

Instruction manual of lite version of the program "Multilingual local instrumental system of housing investment optimization, version 1.2" (LVP MLIS HIO 1.2)

Installing LVP MLIS HIO 1.2

1. Copy to a separate folder of your computer disk space a set of files of LVP MLIS HIO 1.2.
2. Check the composition of this set, which should include the following files and folders:
 - boot file **Lite_MLIS_HIO.exe** of the program;
 - boot file **GLS.exe** of utility program of version 1.0 under the name "**Генератор языковых оболочек (ГЯО 1.0)** (Generator of language shells (GLS 1.0))", which allows creating language shells for LVP MLIS HIO 1.2 interface;
 - contents of the folder **Data** — data files (with extension dat) for several already solved demo tasks, next to which data files will be placed for tasks that the user is solving;

Note

The installation set of LVP MLIS HIO 1.2 includes five solved demonstration tasks that are not available for removal, which are presented in two options: *Russian* ("DEMR01", "DEMR02", "DEMR03", "DEMR04", "DEMR05") and *English* ("DEME01", "DEME02", "DEME03", "DEME04", "DEME05"). Input and output data of these tasks you can look through at the screen, as well as bring out to Excel-files or print.

- contents of the folder **Excel documents** (it includes two subfolders: **rus** and **eng**) — files of tabular format Excel (with extension xls), in which can be stored the input data of any tasks, as well as the output data of solved tasks;

Note

The installation set of LVP MLIS HIO 1.2 includes Excel-files in Russian and English with the input data of five demonstration tasks. All these files can be viewed or edited in Microsoft Excel, and those of them that contain the input data for tasks — imported into LVP MLIS when creating new tasks.

- contents of the folder **Shells** — files of language shells for the current program interface;

Note

The installation set of LVP MLIS HIO 1.2 includes two files of shells for Russian and English

languages: **Shell (HIO 1.2).rus** and **Shell (HIO 1.2).eng**.

- contents of the folder **Solving** — in this initially empty folder temporarily are placed data files for the tasks which are in the stage of solving;
- contents of the folder **System**:
 - **info** — a text file containing three main parameters of your computer: processor type, clock rate and the volume of operative memory;
 - **Languages.txt** — a text file containing a list of possible language shells for the interface of this program;
 - **Programs.txt** — a text file containing names of those programs (including this one), for which may be created language shells by using the utility program ГЯО 1.0 (GLS 1.0);
 - **protocol.prh** — file of a protocol of tasks, being solved by the user, which holds general information about all existing tasks and their current state;
- contents of the folder **User documents**:
 - files of three Russian-language documents in the subfolder **rus**:
 - **Инструкция по эксплуатации ГЯО 1.0.pdf**;
 - **Инструкция по эксплуатации ОВП МЛИС ОИЖ 1.2.pdf**;
 - **Технические характеристики МЛИС-МСИС ОИЖ 1.2.pdf**;
 - files of three such English-language documents in the subfolder **eng**:
 - **Instruction manual of GLS 1.0.pdf** — file of this manual;
 - **Instruction manual of LVP MLIS HIO 1.2.pdf**;
 - **Technical characteristics of MLIS-MNIS HIO 1.2.pdf**.

3. For ease of launching the program LVP MLIS HIO 1.2, create a shortcut for its file **Lite_MLIS_HIO.exe** and place it on the desktop of your compute.

Run the program in operation

1. Click on the boot file **Lite_MLIS_HIO.exe** of the program or on its label. At that happens the following:
 - in the absence in the folder **Shells** of any language shells files appears on the screen a warning message that the work in the program LVP MLIS HIO 1.2 for this reason is impossible and it emergency closes;
 - in the presence in this folder of only one language shell file is launched the program, which interface is presented by the language of this shell;
 - in the presence there of two or more files of language shells happens transition to the next instruction item.
2. On the screen opens the window of the program LVP MLIS HIO 1.2 without any re-

cords of its interface, and in its center appears a small dialog under the name **Selection of program interface language**. From the drop-down list of this dialog select desired language of program interface and click the button **OK**. At that, the dialog closes and in the program window, which becomes available to work, appear necessary records in language that you just selected. In the same language will be output any text entries in all dialogs of the program, as well as all information provided in it.

Creating a new task with unique parameters

If in a new task of housing investment optimization the parameters of specified variants of a housing object (HO) will differ from those of any other existing task, do the following:

1. Choose the command **Input**⇒**Input of a new task**, opening the dialog **Input of task data (step 1 of 13)**, wherein do the following:
 - enter a six-digit cipher of a new task, which can include Latin characters and digits (first field of the dialog);
 - enter a name of this (second field).
2. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 2 of 13)**, wherein specify the following parameters:
 - Initial number of HO variants (first-top field of the dialog);
 - number of parts of housing object (PHOs) (second field);
 - units of measurement for cost (drop-down list);
 - mode of using the program:
 - *housing purchase* (first-left switch from the first group);
 - *housing rental* (second switch from the same group);
 - for the mode of housing purchase:
 - allocated investment amount (third field);
 - cost of services of realtor and notary (forth field);
 - variant of using the investment amount:
 - *1: only on HO purchase* (first-left switch from the second group);
 - *2: on purchase of HO and its possible repair or fine finish (RFF)* (second switch from the same group);
 - *3: on purchase of HO and its required furnishing* (third switch from the same group);
 - *4: on purchase of HO, its possible RFF and purchase of required furnishing* (forth switch from the same group);
 - for the mode of housing leasing:
 - permissible amount of rental fee per month for HO (third field).

3. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 3 of 13)**, wherein specify parameters of housing object variants:
 - HO address (second field of the table);
 - cost/(rental amount) of HO (third field of the table);
 - description of HO variant (bottom field of the dialog on the additional panel).

Note

In the bottom section of the dialog is displayed the main info about selected HO variant. If it contains a link to a web page with additional info about this variant, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

4. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 4 of 13)**, wherein specify the first group of housing object properties:
 - influence degree of property on HO in conventional units (forth field of the table);
 - minimum possible utility factor of property (fifth field of the table).
5. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 5 of 13)**, wherein specify the second group of property parameters for various HO variants:
 - utility factor of property (sixth field of the table);
 - description of property (bottom field of the dialog on the additional panel).

Note

In the bottom section of the dialog is displayed the main info about selected property of chosen HO variant. If it contains a link to a web page with additional info about this property, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

6. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 6 of 13)**, wherein specify the first group of parameters of housing object parts:
 - name of PHO (second field of the table);
 - degree of influence of PHO on HO (third field of the table);
 - degree of influence of furnishing on PHO (fifth field of the table).
7. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 7 of 13)**, wherein specify the second group PHO of parameters for various HO variants:
 - relative factor of PHO capacity (sixth field of the table);
 - relative factor of PHO attractiveness (seventh field of the table);
 - PHO description (bottom field of the dialog on the additional panel).

Note 1

In the bottom section of the dialog is displayed the main info about selected PHO of chosen HO variant. If it contains a link to a web page with additional info about this PHO, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

Note 2

The further order of setting parameters of the task depends on the chosen by you mode of using the program and of variant of using the investment amount (see instruction item 2 above). Below are four possible variants of the follow-up actions on setting the task parameters.

Order of setting the remaining parameters of the task for the mode of housing purchase with the variant 1 of using investment amount, as well as for the mode of housing rental

8. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 8 of 13)**, wherein specify the third group of PHO parameters for various HO variants:
 - utility factor of a PHO premise (seventh field of the table).

Note

In the bottom section of the dialog is displayed the main info about selected PHO of chosen HO variant. If it contains a link to a web page with additional info about this PHO, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

9. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 10 of 13)**, wherein specify the first group of parameters of PHO elements of furnishing (EFs):
 - number of required EFs (fifth field of the table).
10. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 11 of 13)**, wherein specify the second group of PHO EF parameters:
 - EF name (sixth field of the table);
 - in the presence of several EFs in PHO: minimum cost of a perfect EF (seventh field of the table).
11. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 12 of 13)**, wherein specify the third group of PHO EF parameters for various HO variants:
 - one of two modes:
 - mode of sameness of same-name PHO RF parameters from the third group for various HO variants (switch **yes**);
 - mode of non-sameness of such parameters (switch **no**);

- utility factor of EF variant (tenth field of the table);
- description of EF variant (bottom field of the dialog on the additional panel).

Note

In the bottom section of the dialog is displayed the main info about selected EF variant for chosen PHO and HO. If it contains a link to a web page with additional info about this variant, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

12. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 13 of 13)**, wherein specify the following parameters:

- type of rounding the cost parameters: on minimum (left switch), on middle (average) or on maximum (right);
- protective scaling factor for cost, which provides protection of the cost parameters from possible unauthorized access to them by third parties in case of performing calculations for some tasks on another computer with the purpose of accelerating their processing (field of the dialog).

13. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data**. Look through in it the main input data of the task and if you are not satisfied by them, then using the button **Back** go to the desired previous dialog and make there necessary correction of the tasks input data. Otherwise, do one of two things:

- at selected by default the switch **later** (it is located at the bottom right) click the button **Ready**, causing the program to form two files in the folder **Data**: a common file of the task (**hio_<six-digit task cipher>.dat**) and its input file (**hio_<task cipher >_in.dat**);
- select the switch **at once** (bottom left) and click the button **Ready**, causing this task to be solved at once without using stipulated for this aim the next commands: **Control**⇒**Work with a task protocol** and **Solving**⇒**Execution of optimization**.

Order of setting the remaining parameters of the task for the mode of housing purchase with the variant 2 of using investment amount

8. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 8 of 13)**, wherein specify the third group of PHO parameters for various HO variants:

- utility factor of a PHO premise (seventh field of the table);
- number of RFF variants of this premise (eighth field of the table);
- a possible sign of obligatory RFF (ninth field of the table).

Note

In the bottom section of the dialog is displayed the main info about selected PHO of chosen HO variant. If it contains a link to a web page with additional info about this PHO, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section

to the right of the button **Forth**.

9. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 9 of 13)**, wherein specify parameters of RFF of PHO premises for various HO variants:
 - name of RFF variants (seventh field of the table);
 - cost of RFF (eighth field of the table);
 - utility factor of RFF (eighth field of the table);
 - description of RFF variant (bottom field of the dialog on the additional panel).

Note

In the bottom section of the dialog is displayed the main info about selected PHO of chosen HO variant. If it contains a link to a web page with additional info about this PHO, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

10. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 10 of 13)**, wherein specify the first group of PHO EF parameters:
 - number of required EFs (fifth field of the table).
11. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 11 of 13)**, wherein specify the second group of PHO EF parameters:
 - EF name (sixth field of the table);
 - in the presence of several EFs in PHO: minimum cost of a perfect EF (seventh field of the table).
12. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 12 of 13)**, wherein specify the third group of PHO EF parameters for various HO variants:
 - one of two modes:
 - mode of sameness of same-name PHO RF parameters from the third group for various HO variants (switch **yes**);
 - mode of non-sameness of such parameters (switch **no**);
 - utility factor of EF variant (tenth field of the table);
 - description of EF variant (bottom field of the dialog on the additional panel).

Note

In the bottom section of the dialog is displayed the main info about selected EF variant for chosen PHO and HO. If it contains a link to a web page with additional info about this variant, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

13. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 13 of 13)**, wherein specify the following parameters:

- type of rounding the cost parameters: on minimum (left switch), on middle (average) or on maximum (right);
 - a duration of increment, which is a step of rounding the cost parameters (first-top field of the dialog);
 - protective scaling factor for cost (second field).
14. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data**. Look through in it the main input data of the task and if you are not satisfied by them, then using the button **Back** go to the desired previous dialog and make there necessary correction of the tasks input data. Otherwise, do one of two things:
- at selected by default the switch **later** (it is located at the bottom right) click the button **Ready**, causing the program to form two files in the folder **Data**: a common file of the task (**hio_<six-digit task cipher>.dat**) and its input file (**hio_<task cipher >.in.dat**);
 - select the switch **at once** (bottom left) and click the button **Ready**, causing this task to be solved at once without using stipulated for this aim the next commands: **Control**⇒**Work with a task protocol** and **Solving**⇒**Execution of optimization**.

Order of setting the remaining parameters of the task for the mode of housing purchase with the variant 3 of using investment amount

8. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 8 of 13)**, wherein specify the third group of PHO parameters for various HO variants:
- utility factor of a PHO premise (seventh field of the table);

Note

In the bottom section of the dialog is displayed the main info about selected PHO of chosen HO variant. If it contains a link to a web page with additional info about this PHO, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

9. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 10 of 13)**, wherein specify the first group of PHO EF parameters:
- number of required EFs (fifth field of the table).
10. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 11 of 13)**, wherein specify the second group of PHO EF parameters:
- EF name (sixth field of the table);
 - in the presence of several EFs in PHO: minimum cost of a perfect EF (seventh field of the table).
 - number of variants of choosing EF (eighth field of the table);
 - a possible sign of obligatory EF presence (ninth field of the table).

11. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 12 of 13)**, wherein specify the third group of PHO EF parameters for various HO variants:
 - one of two modes:
 - mode of sameness of same-name PHO RF parameters from the third group for various HO variants (switch **yes**);
 - mode of non-sameness of such parameters (switch **no**);
 - cost of EF variant (ninth field of the table);
 - utility factor of EF variant (tenth field of the table);
 - description of EF variant (bottom field of the dialog on the additional panel).

Note

In the bottom section of the dialog is displayed the main info about selected EF variant for chosen PHO and HO. If it contains a link to a web page with additional info about this variant, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

12. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 13 of 13)**, wherein specify the following parameters:
 - type of rounding the cost parameters: on minimum (left switch), on middle (average) or on maximum (right);
 - a duration of increment, which is a step of rounding the cost parameters (first-top field of the dialog);
 - protective scaling factor for cost (second field).
13. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data**. Look through in it the main input data of the task and if you are not satisfied by them, then using the button **Back** go to the desired previous dialog and make there necessary correction of the tasks input data. Otherwise, do one of two things:
 - at selected by default the switch **later** (it is located at the bottom right) click the button **Ready**, causing the program to form two files in the folder **Data**: a common file of the task (**hio_<six-digit task cipher>.dat**) and its input file (**hio_<task cipher >_in.dat**);
 - select the switch **at once** (bottom left) and click the button **Ready**, causing this task to be solved at once without using stipulated for this aim the next commands: **Control**⇒**Work with a task protocol** and **Solving**⇒**Execution of optimization**.

Order of setting the remaining parameters of the task for the mode of housing purchase with the variant 4 of using investment amount

8. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 8 of 13)**, wherein specify the third group of PHO parameters:

- utility factor of a PHO premise (seventh field of the table);
- number of RFF variants of this premise (eighth field of the table);
- a possible sign of obligatory RFF (ninth field of the table).

Note

In the bottom section of the dialog is displayed the main info about selected PHO of chosen HO variant. If it contains a link to a web page with additional info about this PHO, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

9. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 9 of 13)**, wherein specify parameters of RFF of PHO premises for various HO variants:
 - name of RFF variants (seventh field of the table);
 - cost of RFF (eighth field of the table);
 - utility factor of RFF (eighth field of the table);
 - description of RFF variant (bottom field of the dialog on the additional panel).

Note

In the bottom section of the dialog is displayed the main info about selected PHO of chosen HO variant. If it contains a link to a web page with additional info about this PHO, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

10. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 10 of 13)**, wherein specify the first group of PHO EF parameters:
 - number of required EFs (fifth field of the table).
11. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 11 of 13)**, wherein specify the second group of PHO EF parameters:
 - EF name (sixth field of the table);
 - in the presence of several EFs in PHO: minimum cost of a perfect EF (seventh field of the table).
 - number of variants of choosing EF (eighth field of the table);
 - a possible sign of obligatory EF presence (ninth field of the table).
12. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 12 of 13)**, wherein specify the third group of PHO EF parameters for various HO variants:
 - one of two modes:
 - mode of sameness of same-name PHO RF parameters from the third group for various HO variants (switch **yes**);

- mode of non-sameness of such parameters (switch **no**);
- cost of EF variant (ninth field of the table);
- utility factor of EF variant (tenth field of the table);
- description of EF variant (bottom field of the dialog on the additional panel).

Note

In the bottom section of the dialog is displayed the main info about selected EF variant for chosen PHO and HO. If it contains a link to a web page with additional info about this variant, it can be displayed in a separate window by clicking the phrase "Link to ..." located above this section to the right of the button **Forth**.

13. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data (step 13 of 13)**, wherein specify the following parameters:
 - type of rounding the cost parameters: on minimum (left switch), on middle (average) or on maximum (right);
 - a duration of increment, which is a step of rounding the cost parameters (first-top field of the dialog);
 - protective scaling factor for cost (second field).
14. Click in the current dialog the button **Forth**, passing to the dialog **Input of task data**. Look through in it the main input data of the task and if you are not satisfied by them, then using the button **Back** go to the desired previous dialog and make there necessary correction of the tasks input data. Otherwise, do one of two things:
 - at selected by default the switch **later** (it is located at the bottom right) click the button **Ready**, causing the program to form two files in the folder **Data**: a common file of the task (**hio_<six-digit task cipher>.dat**) and its input file (**hio_<task cipher >_in.dat**);
 - select the switch **at once** (bottom left) and click the button **Ready**, causing this task to be solved at once without using stipulated for this aim the next commands: **Control**⇒**Work with a task protocol** and **Solving**⇒**Execution of optimization**.

Creating a new task with repetitive parameters

If a new task has the same parameters of available variants of a housing object as some existing task, follow these steps:

1. Choose the command **Input**⇒**Input of a new task by data import**, opening the dialog **Input of task data (step 1 of 13)**, wherein do the following:
 - enter a six-digit cipher of a new task, which can include Latin characters and digits (first field);
 - enter a name of this (second field).
 - select format of a file to be imported which contains input data of another task:

own format of the program (left switch **DAT**) or standard format Excel (right switch **XLS**);

Note

Mode of import into a new task of input data of another task, been stored in Excel-file, was introduced due to the fact that the program has a mode of export input data of existing tasks into files of Excel type (command **Export of task data to Excel-table** of menu **Output**).

- when selecting the switch **DAT** do the following:
 - select in the first drop-down list the existing task, input data of which should be copied to the current task;
 - click the button **Import**;
 - when selecting the switch **XLS** do the following:
 - click the button **Import of Excel-file**;
 - in the opened dialog **Open** select on the disk required file (with the extension xls), and click the button of the same name.
2. Moving with the button **Forth** from the current dialog to a next one, look through in all 14 dialogs the input data of a current task and make necessary changes in them (see above Sec. "Creating a new task with unique parameters").
 3. Click the button **Ready** in the last dialog. At that, in the folder **Data** will be created two files of the task: general and input ones.

Correction of task input data

This operation can be performed in two ways:

- during the operation to create a new task (see above);
- by using the command **Input⇒Correction of input data of unsolved task**, that is available for use to such unsolved tasks, which input files have not been copied to the folder **Solving** for their solution (selection of a task to correct its input is made in the dialog **List of tasks** on the screen when running this command).

Uploading a file with input data of a new task

After creating a new task, you need to copy its input file (with input data of the task) to the folder **Solving** for its subsequent solution (see below). This operation is executed in the following order:

Note

After completing the operation in question concerning to some unsolved task you can not correct its input data.

1. Choose the command **Control⇒Work with a task protocol**, opening the dialog **Protocol of tasks**.

2. Select in the dialog upper list the required task, for which the operation in question was not fulfilled (this is indicated by the record "A stage of data input" in line "Task state" of the protocol table).
3. Click the button **Upload the file of task input data**, which in this case becomes unlocked. At that happens the following:
 - in the folder **Solving** appears a duplicate of the input file of current task;
 - in line "Task state" of the protocol table appears record "Waiting for solution";
 - the button **Upload the file of task input data** becomes locked.

Solving tasks

Operation of solving tasks, which input files are placed in the folder **Solving**, is performed in the following order:

1. Choose the command **Solving** \Rightarrow **Execution of optimization**, opening the dialog **Optimization module of MLIS HIO 1.2**.
2. Set the desired mode of processing: *batch* (for solving all group of tasks) or *individual* (for solving only one task), and then click the button **Next**.
3. When working in batch mode, do the following:
 - if necessary, adjust specified parameters of optimization, and then click the button **Next**;
 - click the button **START** at the bottom, resulting in a process of successive solving the tasks of this group, when a name of this button changes to **WORK**;
 - after this button again be called **START**, which indicates the completion of solving the entire group of tasks, close the dialog **Optimization module of MLIS HIO 1.2** by clicking the button **EXIT** (bottom right).
4. When working in individual mode, do the following:
 - type in the dialog field a six-digit cipher code of a solvable task and click the button **Next**;
 - if necessary, adjust the parameters of optimization scheme, and then click the button **Next**;
 - click the button **START** at the bottom, resulting in a process of solving selected task, when a name of this button changes to **WORK**;
 - after this button again be called **START**, which indicates the completion of solving the current task, close the dialog **Optimization module of MLIS HIO 1.2** (button **EXIT**).

Connecting a file with task solving results

After performing the operation of solving tasks you should transfer files with results of

their solution (**hio_<task cipher>_out.dat**) from the folder **Solving** to the folder **Data**. This operation is performed in the following order:

Note

After performing this operation concerning some solved task it is impossible its repeated processing. That may be required, in particular, in case of absence of its successful solution due to wrong choice of values of the optimization schemes parameters.

1. Choose the command **Control⇒Work with a task protocol**, opening the dialog **Protocol of tasks**.
2. Select in the upper dialog list the required task, which input file was copied to the folder **Solving** (this is indicated by the record "Waiting for solution" in line "Task state" of the protocol table).
3. Click the button **Load the file of task solving results**, which in this case becomes unlocked. At that happens the following:
 - input file of the current task is removed from the folder **Solving**, and its output file is moved from this folder to the folder **Data**;
 - in line "Task state" of the protocol table appears record "Task is solved";
 - the button **Load the file of task solving results** becomes locked.

Working with a tasks protocol

A protocol of tasks contains general information about existing tasks of housing investment optimization, being solved by LVP MLIS HIO 1.2 (these data are stored in the file **protocol.prh** placed in the folder **System**). On the screen displays in tabular form such part of the protocol, which refers to a user-selected task. It contains the following formation:

- cipher and name of this task;
- current state of the task, which can be one of three: " A stage of data input", "Waiting for solution" or "Task is solved";
- dates and times of occurrence for the four different event.

Transition to the mode of work with a tasks protocol is performed by the command **Control⇒Work with a task protocol**, which opens the dialog **Protocol of tasks**. In this window, the following operations can be performed:

- viewing general information about the existing tasks;
- upload the input file a new task, that contains its input data (see above);
- connecting the output file of the task containing the results of its solution (see above);
- removal of those tasks that are no longer necessary for the user (button **Delete the task**).

Output of task input data

Input data for any existing task of housing investment optimization may be brought out to screen, Excel-file and print. This operation is performed in the following order:

1. Choose the command **Output⇒Viewing input data of any task**.
2. In the opened dialog **List of all tasks** select the desired task and click the button **OK**. At that, the current dialog is closed and opens the window **Viewing input data of the task "<task name>"** with tabular input data of the task chosen by you, which can be looked through.
3. To bring out these data to a new Excel document, choose the command **Export of data to Excel-table** of menu **Output**, to print them — the command **Printing of data** of the same menu.

Output of task solving results

Output data for any solved task of housing investment optimization may be brought out to screen, Excel-file and print. This operation is performed in the following order:

1. Choose the command **Output⇒Viewing data of solved task**.
2. In the opened dialog **List of solved tasks** select the required task and click the button **OK**. At that, the current dialog is closed and opens the window **Viewing solution result of the task "<task name>"** with tabular output data of the task you have selected.
3. To bring out these data to a new Excel document, choose the command **Export of data to Excel-table** of menu **Output**, to print them — the command **Printing of data** of the same menu.