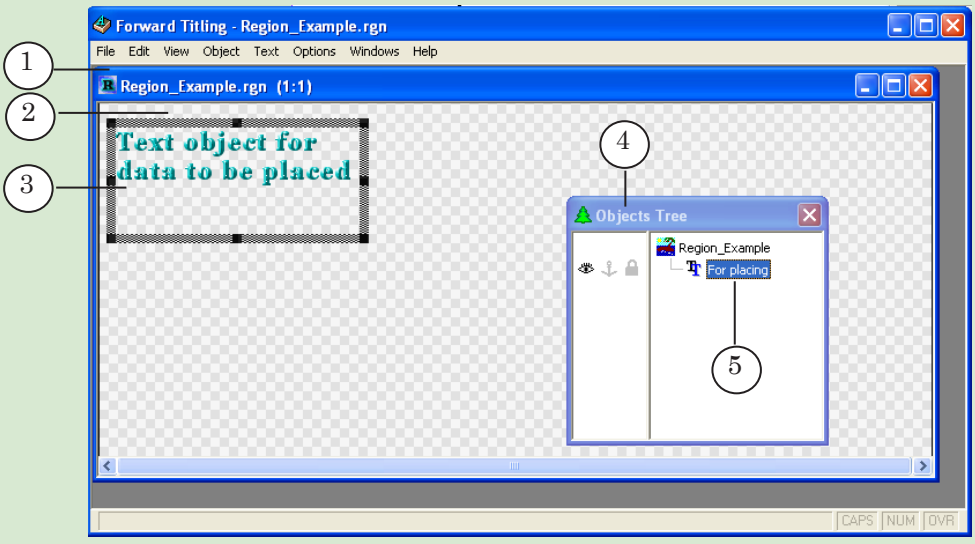
In FDImageUpdater program regions are used as templates for generating images.

8. Requirements to Regions Used in FDImageUpdater

Region that is used as a template in FDImageUpdater must necessarily include at least one text object (Text box). At updating of image text with output data is placed into this text object.

Example: Picture below presents Forward Titling program window. The Region_Example.rgn region (1) is located in working space of the window. The region is designed with a transparent filling (2) with a text object (3) over it.

The Object Tree window (4) displays name of text object specified by user – For placing (5).



Name of a text object is used in FDImageUpdater program to indicate an object where output data must be placed.

Text in region of text object during generating of an image is fully replaced by text with output data.

Example: Picture below presents an image with title overlay that displays information on weather.

For generating of this image in FDImageUpdater a region with a transparent filling is used. There is one text object located over transparent filling.

Picture below shows ForwardTitling program window with opened region used in this example.

Text «00» located in text object of region at generating of image in FDImageUpdater program is replaced by text with information on temperature.

9. Used Signs

Click denotes clicking left mouse button.

Right-click denotes clicking right mouse button.

Image in Resulting Graphic File

1. Content of Image

Image in resulting graphic file is an image that is generated by FDImageUpdater program and is output into updated graphic file at execution of a procedure of image updating.

Design of resulting image is specified by content of a region file that is used as a template of generated image.

Besides image that is in region file resulting image also has text with information received from data source.

Example:

Image that is in region file (template)

Result image

2. Text With Data

2.1. Structure

Generally text with data that is output in resulting image has the following structure:

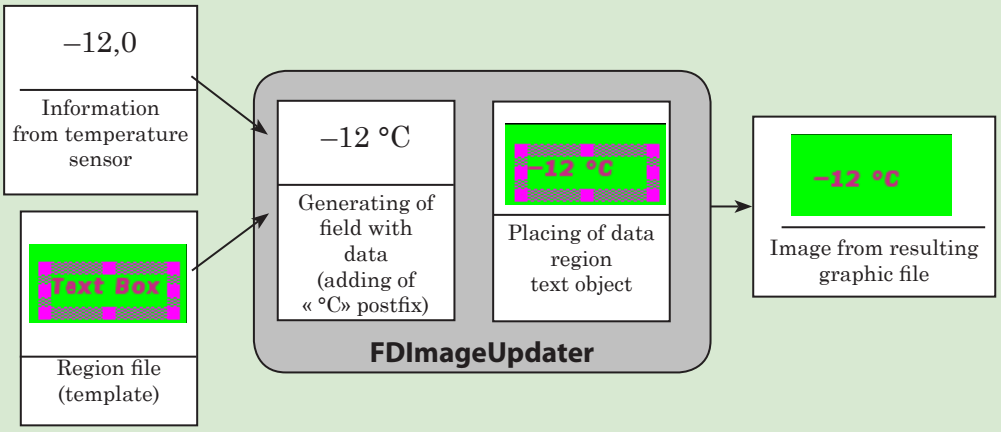
<Prefix><Text with information received from data source><Postfix>,

where

- Prefix is a text that is automatically added before text with data at generating of a resulting image;
- Postfix is a text that is automatically added after text with data at generating of a resulting image.

Prefix and postfix are specified by user at customizing of image updating procedure. Their presence is not obligatory.

Example: At output of information on temperature units of measure are also displayed (°C). Temperature sensor sends only temperature value. To output units of measure you must add « °C» postfix to output data.



2.2. Design

In resulting image text with output data is rendered according to style specified in text object of a region used for data placing (font, effects list, etc.).

2.3. Format of Data Displaying

The program provides with a possibility of customizing a format of displaying of data received from the following sources:

- temperature sensors and weather stations – it is possible to select format of displaying of numerical values.
  For example, +26,7 temperature can be output in resulting image in one of the following ways:
  - «26»;
  - «26,7»;
  - «+26»;
  - «+26,7».
- time source:
  - 12- or 24-hour format (for example, «05:10» or «17:10»;
  - at output of time in 12-hour format:
    - add «AM/PM» after time value (for example, «05:10 PM» or «05:10»);
    - output time value that is less than 10 with a leading zero or without it (for example, «5:10» or «05:10»);
  - select separator that is put between hours and minutes values («:», «-», «;», «/», «,»).

3. Size of Image

Width and height of resulting image are specified by user at customizing of a project.

Minimal size of output image is 10 × 10, maximal size is 2048 × 2048 pixels.

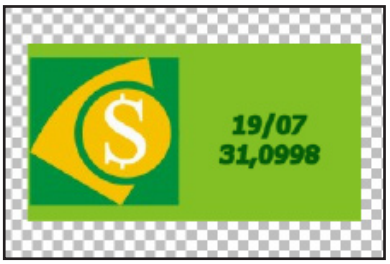
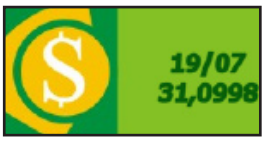
It is also possible to work with regions which sizes do not correspond to size of a resulting image specified in project settings:

- if region size is smaller then resulting image is an image created basing on a region with added transparent fields along the edges proportionally (see Example below);
- if region size is larger then result image is an image created basing on a region with proprotionally cut edges (see Example below).

Example: Let us consider resulting images of different sizes created via FDImageUpdater program basing on one the same region (template).

Picture below presents image of used region. Size of the region is 256 x 138 pixels.

Table below presents resulting images of different size created basing on created region.

№	Region size	Size of resulting image specified by user, in pixels	Resulting image
1	256 x 138	256 x 138 (size of target image corresponds to template size)	
2	256 x 138	288 x 200 (size of resulting image is larger than template size) Transparent background is marked by grey-and-white squares on the picture.	
3	256 x 138	192 x 100 (size of resulting image is smaller than template size)	

4. Updating of Resulting Image

During a procedure of updating image in a resulting graphic file is updated periodically.

Starting to execute the next task of project the FDImageUpdater program generates image according to the settings of this task and records the image into a resulting file.

During time when task is being executed the program reads periodically data received from specified source in task and outputs into file again generated image with the last read data. Periodicity when program appeals to sources of different types is different.

Image with the last data read from specified source is stored in resulting graphic file either till the next data reading or till start of execution of the next task of the project (depending on what happens firstly).

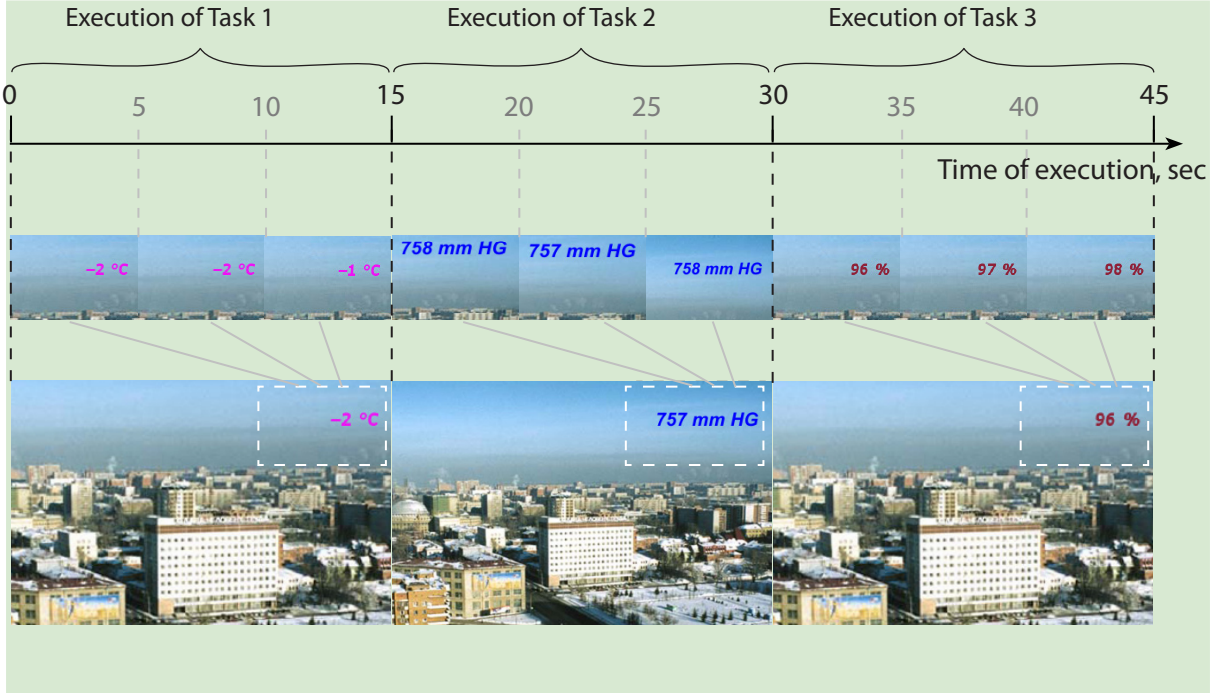
Example: Let us consider an example of a project with 3 tasks to demonstrate a process of image updating. During execution of tasks images with the following information are output into update project file: temperature (Task 1); air pressure (Task 2); humidity (Task 3).

Let us consider the first cycle of tasks executing.

Table below presents a brief description of tasks. For moments of time that correspond to moments when data is updated received information and image generated basing on this information are shown.

Breif description of task	Time		Information from data source	Image in updated file (grey-and-black squares denote transparent background of image)
	from start of task execution	from start of execution of update procedure		
Name: Task 1 Duration: 15 sec Update every: 5 sec Postfix: °C	0	0	–2	
	5 sec	5	–2	
	10 sec	10	–1	
Name: Task 2 Duration: 15 sec Update every: 5 sec Postfix: mm HG	0	15	757	
	5 sec	20	757	
	10 sec	25	758	
Name: Task 3 Duration: 15 sec Update every: 5 sec Postfix: %	0	30	96	
	5 sec	35	97	
	10 sec	40	98	

Picture presents screenshots made in different time.


Execution of Task 1
Execution of Task 2
Execution of Task 3
0
5
10
15
20
25
30
35
40
45
Time of execution, sec
–2 °C
–2 °C
–1 °C
758 mm HG
757 mm HG
758 mm HG
96 %
97 %
98 %
–2 °C
757 mm HG
96 %

Launching and Finishing of Program Work

1. Ways of Program Launch

The program can be launched at opening of the ~\ImageUpdater\FDImageUpdater.exe file, where ~ denotes a full path to the folder where ForwardT Software set is installed.

To launch the program you can use:

- program shortcut located on desktop;
- the Start menu command:
  Programs > ForwardT Software > Titles > Image Updater;
- command line.

When the program is launched its main window opens and the icon appears in taskbar notification area.

2. Format of Command Line

You can also launch the program from command line that has the following format:

"ProgramFile" ["ProjectFile"][/run[:time]][/h]

where:

- ProgramFile is a full path to the FDImageUpdater.exe file;
- ProjectFile is a full path to file of project. This parameter is not obligatory. If path to file is not specified then the last opened during the previous program session project is loaded into the program;
- /run is a key for automatic switching of the program into mode of execution after launching. This parameter is not obligatory. If the key is absent the program is launched in configuration mode;

- :time is time of execution of a project. This parameter is not obligatory. The parameter is used only if /run key is specified. If :time parameter is not specified then the program works in mode of task execution till stop command from user is not received. If :time parameter is specified the program works during time minutes, then execution of project is stopped and the program is closed;
- /h is a key for minimizing of program window into tray after launching. This parameter is not obligatory.

✔ **Important:** If names of files and folders have spaces then path to file in command line must be enclosed in double quotes – (« ...»).

Example: "C:\Program Files\ForwardT Software\ImageUpdater\ FDImageUpdater.exe" "D:\Users\222.s4i"/run:25

Result of command executing: launch of the FDImageUpdater program, loading of the D:\Users\222.s4i project into the program, execution of project during 25 minutes, exiting the program.

3. Finishing of Program Work

You can finish working with the program via:

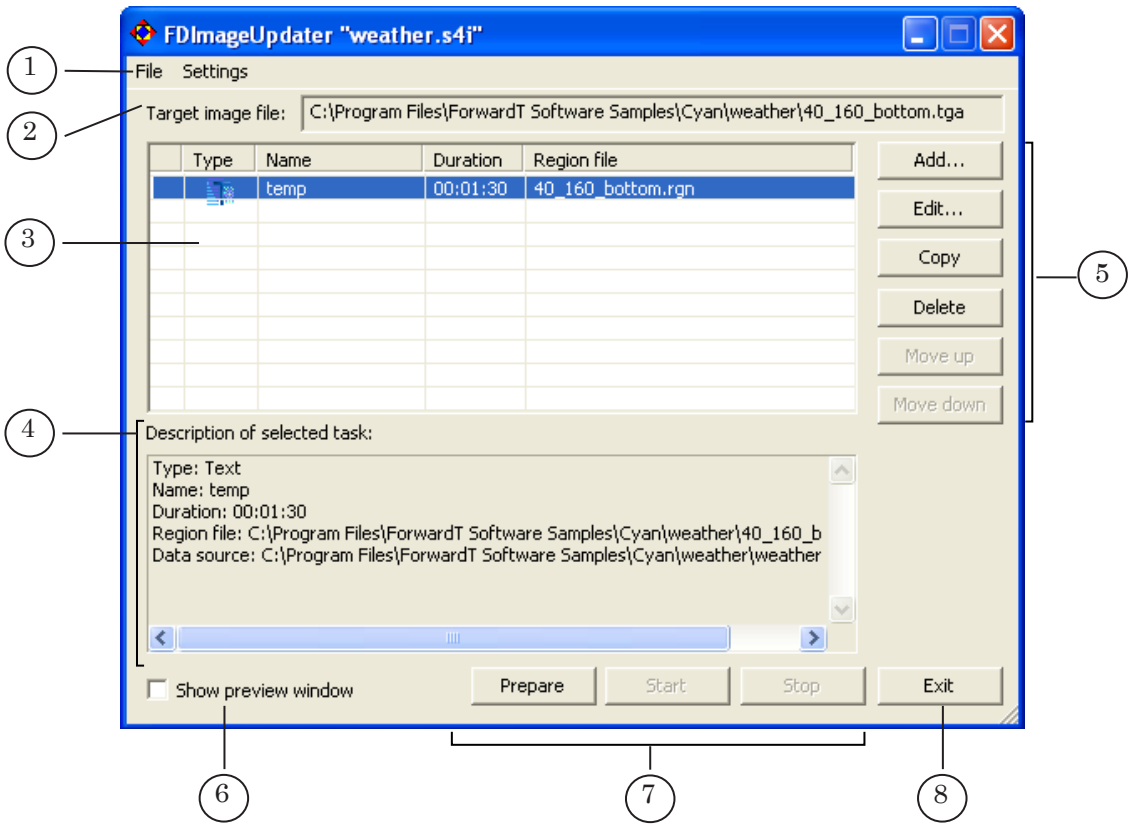
- the Exit button located in the main program window;
- the Exit button of the context menu of program icon.

✔ **Important:** It is impossible to close the program via the button located in title bar of the main program window.

Program Interface

1. Main Window

At launching of the program its main window appears. Title bar of the main window displays name of the program and name of file of current project.



The main program window has the following elements:

- main menu (1) with commands to control projects files, opening of settings windows, etc.;
- line with displayed full name of resulting graphic file of current project (2);
- table for displaying of a list with tasks for current project (3);
- information area for displaying of data on settings of selected task (4);
- buttons for editing of a tasks list (5);
- check box to control preview window (6);
- buttons to control execution of procedure of image updating (7);
- the Exit button (8) to exit the program.

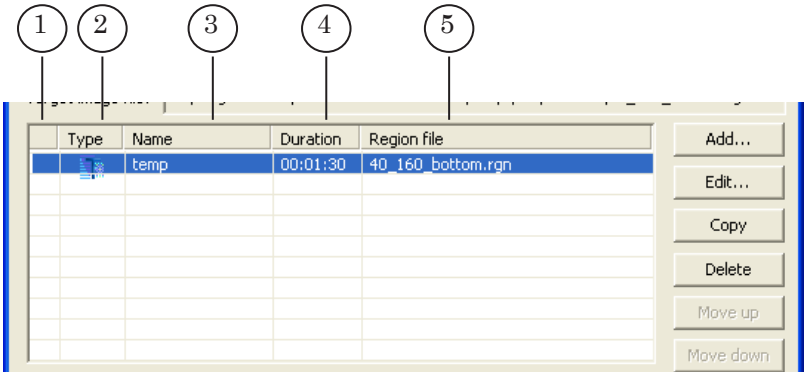
2. Commands of the Main Menu

The main program window menu consists of 2 submenus:

- File submenu with commands to control projects files;
- Settings submenu with commands to customize parameters.

Name	Purpose
File submenu	
New project ...	create a new project
Open project ...	open earlier created project from file
Save project	save project into file
Save project as...	save project into file with another name
Settings submenu	
Project settings...	open the Project settings window
Program settings...	open the Program settings window

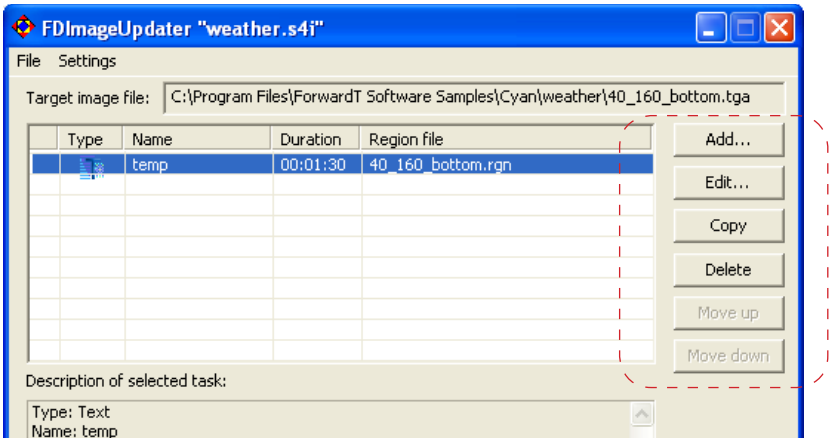
3. Table for Displaying of Tasks List



The following information on project tasks is displayed in table column headers:

- (1) is a mark that displays current state of task (is displayed only in a ready mode and in mode of execution);
- Type (2) is a pictogram that indicates type of a task;
- Name (3) is a name of file;
- Duration (4) is a duration of task execution;
- Region file (5) is a name of region file used in task.

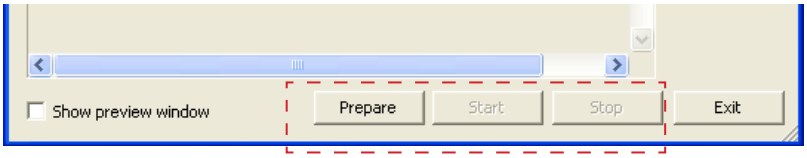
4. Buttons for Working with Tasks List



The following buttons are used for working with tasks list:

- Add... button is used to create a new task. The task is added to the end of a list;
- Edit... button is used to edit parameters of selected task;
- Copy button is used to copy task. The copy of a task is added into a list after task that is being copied;
- Delete button is used to delete selected task;
- Move up button is used to move selected task one row up;
- Move down dutton is used to move selected task one row down.

5. Buttons to Control Project Execution



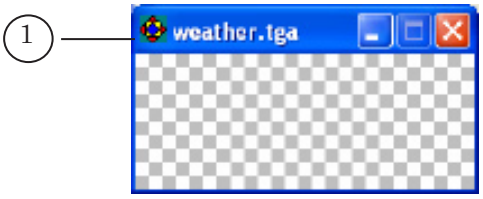
Control over a procedure of image updating is implemented via buttons located in the main program window:

- Prepare button is used to start automatic preparation of the program to execute tasks of project – to switch into mode of preparation;
- Start button is used to start a procedure of image updating;
- Stop button is used to stop preparation or a procedure of image updating.

Preview Window

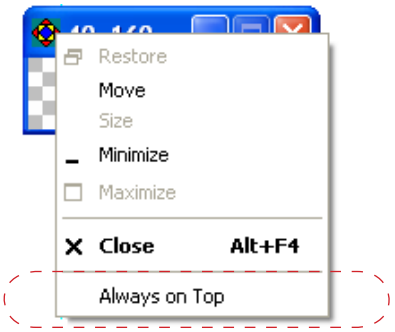
Preview window is an additional window of the FDImageUpdater program used for displaying of image that is output into a graphic file. The image is displayed in the window only when a procedure of image updating is being implemented.

Preview window is opened at putting of the Show preview window check mark in the main program window. Name of a graphic resulting file is displayed in title bar (1) of the main program window.



Size of a preview window adjusts automatically to size of a resulting image.

Select Always on Top in drop-down window menu for the window to be always placed over other windows.

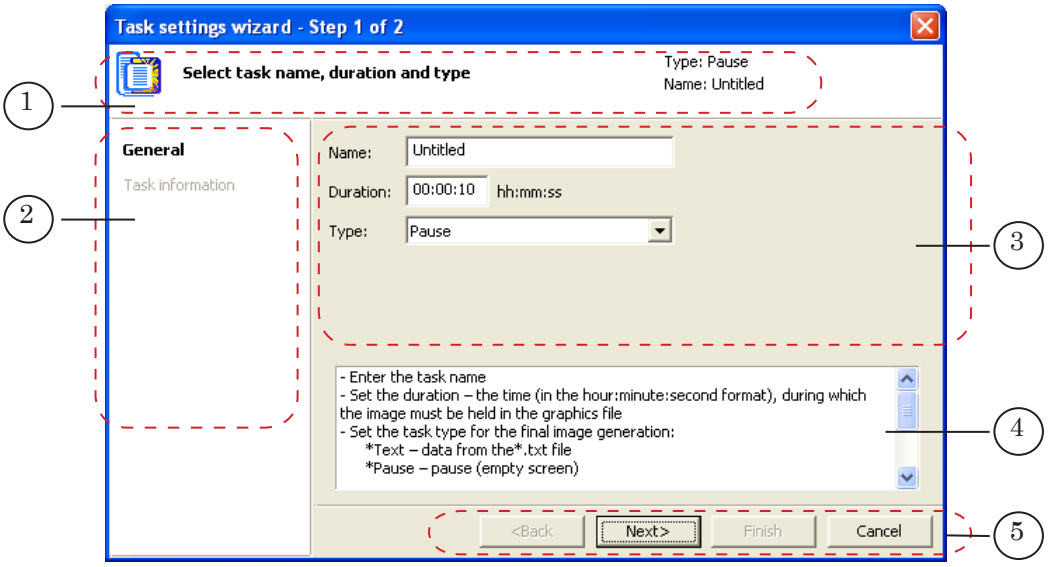


The menu is opened by right-clicking title bar of a preview window.

Task Settings Wizard

Creation and editing of project tasks are implemented via Task settings wizard.

Picture below presents Task settings wizard window, step 1 of 2.



The Task settings wizard window has the following elements:

- information fields:
  - (1) is a field with information on actions implemented on the current step of Wizard, type and name of current task;
  - (2) is a list of steps to configure task parameters;
  - (4) is a field with information on customizing of parameters on the current step;
- elements to configure task parameters on the current step of Wizard (3);
- buttons to control work of Task settings wizard (5):
  - Back is for switching to the previous step of Wizard;
  - Next is for switching to the next step of Wizard;
  - Finish is for ith saved made configuration;
  - Cancel is for exiting Wizard without saving of made configuration.

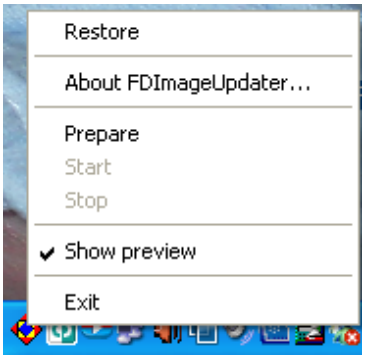
Set of configured parameters and quantity of wizard steps are different for different types of tasks.

Modes of User Interface

The program has 2 modes of interaction with user:

- window mode (when the main program window is maximized);
- minimized mode (when the main program window is minimized and there is a program icon in taskbar notification area).

In a minimized mode control over program work is implemented via commands of a context menu that is opened by right-clicking the icon in taskbar.



Click the or icon to minimize the main program window.

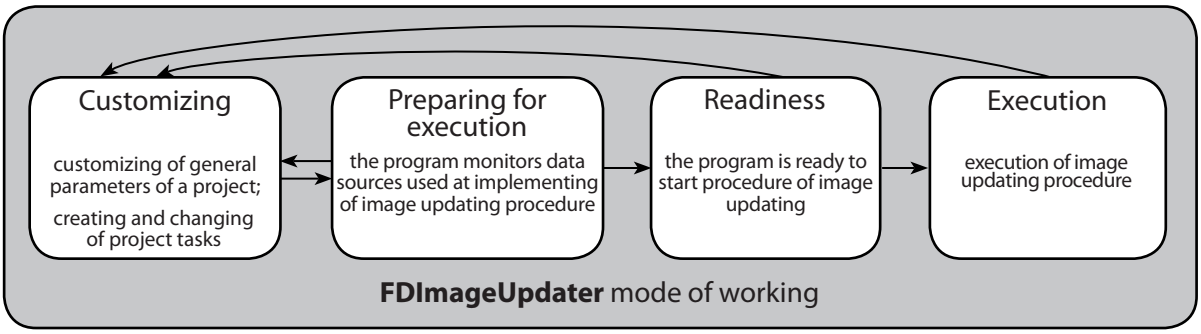
Click the icon to restore the main program window. The icon is located in taskbar notification area.

Modes of Program

The program has 4 modes of working:

- customizing;
- preparing for execution;
- readiness;
- execution.

The scheme below presents a brief description of the FDImageUpdater program modes of working with their all possible switchings.



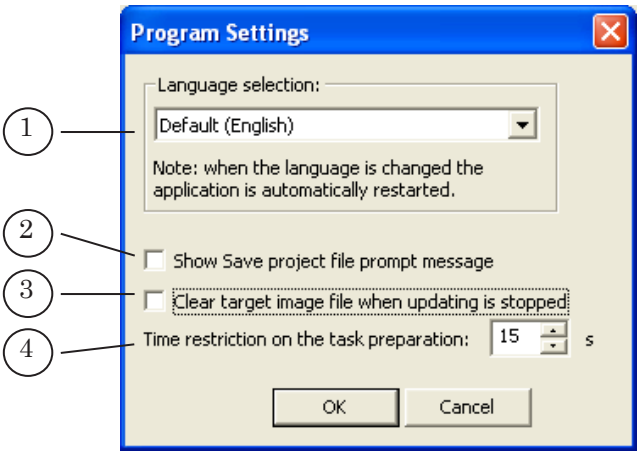
Switching between modes can be implemented both on user command and automatically. Detailed description of modes switchings you can find in the Launch of Image Updating Procedure Section.

General Workflow of Working With the Program

1. Launch the FDImageUpdater program.
2. Customize parameters of program for further dealing with it.
3. Create new or load created earlier project of image updating in the progam.
4. Launch procedure of image updating (project).

Customizing of Program Settings

Program settings are customized in the Program Settings window that is opened via the Settings > Program Settings… menu command.



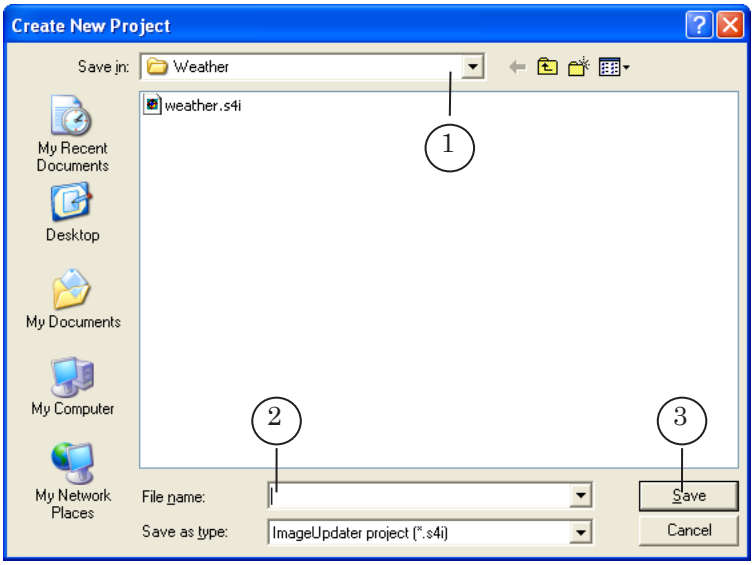
The Program Settings window has the following elements:

- Language selection (1) where you can select language of program interface;
- Show Save project file prompt message check box (2) – if the mark is put then at opening of another project or at exiting the program the prompt on if is it necessary to save current project or not appears; if the mark is not put then no prompt appears and the last made changes of the project are not saved;
- Clear target image file when updating is stopped (3) – if the mark is put then at stopping of updating procedure the program clears target file by recording an empty and transparent image into it; if the mark is not put then the image is rest in updated file (in this case rest image is the latest recorded image at project execution);
- Time restriction on the task preparation element (4) is a maximal time necessary for preparation of one task to be executed (during being of the program in the preparing mode). If during specified time the task is not prepared then at updating of image this task is not implemented.

The OK button is used to save settings and return into the main program window. At clicking of Cancel the window is closed without saving made comfiguration.

Creation of a New Project

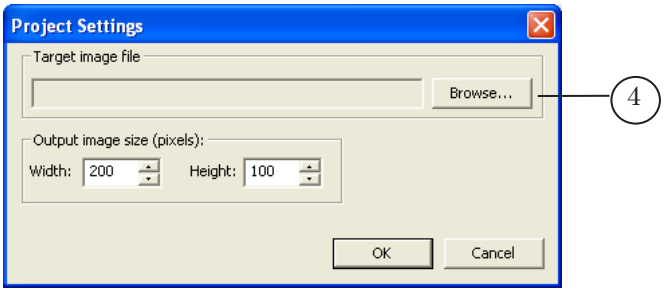
1. Select the New project... command in the File menu of the main program window.
2. The Create New Project window appears.



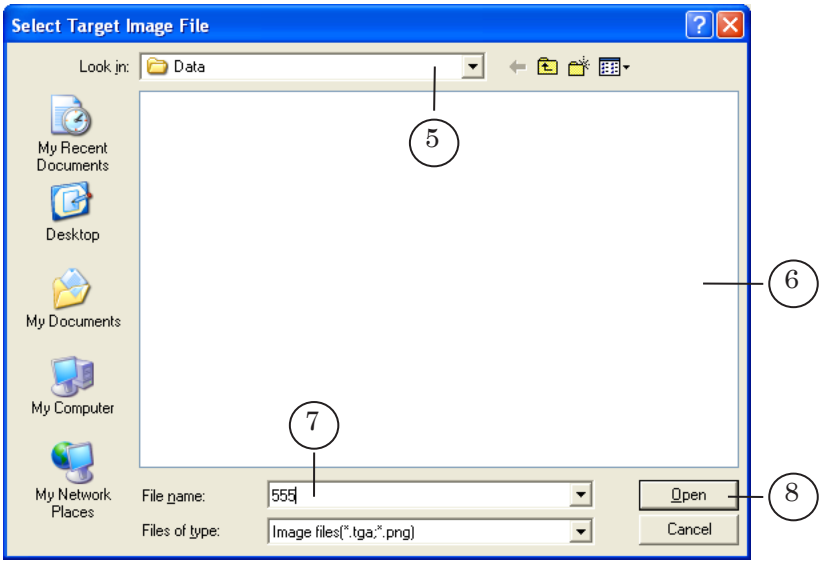
Complete the following in the Create New Project window:

- specify a folder where project file will be stored in the Save in drop-down list (1);
- specify name of file project in the File name field (2);
- click the Save button (3). The window is closed.

3. The Program Settings window appears automatically.
4. Click the Browse... button (4) in the Target image file group.



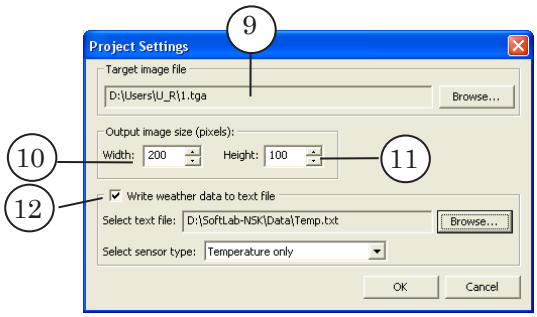
The Select Target Image File window appears.



Complete the following in the appeared window:

- select folder in the Look in drop-down list (5) where target image file of customized project is stored;
- specify name of a target graphic file:
  - select file in the list of files (6) if updated project file has already been created;
  - if the file is not created yet then specify its name and extension in the File name text field (7). The file will be created when the image is updated. If name extension is not specified then the file will have the tga extension automatically;
- click Open (8). The window closes.

A full path to the specified file is displayed in the Project Settings window in the Target image file field (9).

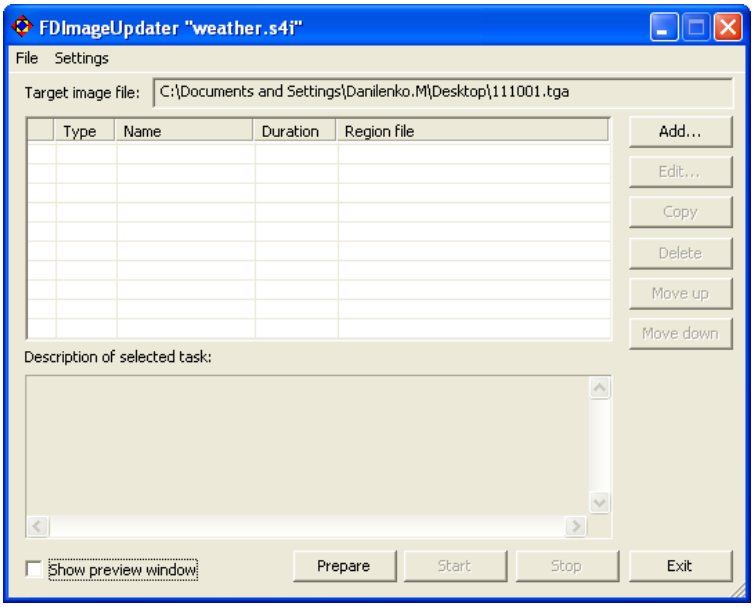


5. Specify width (10) and height (11) values in the Output image size (pixels) group of elements.

6. If it is needed put the Write weather data to text file mark (12) and customize corresponding parameters. Information on customizing you can find in the «Sensors and Weather Stations» section, «Recording of Weather Data Into a Text File» section.

7. Click OK.

8. Now the main program window has the following appearance:



9. Configure task for project.

   A workflow of creating of tasks you can find in the «Creation of tasks» section.

10. Save created project by selecting the Save project command in the File menu.

Opening of Recently Created Project

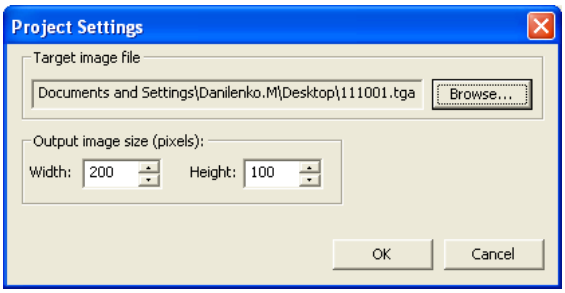
Complete the following to open a recently created and saved project:

1. Select Open project... command in the File menu.
2. Specify a folder and FDImageUpdater project file that is necessary to open in the appeared window.

Editing of Project Settings

1. Editing of Target Graphic File Settings

Editing of settings of a target image file and its size is implemented in the Project Settings window.

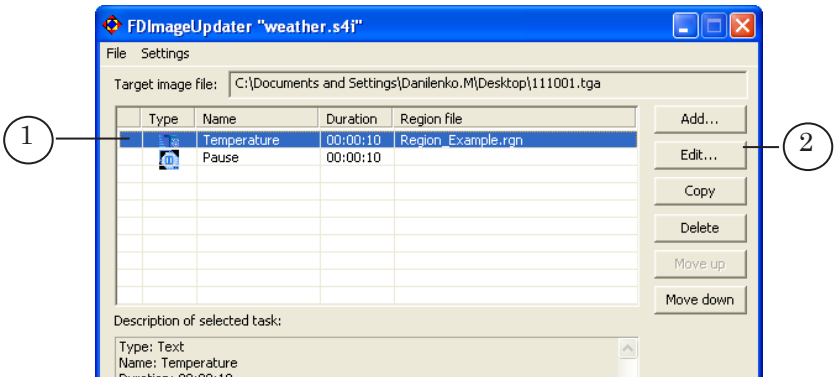


The window is opened by clicking Setitngs > Project settings... menu command.

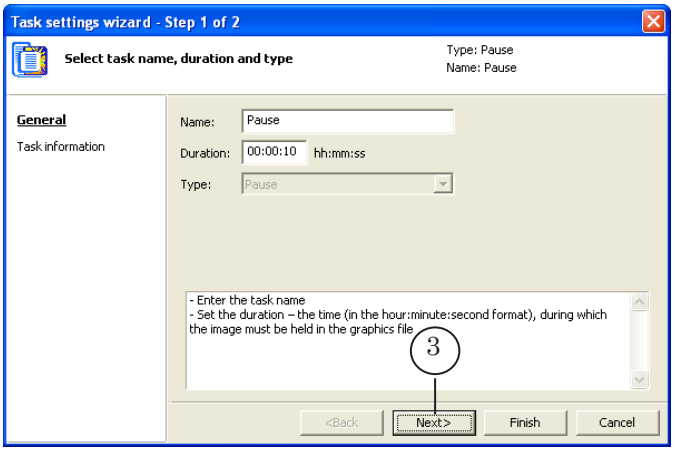
2. Editing of Task Settings

Complete the following to edit project task settings:

1. Click line with task that you want to edit (1) in the table with a list of tasks in the main program window.

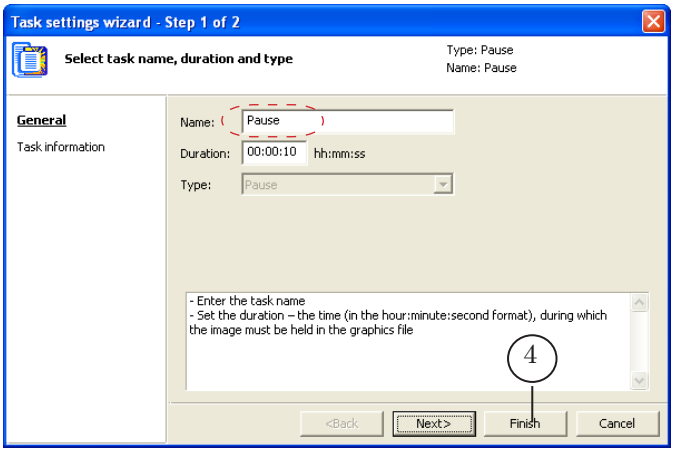


2. Click Edit... (2), the Task settings wizard window appears.



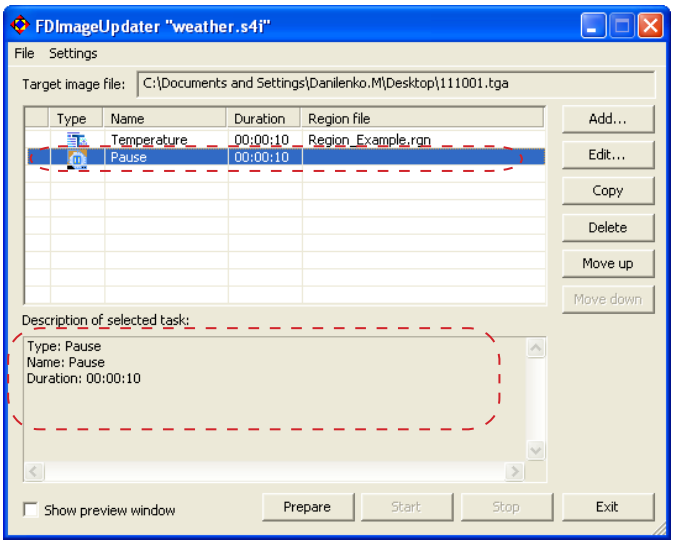
3. Open the Task settings wizard window where you can edit task parameters using the Next button (3).

4. Edit task parameters and then click Finish (4).



The Task settings wizard window closes.

6. New task settings are displayed in the main program window.

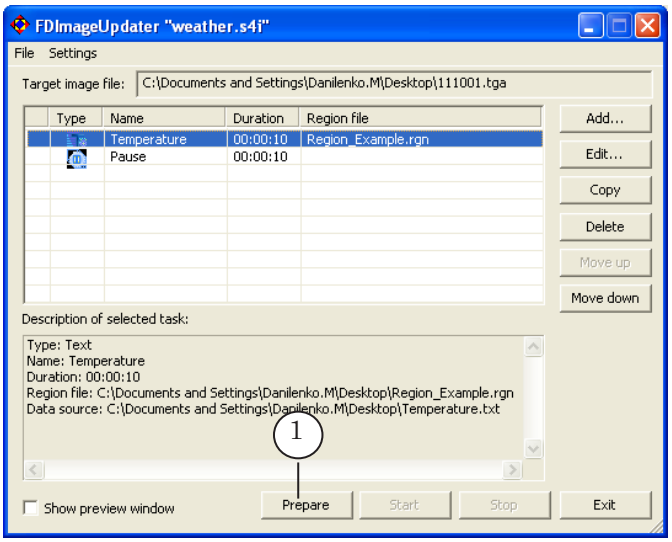


Control Over Image Updating

A procedure of image updating is started only when image updating project is loaded into the program.

Complete the following to start procedure of image updating (execution of a project):

1. Click Prepare (1) in the main program window.



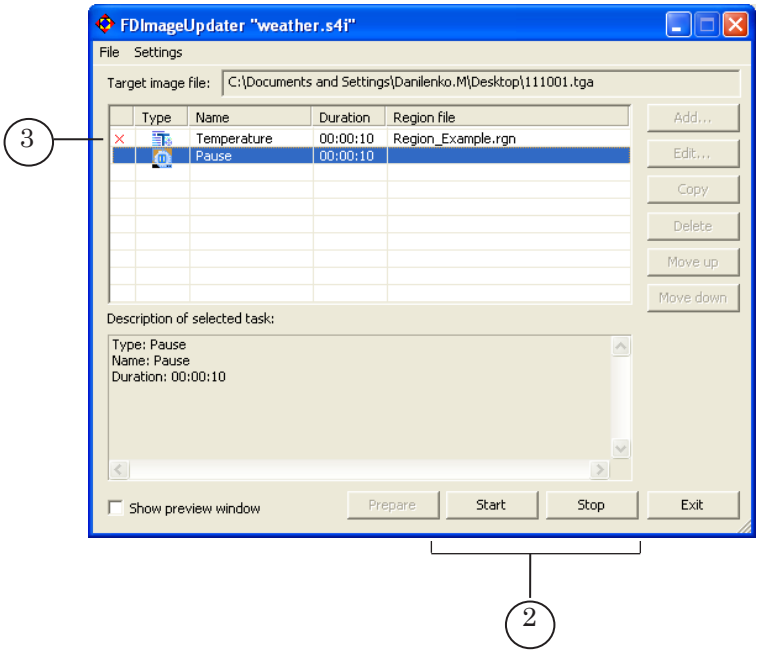
2. The program switches into a mode of preparation for execution of tasks of a project.

   The program implements a test scanning of data sources specified in task, checks presence of region files, etc. in this mode.

   Task is not prepared to be executed if during time specified in the Program Settings window as Time restriction on the task preparation the program can not link with data source.

3. When preparation is complete the program switches to one of the following modes automatically:
   - readiness, if at least one of the tasks is prepared correctly;
   - customizing, if tasks can not be prepared.

4. If one or more tasks are prepared correctly the program is switched to the readiness mode.



The Start and Stop buttons (2) are available in this mode.

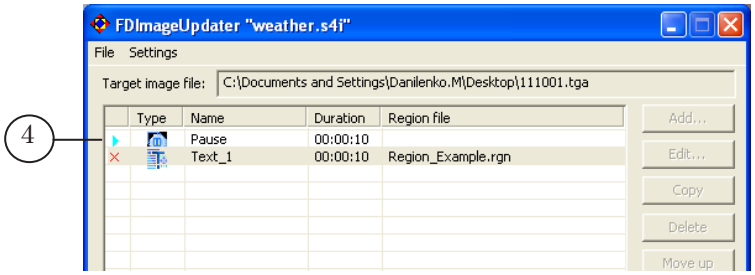
The ✕ mark (3) in the table with tasks list marks tasks of the project that are not prepared for execution.

The program can be switched to one of the following modes from mode of readiness:

- mode of execution – by clicking Start;
- mode of configuring – by clicking Stop.

5. Click Start to launch a procedure of image updating.

   The program switches to a mode of execution. In this mode the program updates image automatically. Tasks of a project that are prepared will be executed in this case.
   The ▸ mark (4) in the table with tasks list marks the task that is being executed at the moment.



6. Click Stop to stop executing of a procedure of image updating.

Creation of Tasks of Different Types

1. Pause

1.1. Purpose

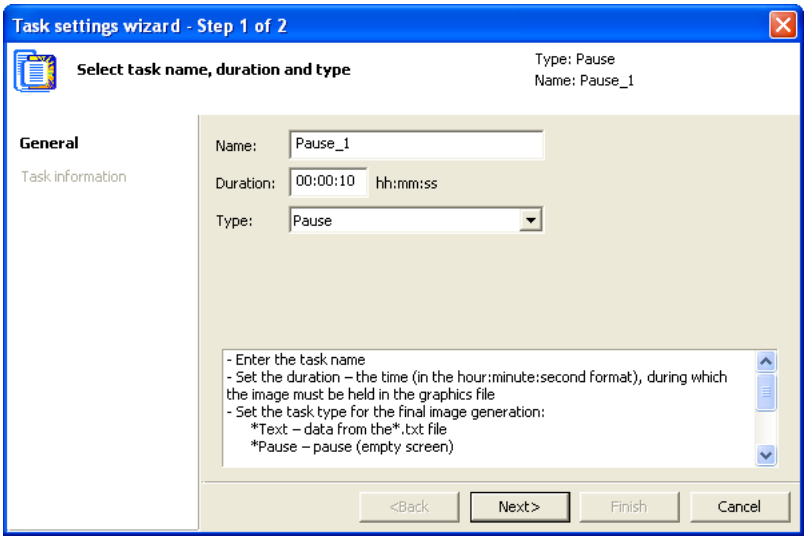
Use of such tasks allows sustaining a pause among images that replace each other.

1.2. Features

At execution of the Pause task updating file stores an image that is a rectangle with a transparent filling.

1.3. Creation of Task

1. Click Add... in the main program window, the Task settings wizard - Step 1 of 2 window appears.

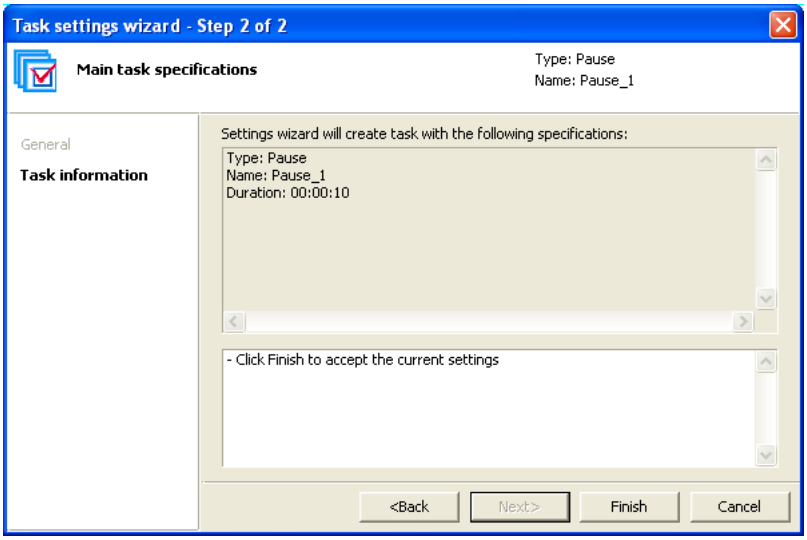


Specify task type – Pause.

Enter task name in the Name field.

Specify duration of task execution in the Duration field.

2. Step 2.

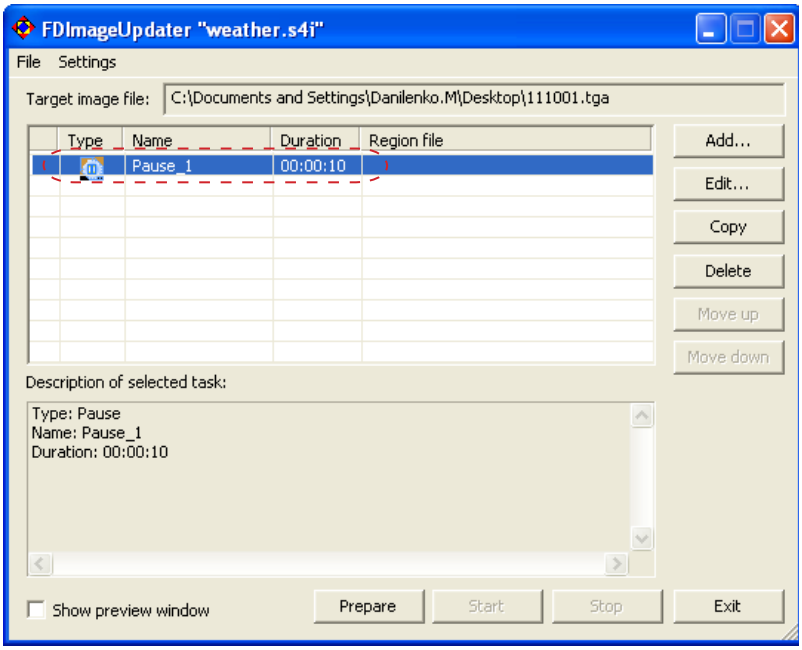


Information on made configuration is displayed at this step.

Click <Back in the Wizard window if it is necessary to change some settings specified at the previous step.

Click Finish if all settings are correct.

3. After clicking Finish work of Wizard is finished and the task will be added to the list with tasks displayed in the main program window.



2. Text

2.1. Purpose

Task of the Text type is used to output information from a text file.

2.2. Data Source

In tasks of the Text type data sources are specially prepared text files with the txt extension.

Each paragraph in the file must be in the following format:

object_name: line with symbols

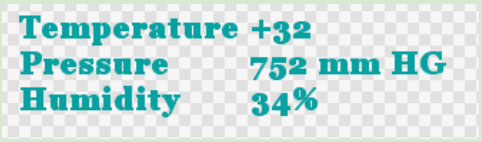
where:

- object_name: is a name of a text object in region file where the data is put. After name of the object you must necessarily put a colon;
- line with symbols is an information to be output.

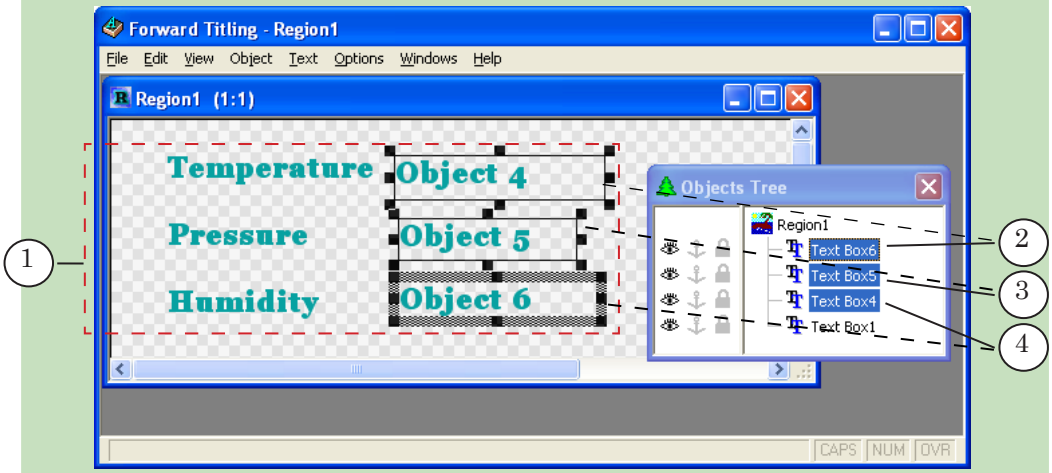
2.3. Features

1. You can vary information in a text file either manually or by means of a specific set of programs during execution of a procedure of image updating.
2. You can organize placing of data into several region text objects simultaneously (see an example).

Example: Picture below displays an image generated by FDImageUpdater as a result of execution of the Text type task ("grey-and-white" filling is used to denote a transparency).

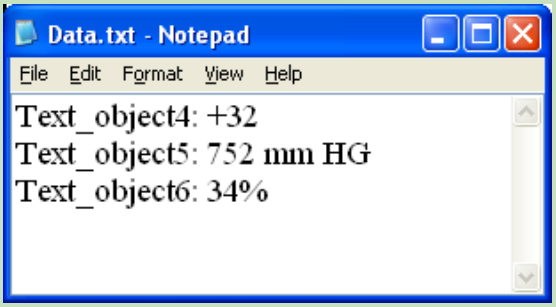


This image was generated via region given below.



The region (1) has 3 text objects for placing of data. Names of objects are:
Text_box6 (2), Text_box5 (3), Text_box4 (4).

Picture below shows a prepared text file under the Data.txt name. The file is used as a source of data.



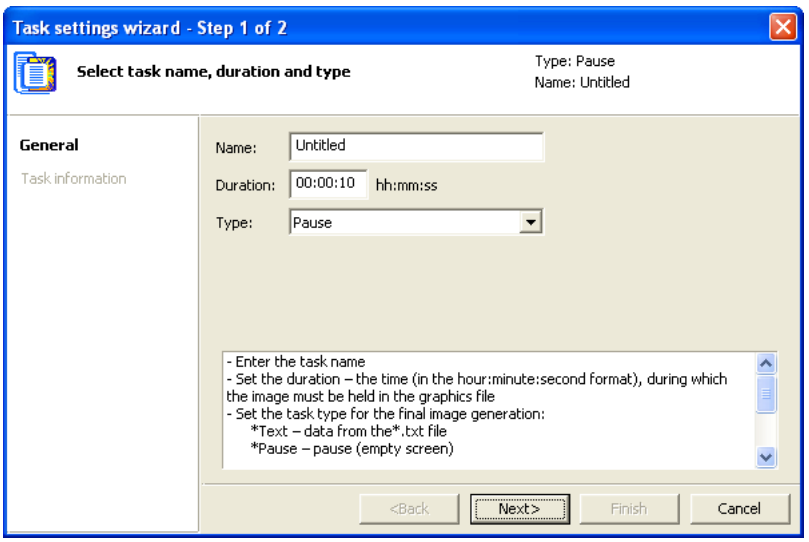
2.4. Creation of Task

You must implement the following before configuring of a task of the Text type:

- create region file that is image template;
- create TXT file that is data source.

Creation of a task:

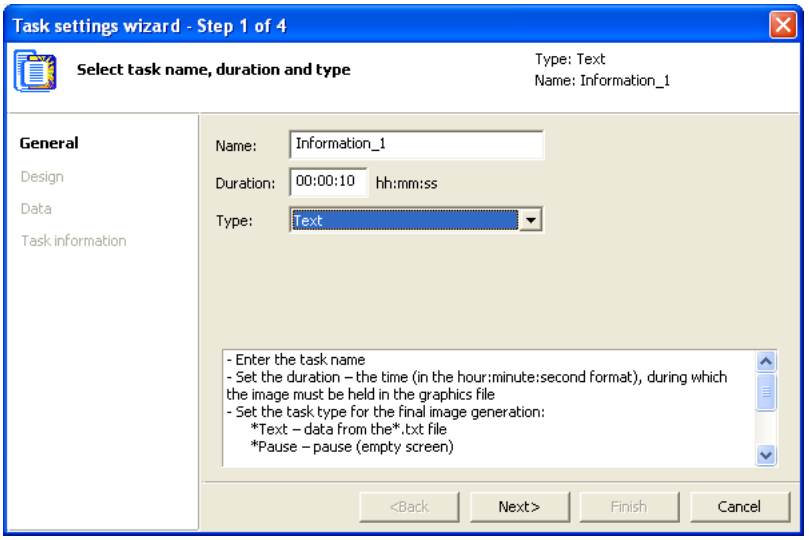
1. Click Add... in the main program window, the Task settings wizard – Step 1 of 2 window appears.



The Name text field displays name of a task specified by default – Untitled. To specify another name clear the field and enter a new one.

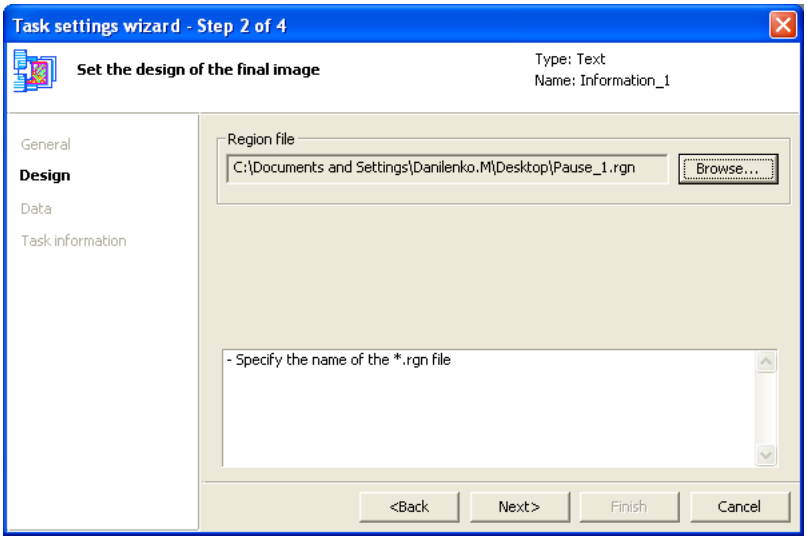
Specify duration of task execution in the Duration field. During specified time period image will be updated according to settings of the given task.

Select type of task (Text) in the Type drop-down list. Steps for configuring will be displayed in the list of steps for this type of the task.



Click Next> to continue.

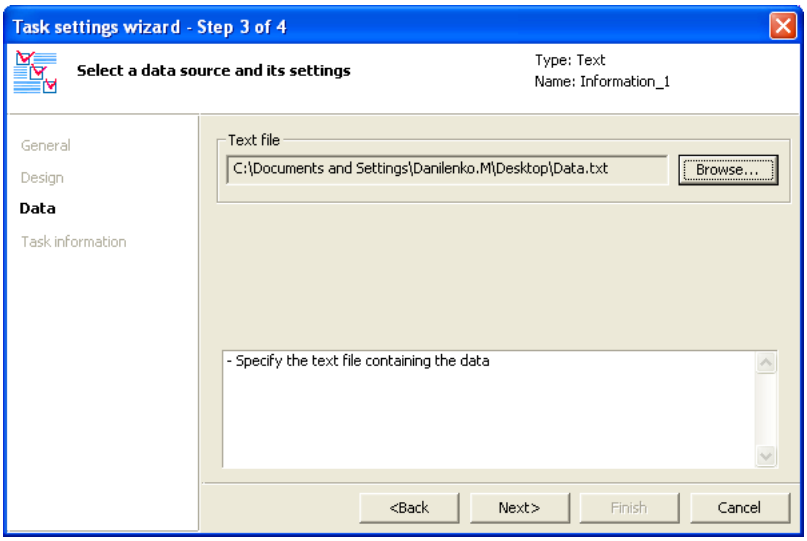
2. Step 2



Click Browse... to open a standard dialog window and select region file used in the given task as an image template.

Click Next> to continue.

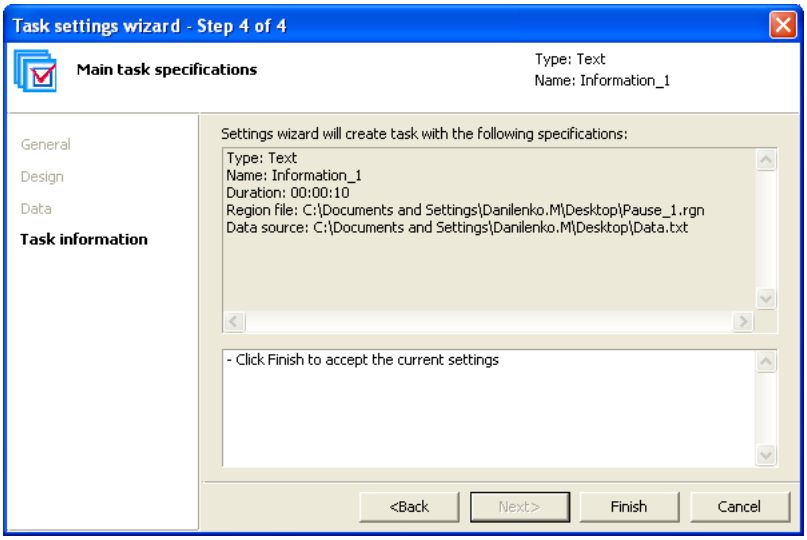
3. Step 3



Click Browse... to open a standard dialog window and select text file used in the given task as a source of data.

Click Next> to continue.

4. Step 4

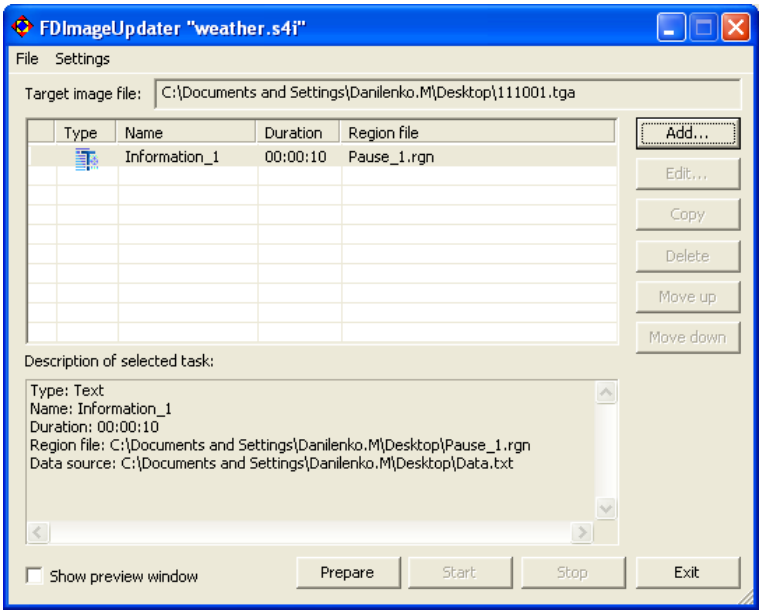


Information on made configuration is displayed at this final step.

Click <Back in the Wizard window if it is necessary to change some settings specified at the previous step.

Click Finish if all settings are correct.

5. After clicking Finish work of Wizard is finished and the task will be added to the list with tasks displayed in the main program window.



3. Time

3.1. Purpose

Tasks of the Time type are used to organize output of current time.

3.2. Source of Data

One of the following sources of time can be used in tasks of the Time type:

- PC system time;
- SLTimeServer – system server for keeping and synchronizing of time. SLTimeServer is included in the Forward T Software products set. More detail on working with SLTimeServer you can find in the «SLTimeServer: Time Server» document.

3.3. Features

You can organize output of current time via tasks of the Time type in the hh:mm format.

There is a possibility of customizing format of time displaying:

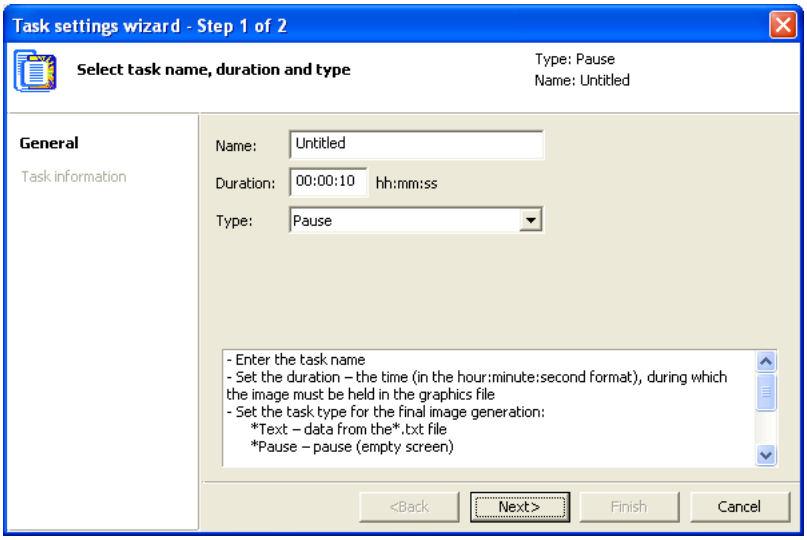
- specify time format (12 or 24 hour format);
- select a separator that is put between hours and minutes («:», «.», «-», «.», «;»);
- enable/disable displaying of:
  - a leading zero in hours;
  - AM/PM indicator at output of time in 12-hour format.

3.4. Creation of Task

Create a region file before configuring of a task of the Time type.

Creation of task:

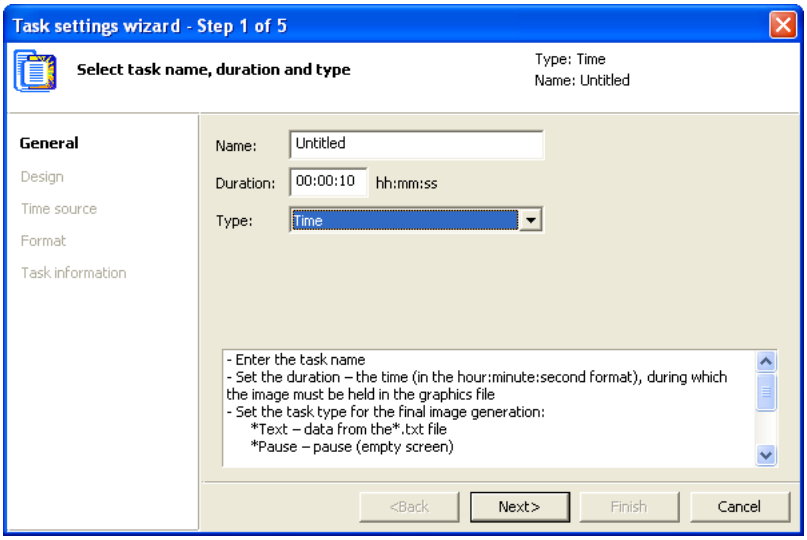
1. Click Add... in the main program window, the Task settings wizard - Step 1 of 2 window appears.



Specify task type – Time.

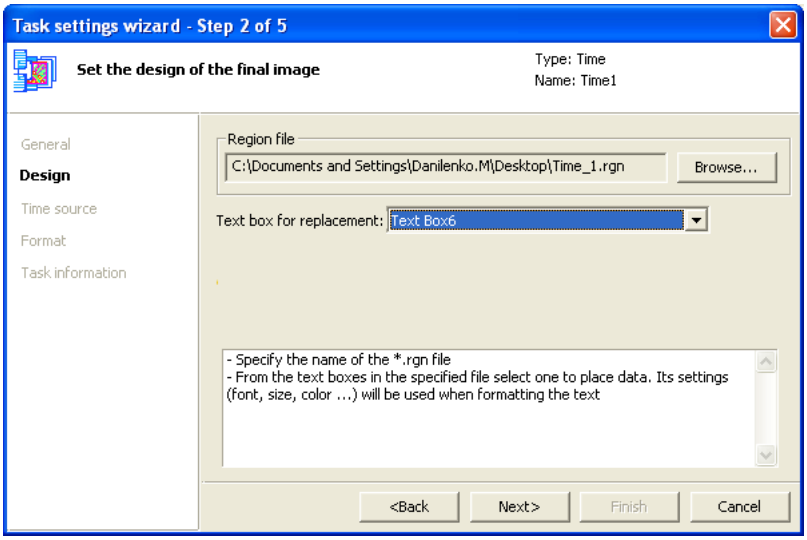
Enter task name in the Name field.

Specify duration of task execution in the Duration field.



Click Next> to continue.

2. Step 2

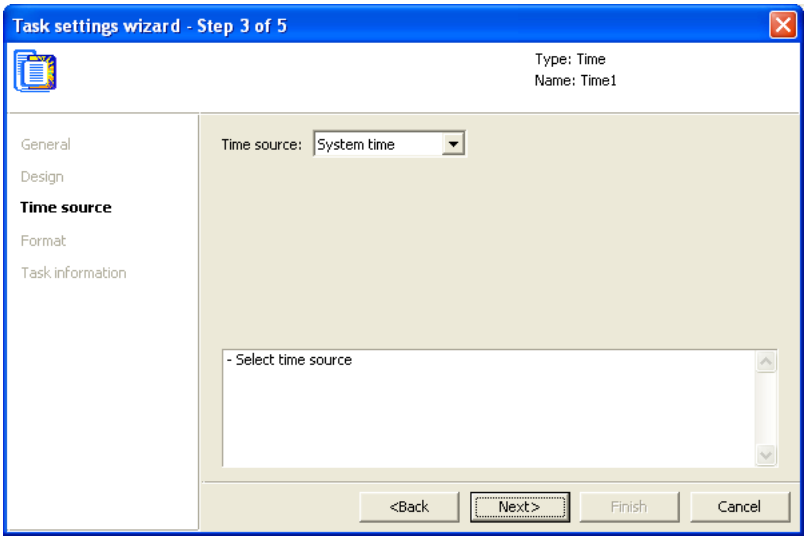


Click Browse... to open a standard dialog window and select region file used in the given task as image template.

Select name of region object where data will be placed in the Text box for replacement drop-down list.

Click Next> to continue.

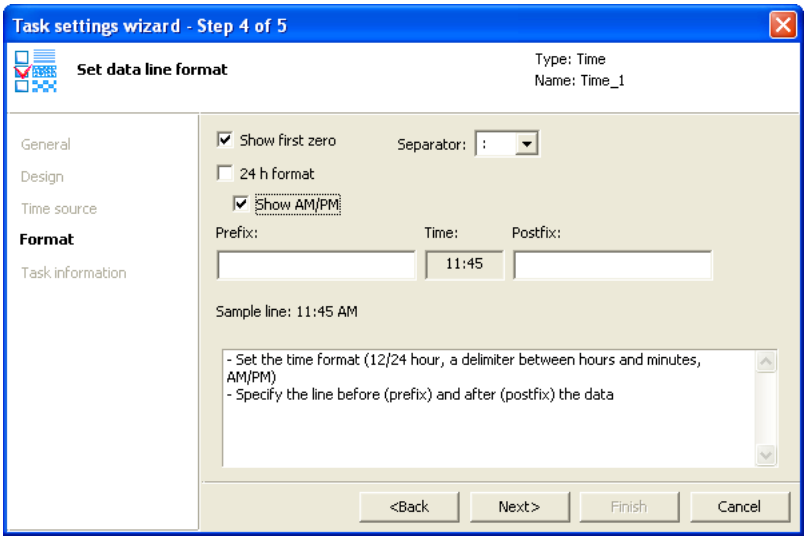
3. Step 3



Specify source of time in the Time source drop-down list.

Click Next> to continue.

4. Step 4



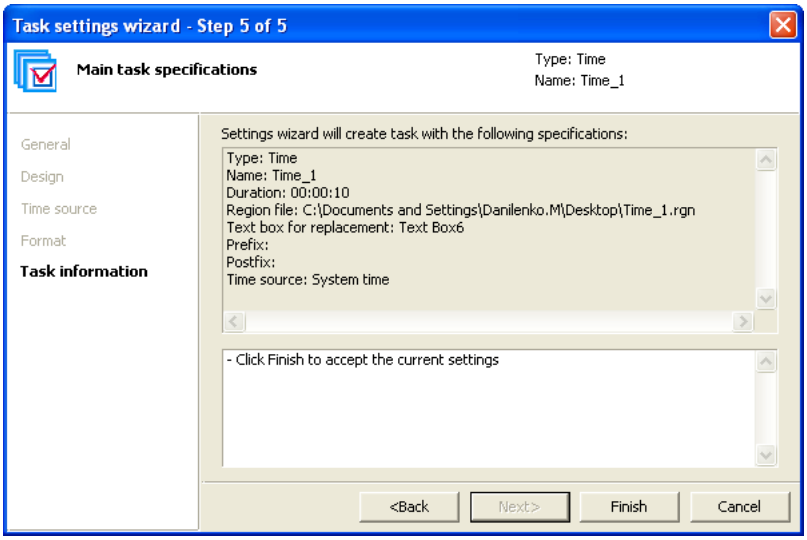
Customize format of time displaying by:

- putting the Show first zero mark to display zero before time values that have one number (for example, 05);
- putting the 24 h format mark to output time in 24-hour format. If the mark is absent then information on time is output in 12-hour format;
  - putting the Show AM/PM mark if time is output in 12-hour format to display AM/PM indicator (at midnight/past midnight);
- selecting in the Separator drop-down list a separator that is put between values of hours and minutes.

Enter text in the Prefix field that should be before output data in output image.

Enter text in the Postfix field that should be after output data in output image.

5. Step 5.

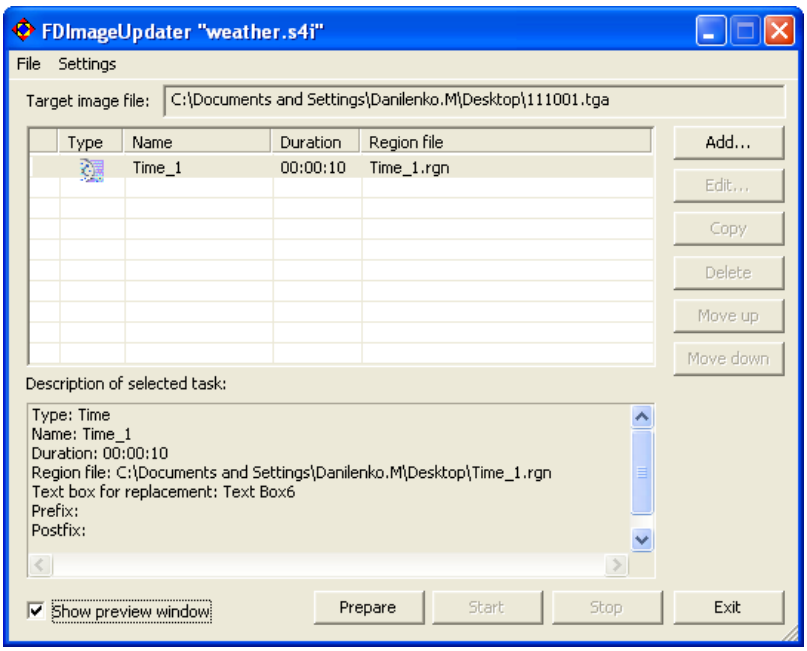


Information on made configuration is displayed at this step.

Click <Back in the Wizard window if it is necessary to change some settings specified at the previous step.

Click Finish if all settings are correct.

6. After clicking Finish work of Wizard is finished and the task will be added to the list with tasks displayed in the main program window.



4. Web

4.1. Purpose

Tasks of the Web type are used to organize output of information taken from a web page.

4.2. Source of Data

Source of data for tasks of the Web type is a website page.

Configuration necessary for receiving of data from a website is implemented in the SLWebTracker program. The settings are saved in file with the *.webtrackerproj extension that is a SLWebTracker project (information on dealing with the program you can find in the «FDWebTracker. User's Guide» document).

At configuring of Web tasks you should specify name of file of necessary SLWebTracker project in the FDImageUpdater program.

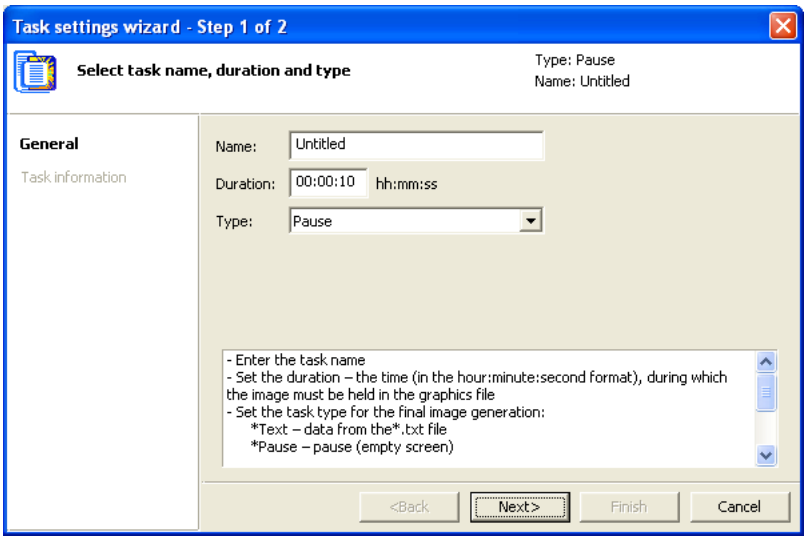
4.3. Creation of Task

You must create the following before configuring of a task of the Web type:

- region file that is a template of an image;
- the SLWebTracker project. Information on dealing with the program you can find in the «FDWebTracker. User's Guide» document.

Creation of task:

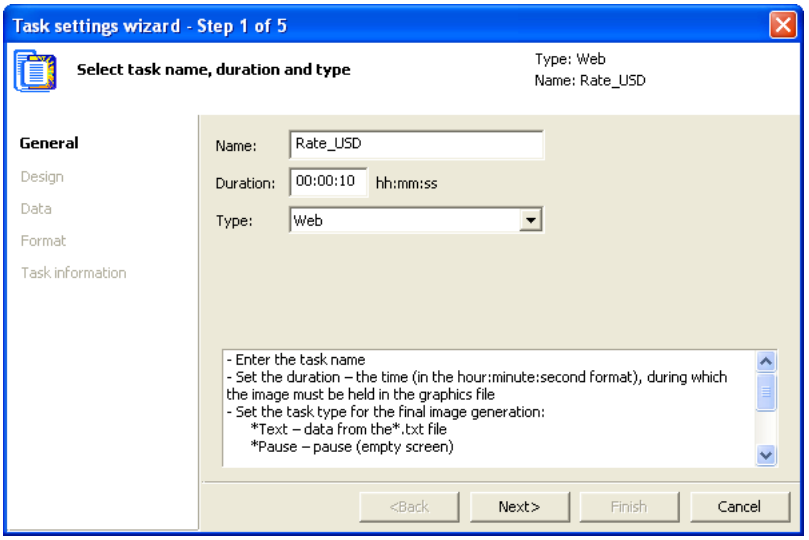
1. Click Add... in the main program window, the Task settings wizard - Step 1 of 2 window appears.



Specify task type – Web.

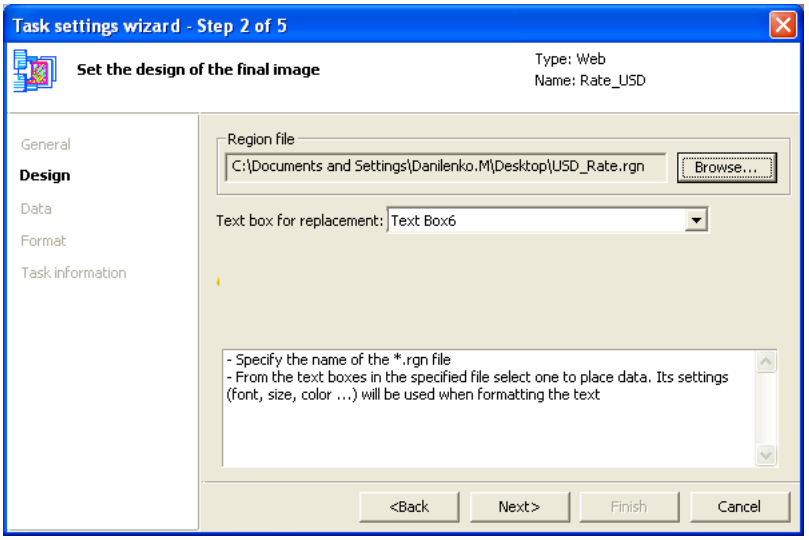
Enter task name in the Name field.

Specify duration of task execution in the Duration field.



Click Next> to continue.

2. Step 2

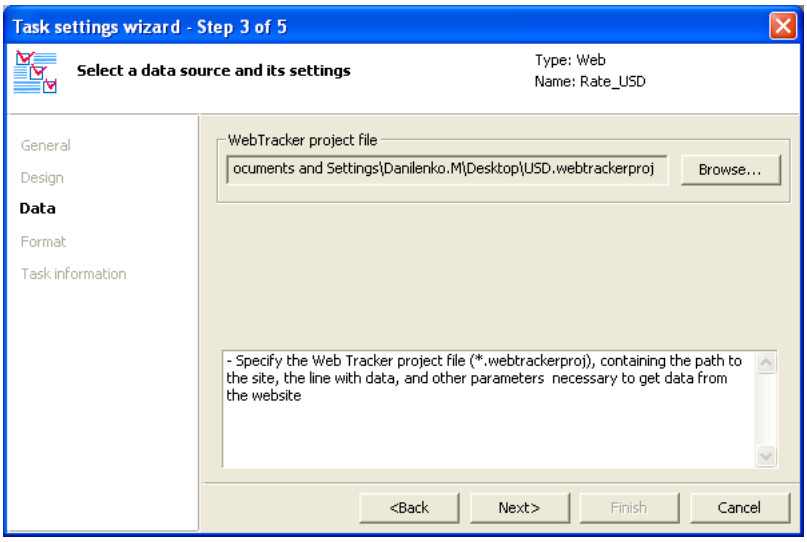


Click Browse... to open a standard dialog window and select region file used in the given task as image template.

After selecting of the region file a list of all text objects names that are in the region appears in the Text box for replacement drop-down list.

Select the necessary one and then click Next> to continue.

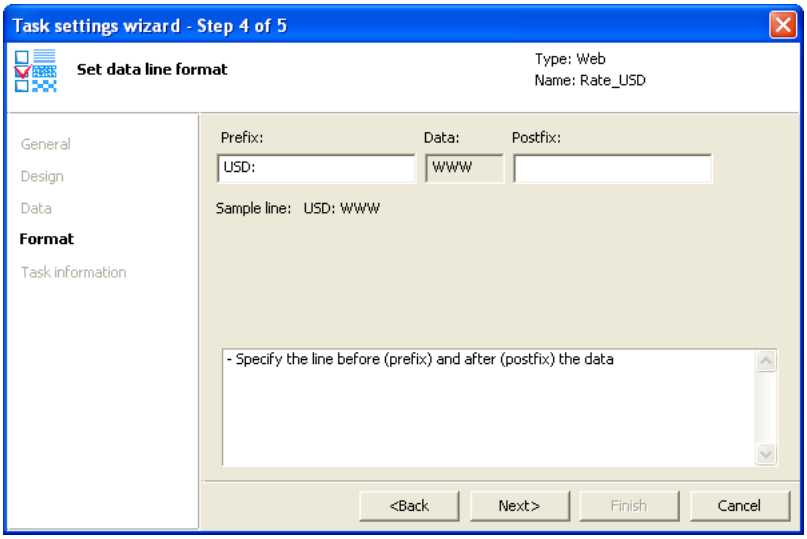
3. Step 3



Click Browse... to open a standard dialog window and select the SLWebTracker project file.

Click Next> to continue.

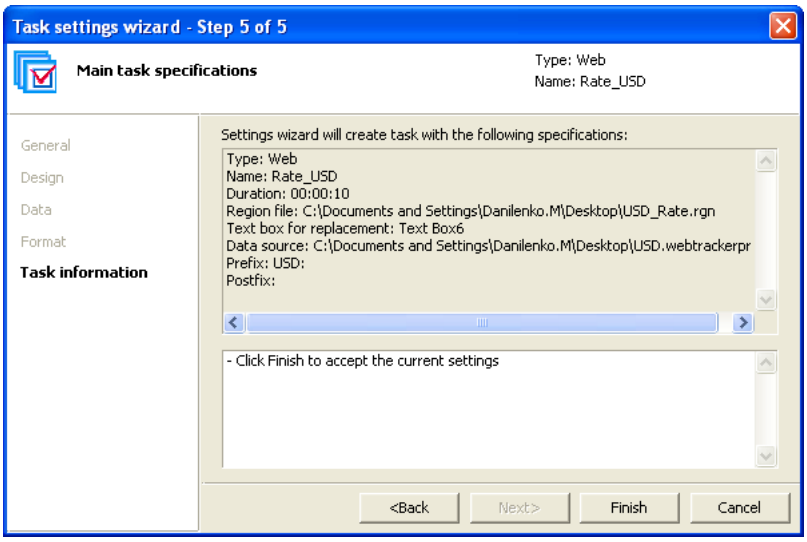
4. Step 4



Enter text in the Prefix field that should be before output data in output image.

Enter text in the Postfix field that should be after output data in output image.

5. Step 5

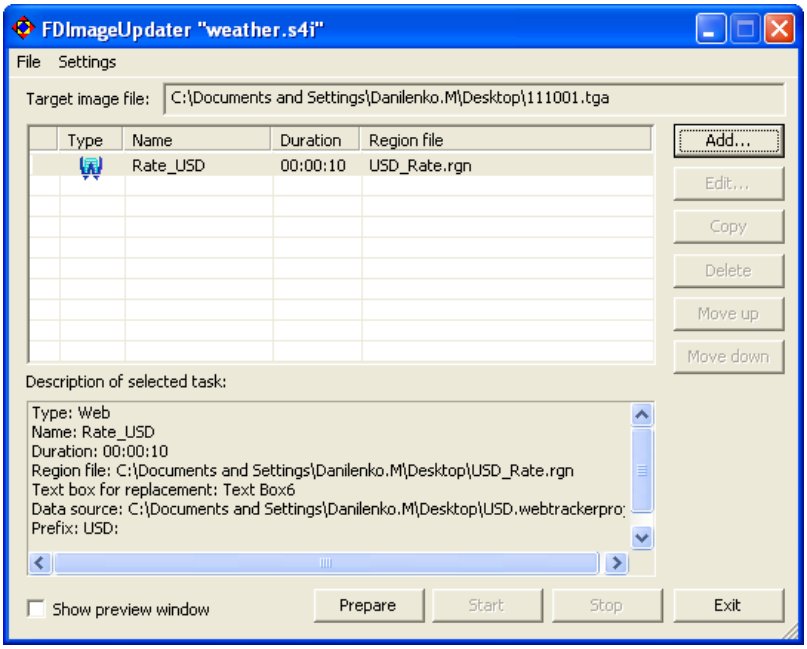


Information on made configuration is displayed at this step.

Click <Back in the Wizard window if it is necessary to change some settings specified at the previous step.

Click Finish to finish creation of task.

6. The task is added to the list with tasks displayed in the main program window.



5. SensorEx

5.1. Purpose

Tasks of the SensorEx type are used to output sensors and weather stations meters.

5.2. Source of Data

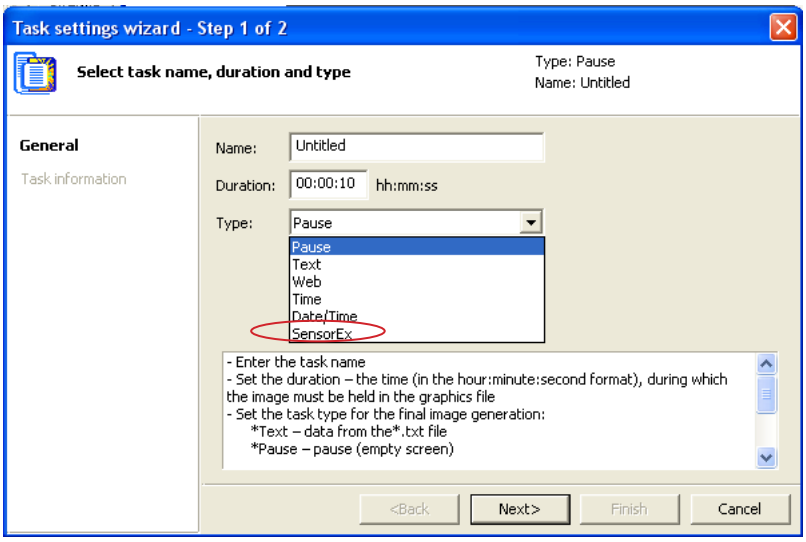
Tasks of the SensorEx type are used to output data received from the following sources:

- Temperature sensors:
  - IRT 5920;
  - Tundra 73;
  - Stream TPH:
  - RMM-4095 (Profitt Meteo Meter);
  - DIP Modular System;
- Weather stations:
  - HeavyWeather (models: WS2308, WS2310, WS2315; WS3610);
  - Oregon Scientific (models WMR100, WMR200);
  - Davis Instruments (Vantage Pro2).

The list of used sensors is expanded.

5.3. Features

1. The SensorEx line is displayed in the Type drop-down list only in that case if at least one sensor is plugged to PC, configured and ready to work.



2. User specifies periodicity of reading data received from source.
3. At output of data into graphic file meterage of sensors can be adjusted to a specific value automatically.

4. Region that is a template may include any number of text objects.

   Meterage of both one and several sensors also can be output into one text region object.

   Order of distributing of output meterage among text region objects is specified at creating of a task.

5. When dealing with some sensors text files for substitution can be used.

5.4. Text File for Substitution

When dealing with some sensors there is a possibility to replace output numerical values by a special text in the FDImageUpdater program (see example).

Substitution text files are used to correspond received sensors values to output text.

Text file for substitution is a specially prepared text file (*.txt) that has a set of lines in the following format:

<Boundary _value 1><space><Text for_substitution 1>
<Boundary _value 2><space><Text for_substitution 2>
...
<Boundary _value N><space><Text for_substitution N>

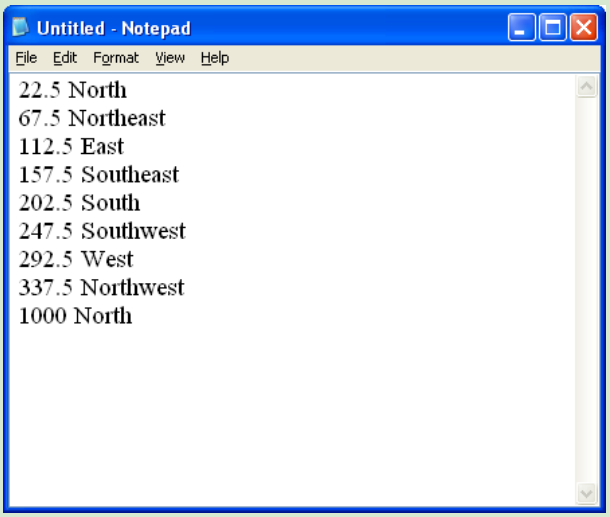
where:

- <Boundary _value> is a maximal value of a scale range that corresponds to output <Text for_substitution>.
- <Text for_substitution> is a text that is output into a target image instead of a numerical value from spcified range.

Lines in substitution file must be put in an increasing order of Boundary_values, i.e. Boundary _value 1 must be less than Boundary _value 2, Boundary _value 2 must be less than Boundary _value 3, etc.

Principle of working with a substitution file is the following: value received from a sensor is successively compared with Boundary_values recorded in a subsitution file beginning from the first file line. Text for_substitution from the first searched line is finally output into a target image. Boundary _value in this line must be greater than received numerical value.

Example: Information on bearing of an apparent wind is received from a sensor in degrees (0–360°). In daily life wind direction is specified according to a quarter from where it is blowing (North, Northeast, etc.).
Picture below presents an example of a text file for substitution used to output information on wind direction.



For example, if the FDImageUpdater program receives from sensor 183,5 degrees of a wind direction then the «South» value is output into a target image (the value is in 157,5–202,5 range).

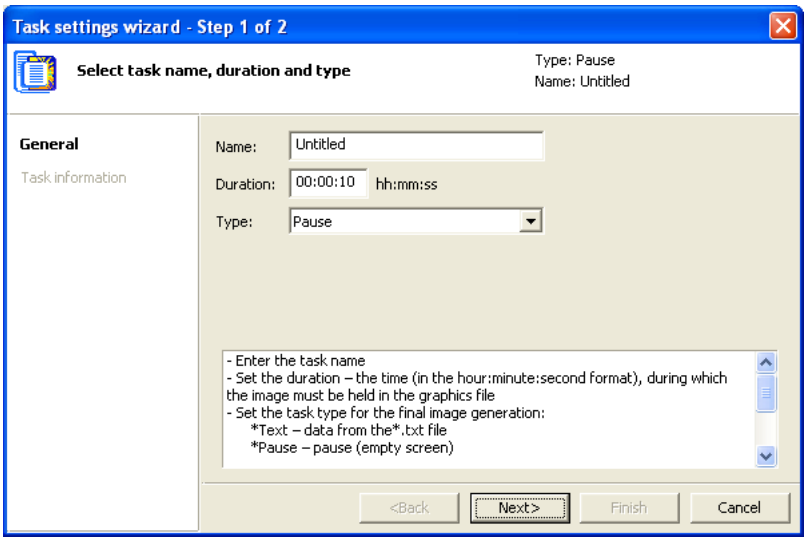
5.5. Creation of Task

Preliminary preparation:

1. Plug a sensor (weather station) to PC and complete necessary configuration (see the Working with Sensors and Weather Stations section).
2. Create a region file used as an image template.
3. Create a text file for substitution if it is supposed to use a text file for substitution at data output.

Creation of task:

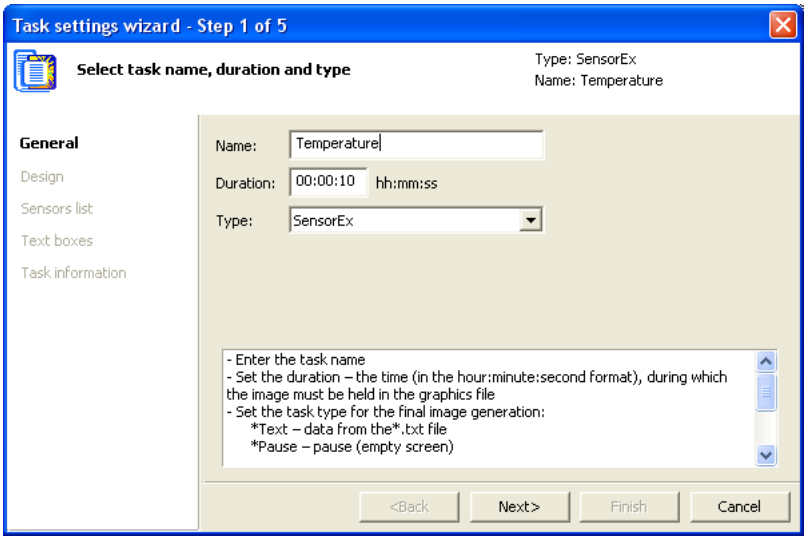
1. Click Add... in the main program window, the Task settings wizard - Step 1 of 2 window appears.



Specify task type – SensorEx.

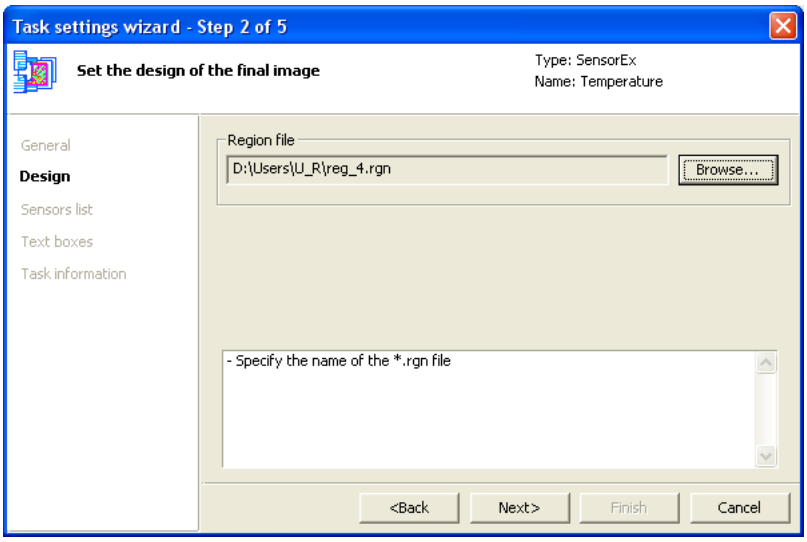
Enter task name in the Name field.

Specify duration of task execution in the Duration field.



Click Next> to continue.

2. Step 2



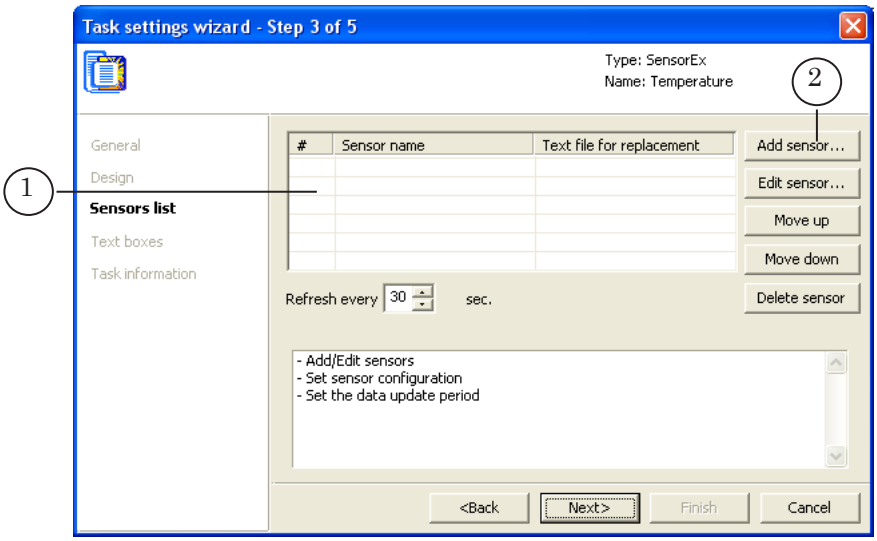
Click Browse... to open a standard dialog window and select region file used in the given task as image template.

Select name of region object where data will be placed in the Text box for replacement drop-down list.

Click Next> to continue working.

3. Step 3

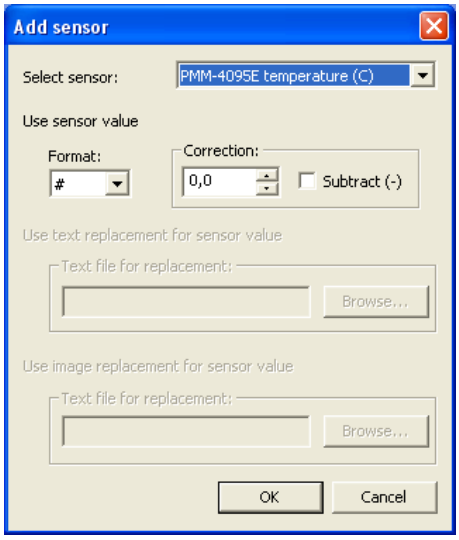
At this step you create a list of sensors which meterage must be output.



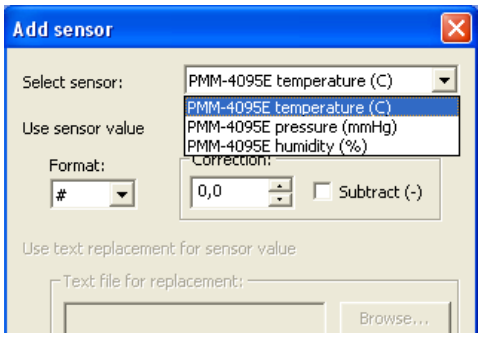
List of sensors is displayed in the table (1).

Complete the following to add sensor to the list:

1. Click Add sensor (2) in the Task settings wizard, step 3 window.
   The Add sensor window appears:

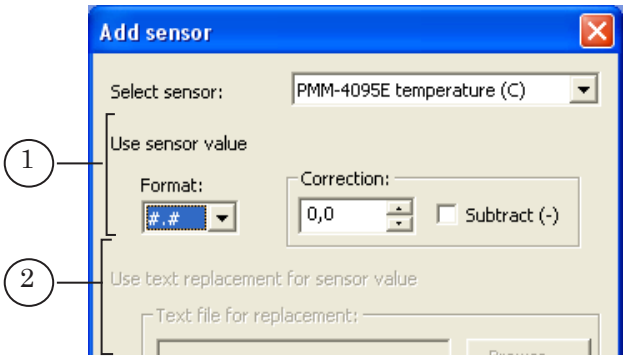


Select necessary sensor in the Select sensor drop-down list.



The Select sensor list has all sensors available for working. A set of included into the list sensors depends on the settings made at preliminary steps (see the Working with Sensors and Weather Stations section).

2. Customize format of presentation of sensor meterage in a target file.

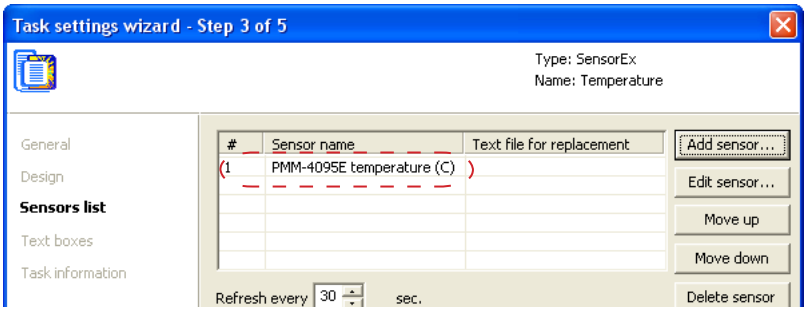


Depending on selected sensor one of two groups of elements becomes available to configure the format of sensor values displaying:

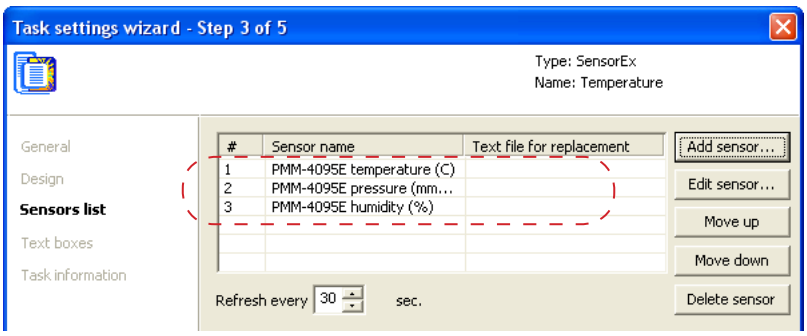
- Use sensor value (1) is information received from a sensor that is output as a numerical value. In this case:
  - select a format of data output in the Format drop-down list;
  - customize correction of values via the Correction group by specifying of a value in the text field. Put the Subtract mark to reduce output value till corrected value. If the mark is absent then output value is increased till corrected value;
- Use text replacement for sensor value (2) group of elements is used when a text from file for substitution is output into target file and the text corresponds to numerical value (for example, for wind direction not degrees are used but name of direction). In this case click Browse... to open a standard dialog window and select text file for substitution (detailed information on file for subsitution see above);

3. Click Ok to close the Add sensor window.

Name of added sensor is displayed in the table with a list of sensors.



Repeat given above steps to select all necessary sensors.



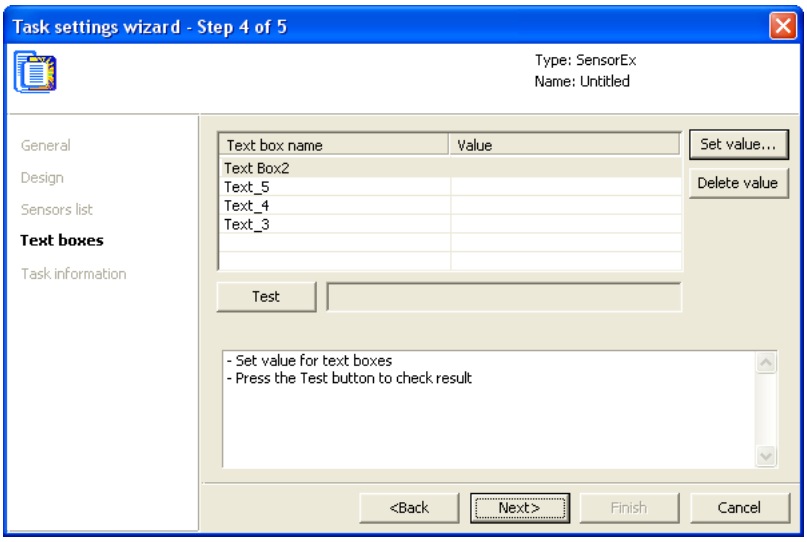
Specify time period (in seconds) between each reading of data from a sensor in the Refresh every field.

Click Next> to continue.

4. Step 4

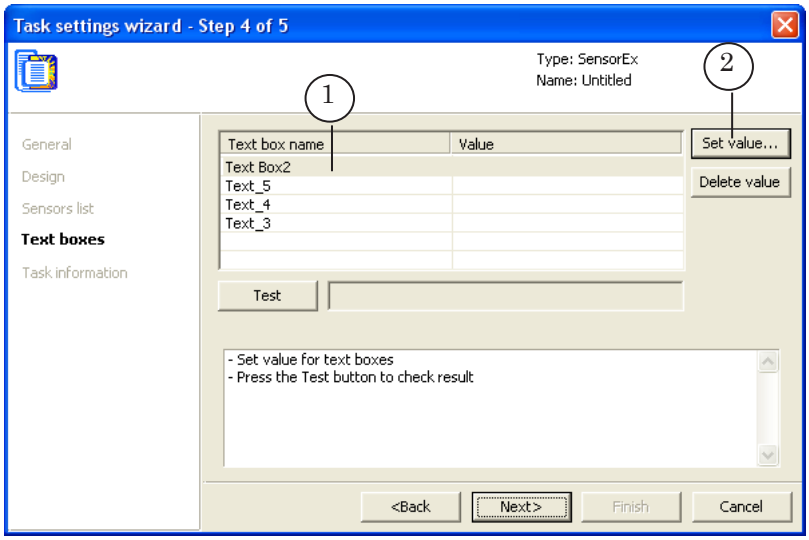
   Templates of text lines that are substituted into text objects of a region are created at this step of Wizard.

   Table with a list of text objects names that are in a region file is displyed in the Wizard window (region file is specified at Step 2).

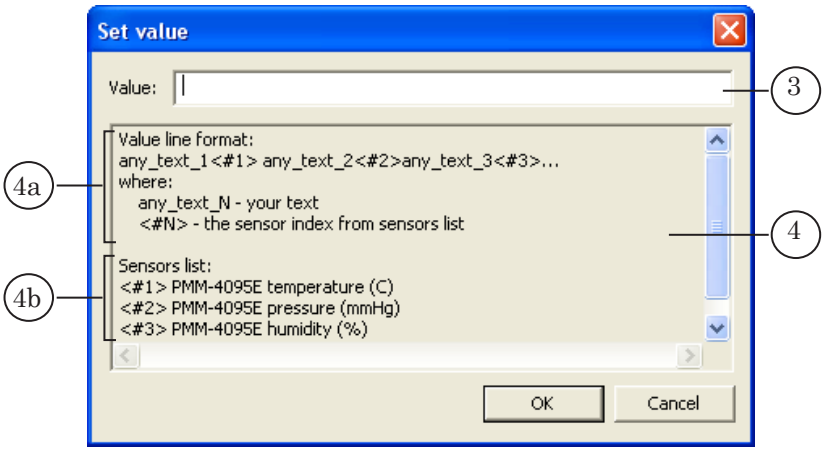


Complete the following to customize template of a line that is output into a concrete text object of region:

1. Right-click the line with name of a region text object (1) and click the Set value... button (2).



2. The following window appears.



The window has:

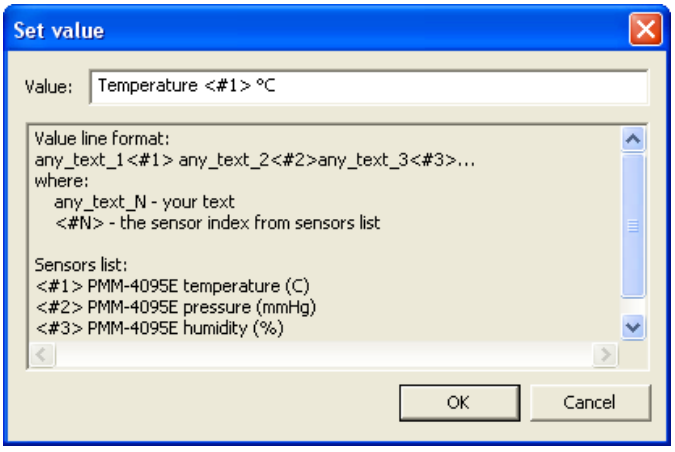
- the Value text field (3) used for output of a template of a value line;
- field with some explanations on forming of a line with value (4) that includes:
  - a description of line format (4a);
  - a list of sensors (4b). In this list you must specify index <#N> for each sensor (N = 1, 2, ... n, where n is a total number of sensors in the list).

Template of a line has the following format:
Free_ext_1<#N_1>Free_text_2<#N_2> ... Free_text_n<#N_n>,
where:

Free_text is an arbitrary text created by user. The text is output into target image without modifyings;

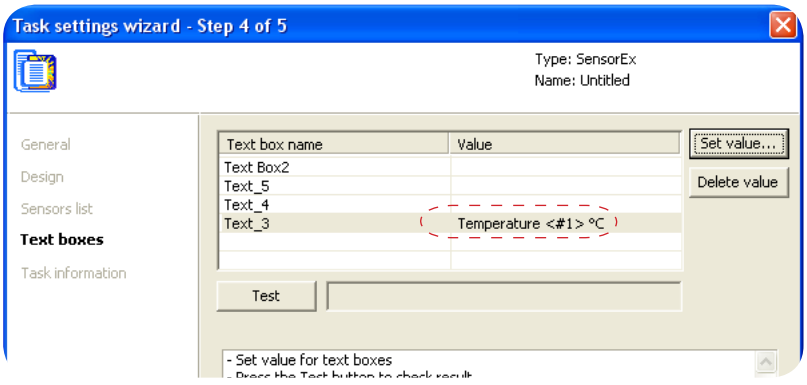
<#N_i> is an index of used sensor. Sensor meterage is output in a target image instead of a tag with sensor index.

3. Specify line value in the Value text field.

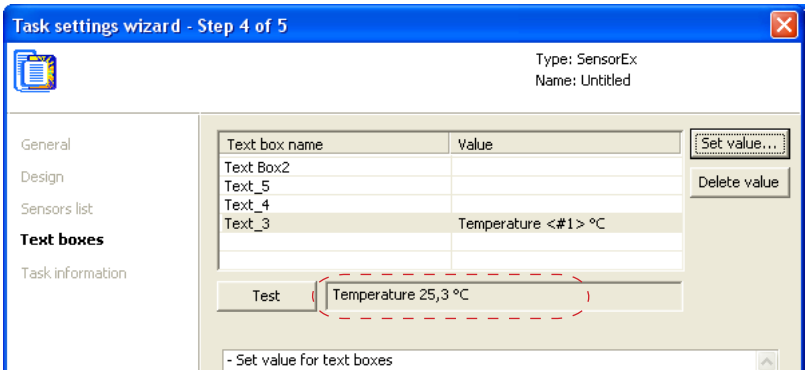


Click OK. The window is closed.

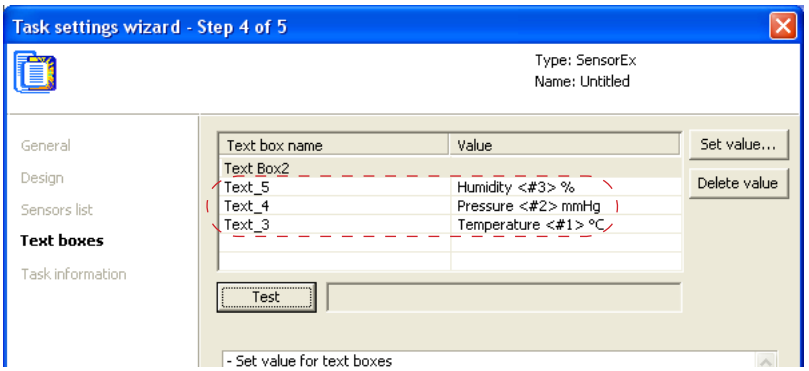
4. Created template of value line is displayed in the Value column of the Wizard window.



Click Test to test how created according to the template line looks like with sensor values. The line is displayed in the text field.

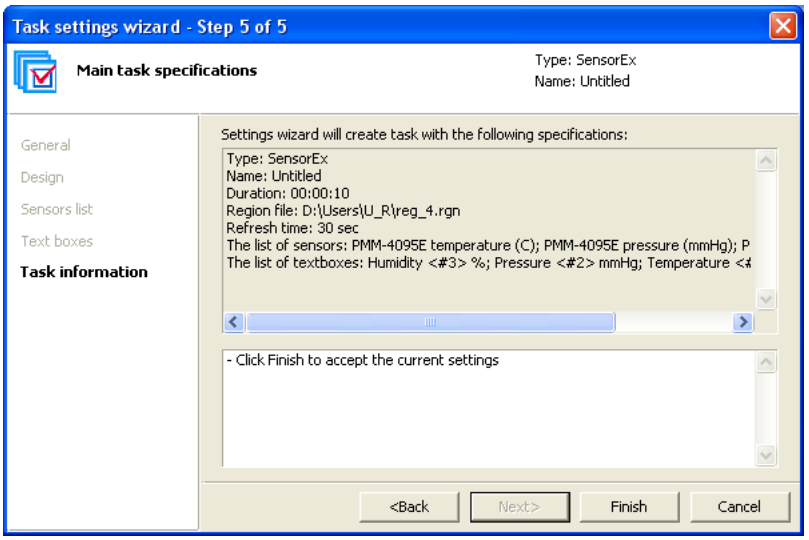


Specify values for all text objects where it is necessary to output data.



Click Next> to continue.

5. Step 5.

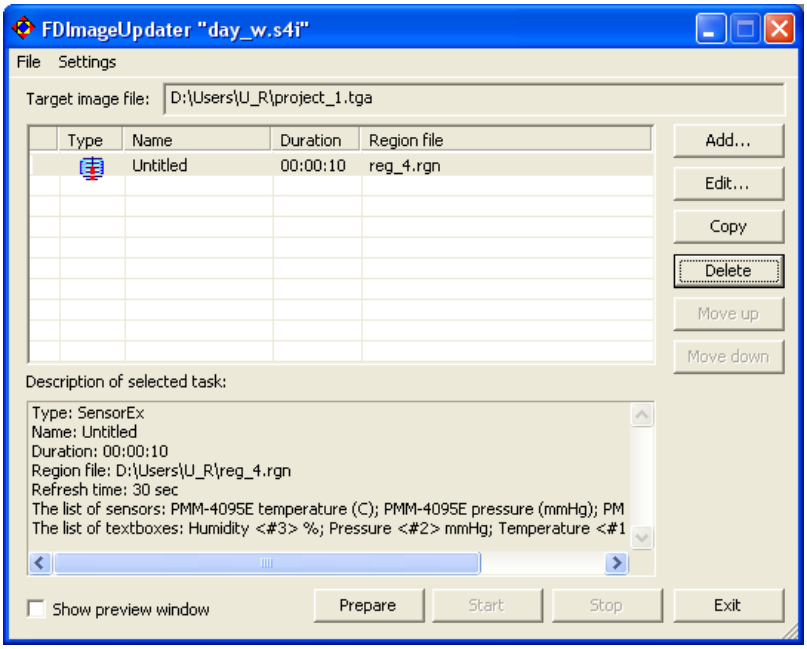


Information on made configuration is displayed at this step.

Click <Back in the Wizard window if it is necessary to change some settings specified at the previous step.

Click Finish to complete creation of the task.

6. The task is created. It is displayed in the list with tasks of the main program window.



General Information

1. Definition

Sensor (of temperature, pressure, humidity, etc.) is a device used for measuring of a concrete weather parameter that converts the measurement into a useful for being used signal. The sensor can be either a separate device or be included into weather station set.

Weather station is a device used for measuring of different weather parameters that includes a set of special sensors.

At the current moment the FDImageUpdater application supports the following weather stations and sensors:

- temperature sensors:
  - IRT 5920;
  - Tundra 73;
  - Sahara;
  - DIP TTE24
- weather stations:
  - HeavyWeather, models: WS2308, WS2310, WS2315, WS3610;
  - Oregon Scientific, models: WMR100, WMR200;
  - DAVIS Instruments, Vantage Pro 2 model;
  - DIP MS;
  - StreamLabs TP.

The list of supported equipment is expanded.

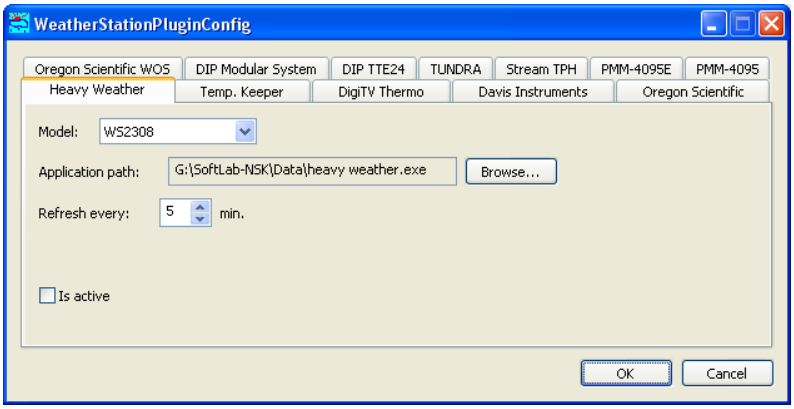
2. General Scheme of Working with Sensors and Weather Stations

1. Plug device to PC. Install software to output measurings on PC if it is included into software set.
2. Be sure that the device functions correctly.
3. Customize the device via the WeatherStationPluginConfig program configurator.

4. Launch the FDImageUpdater program. Create task of the SensorEx type used to output data from plugged to PC device (see the Creation of Tasks section).

3. The WeatherStationPluginConfig Program Configurator

The WeatherStationPluginConfig program is used to configure weather stations and temperature sensors used by programs from the Forward T software set.



Installation of the program is implemented automatically when the ForwardT Software set is being installed. The program is installed in the ~\Tools\WeatherStations folder,
where ~ is a full path to the folder where ForwardT Software set is installed.

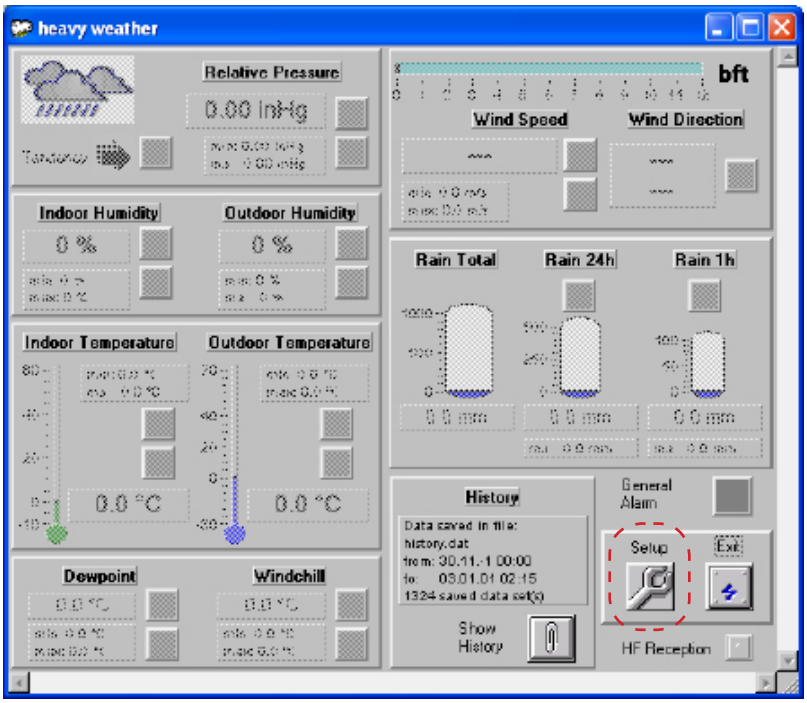
General workflow of working with the program:

1. Launch the program.
2. Pass to the tab which name corresponds to the name of weather device to be configured in the appeared window.
3. Customize parameters on the tab and put the Is Active mark.
4. Close the program.

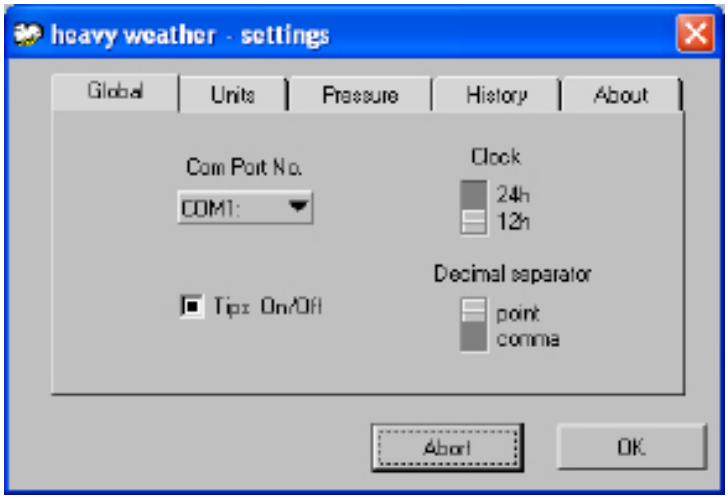
1. Heavy Weather Station

1. Turn PC off. Plug weather station to PC COM port.
2. Plug weather station into COM port. Turn PC on.
3. Install necessary software using the disk included in weather station set. The software is used to output measurings on PC (HeavyWeather PC Software).

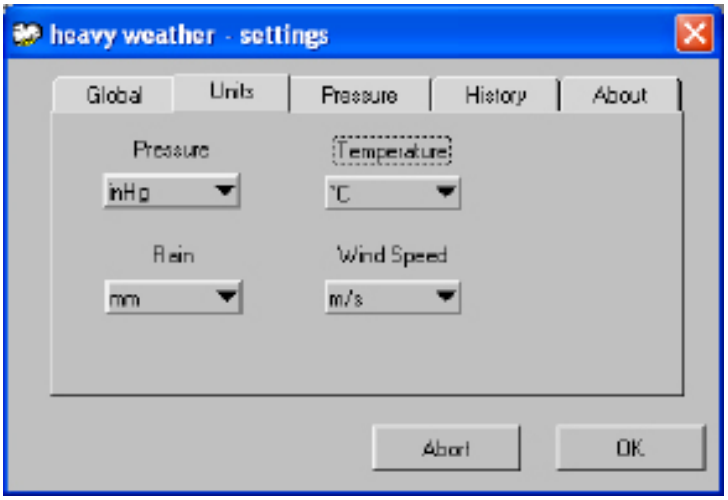
4. Launch the application used for output of data from Heavy Weather station on PC.
5. Click the Setup button in the appeared window.



6. Customize the following in the appeared window:
   - select COM port to which the station is connected in the Com Port No drop-down list on the Global tab;

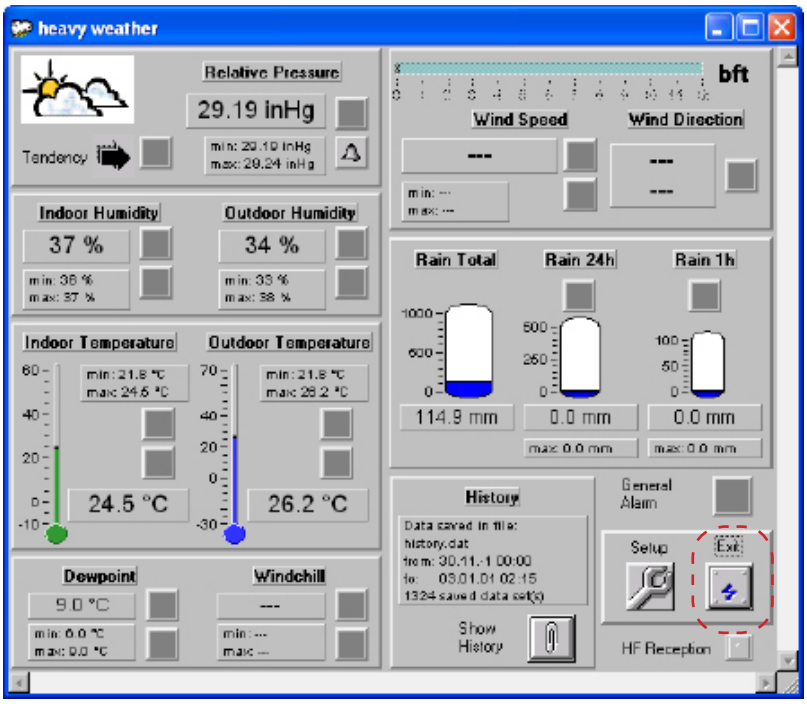


- specify units of output measurings on the Units tab as it is shown on the picture below.



Click OK to exit the window with saving of all customized settings.

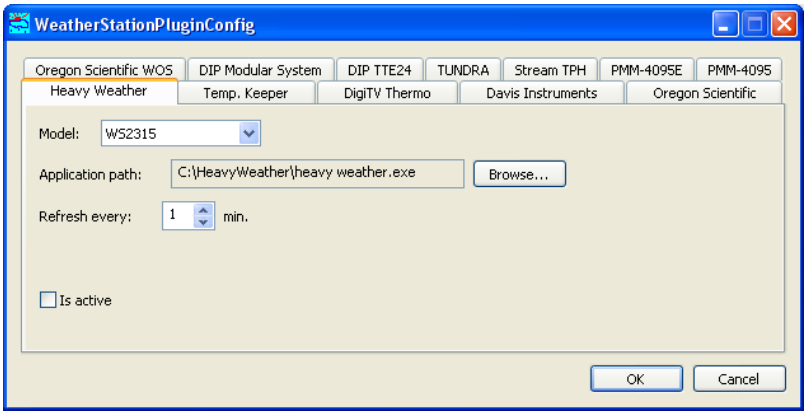
7. Data received from weather station is displayed in the heavy weather main program window in several seconds.



8. Click Exit to exit the program. The program must be closed at further working.

9. Launch the WeatherStationPluginConfig weather station configurator (C:\Program Files\ForwardT Software\Tools\WeatherStations\WeatherStationPluginConfig.exe).

10. Pass to the Heavy Weather tab.

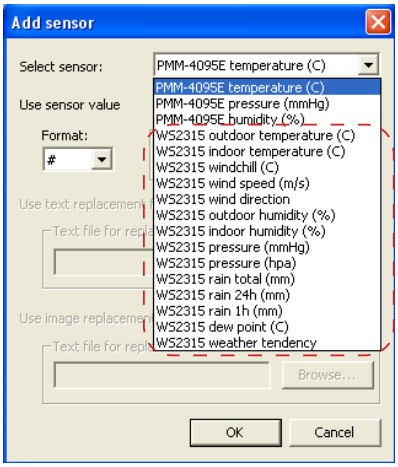


Customize the following items:

- select model of used device in the Model drop-down list;
- specify a full path to the file that launches the program that outputs data received from weather station on PC in the Application file field (for example, heavy weather.exe). For this use the Browse... button to open a standard dialog window and select the file;
- specify time interval between reading cycles of data from weather station in the Refresh every field;
- put the Is active mark.

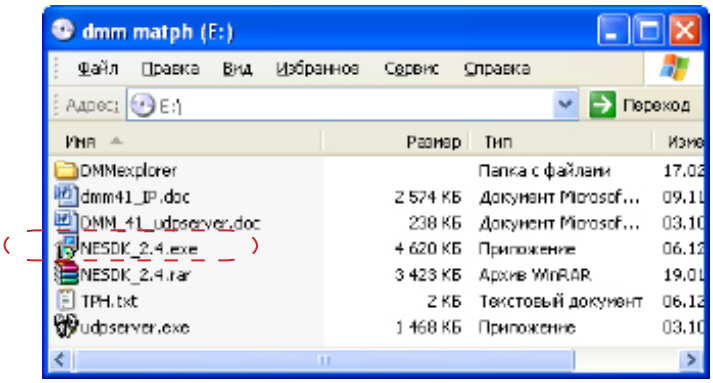
11. Close the WeatherStationPluginConfig program by clicking OK. The program must be closed at further working. Weather station is prepared to be used by FDImageUpdater program.

12. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select sensors which names begin with the WSxxxx prefix, where xxxx is an index of weather station model.



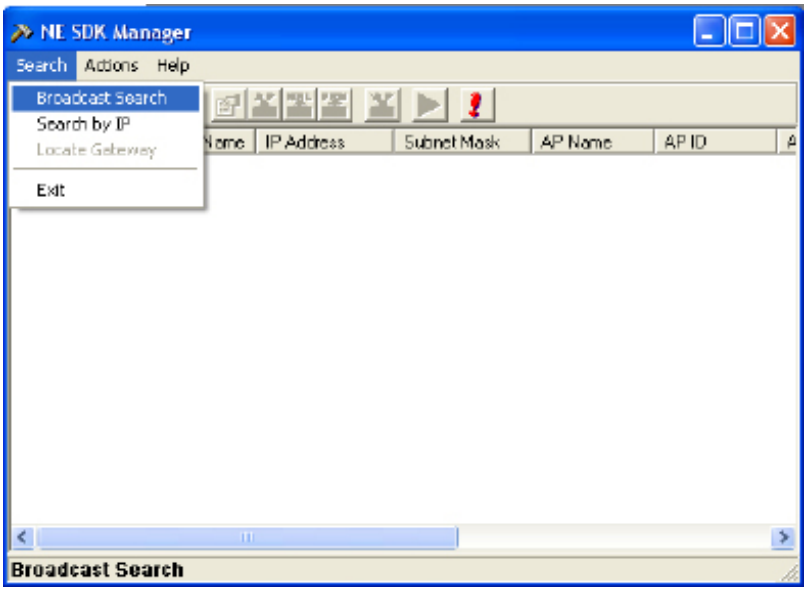
2. DIP Modular System Sensors (MA T, MA TPH Models)

1. Plug sensor to PC local net and network. Turn the device on.
2. Install NESDK software included in the sensor delivery set. For this start NESDK_X.X.exe application for execution, X.X denotes software version.

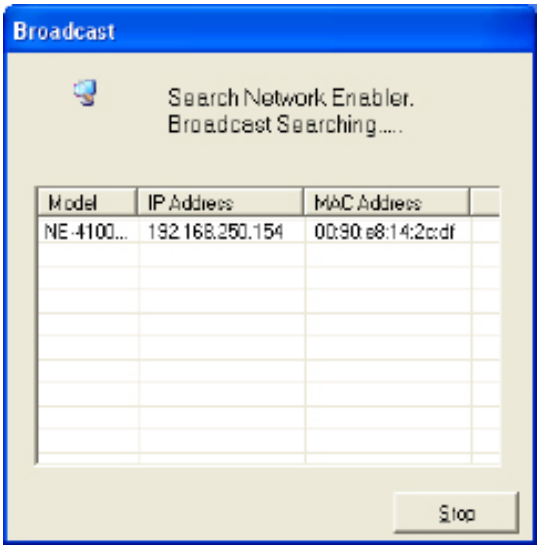


3. Launch the NE SDK Manager program.

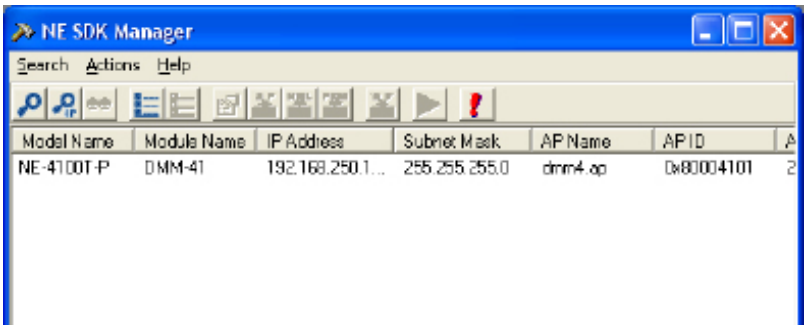
4. Select the Broadcast Search command in the appeared program window in the Search menu.



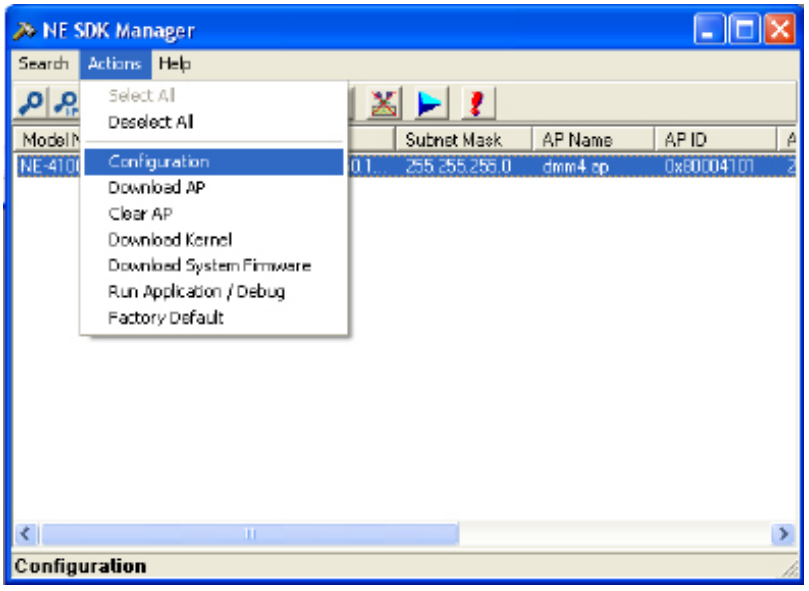
The program searches the device in local network.



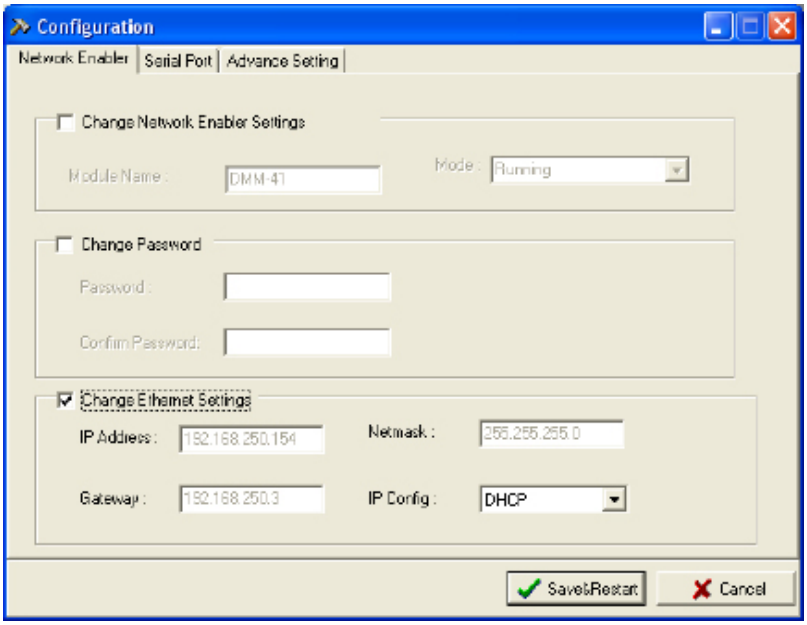
Information on found device is displayed in the main program window.



5. Click line with information on the divice.
6. Select the Configuration command in the Actions menu.



7. Put the Change Ethernet Settings mark and customize local settings of the device (IP Adress, Netmask, Gateway, IP Config) according to recommendations of a local network administrator in the Configuration window. Then click Save&Restart.

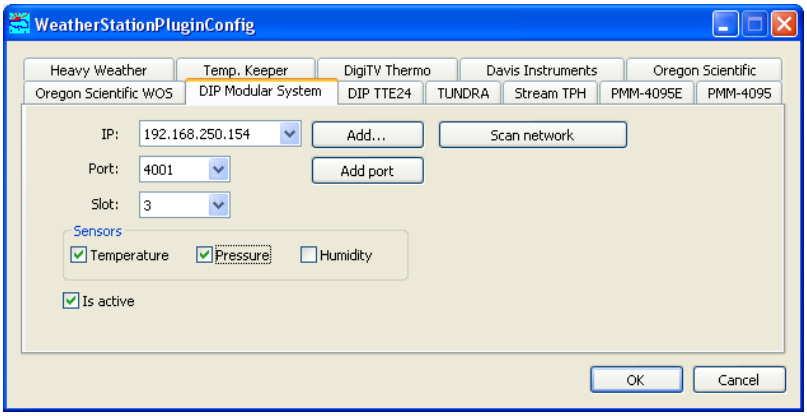


8. Close the program. The program must be closed at further working.

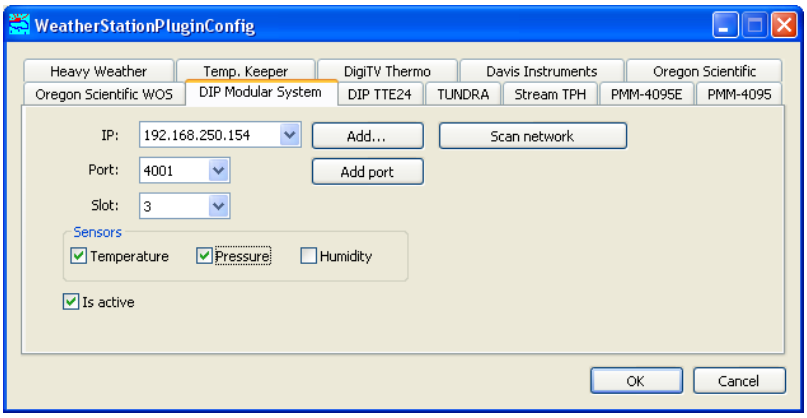
9. Be sure that temperature is displayed on device panel on a special display.

10. Launch configurator of weather stations WeatherStationPluginConfig (C:\Program Files\ ForwardT Software\Tools\WeatherStations\ WeatherStationPluginConfig.exe).

11. Pass to the DIP Modular System tab.

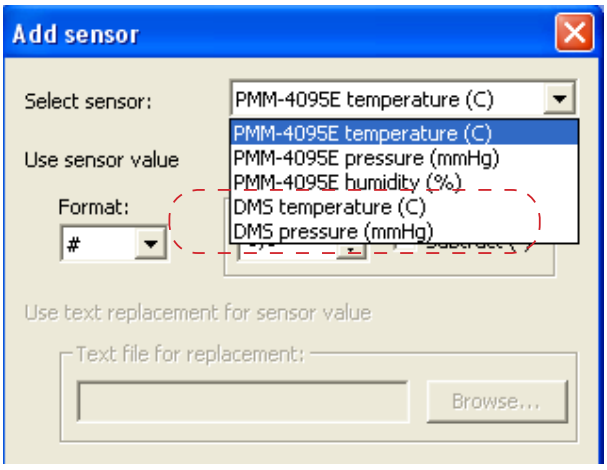


- click Scan network. The program searches the device in local network. When the device is found the IP, Port and Slot fields values will be specified automatically.



- put marks that correspond to sensors from which the FDImageUpdater program must receive the information in the Sensors group of elements;
- put the Is active mark.

12. Close the WeatherStationPluginConfig application by clicking OK. The program must be closed at further working. Weather station is prepared for being used in FDImageUpdater.
13. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select sensors which names begin with the DMS prefix.



3. Stream Labs USB_MS_RS485 Sensor

1. Copy a folder with drivers on PC hard disk.

✔ **Important:** Drivers and application used for customizing of the Stream Labs sensor are supplied by the manufacturer.

2. Plug the sensor to PC USB port. The Wizard window appears. Follow Wizard instructions. Installation is implemented in a standard way.

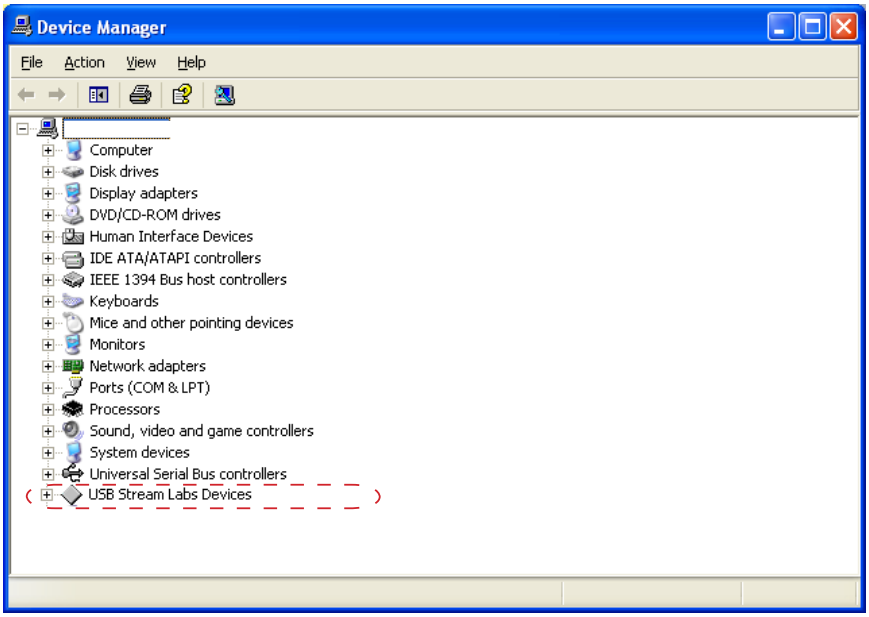
3. Be sure that the sensor is in the list of system devices. To do this complete the following:

   a) right-click My Computer context menu and select Properties;

   b) pass to the Hardware tab in the Properties window;

   c) click Device Manager;

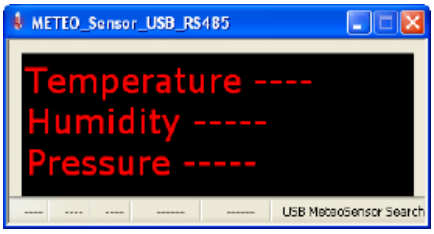
   d) look for USB Stream Labs Devices in the list of devices. Close the window.



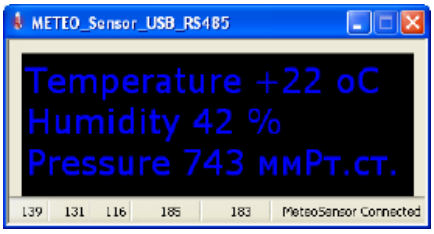
4. Launch the METEO_Sensor_USB_RS485.exe program to check functioning of the sensor.

✔ **Important:** The METEO_Sensor_USB_RS485 program is supplied by the manufacturer.

The program searches sensors plugged to PC via USB port.



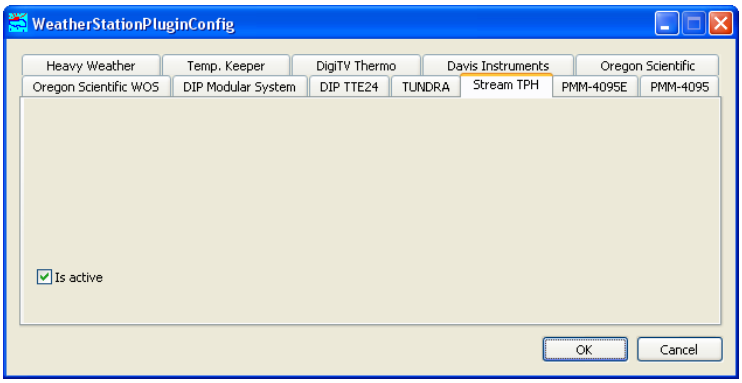
When sensor is found information received from it will be displayed in the program window.



Close the program.

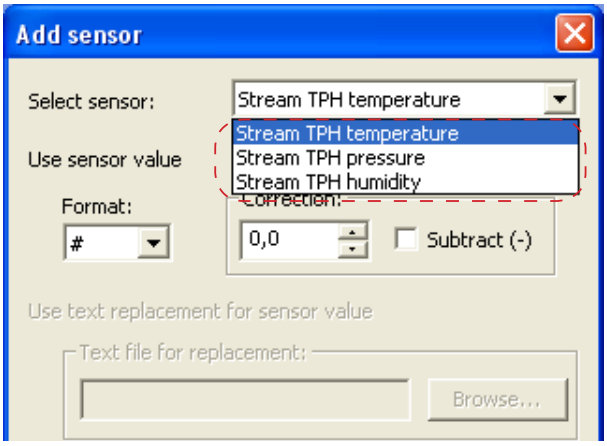
5. Launch the WeatherStationPluginConfig configurator for weather stations (C:\Program Files\ForwardT Software\Tools\WeatherStations\WeatherStationPluginConfig.exe).

6. Pass to the Stream TPH tab. Put the Is active mark.



7. Close the WeatherStationPluginConfig program by clicking OK.

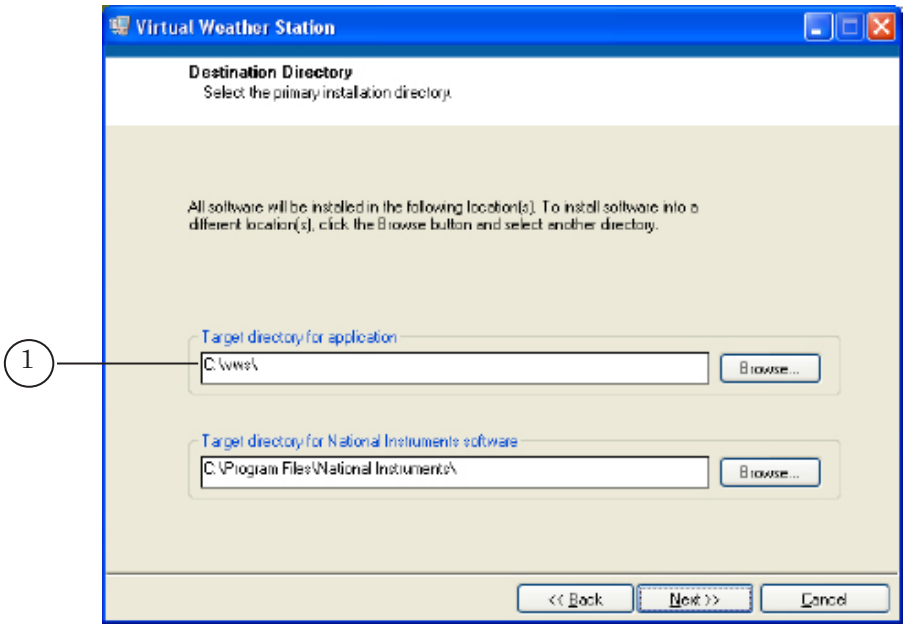
8. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select sensors which names begin with the Stream TPH prefix.



4. Oregon Scientific Weather Station

4.1. Working With Oregon Scientific Weather Station Using Virtual Weather Station Software

1. Plug weather station to PC, turn the station on.
2. Install software from the disk included in the Virtual Weather Station software set.



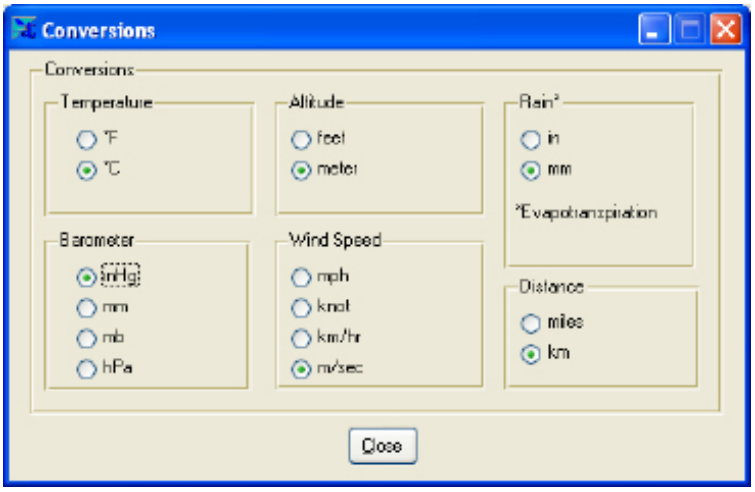
The software is installed to the folder specified in the Target directory for application field (1).

Program shortcut appears on the desktop after installation.

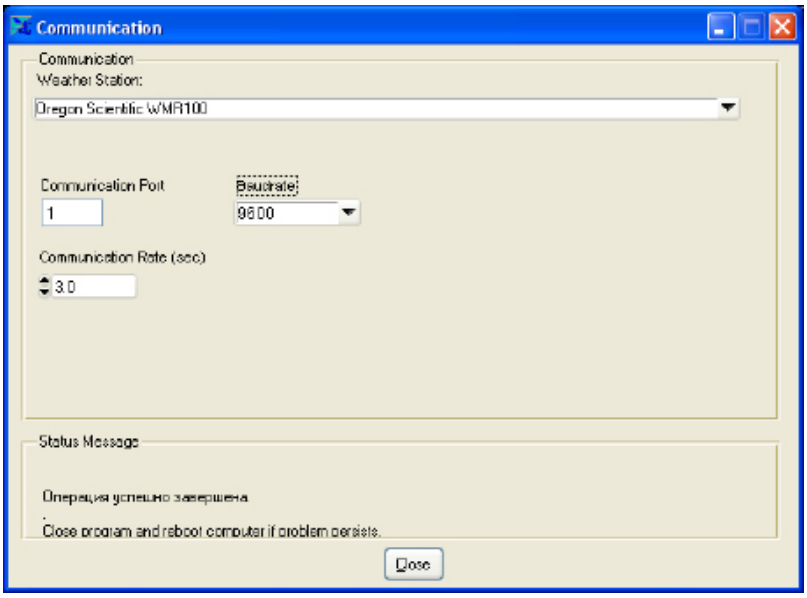
3. Launch the Virtual Weather Station program using the shortcut.

   At the first program launch several dialog windows appear. In the windows you may select a language and register used software. We recommend registering the program.

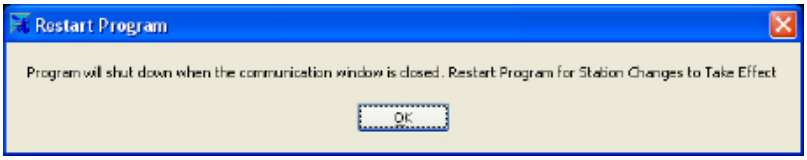
4. Specify units of measuring of output data in the Conversions window as it is shown below. Then click Close.



5. Select name of plugged weather station in the Weather Station drop-down list of the Communication window.

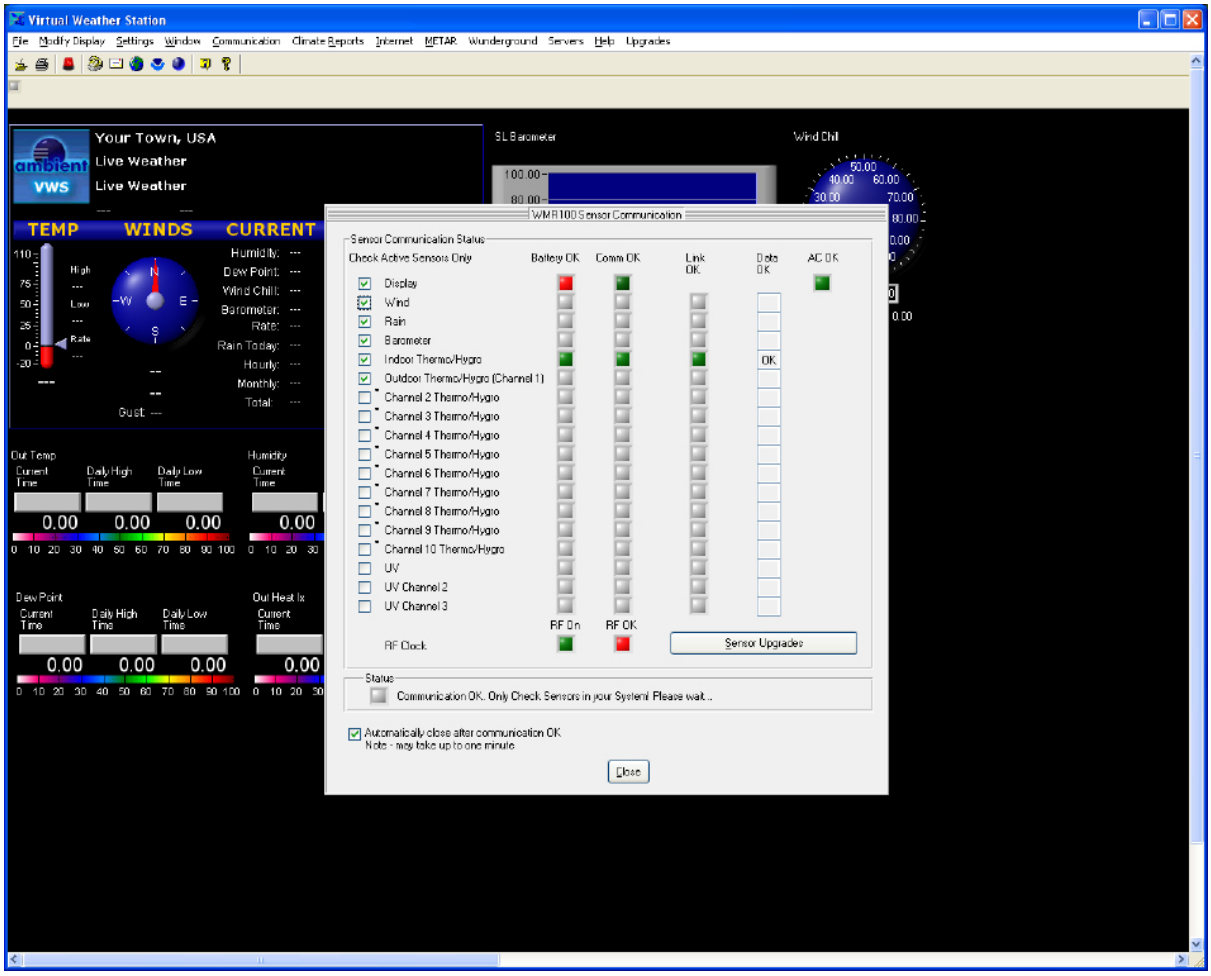


Click Close. Window with the following service message appears.



After clicking OK the program is automatically closed.

6. Launch the Virtual Weather Station program. Its main window and window with title XXX Sensor Communication, where XXX is name of station appear.

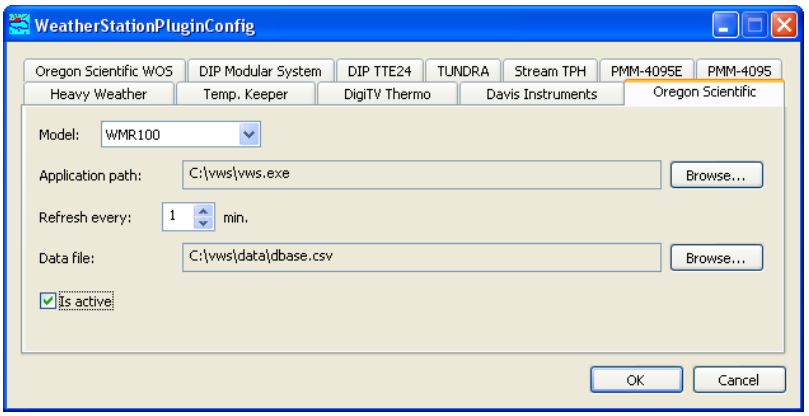


7. Complete the following in the XXX Sensor Communication window:
   - put marks that correspond to the names of plugged sensors (if marks are absent);
   - remove marks that correspond to the names of sensors that are not used (if marks are put);
   - put the Automatically close after communication OK mark and wait till the window closes automatically (it may take several minutes).
8. Data received from the Virtual Weather Station is displayed in the main program window after closing of the XXX Sensor Communication window and if the station functions correctly.

   The program initializes output of data in the dbase.csv file during some time (it takes 1 minute approximately).

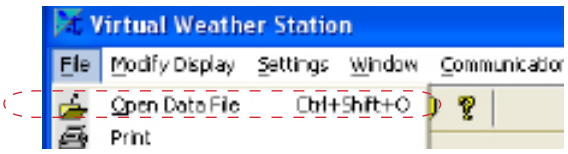
9. Launch the WeatherStationPluginConfig configurator for weather stations (C:\Program Files\ForwardT Software\Tools\WeatherStations\WeatherStationPluginConfig.exe).

10. Pass to the Oregon Scientific tab in the WeaterStationPluginConfig window.

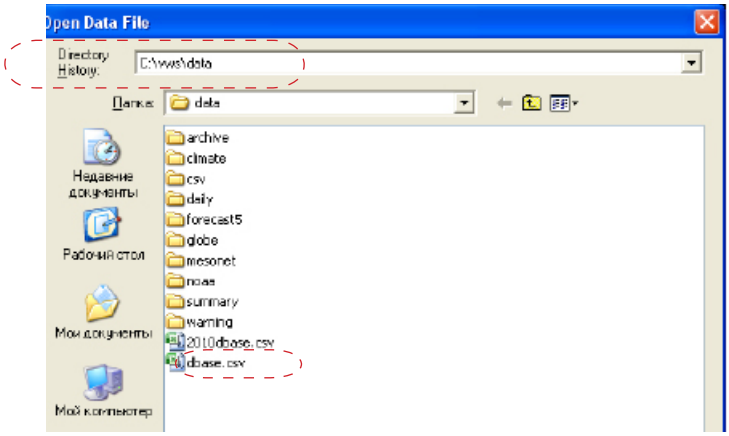


Complete the following on the tab:

- select a model of plugged weather station in the Model drop-down list;
- specify a full path to the file that launches the program that outputs data received from weather station on PC in the Application path field (for example, vws.exe). For this use the Browse... button to open a standard dialog window and select the file;
- specify time interval between reading of data from weather station in the Refresh every field;
- specify a full path to the dbase.csv file in the Data file field by completing the following:
  1. Pass to the Virtual Weather Station program window.
  2. Select the Open Data File command in the File menu.



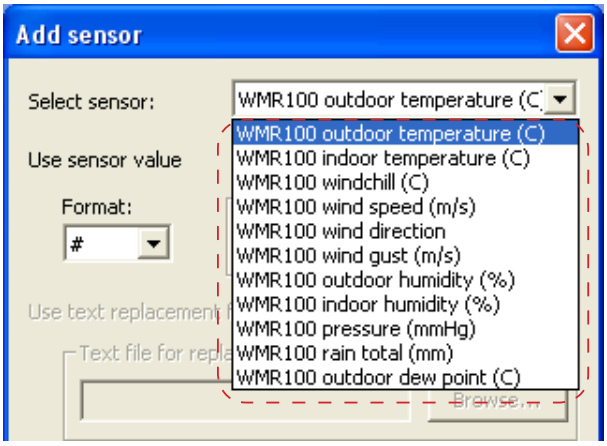
3. A full path to the folder with the dbase.csv file is displayed in the Open Data File window in the Directory History field. Memorize this path.



4. Close the window by clicking Cancel.
5. Pass to the WeatherStationPluginConfig program window.
6. Click Browse... to specify path to data file. Specify path to the dbase.csv file mentioned on step 3.

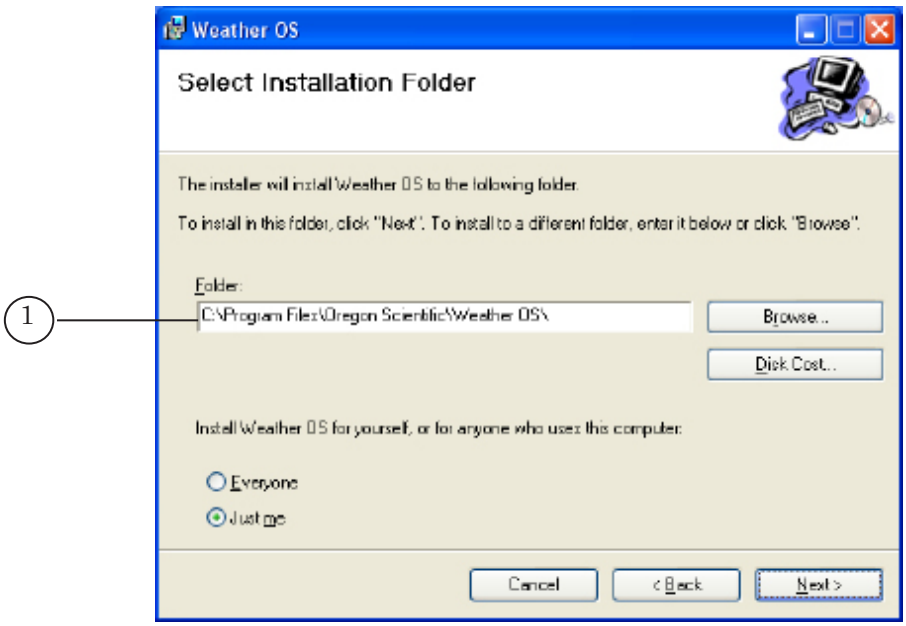
- put the Is active mark.

12. Close the WeatherStationPluginConfig application by clicking OK.
13. Close the Virtual Weather Station program using the File > Exit menu command.
14. Launch the FDImageUpdater program.
15. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select sensors which names begin with the WMRXXX prefix, where xxx is an index of weather station model.



4.2. Working With the Oregon Scientific Weather Station using Weather OS

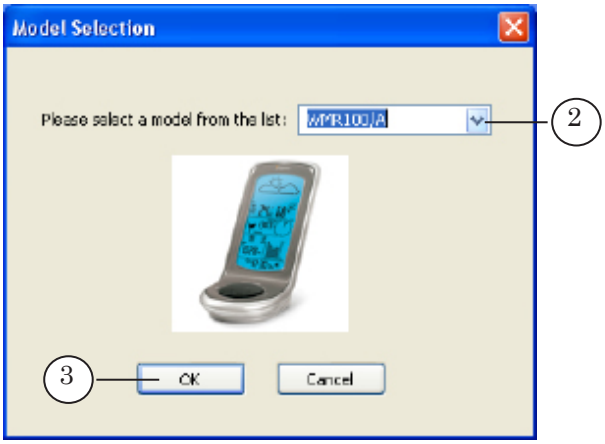
1. Plug weather station to PC, turn the station on.
2. Install software from the disk included in the Weather OS software set.



The software is installed in the folder specified on the Select Installation Folder step in the Folder field (1).

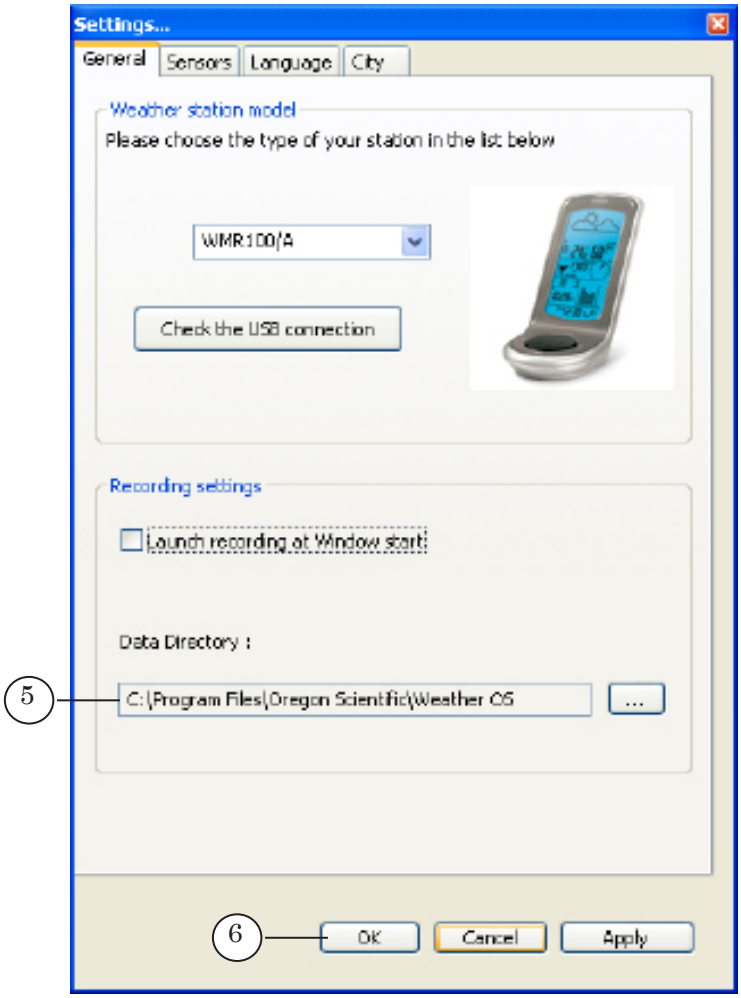
Program shortcut appears on the desktop after installation.

3. Launch the Weather OS program using the shortcut.
4. Select model of used weather station in the appeared Model Selection window in the drop-down list (2) and click OK (3).



5. The Oregon Weather Station – XXX window appears, XXX is index of program version. Click Settings... (4).

6. Specify a folder for storing data in the Settings window on the General tab, in the Data Directory field (5). The Data subfolder is automatically created in this folder that will contain data received from weather station at working of the FDImageUpdater program.

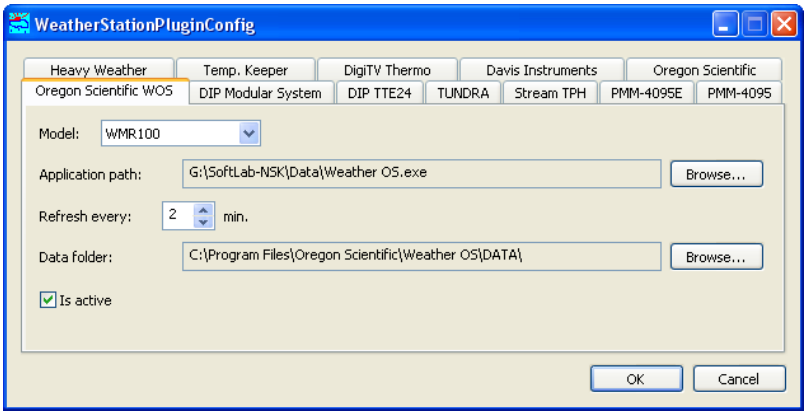


Click OK (6).

7. Close the Weather OS program by right-clicking the icon (7) located in task bar notification area. Select Quit in the appeared menu.

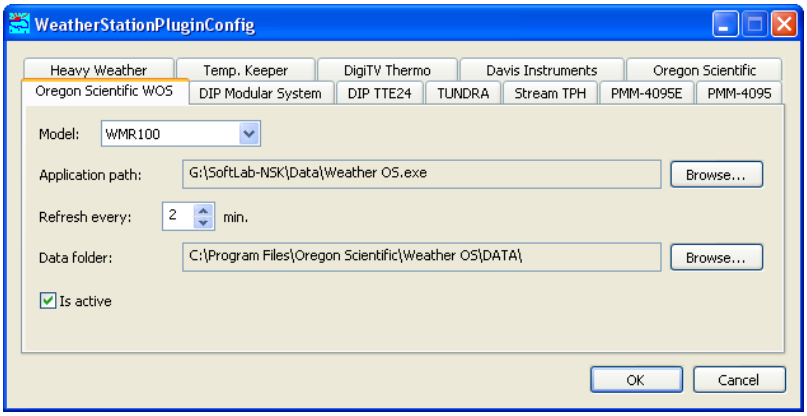
8. Launch the WeatherStationPluginConfig configurator for weather stations (C:\Program Files\ForwardT Software\Tools\WeatherStations\WeatherStationPluginConfig.exe).

9. Pass to the Oregon Scientific WOS tab.



Customize the following items on the tab:

- select model of plugged weather station in the Model drop-down list;

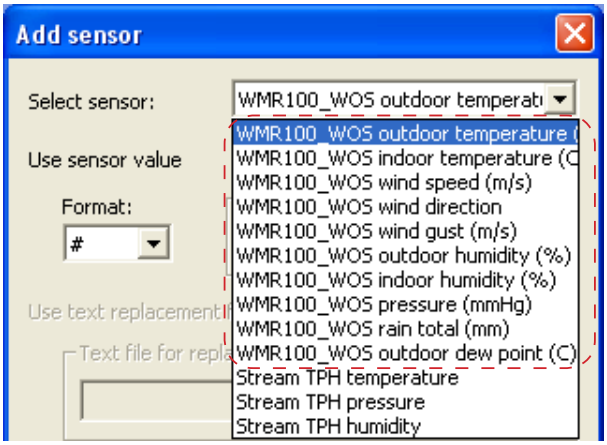


- specify a full path to the file that launches the program that outputs data received from weather station on PC in the Application path field (for example, vws.exe). For this use the Browse... button to open a standard dialog window and select the file;
- specify time interval between reading of data from weather station in the Refresh every field;
- specify path to the folder used for storing of files selected on step 6 in the Data folder field;

- put the Is active mark.

10. Close the WeatherStationPluginConfig program by clicking OK.

11. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select sensors which names begin with the WMRXXX prefix, where xxx is an index of weather station model.

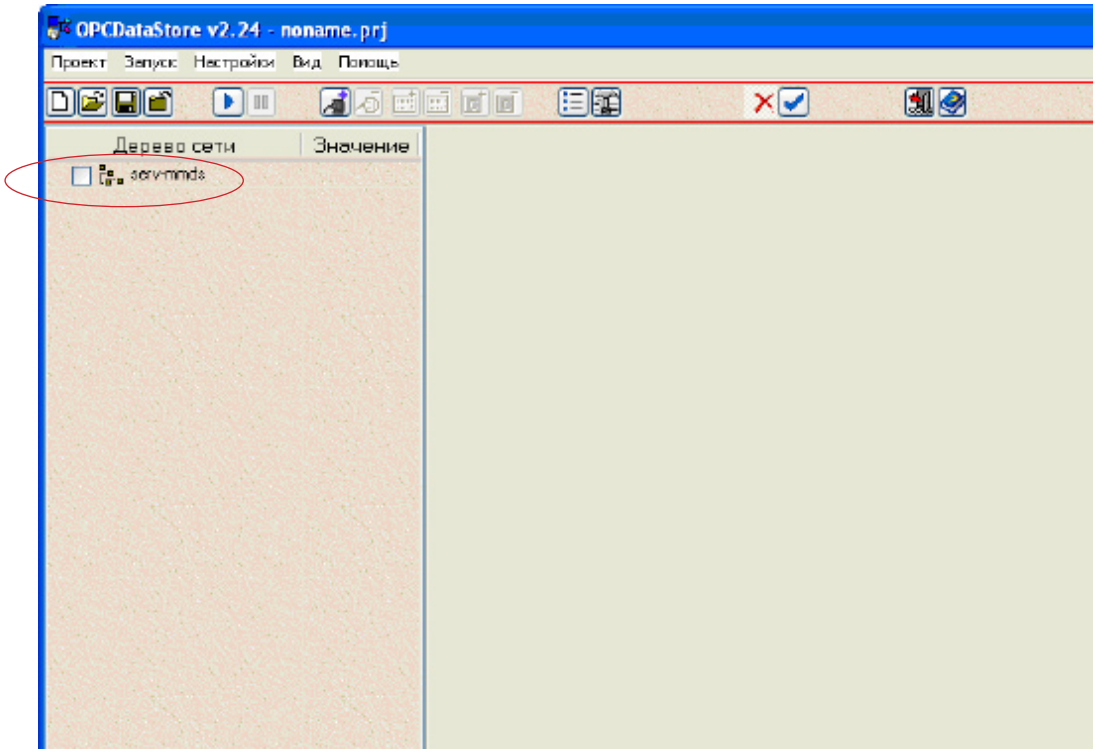


5. IRT 5920 Sensor

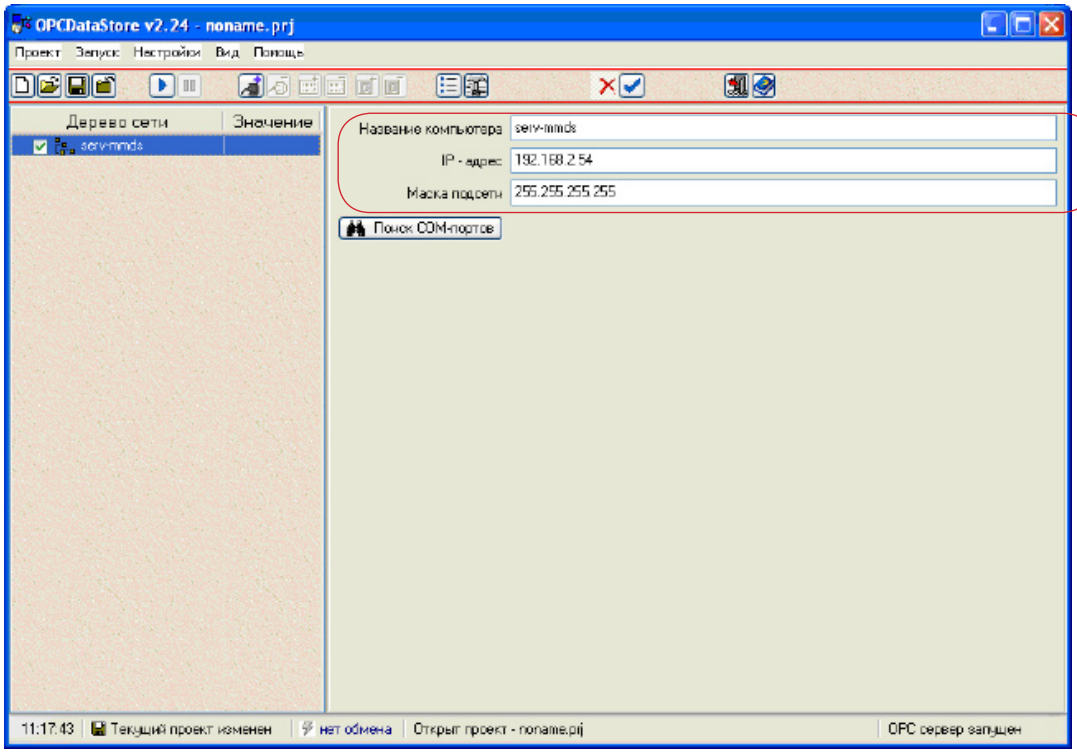
Transmitting of data from the IRT 5920 sensor to PC is implemented via the OPCDataStore server developed by sensor manufacturer. The program can be downloaded from the «Elemer» website, the site is currently available in Russian only:
http://www.elemer.ru/catalog_1146.html.

1. Launch the OPCDataStore program. The program does not have English interface.
2. Create a new project via the Проект > Новый проект menu command.

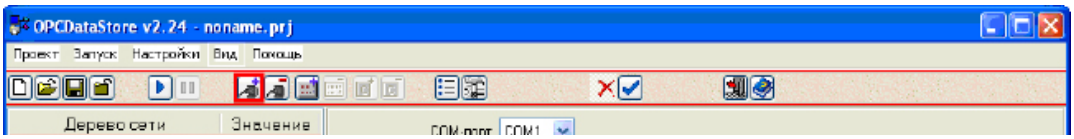
   Line with the name of your PC is displayed in the Дерево сети list.



3. Put the mark opposite the name of your PC in the Дерево сети list. PC net connection settings are displayed on information panel.

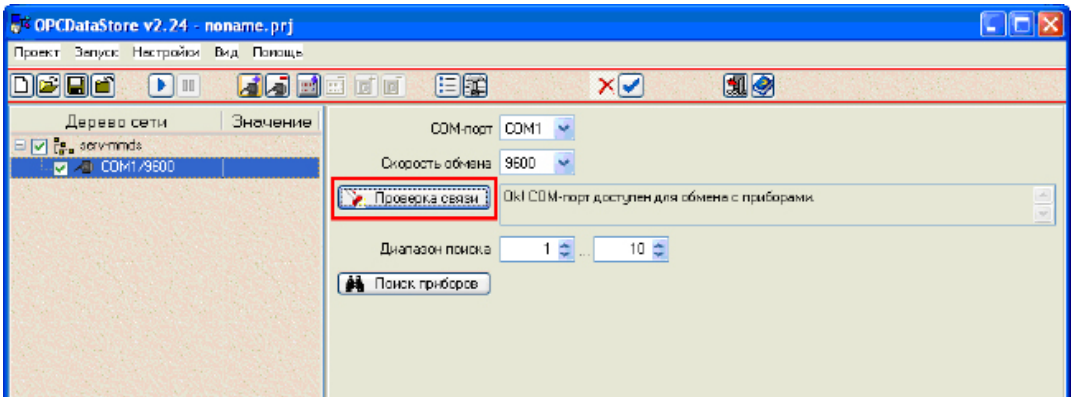


4. Click Добавить COM-порт on a toolbar. The COM1/9600 line is added to the Дерево сети list.

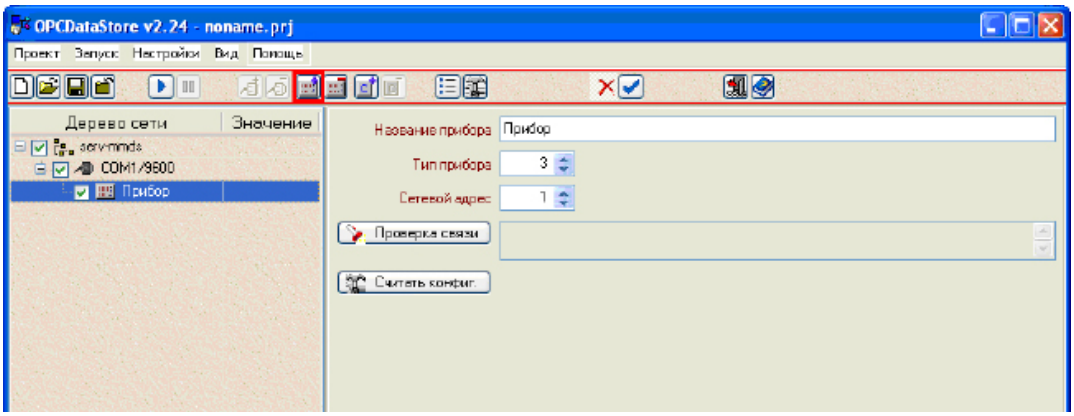


Complete the following on the panel:

- select index of COM port and скорость обмена in the COM-порт and Скорость обмена drop-down lists that correspond to specified sensor;
- click Проверка связи to be sure that specified port is accessible for working.



5. Click Добавить прибор on the panel. The Прибор line appears in the Дерево сети list.

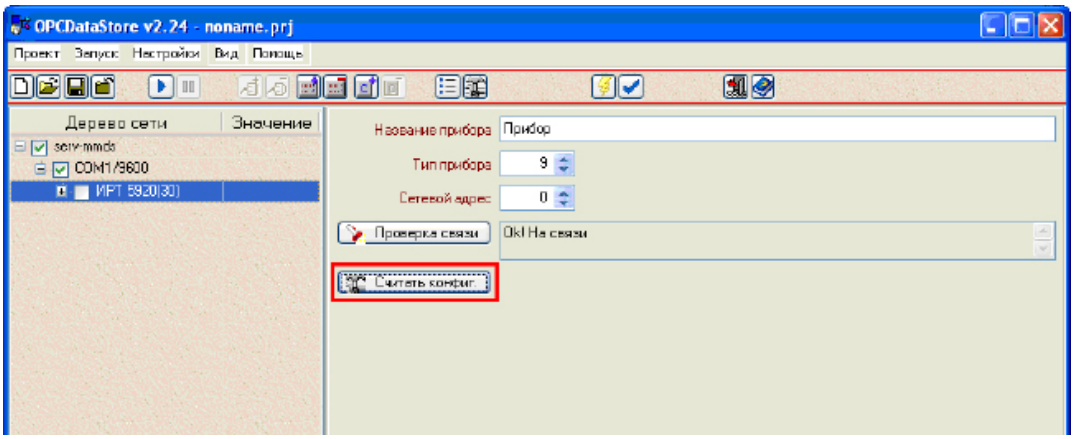


Customize the following on the panel:

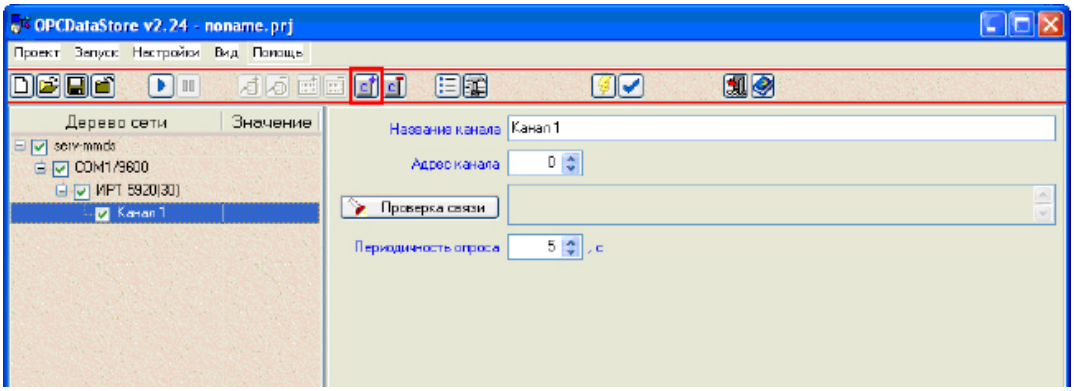
- specify 9 in the Тип прибора field;
- specify 0 in the Сетевой адрес field;
- click Проверка связи to be sure that settings are made correctly;

Note: Required values of the Тип прибора parameters are specified in instruction supplied to the IRT 5920 sensor.

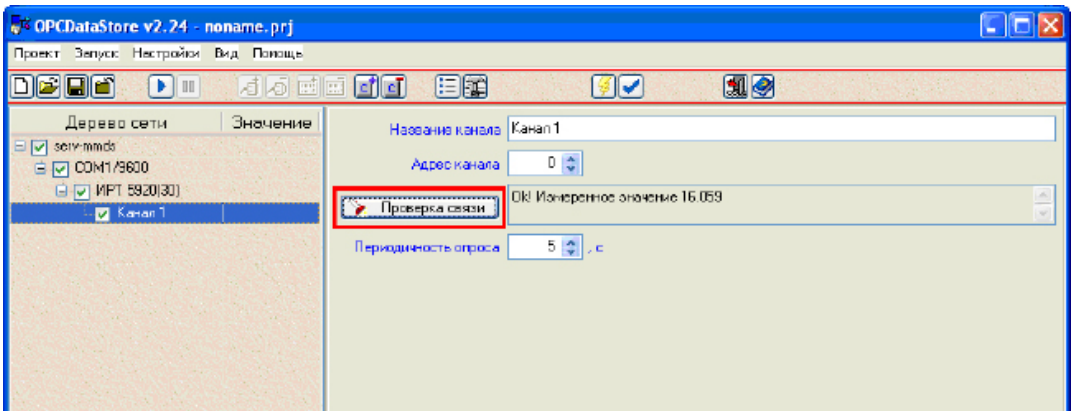
- click Считать конфиг. Name of the sensor is displayed in Дерево сети list instead of Прибор.



6. Click Добавить канал on a toolbar.
   Line with name of channel appears in the Дерево сети field.

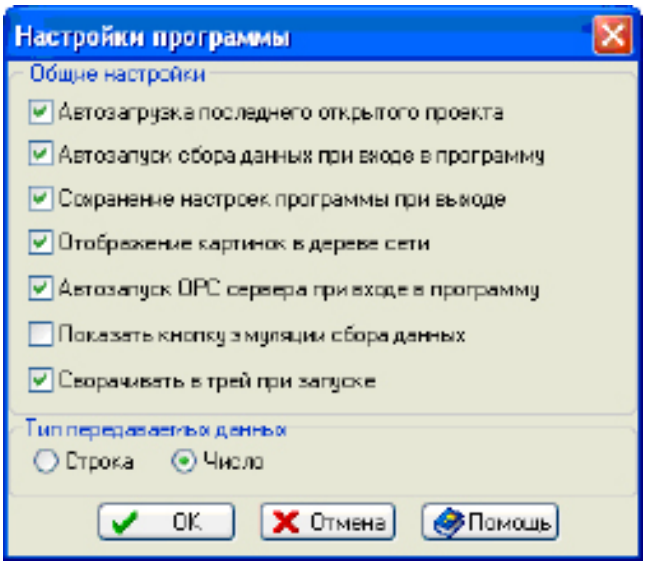


7. Click Проверка связи on information panel. Measured value appears in the filed located near the Проверка связи button if data is correctly received from the sensor.

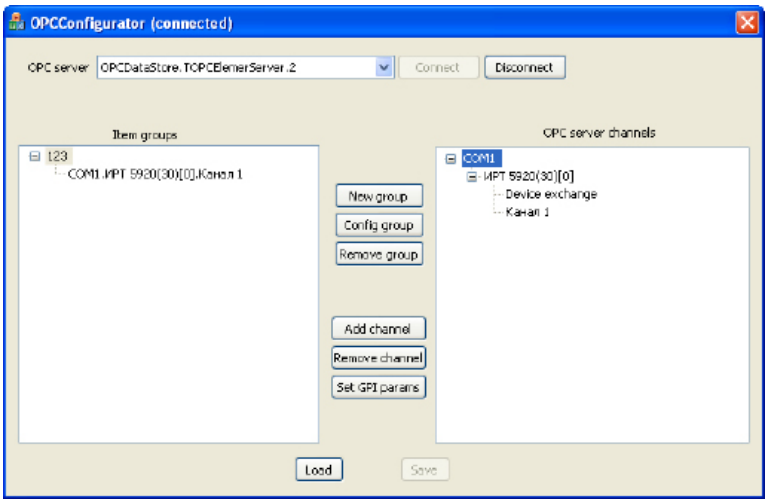


8. Save the project by clicking Проект > Сохранить проект как... .
9. Open the Настройка программы (the Настройки > Настройки программы menu command).

10. Customize the following items as it is shown below on the picture. Then click OK.



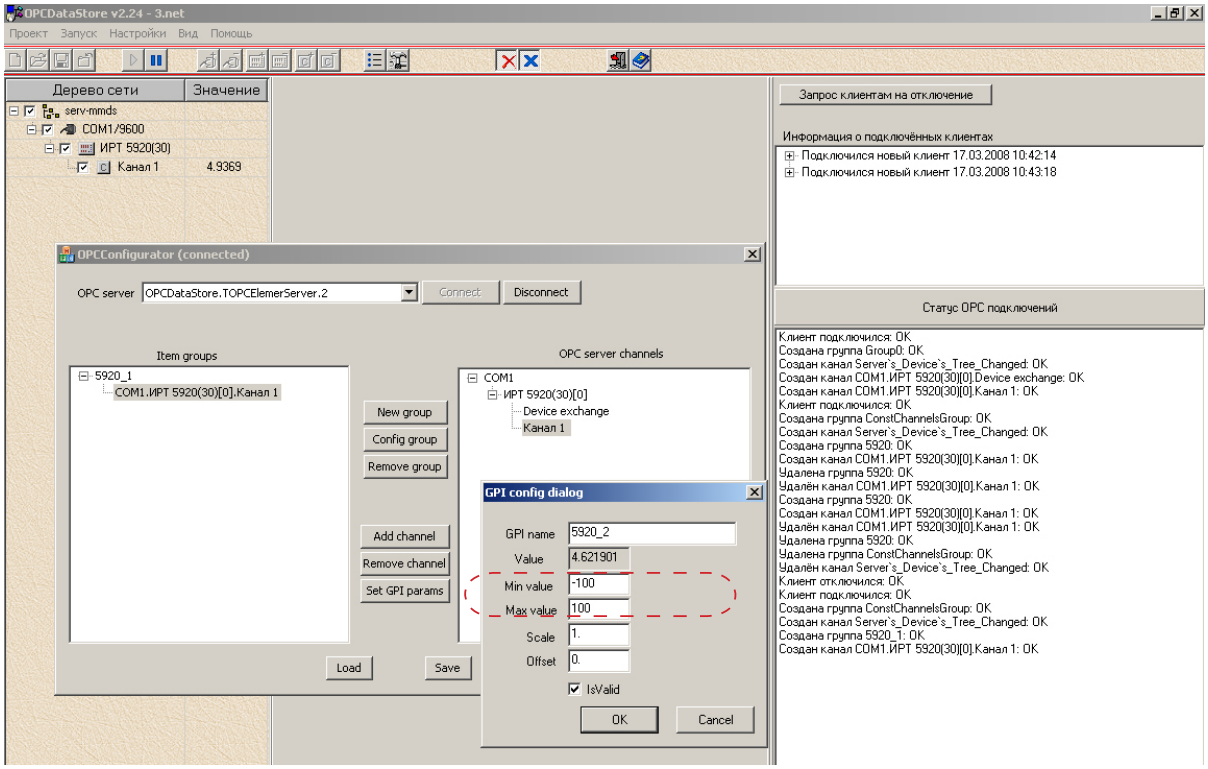
11. Launch the OPCConfigurator configurator (C:\Program Files\ ForwardT Software\Tools\OPC\ SLGPIOPCConfig.exe).



12. Customize parameters in this program configurator in the same way as you customized dealing with OPCDataStore.

Tip: First customize settings in the OPC server channels bar, then after creating of a group drag the channel into the Item groups bar using the mouse.

13. Specify minimal and maximal temperature values in the GPI config dialog window. The window is opened by clicking the Set GPI params button.



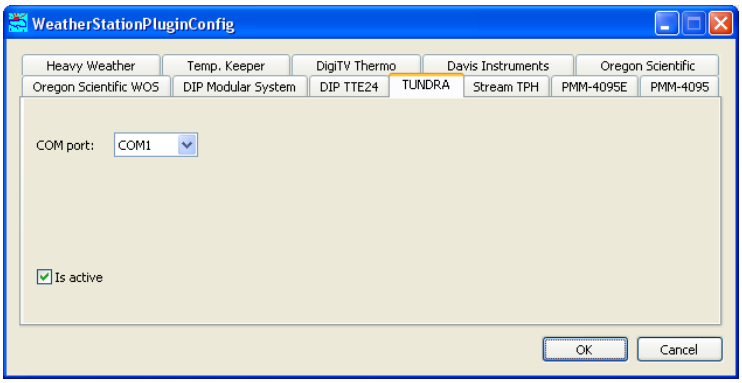
Tip: We insistently recommend specifying nonzero values for the Min value and Max value parameters (minimal and maximal temperature values), for example , -50 minimal, 50 maximal.

14. Save made configuration. Close the configurator.

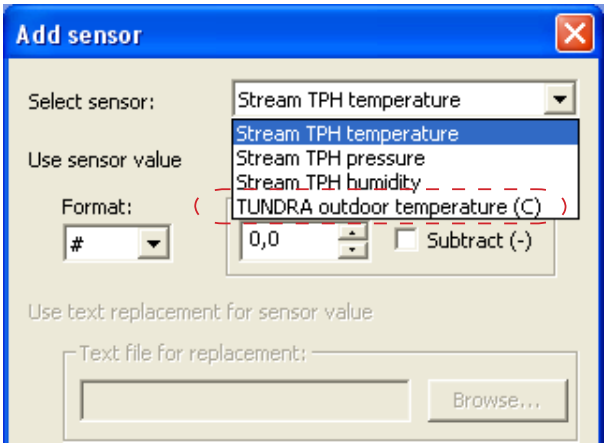
15. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select sensor which name begins with «OPC_».

6. Tundra Sensor

1. Turn PC off.
2. Plug the sensor to PC COM port. Turn PC on.
3. Launch the WeatherStationPluginConfig weather station configurator (C:\Program Files\ForwardT Software\Tools\WeatherStations\WeatherStationPluginConfig.exe).
4. Pass to the Tundra tab.

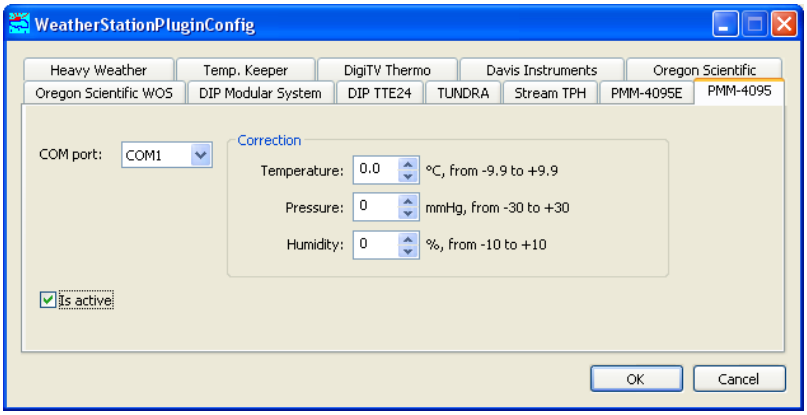


5. Complete the following on the tab:
   - specify port to which the sensor is plugged in the COM port drop-down list;
   - put the Is active mark.
6. Close the WeatherStationPluginConfig program by clicking OK.
7. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select the TUNDRA outdoor temperature (C) sensor.



7. RMM–4095. Device for Collecting and Processing of Data Received from Weather Station

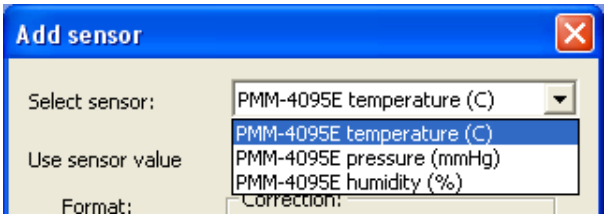
1. Turn PC off. Plug the device to PC COM port.
2. Plug the device to network. Turn the device and PC on.
3. Launch the WeatherStationPluginConfig configurator for weather station (C:\Program Files\ForwardT Software\Tools\WeatherStations\WeatherStationPluginConfig.exe).
4. Pass to the RMM–4095 tab.



Customize the following:

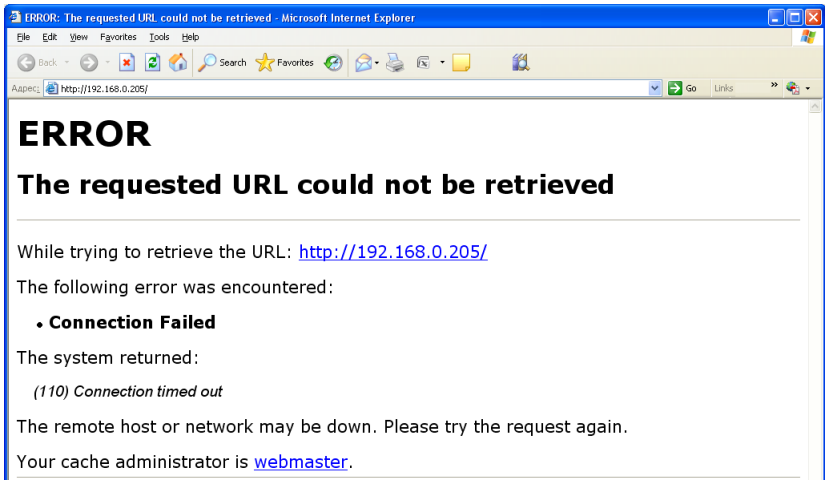
- specify port to which the RMM-4095 device is plugged in the COM port drop-down list;
- specify corresponding correction values for temperature, pressure and humidity indicators in corresponding text fields of the Correction group. The FDImageUpdater program will receive data adjusted according to the specified values;
- put the Is active mark.

5. Close the WeatherStationPluginConfig program by clicking OK. The program must be closed at further working. The RMM–4095 device is prepared to be used by FDImageUpdater program.
6. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select sensors which names begin with RMM-4095.

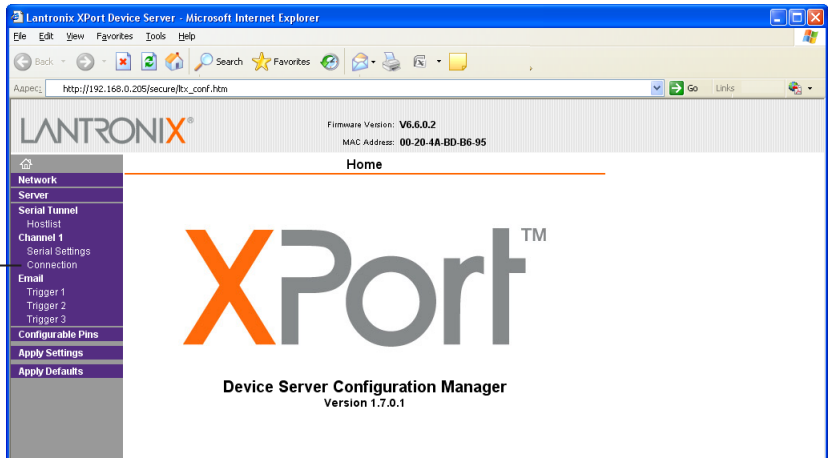


8. RMM–4095E. Device for Collecting and Processing of Data Received from Weather Station

1. Plug the PMM-4095E device to PC network port and local network. Turn the device on.
2. Be sure that the device is detected. To do this launch Microsoft Internet Explorer on one of PCs in local network. Specify IP address of the device in address line (see Tip below) and pass to the web page:
   - if the page with message on error appears then the device is not detected. In this case appeal to network administrator.



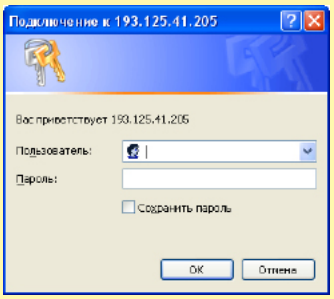
   - if the page presented on the picture below is opened in the Internet Explorer window then the device is detected.



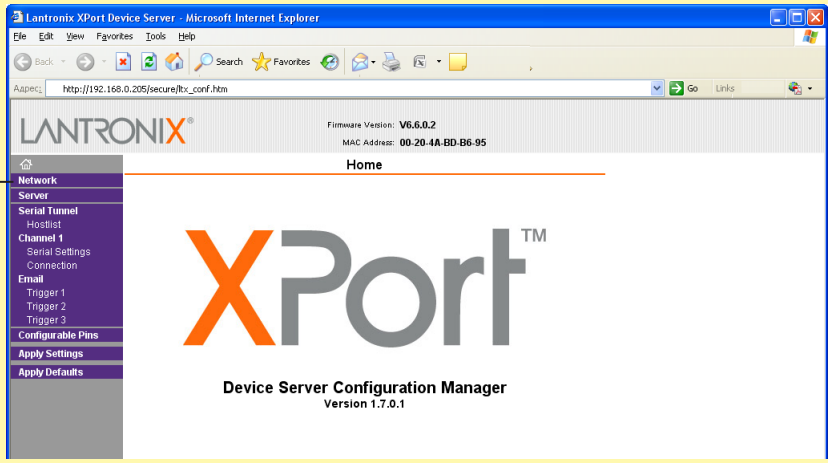
5

Tip: The RMM-4095E block is supplied with a preset IP adress – **192.168.0.205**.
There is a possibility of changing IP adress by completing the following:

1. Connect the device and PC using a net cable. Turn the device on.
2. Launch Microsoft Internet Explorer (when using other browsers information can be displayed incorrectly). Specify: http://192.168.0.205 in address line and press Enter.
3. If the following window appears in the Internet Explorer window then click OK without entering anything.

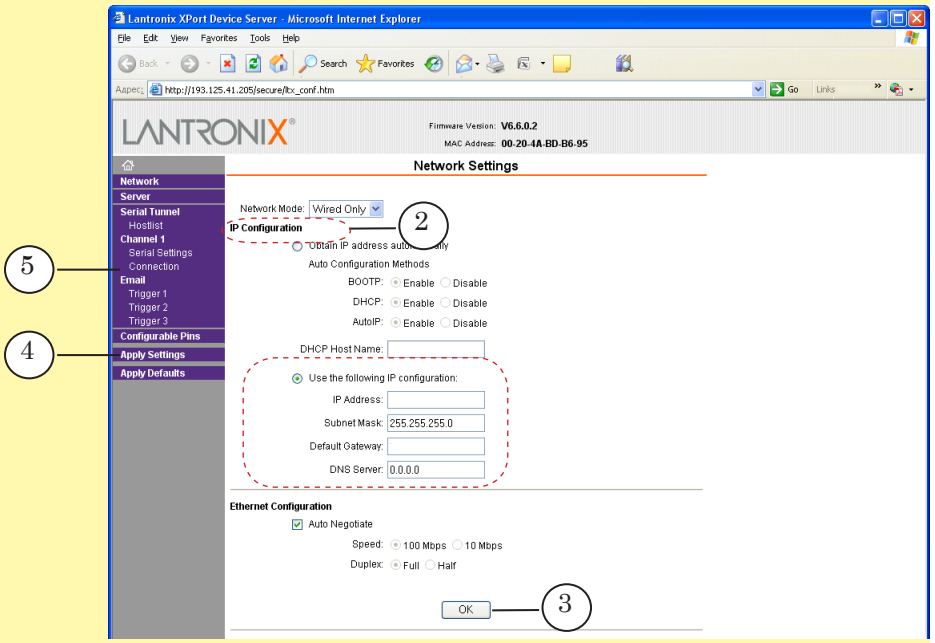


4. Select Network (1) in the appared window.



1

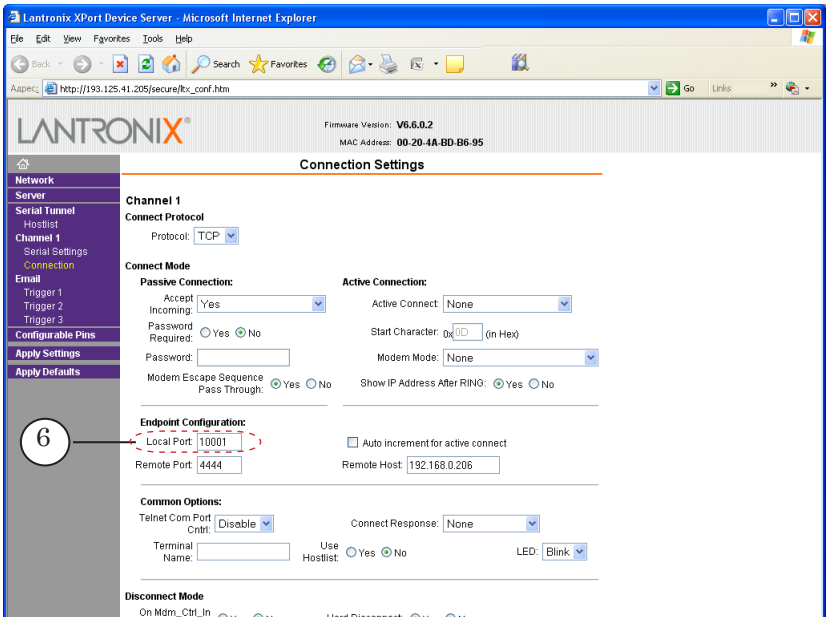
5. Page for customizing of network connection appears.



Customize settings recommended by your administrator in the IP Configuration group (2), then click OK (3) and click Apply Settings (4).

5. Right-click Connection (5).

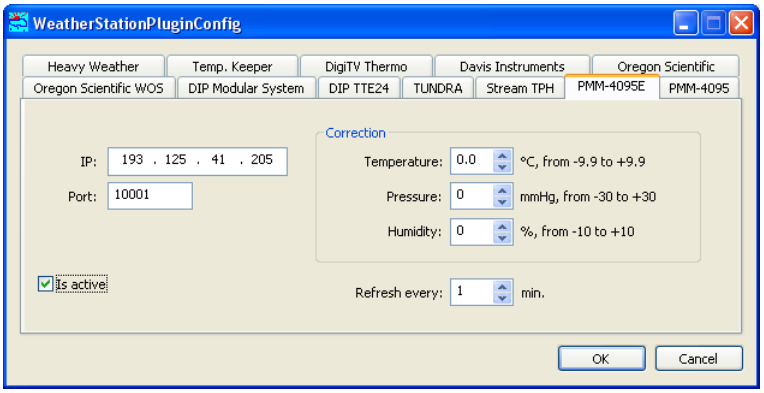
6. Search for the value displayed in the Endpoint Configuration group in the Local Port field (6). Memorize this value. The value is necessary at customizing of the device in WeatherStationPluginConfig program configurator.



7. Close Internet Explorer.

8. Launch the WeatherStationPluginConfig program configurator for weather stations (C:\Program Files\ ForwardT Software\Tools\WeatherStations\ WeatherStationPluginConfig.exe).

9. Pass to the RMM–4095E tab in the appeared configurator window.

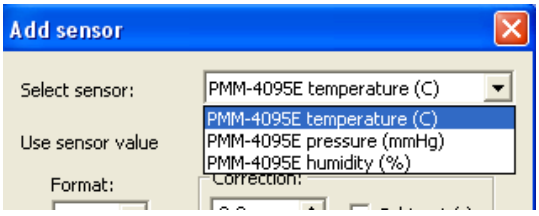


Customize the following items on the tab:

- specify IP address of the device in the IP address field;
- specify port used for interaction of the device and PC in the Port field (10001 is by default, see step 6);
- specify corresponding correction values for temperature, pressure and humidity indicators in corresponding text fields of the Correction group. The FDImageUpdater program will receive data adjusted according to the specified values;
- put the Is active mark.

10. Close the WeatherStationPluginConfig program by clicking OK. The program must be closed at further working. The RMM–4095 device is prepared to be used by FDImageUpdater program.

11. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select sensors which names begin with RMM-4095E.

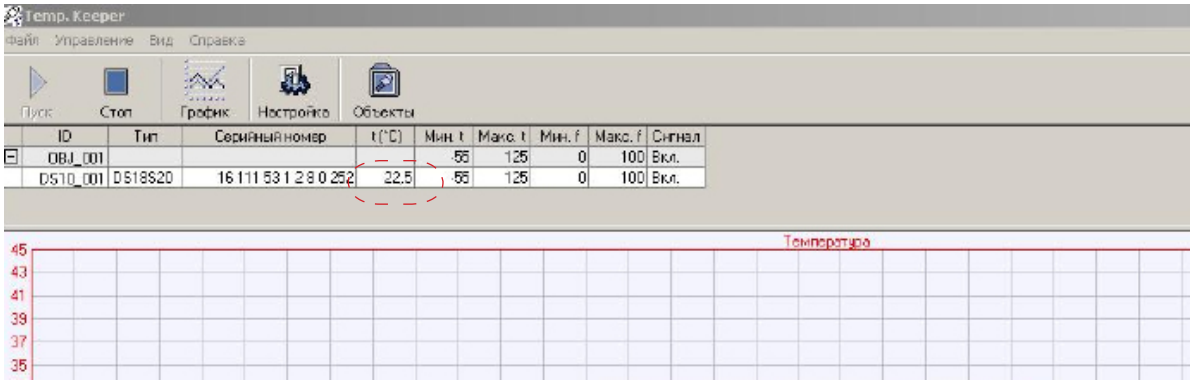


9. Temperature Sensors that Work with the Temp. Keeper Program

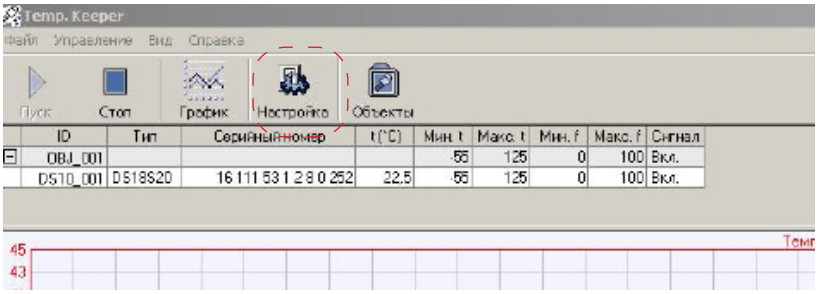
The Temp. Keeper (http://isens.ru/about.html) program is used to work with temperature sensors based on DS1820, DS18S20 michrochips developped by Dallas Semiconductor. The link is currently available in Russian only.

Workflow of preparation:

1. Plug the sensor to PC.
2. Launch the Temp. Keeper program.
3. Be sure that temperature measurings received from the sensor are displayed in the program window.

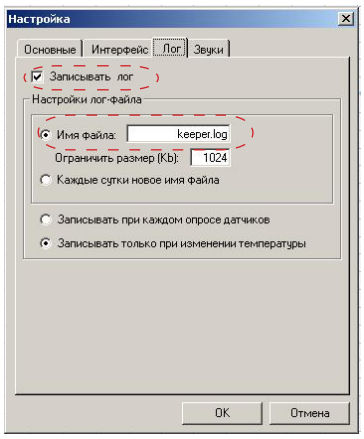


4. Click Настройка (2).



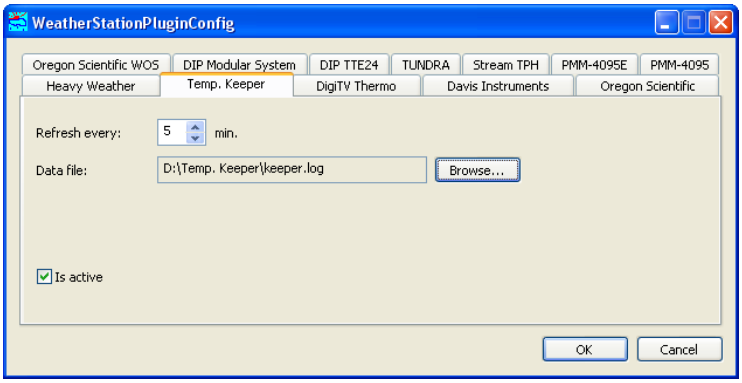
5. Customize the settings in the Настройка appeared window.
   Customize the following settings on the Log tab:
   - put the Записывать лог mark;
   - put the Имя файла mark in the Настройки лог-файла group;
   - specify the keeper.log name in the Имя файла field.

✔ **Important:** You must obligatory specify the keeper.log name for a correct interaction of the FDImageUpdater and Temp. Keeper programs via log file.



Click OK to exit the window with saving of all customized settings.

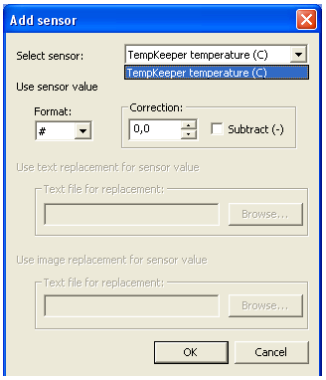
6. Close the program.
7. Launch the WeatherStationPluginConfig weather station configurator (C:\Program Files\ForwardT Software\Tools\WeatherStations\WeatherStationPluginConfig.exe).
8. Pass to the Temp. Keeper tab.



Customize the following settings on the tab:

- specify time interval between data updating in the Refresh every field;
- specify a full path to the keeper.log file in the Data file field;
- put the Is active mark.

9. Close the WeatherStationPluginConfig program by clicking OK. The program must be closed at further working.
10. Launch the Temp. Keeper program.
11. Create task of the SensorEx type in the FDImageUpdater program (see the Creation of Tasks section). Select sensor which name begins with the Temp.Keeper prefix.



✔ **Important:** The Temp. Keeper program must be obligatory launched when images are customized and output.

Recording of Data on Weather Into a Text Fie

1. General Information

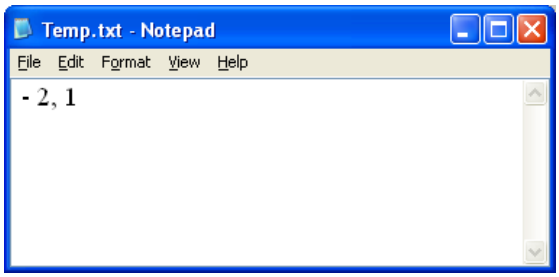
Function of recording of data on weather must be activated if it is necessary to use information coming in FDImageUpdater program from weather stations via other programs.

✔ **Important:** You must create a task for working with used weather station to output data on weather into a text file in the FDImageUpdater project.

2. Recording of Data on Temperature

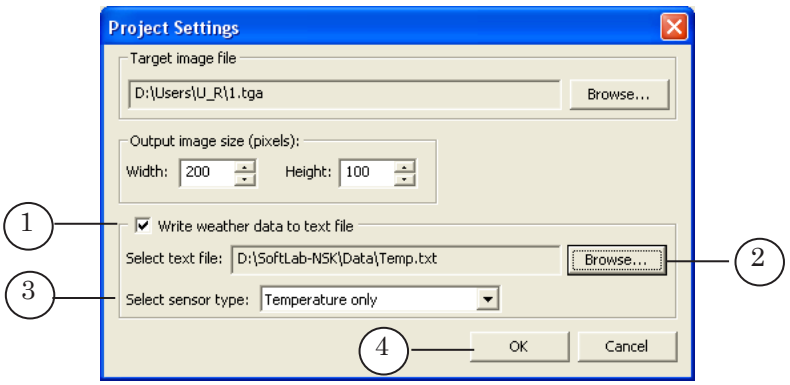
Working with any sensor supported by the FDImageUpdater program you can organize output of data on temperature into a text file.

Only temperature value is recorded into a text file. Output of data is implemented periodically.



Complete the following to organize output of data:

1. Open the Project Settings... window using the Settings > Project Settings... menu command.
2. Put the Write weather data to text file (1) mark in the Project Settings... window.



3. Click Browse... (2) to specify text file for data output in the appeared window.
4. Specify the Temperature only value in the Select sensor type drop-down list (3).
5. Save project settings by clicking OK (4).

3. Recording of Data on Temperature, Pressure, Humidity

Output of data on temperature, humidity and pressure into a text file can be implemented only when dealing with the following sensors:

- Stream Labs USB_MS_RS485;
- RMM–4095 (device for collecting and processing of weather data).

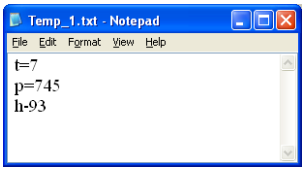
Data is recorded into separate lines that have the following format:

t=XX is a line with data on temperature, where XX is temperature value;

p=YY is a line with data on pressure, where YY is pressure value;

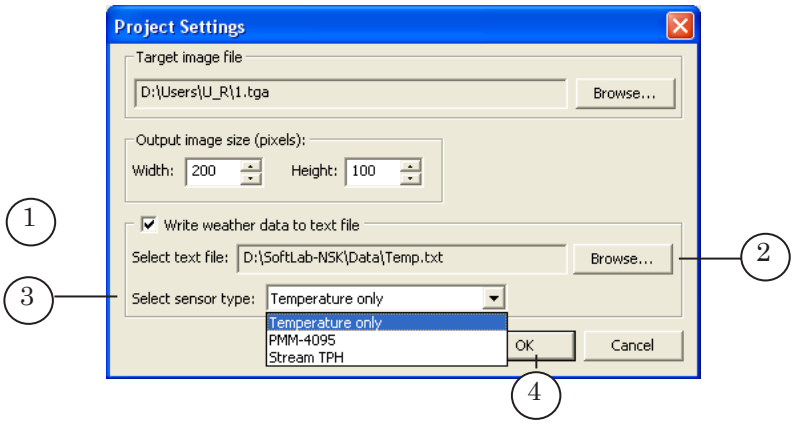
h=ZZ is a line with data on humidity, where ZZ is humidity value.

Picture below presents an example of file with data on temperature, pressure and humidity opened in Notepad editor.



Complete the following to organize output of data:

1. Open the Project Settings... window using the Settings > Project Settings... menu command.
2. Put the Write weather data to text file (1) mark in the Project Settings... window.



3. Click Browse... (2) to specify file used for output of data in the appeared window.

4. Select one of the following values in the Select sensor type drop-down list (3):
   - Stream TPH if the Stream Labs USB_MS_RS485 sensor is used;
   - RMM–4095 if either RMM-4095 sensor or RMM-4095E sensor is used.

5. Save project settings by clicking OK (4).

Useful Links

Forward T Product Line: Description, Software Delivery, Documentation, Ready Solutions

http://www.softlab-nsk.com/forward/index.html

Support

http://www.softlab-nsk.com/support.html

e-mail: forward@softlab.tv

forward@sl.iae.nsk.su

forward@softlab-nsk.com

Forums

http://www.softlab-nsk.com/forum (currently available in Russian only)

Additional Information

FDTitleDesigner. Creating Title Objects. User's Guide;

FDWebTracker. Downloading of Data from Web Site. User's Guide;

Translation from
18 March, 2013

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