

# TaskFlow User's Guide

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## Application goals and composition

TaskFlow application has been designed for automatization of data processing and represents a two-component system consisting of interface and process execution module.

Application tools allow the user to set up a sequence of data processing and to use it several times for single-format large data volumes processing.

Interface portion of the application may be missing. In this case for correct operation, it is required to create a task file in xml format, describing data processing sequence. File example in xml format can be found on the distribution disk.

## System requirements

System requirements to TaskFlow application are defined by the system requirements of the software which is part of the data processing sequence.

## Application installation and registration

To install TaskFlow run TaskFlow\_Setup.exe file and follow step-by-step instructions of the installer.

Attention! When installing the application in *Microsoft .Net Framework* window the installer installs *Microsoft .Net Framework* software to your PC. If the software was previously installed to your PC, press *Cancel*.

This application is protected with the software key. To obtain it, do the following: after initial data processing startup a «Hardware fingerprint» value will appear on the screen. This value should be copied and sent together with the customer's name in Latin to [software@scanex.ru](mailto:software@scanex.ru). After getting the file with the key, save this file into the TaskFlow installation directory.

## Application graphical interface

Graphical interface of the application is shown on Fig. 1.

In the upper part of the application dialog window there are groups of elements to create a chain of data processing programs and to set up parameters for each such program. There are also fields in this group of elements to enter messages for successful completion of each program or for error indication.

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Below are the control elements to input *Directory Variables* and *File Variables*. To the right of each element there are buttons used to add, edit or delete the variables.

Data output information field and a set of application control buttons is located in the lower part of the dialog. Information field has two tabs - *Output* tab displays data processing status, *Info* tab – information about the current status of the program, selected in *Program Chain* list.

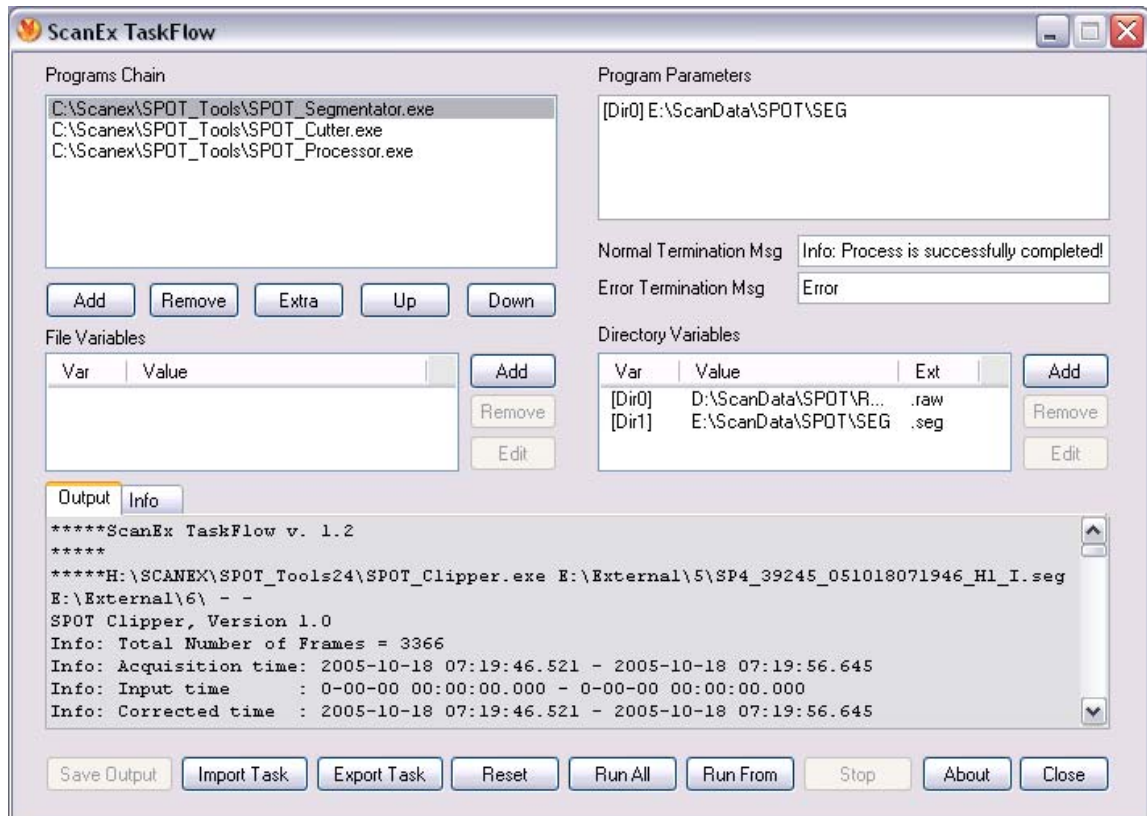


Fig.1 Application graphical interface

### Programs chain block

This block includes *Program Chain* list designed to make a chain of data processing and a set of control buttons. Data processing chain may include both programs and auxiliary functions.

To add a program into *Program Chain* list press *Add* button and in the appearing standard dialog select the required program and press *Open*. *Program Chain* field will display a line containing program name and the full path to it.

To work with the temporary files, created during the operation of the programs within a chain of data processing, as well as to move/copy/delete input/output data additional functions are available that can be opened using *Extra* button.

Press *Extra* button and select one auxiliary function to operate with directories and files:

*Create Directory* – function used to create directory on this data processing stage

*Delete Directory* – function used to delete directory on this data processing stage

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*Copy Directory* – function used to copy the created directory to another directory

*Move Directory* – function used to move a directory to another directory

*Delete Files* – function used to delete file from the specified directory on this data processing stage

*Copy Files* – function used to copy file from the selected directory to another one

*Move Files* – function used to move file from the selected directory to another one

After selecting the required function and pressing *OK* button, a line, containing the selected function, will appear in *Program Chain* list.

All newly added programs and auxiliary functions are moved to the bottom of *Program Chain* list. If a line is needed to be moved in the list, highlight it with the mouse pointer and press *Up* button to move the line up or *Down* button to move it down.

To delete the line with the program or auxiliary function from the list, highlight it in the *Program Chain* list and press *Remove* button.

### Group of control elements to set up program parameters and control messages

*Program Parameters* field was designed to enter parameters of each program, represented in *Program Chain* list. The field reflects parameters of the program, selected from the list.

Parameters of each program should comply with its command line format.

TaskFlow application has « *Directory* » and « *File* » variables that are used to vary input program parameters.

« *Directory* » variable is used to process group of files, located in one directory, in case one of the program parameters is the file name. All «*Directory*» type variables used in the data processing sequence are specified in *Directory Variables* field.

« *File* » variable enables to redefine output file name when a groups of files is processed in case input and output files should be specified as program input parameters. If output file name is directly specified without using *File* variable, the output file will be overwritten at each application start. Input file name is used as the output file name. The change of extension of the input file to the one, specified in the variable, is initiated. All *File* variables used in the data processing chain are specified in *File Variables* field.

For all console programs one may select several types of input parameters. For each of them, program parameters in *Program Parameters* field should be recorded in a specific format (Table 1).

Table 1

Program input parameters		Program parameters specified in TaskFlow	
Input file/directory	Output file/directory	Input file/directory	Output file/directory
Directory	Directory	Full path to directory	Full path to directory
Directory	File	Full path to directory	Full path to file
File	Directory	Variable [Dir]	Full path to directory
File	File	Variable [Dir]	Variable [File]

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If the program specifies paths to input and output directories as input parameters, one should enter a full path to the directory with input files and a full path to output directory in *Program Parameters* entry field.

For example: e:\Input f:\Output

If input parameters of the program contain input directory name and output file name, one should enter a full path to the directory with input files and a full path to output file in *Program Parameters* entry field.

For example: e:\Input f:\Output\filename.zip

If program input parameters contain input file name and output directory name, then in *Program Parameters* field of TaskFlow the input file should be set up via « *Directory* » variable, whereas the output directory – as a directory with the full path.

For example: [Dir1] e:\Output

For programs, which input parameters contain names of input and output files, then in *Program Parameters* field the input file should be set up via « *Directory* » variable, whereas the output file – via « *File* » variable.

For example: [Dir2][File2]

It should be noted that in addition to the specified parameters used to work with input/output files, for some programs other processing parameters should also be specified. Number of parameters and their recording format in command line are determined by the properties of each specific program. Position of each parameter in *Program Parameters* field should match the position of the respective parameter in the command line.

All variables of « *Directory* » and « *File* » type, used to create program parameters within data processing chain, must be marked in respective *Directory Variables* and *File Variables* lists.

Auxiliary functions parameters must be recorded as it is shown in Table 2.

To create or delete directories (auxiliary functions *Create Directory*, *Delete Directory*) one directory should be specified in parameters setup field with a full path to it.

For example: e:\create

To move or copy directories with all their contents (auxiliary functions *Copy Directory*, *Move Directory*) the input directory with files and another directory where the directory should be moved/copied to must be specified in the parameters setup field.

For example: e:\Input h:\Output

Table 2

Auxiliary function	Input filed/directory	Output directory	Example
<i>Create Directory</i>	-	Full path to directory	e:\create
<i>Delete Directory</i>	Full path to directory	-	E:\Del
<i>Copy Directory</i>	Full path to directory	Full path to destination directory	e:\Input h:\Output
<i>Move Directory</i>	Full path to directory	Full path to destination directory	e:\Input h:\Output
<i>Delete Files</i>	Variable [Dir]	-	[Dir0]
<i>Copy Files</i>	Variable [Dir]	Full path to destination directory	[Dir1] H:\Output
<i>Move Files</i>	Variable [Dir]	Full path to destination directory	[Dir1] H:\Output

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To delete a file from the directory (auxiliary function *Delete Files*) in *Program Parameters* field the input parameter should be specified via « *Directory* » variable. All files with specified extension will be deleted from the selected directory.

Example: [Dir0]

To move or copy files from the directory (auxiliary functions *Copy Files*, *Move Files*) in *Program Parameters* field the input file should be specified via « *Directory* » variable, and then a directory should be specified where files are to be moved/copied to.

Example: [Dir1] H:\Output

Selected program parameters can be specified in *Program Parameters* manually or using context menu commands, which can be opened with the right mouse button:

*Add Selected Directory Variable* – adds « *Directory* » variable pre-selected in *Directory Variables* list

*Add Directory* – opens dialog to select a directory, where the user is to select the directory of interest and press OK

*Add Selected File Variable* – adds « *File* » variable pre-selected in *File Variables* list

*Add File* – opens file selection dialog where the user should select the required file and press OK

*Copy* – copies the pre-selected part of line to clipboard

*Paste* – enables to paste part of sub-line, previously copied to clipboard

*Delete* – deletes pre-selected part of line from the program parameters setup field

When program parameters or auxiliary functions are selected, one must follow a certain procedure. (See [Programs parameters setup rules](#).)

TaskFlow application has special fields to enter messages about program status that can be used to analyze data processing.

In *Normal Termination Msg* field the user may enter a message which is displayed by the program after each successful completion.

In *Error Termination Msg* field the user may enter a message popped up by the program if an error occurred.

Taking in account that messages about errors and successful program operation can be non-uniform for different programs and hard-to-detect in log-files, it is recommended to specify the message type, popping up in case of error or successful program operation in the respective TaskFlow fields for each and every program. In this case TaskFlow will generate one-type information line about successful/non-successful messages during the program operation after the completion of each process. These lines can be easily detected in program log-file which enables to quickly analyze if processing has been carried out correctly or not.

To add a control message, select the program in *Program Chain* list and enter the message in the respective field.

For auxiliary operations control messages can not be entered. Therefore, control messages fields are disabled when an auxiliary operation is selected with the mouse pointer.

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### Group of elements for «Directory» variable setup

This control element has been designed to set up *Directory Variables*, which will be used later as input parameters of programs and auxiliary functions when a chain of data processing is created. It consists of the *Directory Variables* list that includes a column with the *Var* variable number, a *Value* column with indicated path to the folder of interest and an *Ext* column with file extension in the specified folder. There is also a set of buttons enabling to operate with variables.

To add «*Directory*» variable, press Add button, located to the right of *Directory Variables* field; in the appearing dialog select the required folder and press OK. After that *Extension Selector* dialog will appear, where one should specify the extension of files in the pre-selected directory that will be used for data processing, and press OK. After that in *Directory Variables* field a line will appear, containing the variable number in *Var* column and path the directory of interest – in *Value* column. In *Ext* column the specified extension of the selected directory files will be indicated.

If the selected directory contains files with different extensions, enter asterisk (\*) instead of extension in *Extension Selector* dialog to process all files from the directory.

To edit a variable, select it in the *Directory Variables* list with the mouse pointer and press *Edit*. In the appearing dialog of directory selection specify path to the folder of interest and press OK. In *Extension Selector* dialog specify the file extension and press OK once again. All changes will be displayed in the line of the variable.

To delete a variable, select it with the mouse pointer from the *Directory Variables* list and press *Remove*.

### Group of elements for «File» variable setup

This control element has been designed to create *File Variables* that will be later used as program output parameters when data processing chain is generated. It includes a list of *File Variables*, containing the column with the *Var* number and *Value* column with indicated file extension and a set of control buttons.

To add a *File* variable, press Add button, located to the right of *File Variables* field. In Appearing *Extension Selector* dialog specify the required extension and press OK. A line will appear in the field, containing the number of the variable and files extension.

To edit a variable, select it from the *File Variables* list and press *Edit*. After that, in *Extension Selector* dialog specify the file extension and press OK button. In the line with the edited variable files extension will be changed to the one specified.

To delete a variable, select it in the *File Variables* list with the mouse and press *Remove* button.

### Program parameters setup rules

Certain rules should be followed when entering program parameters in *Program Parameters* field. If program parameters are entered incorrectly, a message about the respective error will be displayed during processing.

1. *Directory* variable should not be used more than once when setting parameters for each program.
2. *File* variable should not be used more than once when setting parameters for a program.
3. When using *File* variable in program parameters, the latter should also contain a *Directory* variable.

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4. « *Directory* » and « *File* » variable used in all programs of the processing chain should be described in *Directory Variables* and *File Variables* fields.
5. All entries in *Program Parameters* field should be made in English and with decimal numbers (0-9) and should not have spaces.
6. Parameters of auxiliary functions, operating with directories, should not contain variables. Parameters of auxiliary functions, operating with files, should contain *Directory* variables as a first parameter.

### Functional set of buttons

The lower part of TaskFlow dialog contains data processing control buttons.

*Save Output* – enables to save output data window contents as a text document. Enabled only during data processing

*Import Task* – enables to load pre-generated data processing chains in xml format into the application

*Export Task* – enables to save the generated data processing chain in xml format

*Reset* – executes deletion of all programs fields' contents

*Run All* – initiates data processing

*Run From* – initiates data processing from a certain position. A required program in the list should be pre-selected with the mouse pointer. Used only if the previous processing stage was incorrect, but the repeated run is not required in order to get final results

*Stop* – stops data processing

*About* – opens information dialog about TaskFlow program

*Close* – closes the program window. All program parameters are saved to ini.xml file

### Application operation restrictions

TaskFlow application has been created to process a large number of files from one directory.

However, not any program can be used when data processing chain is generated with the help of TaskFlow application. This is due to certain restrictions in describing parameters of the used programs. (See [Program parameters setup rules](#), items 1-3)

Programs, which input parameters can not be described with one «*Directory*» variable and one «*File*» variable can not be used in the data processing chain, generated using TaskFlow.

The programs, which parameters include time intervals for input file or individual additional parameters for each file, can also not be used. (Example: Spot Clipper, Spot Extractor, Spot Extractor 1A, Spot Processor in Spot scene Level 0 generation mode)

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