ForwardT Software Package

FDOnAir

Additional Sections

Revision as of
December 3, 2008

User's Guide

FCC Information

FCC ID:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

Shielded cables and I/O cards must be used for this equipment to comply with the relevant FCC regulations. Changes or modifications not expressly approved in writing by SoftLab-NSK Ltd. may void the user's authority to operate this equipment.

Limited Warranty

Our company warrants this product against defects in materials and workmanship for a period of one year from the date of purchase. During the warranty period, products determined by us to be defective in form or function will be repaired or replaced at our option, at no charge. This warranty does not apply if the product has been damaged by accident, abuse, misuse, or as a result of service or modification other than by us.

This warranty is in lieu of any other warranty expressed or implied. In no event shall we be held liable for incidental or consequential damages, such as lost revenue or lost business opportunities arising from the purchase of this product.

Table of Contents

Introduction

This document contains sections supplementing the basic FDOnAir User's Guide. We discuss here some new topical features of the program and user interface.

From now on, updating FDOnAir User's Guide proper is stopped. All the subsequent changes will be covered in this document only.

Autoloading Schedules

1. Autoload Mode

The FDOnAir application has the ability to automatically download a schedule and execute it.

Schedules that are to be autoloaded must be stored in text files named in a certain way: a file name contains the date and time of starting the schedule.

In the autoload mode, the application automatically:

- continuously tracks the availability of appropriate files in a specified folder;
- when detects a file corresponding to the current moment of time:
  - reads the data to the schedule table inactive at the moment;
  - activates the schedule (starts preparing for the execution of the first command);
  - proceeds to the schedule execution at the specified time.

2. Schedule File Name

A file that is to be to be autoloaded must be named as follows: Autoload_Date_Time.air,
where:

- Autoload – a required substring indicating that the file is to be autoloaded;
- _Date – a required substring indicating the date of starting the schedule in the YYYYMMDD format, where:
  - YYYY denotes the year;
  - MM – the month;
  - DD – the day of the month;
- _Time – a required substring indicating the time of starting the schedule in the hhmmss format, where:
  - hh denotes the hour in military time;
  - mm – the minute;
  - ss – the second;
- air – the standard extension of the FDOnAir file names.

Example: A file with a schedule which is to be autoloaded and executed on July 25, 2007 at 13:39 PM must be named as follows: Autoload_20070725_133900.air.

Important: Strictly keep the stated file name format. File names that do not meet the requirements are ignored when autoloading.

3. Autoload Start and Schedule Activation Time

Autoloading a schedule to the table and its activation may take some time.

It's possible to adjust an anticipatory launching schedule autoload and preparing for the first command execution.

To adjust an anticipatory launching, use the controls located on the FDOnAir Settings > Schedule autoload tab page. The autoload start and schedule activation time are determined automatically on basis of the start time specified in a file name and values set on the page.

4. Schedule Start Time

A schedule start time is specified in the file name.

Proceeding from a specific situation the application can automatically change the actual time of starting commands.

If a command of playing data is being executed in the current schedule, a new schedule will not start until displaying the current clip is over, even if the moment of time specified in the file name has come.

✔ **Important:** The actual start time of a new schedule may shift by the time required to complete playing the current data.

✿ **Tip:** To avoid a start time shift, use the wait time active command containing the required start time specified. The command forcibly switches control to itself at a specified point of time.

A schedule having the command at the beginning will necessarily start at the specified time (see example below).

Example: Here goes an example of a transfer from one schedule to another.

1. The Figures below show time 13:59.
2. The schedule being executed is located in the upper table. The file reel_5.avi is being played. Its displaying is to be completed at 14:01:30.09.
3. After the displaying of the current clip has been started, a new schedule from the file Autoload_20070803_140000.air was loaded to the lower table. It's specified in the file name that the schedule is to start at 14:00.
4. The Wait time active command goes first in the schedule presented in Figure (A). The Wait previous command goes first in the schedule in Figure (B). All the rest of the commands are the same.
5. The start time of the file loza1020.avi is different in the two cases presented in the examples:
   - in Figure (A) – 14:00:00.00, matches the time specified in the Wait time active command;
   - in Figure (B) – 14:01:30.09, matches the end time of playing reel_5.avi.

A   B

5. Autoload Settings

To configure autoload, use the following tab of the FDOnAir application settings: Settings > Schedule autoload.
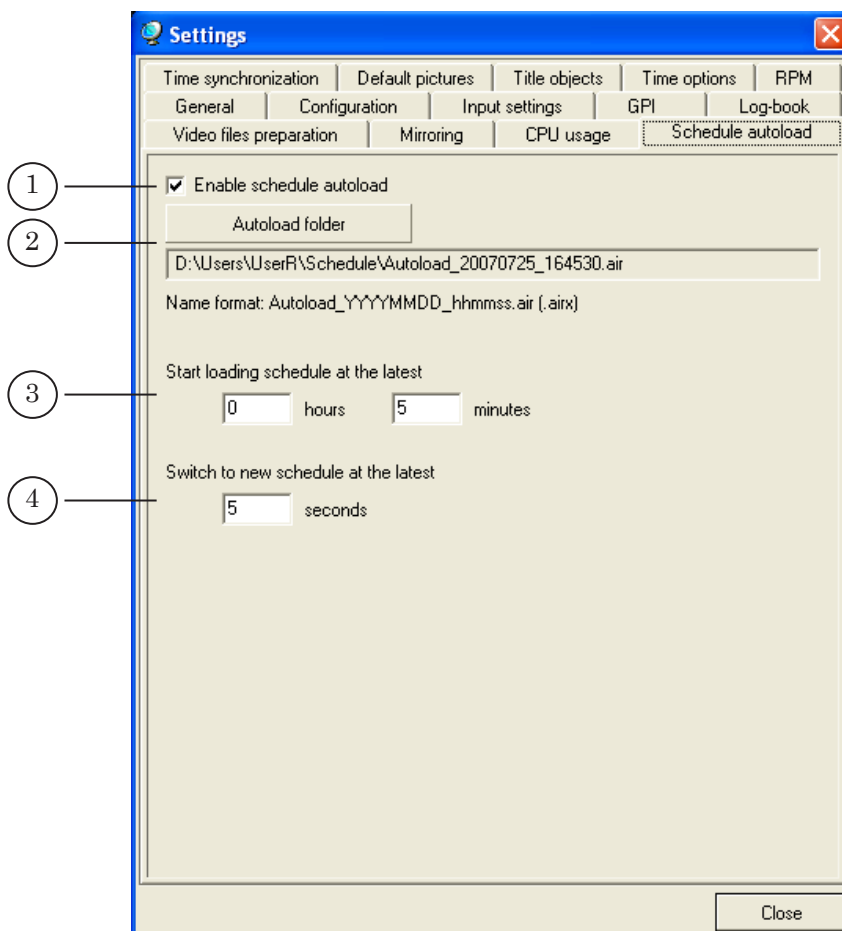
The Schedule autoload tab
The controls of the tab allow you to set: 1 – using the schedule autoload mode (enable/disable); 2 – a name of the folder with the schedule files; 3 – a value for the schedule loading time; 4 – a value for the schedule activating time.

Schedule files that are to be autoloaded must be located in the folder specified as the autoload directory.

The time of loading each schedule to the table is determined as the time specified in the file name reduced by the value (in minutes) specified in the Start loading schedule at the latest field.

A transfer from one schedule table to another (from a current schedule to a new one) is executed a few seconds before the start time specified in the file name. A value used when calculating the moment of activation is specified in the Switch to new schedule at the latest field.

6. Using the Autoload Mode

1. Create a schedule. Save it to a file, specify the required date and time of loading.

The file name must look as follows:
Autoload_Date_Time.air, where:

- Date – the date in the YYYYMMDD format. For example: 20070821 – August 21, 2007;
- Time – the time in the hhmmss format. For example: 063027 – 06:30:27.
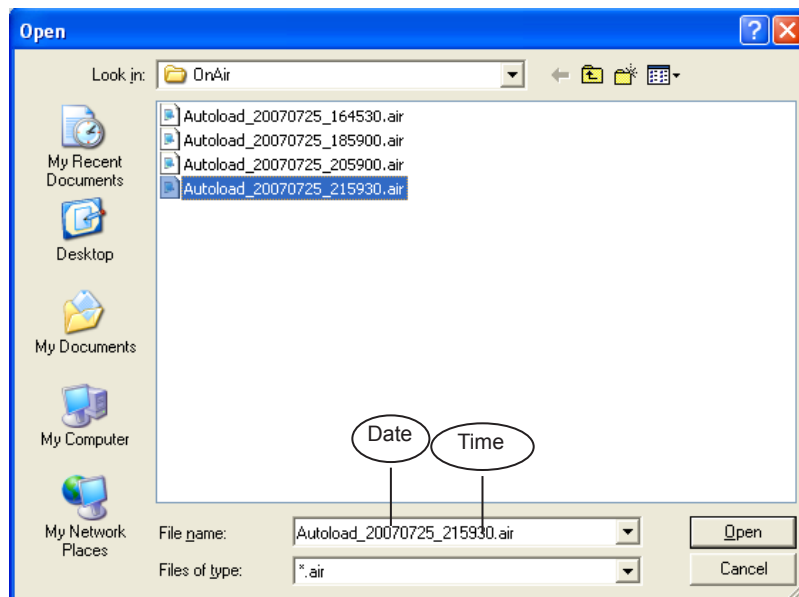
2. Ensure all the schedules which are to be autoloaded are located in the same folder.

3. Click the Settings button in the FDOnAir main window. The Settings window opens. Select the Schedule autoload tab.

Settings

| Time synchronization | Default pictures | Title objects | Time options | RPM |

| General | Configuration | Input settings | GPI | Log-book |

| Video files preparation | Mirroring | CPU usage | Schedule autoload |

☑ Enable schedule autoload

Autoload folder

D:\Users\UserR\Schedule\Autoload_20070725_164530.air

Name format: Autoload_YYYYMMDD_hhmmss.air (.airx)

Start loading schedule at the latest

| 0 | hours | 5 | minutes |

Switch to new schedule at the latest

| 5 | seconds |

Close

4. To switch on the autoload mode, check the
   Enable schedule autoload check box.

5. To set the folder with the schedule files, click Autoload folder.
   The standard Open dialog box opens. Select the required
   folder and the file in it, click Open. The selected folder name
   is displayed in the text field.

6. To set a value (in minutes) for determining the start time
   of loading the schedules to the table, enter a number in the
   Start loading schedule at the latest field.

7. To set a value (in seconds) for determining the time of acti-
   vating schedules: enter a number in the
   Switch to new schedule at the latest field.

8. To close the Settings window, click Close. The settings are ap-
   plied.

The Split Movie Operation of Editing

1. Function

The Split Movie operation is intended to set playing a file by parts, with breaks and can be used, e.g., when creating a schedule for playing a film with commercials.

Performing the operation you can promptly get a schedule draft containing several commands for playing fragments of the original file and empty lines between them for inserting commercials.

The Split Movie operation can be applied only to the commands for playing data from a file:

- Play video clip;
- Play audio clip.

2. Action

By the Split Movie operation, one command for playing data is automatically changed to a sequence of commands.

The created sequence presents a set of alternating blocks of two types:

- blocks each with a command for playing a fragment of the original file;
- "empty" blocks to insert additional commands, e.g., commands for playing commercials.

Each block starts with the Wait previous command and is accompanied with a comment.

The total number of blocks is determined by the user when performing the Split Movie operation and depends on the number of breaks at the clip playback.

The file fragments created by the splitting do not intersect each other and have the same length. Their total duration matches the file duration.

The start time and duration of each fragment can be edited by the user when splitting.

Note: The result of performing the operation presents several commands for playing fragments of the clip, the original file being not splitted into parts.

Example: The picture shows the fragments of a schedule before (A) and after (B) performing the Split Movie operation.

The Split Movie operation was applied to the Play video clip reel_3.avi command (A).

The splitting was adjusted the way to insert 3 blocks of commercials in the breaks between the clip fragments. The duration of the clip fragments was not adjucted, the default settings being used.

As a result (B), the command for playing was transformed into a set of commands consisting of 7 blocks. Each block starts with the Wait previous command with a comment explaining the block function.

Blocks 1, 3, 5, and 7 contain the command for playing a fragment of the video clip 'reel_3.avi'. All the four fragments have the same duration (1/4 of the file total duration).

Blocks 2, 4, and 6 are empty and present blanks for further editing.

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3. Starting the Operation

To start the operation, use the Split Movie button. It's located on the schedule editing panel.
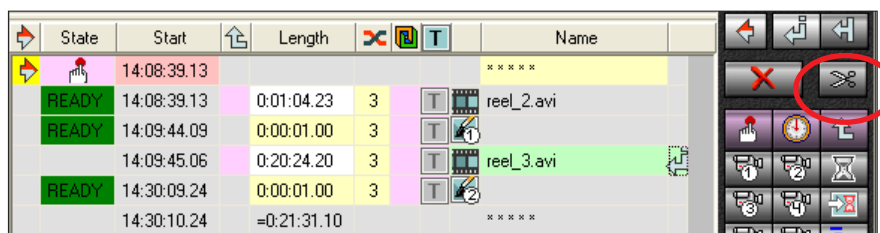
✔ **Important:** The button is available only if the current editing position is placed on a line containing either of the commands:
Play video clip or Play audio clip.

4. Settings of Splitting

Click Split Movie. The dialog box with the settings for splitting the selected file opens.
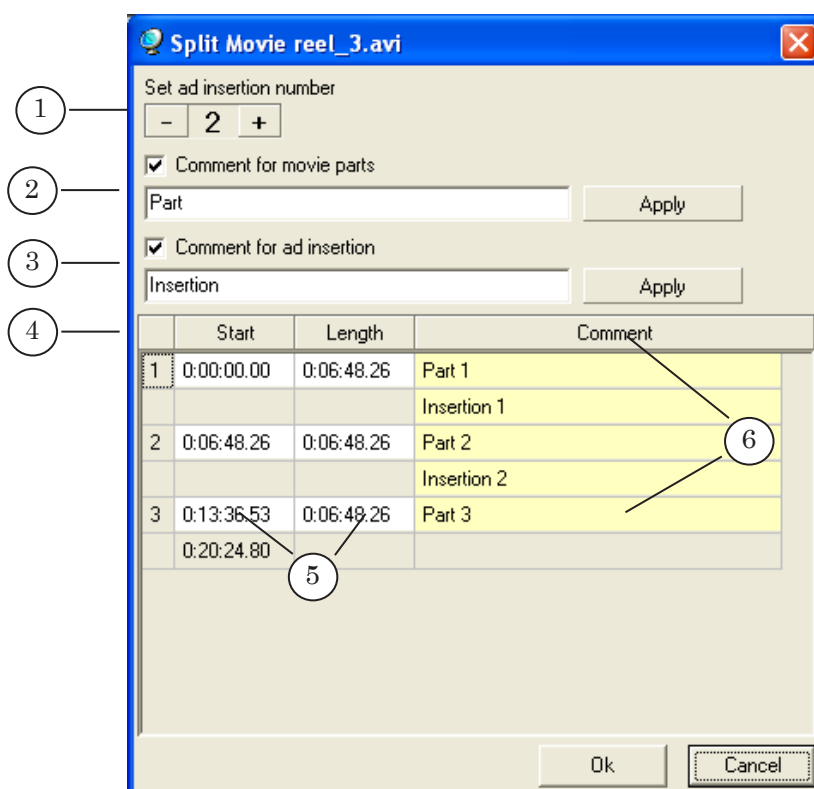
Dialog box with the settings of splitting:
1 – buttons for setting the number of insertions; 2 – controls for setting a comment to the clip fragments; 3 – controls for setting a comment to blocks with other commands; 4 – a table with a schedule draft. In the table fields you can edit: 5 – the fragments duration; 6 – comments to each block.

Setting the number of insertions (breaks in the file broadcast) is performed with two buttons:

- "decrement by 1" – `–` ;
- "increment by 1" – `+` .

The current number of insertions is displayed in the field between the buttons.

The schedule draft presents a table with columns displaying information (which can be edited) about the created fragments:

- Start – the start time relative to the clip beginning;
- Length – the playback duration;
- Comment – a covering text to each of the created blocks.

Besides, the table allow you to edit the comments to the blocks of commercials.

The table information is updated each time the number of insertions is changed: the original clip is split anew into the corresponding number of fragments (by 1 more than the insertions) of the same length, the values in the Start and Length columns being recounted.

The start time and duration of each fragment can be changed. To do so, click in the appropriate field of the draft table. The Trim Editor dialog box opens, where you can adjust the bounds of the fragment.

Note: Since the fragments must not intersect each other, and the total playback duration must not change, a change of a parameter value causes recounting values in the adjacent fields.

There are two identical groups of controls for setting comments to the schedule blocks: the first one is for a commentary to the clip fragments and the second one is for the text attached to the insertions. Each group contains:

- a check box enabling/disabling a comment text;
- a text field for editing the common part of the comments. The specified text is to be repeated in all the comments of the type;
- the Apply button.

After the common part of the comments is set, each comment can be edited additionally in the schedule draft table.

5. Performing the Split Movie Operation

1. Place the pointer on a line with the Play video clip command.
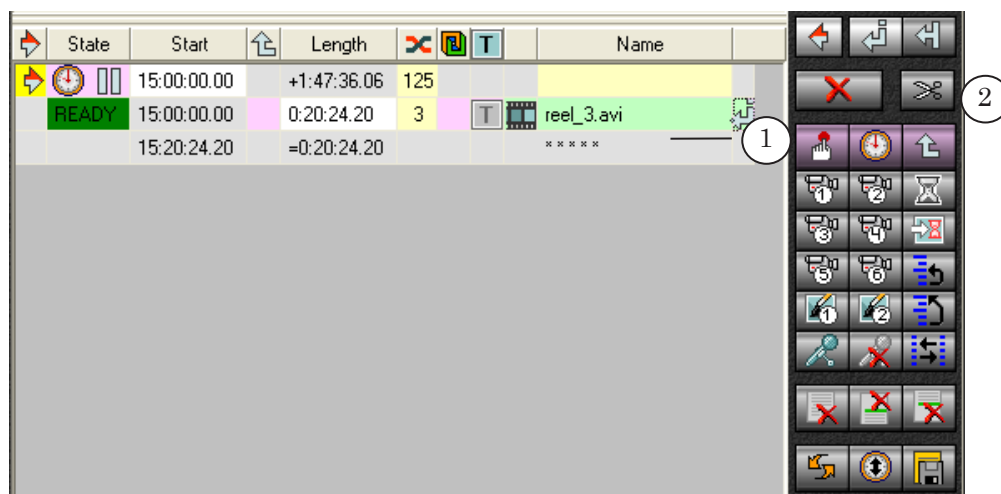
2. Click Split Movie. The dialog box with the settings of splitting (the Split Movie dialog box) opens.

3. To set the number of blocks of commercials, click the "+" or "–" buttons.
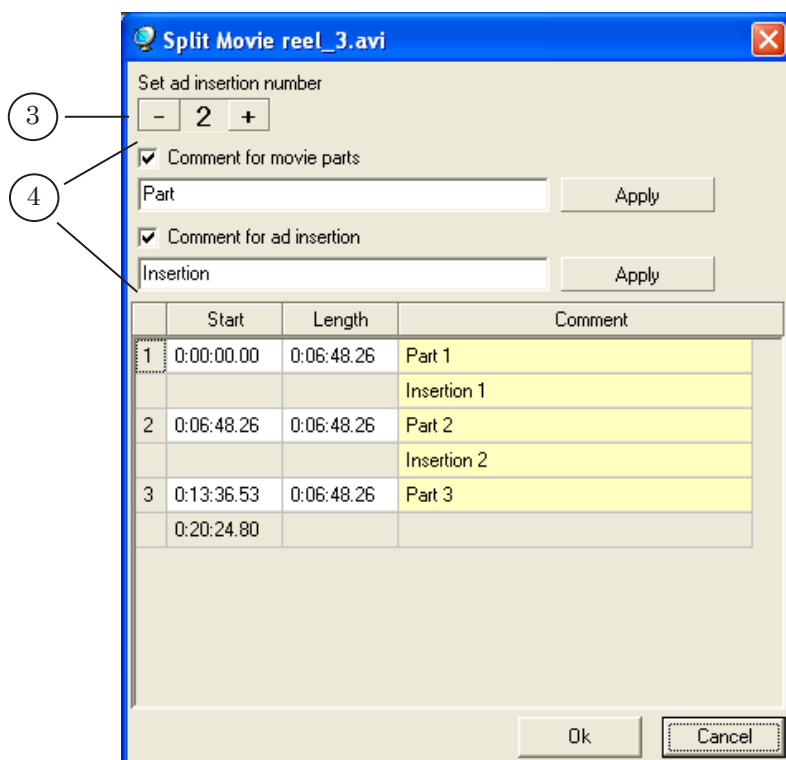
4. Edit the comments to the clip fragments and blocks of commercials.

5. Set the duration of the clip fragments:

   a) for each fragment which is to be changed, click in the Length field;

b) in the editing dialog box (the Trim Editor dialog box), set the required bounds for the fragment beginning and end.
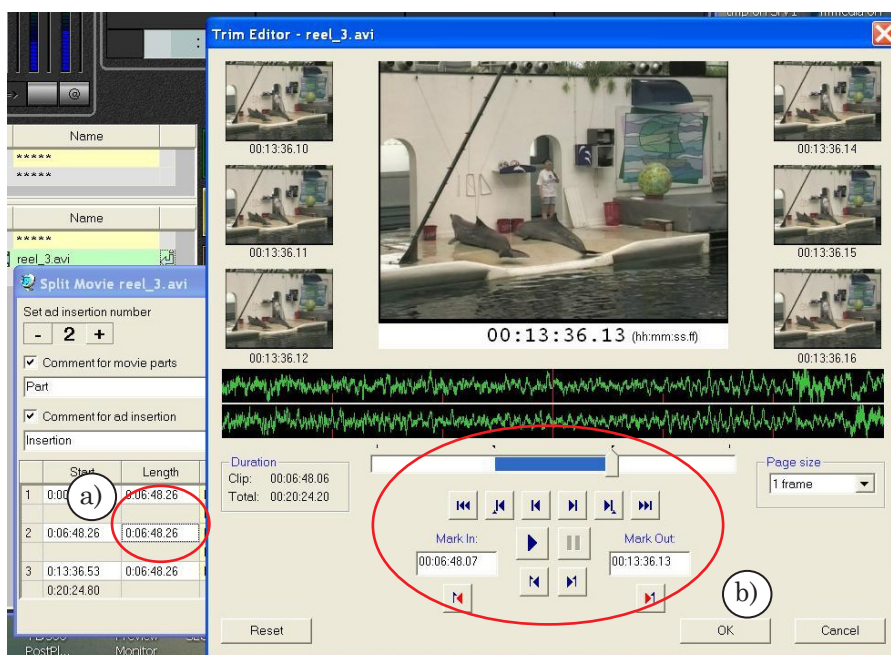
6. The values in the corresponding fields of the Length and Start columns are changed.
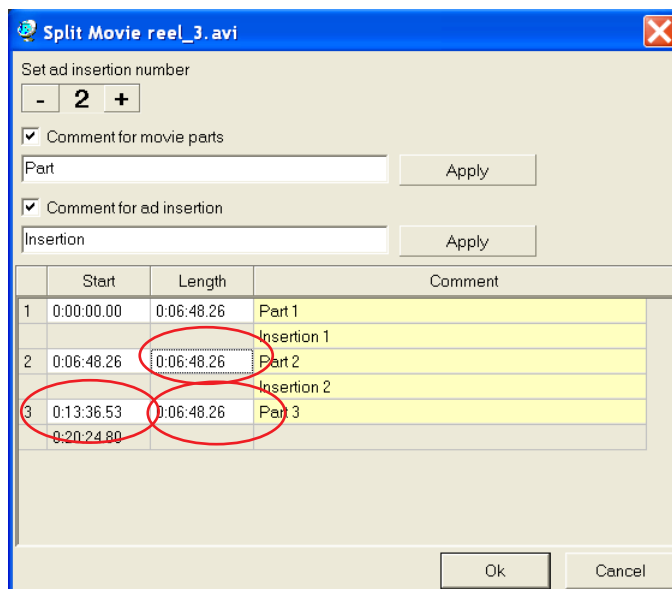
7. Close the Split Movie dialog box.

8. In the schedule, one command for playing is changed to a sequence of lines: several blocks of schedule commands; each starts with the Wait previous command and contains a

command for playing a fragment of the origilal clip or a line for inserting a command for a block of commercials.

	State	Start		Length	✂	🗗	T		Name
⇨ 🕐 ‖		15:00:00.00		+1:39:01.06	125				
		15:00:00.00		=0:00:00.00					
	🔼	15:00:00.00							Part 1
	READY	15:00:00.00		[0:06:48.07]	3		T	🎞	reel_3.avi
		15:06:48.07		=0:06:48.07					
	🔼	15:06:48.07							Insertion 1
		15:06:48.07		=0:00:00.00					
	🔼	15:06:48.07							Part 2
		15:06:48.07		[0:06:52.08]	3		T	🎞	reel_3.avi
		15:13:40.15		=0:06:52.08					
	🔼	15:13:40.15							Insertion 2
		15:13:40.15		=0:00:00.00					
	🔼	15:13:40.15							Part 3
		15:13:40.15		[0:06:44.05]	3		T	🎞	reel_3.avi
		15:20:24.20		=0:06:44.05					* * * * *

9. Edit the blocks of commercials: add the commands for playing the required files.

	State	Start		Length	✂	🗗	T		Name
⇨ 🕐 ‖		15:00:00.00		+1:10:05.08	125				
		15:00:00.00		=0:00:00.00					
	🔼	15:00:00.00							Part 1
	READY	15:00:00.00		[0:06:48.07]	3		T	🎞	reel_3.avi
		15:06:48.07		=0:06:48.07					
	🔼	15:06:48.07							Insertion 1
		15:06:48.07		0:00:10.14	3		T	🎞	commercial_1.avi
		15:06:58.19		0:00:16.02	3		T	🎞	commercial_2.avi
		15:07:14.18		0:00:16.14	3		T	🎞	commercial_3.avi
		15:07:31.07		=0:00:42.25					
	🔼	15:07:31.07							Part 2
		15:07:31.07		[0:06:52.08]	3		T	🎞	reel_3.avi
		15:14:23.15		=0:06:52.08					
	🔼	15:14:23.15							Insertion 2
		15:14:23.15		0:00:32.01	3		T	🎞	commercial_4_Utki.avi
		15:14:55.13		0:00:09.13	3		T	🎞	commercial_5.avi
		15:15:05.01		=0:00:41.11					
	🔼	15:15:05.01							Part 3
		15:15:05.01		[0:06:44.05]	3		T	🎞	reel_3.avi
		15:21:49.06		=0:06:44.05					* * * * *

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Switching the Schedule

1. Switching between the Schedule Tables in the FDOnAir Main Window

Two schedules can be open at the same time in the FDOnAir application. For that, two schedule tables are provided in the main window. Either of them can be used to edit the timetable and control the execution.

When working you can switch between the tables, e.g., proceed from executing one table to executing another.

Switching the schedule being executed can be performed both in the manual or automatic mode.
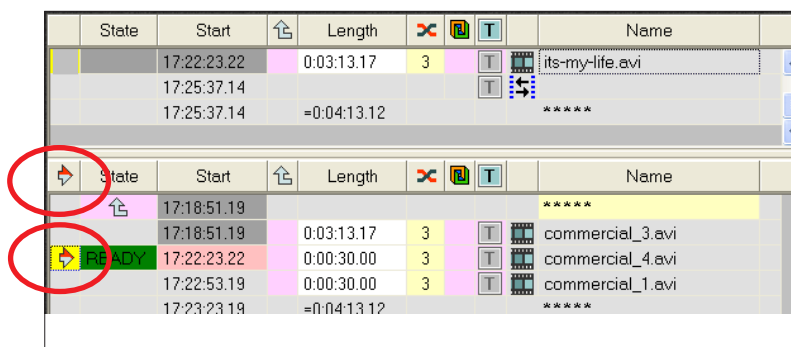
2. Active Schedule

The schedule a command of which is being prepared for execution is referred to as active.

Only one of the two open schedules can be in the active state at the same time.

The active schedule is marked [ ] in the first field of the schedule table header.

The line with the command being prepared for execution is marked [ ].

3. Switching the Schedule Manually

To switch the schedule manually, use:

- the Switch active schedule button located on the schedule editing panel;
- the Ctrl-Tab key combination;
- a double click in the first column of the inactive table. Works only if the corresponding option is enabled on the settings tab (see below).
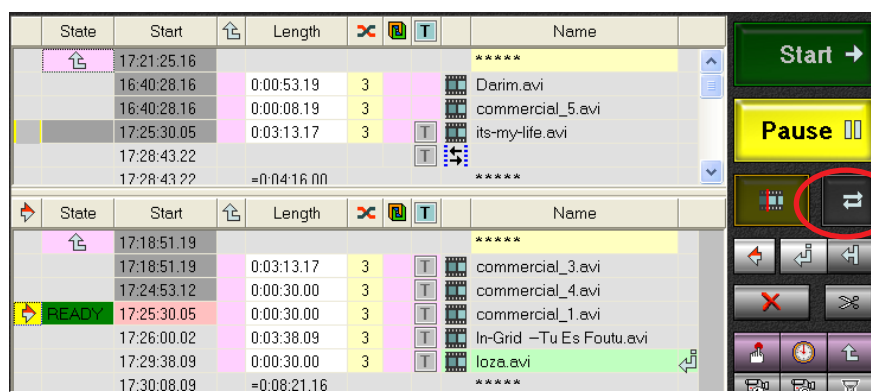
The Switch active schedule button and the Ctrl-Tab hotkey operate similarly: execute switching from the current schedule to the schedule opened in the other table, namely, to the line, following the last executed command of the schedule.

Using a double click you can switch to any command of the inactive schedule. The control will be transferred to the line the pointer was placed on.

4. Switching the Schedule Automatically

To switch the schedule automatically, use the Switch to other schedule command.

Table: The command of switching the schedule

Name	Icon	Syntax	Action
Switch to other schedule		**switch shedule**	Switch to executing the schedule opened in the other table.

5. Performing the Schedule Switching

1. To perform switching the schedule, the required schedule must be open in both of the tables.

2. Switching from one schedule to the other is executed on the arrival of the command for switching the schedule. The command is issued when:

    - the operator clicks the appropriate buttons when working in the manual mode;
    - executing the command located one line above the Switch to other schedule command in the schedule when working by the schedule.

    Consequently:

3. The before inactive schedule is activated.

4. The next in turn task of the activated schedule is being prepared for execution. The next in turn command is referred to a command which is located:

    - in the first line of the schedule. This is in case the schedule has not been executed yet after loading to the table;
    - in the line before which playing the schedule was stopped. This is in case the schedule has already been played after loading to the table.

5. The execution of the schedule which has become inactive is not interrupted, the current command is being executed.If playing data is being executed, it will be executed until the time allocated for that is expired, or the operator clicks Start.

6. Example of Using the Command for Switching the Schedule

Example: Assume there are two schedules: a basic one and one created for displaying a block of commercials. We want:

1. To perform broadcast by the basic schedule.

2. To switch to displaying commercials from the block of commercials.

3. After the block has been completed, to resume executing the basic schedule.

The Figures below explain how to make schedules for this purpose, and how the schedules work.

1. The basic schedule is loaded to table A, the schedule for displaying a block of commercials – to table B.

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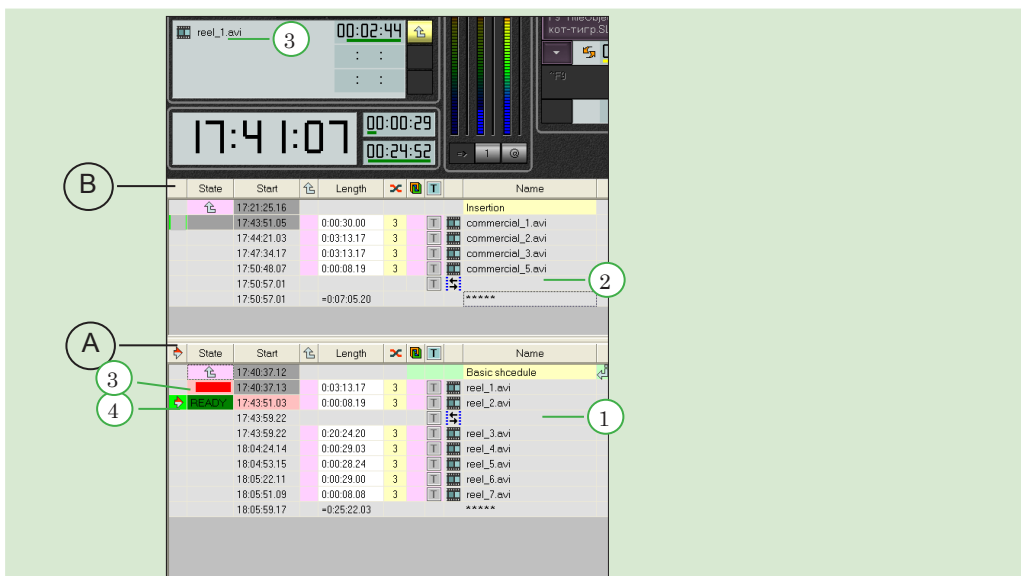
The Switch to other schedule command (1) is written in schedule A in the place where playing video files is to be stopped and switched to playing a block of commercials.

In schedule B, the command is placed at the end of the block (2).

The Figure shows the moment right after the basic schedule has been started: reel_1.avi is being played (3), and the next in turn command has been prepared for execution (4).

2. Playing reel_2.avi started (1), and the command for switching the schedule triggered at the same time.

Schedule B automatically switched to the active state (2). The next in turn command – playing commercial_1.avi – is being prepared for execution (3).
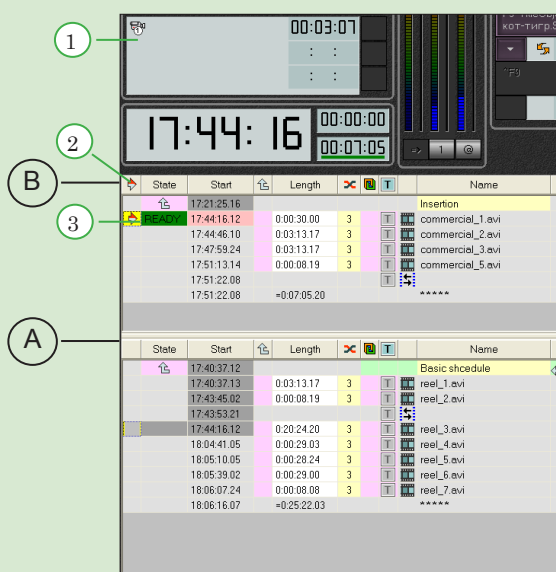
3. The clips from schedule B are being played.

B

1
2

A

State	Start		Length	✂		T		Name
	17:47:11.08							Insertion
	17:47:11.10		0:00:30.00	3		T		commercial_1.avi
LOAD	17:47:41.08		0:03:13.17	3		T		commercial_2.avi
	17:50:54.22		0:03:13.17	3		T		commercial_3.avi
	17:54:08.12		0:00:08.19	3		T		commercial_5.avi
	17:54:17.06					T		
	17:54:17.06		=0:07:05.20					*****

State	Start		Length	✂		T		Name
	17:40:37.12							Basic shcedule
	17:40:37.13		0:03:13.17	3		T		reel_1.avi
	17:43:45.02		0:00:08.19	3		T		reel_2.avi
	17:43:53.21					T		
	17:47:41.10		0:20:24.20	3		T		reel_3.avi
	18:08:06.03		0:00:29.03	3		T		reel_4.avi
	18:08:35.03		0:00:28.24	3		T		reel_5.avi
	18:09:04.00		0:00:29.00	3		T		reel_6.avi
	18:09:32.22		0:00:08.08	3		T		reel_7.avi
	18:09:41.05		=0:25:22.03					*****

The Figure shows the moment when the commercial_1.avi file
is being played (1); the commercial_2.avi file is being prepared
for playing (2).

4. The execution of schedule B is finishing.

1

B

2

A

3

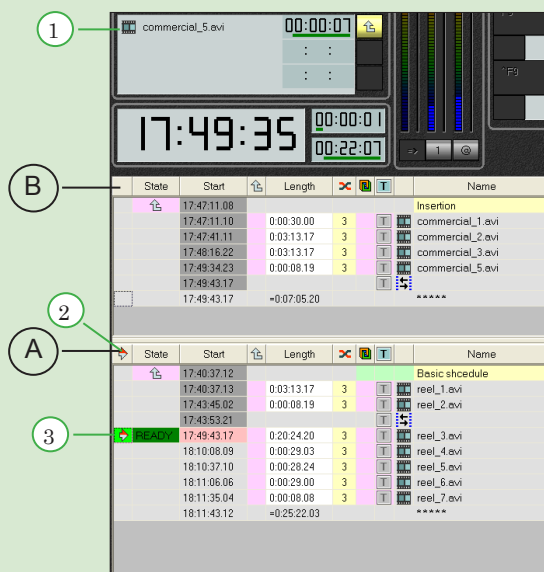| State	Start		Length	✂		T		Name
	17:47:11.08							Insertion
	17:47:11.10		0:00:30.00	3		T		commercial_1.avi
	17:47:41.11		0:03:13.17	3		T		commercial_2.avi
	17:48:16.22		0:03:13.17	3		T		commercial_3.avi
	17:49:34.23		0:00:08.19	3		T		commercial_5.avi
	17:49:43.17					T		
	17:49:43.17		=0:07:05.20					*****

State	Start		Length	✂		T		Name
	17:40:37.12							Basic shcedule
	17:40:37.13		0:03:13.17	3		T		reel_1.avi
	17:43:45.02		0:00:08.19	3		T		reel_2.avi
	17:43:53.21					T		
READY	17:49:43.17		0:20:24.20	3		T		reel_3.avi
	18:10:08.09		0:00:29.03	3		T		reel_4.avi
	18:10:37.10		0:00:28.24	3		T		reel_5.avi
	18:11:06.06		0:00:29.00	3		T		reel_6.avi
	18:11:35.04		0:00:08.08	3		T		reel_7.avi
	18:11:43.12		=0:25:22.03					*****

The last clip from schedule B – commercial_5.avi is being
played (1).

Switching the active schedule has been executed automati-
cally (2). The next in turn command from schedule A is be-
ing prepared for execution (3).

Switching the Schedule

7. Setting Parameters for Switching the Schedule

Some parameters affecting the procedure of switching schedules can be adjusted in the FDOnAir settings window
 (Settings > General).

To do so, use the following check boxes:

- Switch active schedule by double click (1) – if the option is enabled, you can click between the schedules with a double click;
- Move edit position to active schedule (2) – when switching schedules, move the editing position to the table with the activated schedule;
- Clear logotype/titles when switch schedule (3) – when switching schedules, disable displaying titles in the schedule which is to become inactive.
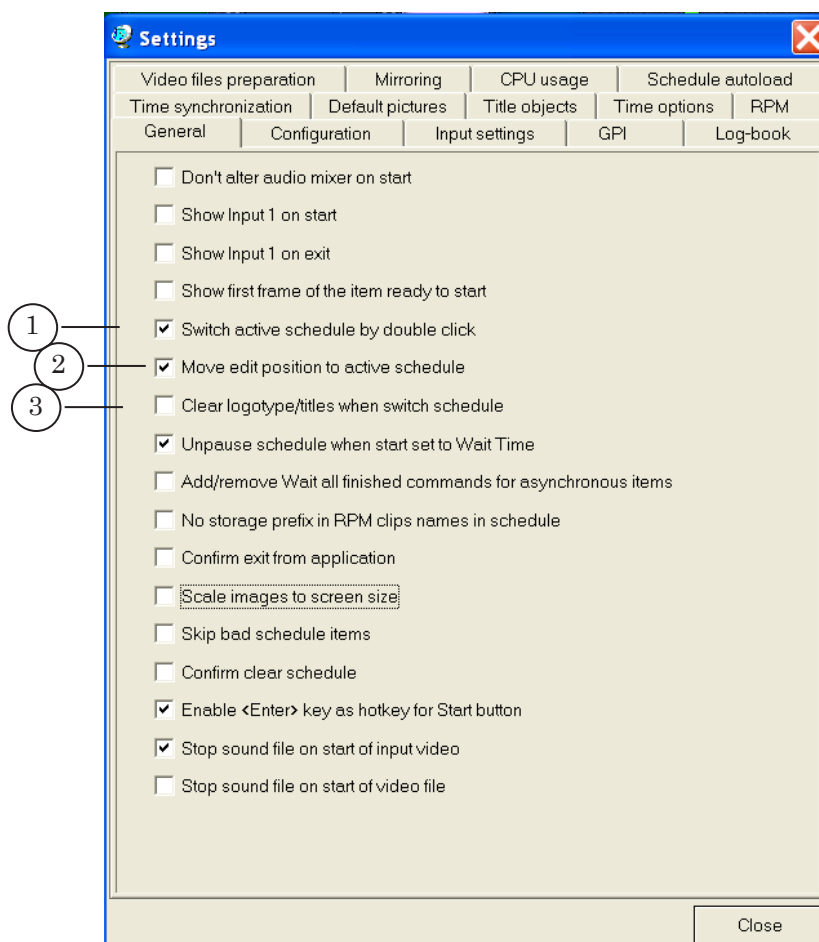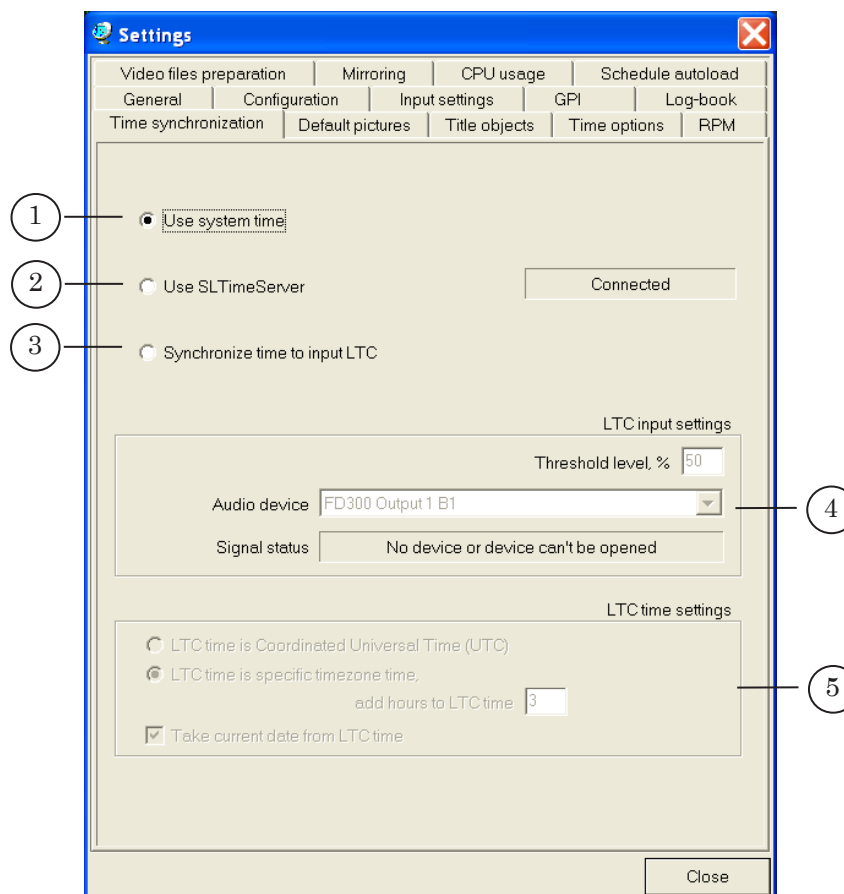
Time Synchronization

1. Time Sources

To keep time in the FDOnAir application, different sources can be used:

- the computer internal clock;
- an audio signal with the LTC code (longitudinal time code);
- a time server configured in the SLTimeManager program (see SLTimeManager User's Guide).

Different occurences of the FDOnAir application can be set to use their separate time sources.

2. Selecting the Way of Synchronization

Adjusting the synchronization settings is performed in the Settings > Time synchronization tab of FDOnAir.

To select a way of time synchronization, use the following cluster of radio buttons:

- Use system time (1) – count by the internal clock. When the radio button is selected, additional settings are nor required;

- Use SLTimeServer (2) – perform time keeping using a time server. Configuring the time server is performed in the SLTimeManager program;
- Synchronize time to input LTC (3) – use an audio signal with longitudinal time code. Adjusting the LTC settings is performed on the same page in the following areas:
  - LTC input settings (4);
  - LTC time settings (5).

3. Adjusting Parameters for LTC Synchronization

Adjusting parameters for LTC synchronization is performed in the Settings > Time synchronization tab of FDOnAir

The appropriate controls are enabled when selecting the Synchronize time to input LTC radio button (1).
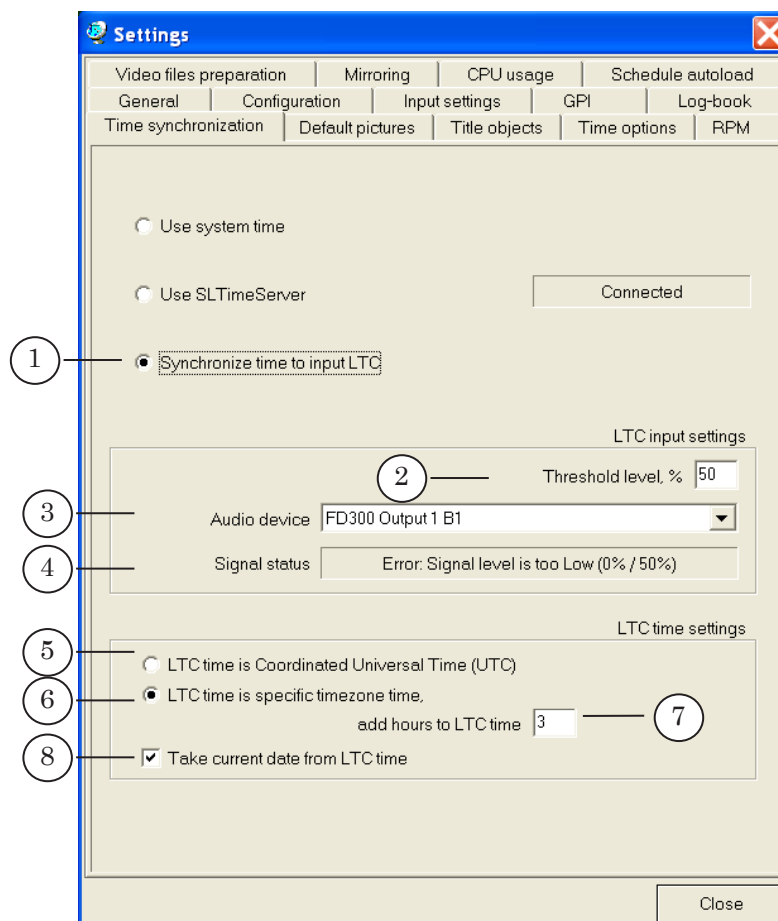
The LTC input settings area contains controls to adjust parameters of receiving an audio signal with the time code:

- the Threshold level field – to set the threshold volume level when recognizing the time code (in per cent). The recommended value is 50%;

- the Audio device drop-down list (3) – to select an audio device which is to be the source of a signal with the LTC code;
- the Signal status information field (4) – to display messages of the connection status with the selected device at the current moment of time.

The LTC time settings area contains controls for transformation of information coded in the LTC code – determining the time zone and current date.

To select a way of setting the time zone, use the following radio buttons:

- LTC time is Coordinated Universal Time (UTC) (5) – the time code contains time relative to GMT. The transformation is to be performed considering the time zone set for the system time (Control Panel > Date and Time > Time Zone).
  For example, if Pacific Time (GMT-08:00) is selected on the computer, 8 hours are to be subtracted from the received LTC signal;
- LTC time is specific timezone time (6) – the time code contains the time referring to a certain time zone, and it is to be changed by the value, specified in the add hours to LTC time field (7).
  In this case, the settings of the system clock (time zone) are not considered. For example, if the value «-3» is specified in the add hours to LTC time field, the time written in the time code is to be reduced by 3 hours.

To select a way of setting the current date, use the Take cuttent date from LTC time check box (8). The option enabled means the info of the current date is to be read from the signal along with the time.

Immediate Break of Video Clip Playback

1. The Break video playback Button

The Break video playback button of interactive control (the Ctrl+Back hotkey) is intended to break the playback of a video clip (a file in the AVI or MPEG format) at a required moment of time.

The button is located on the schedule control panel. It's available only when executing the Play video clip command. When executing other commands, the button is disabled.
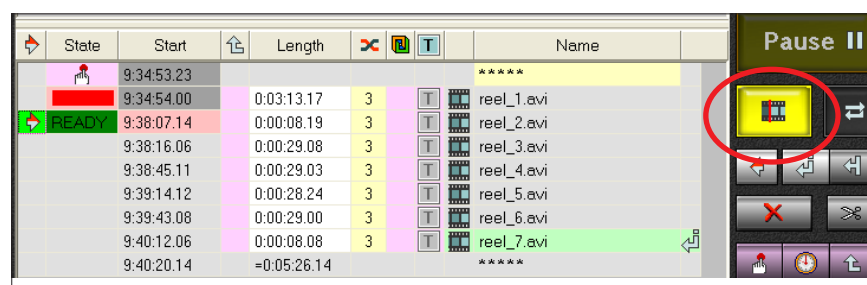
On clicking the button:

1. Immediate break of the video clip playback occurs, all the titles displaying being switched off (if were displayed in parallel).

2. The last of the played frames is displayed on air.

3. The schedule is automatically changed – right after the broken command are added:
   - a new command Play video clip referring to the broken clip playback (from the point of break up to the end);
   - the Titling On, Logotype On commands for controlling the titles displaying if they were enabled before the break.

2. Example of Breaking a Video Clip Playback

Here goes an example of what's going on if the Break video playback button is clicked when playing a video clip.

Example:

1. The initial schedule contains the following commands:

   - Logotype On (1);
   - Titling On (2);
   - Play video clip reel_8.avi. The video clip duration is 10 minutes (3);
   - Play video clip reel_1.avi and so on (4).

2. The Figure shows the FD Preview Monitor... window and a fragment of the FDOnAir main window. reel_8.avi is being played (1). The subtitles and logotype are displayed in parallel (2).

   2 minutes of the clip have been played by the current moment (3). The Break video playback button is available (4).
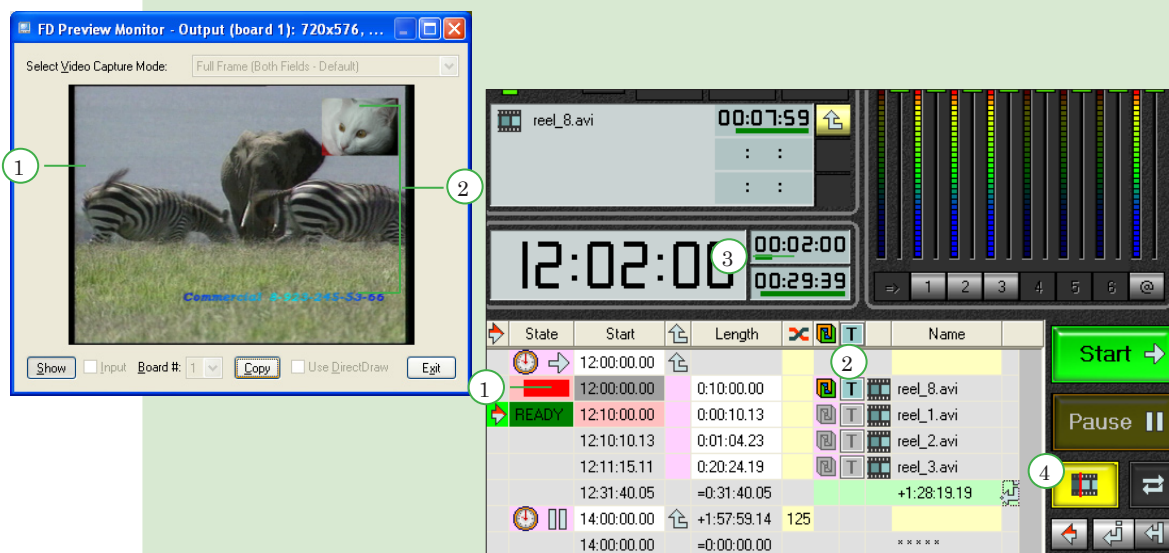
3. The Figure shows the moment of time on clicking the Break video playback button. The clip playback is broken; the titles

are switched off; the last played frame is displayed on screen (1).

A new line with the command for playing the remaining part of the video clip (2), the duration of which is 7 minutes 59.32 seconds (3), and playing the titles and logotype (4) is added to the schedule.
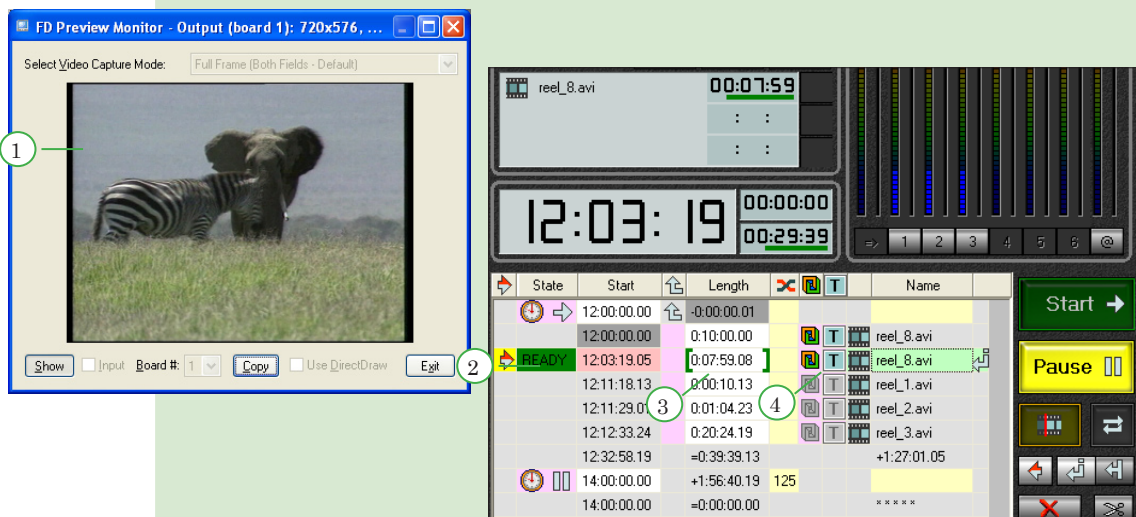
4. You can see in the text presentation of the schedule that three new commands are added after the line with the broken playback command (1):

- Logotype On (2);
- Titling On (3);
- Play video clip reel_8.avi, the fragment (4). The fragment duration is 7 minutes 59.32 seconds, i.e., from the break point (2 minutes 0.70 seconds from the beginning) up to the clip end.

```
movies_break_after.txt - Notepad
File  Edit  Format  View  Help
wait time 12:00:00.00 [5.00] active
logoOn
titlingOn
movie 0:10:00.00 D:\Users\UserR\Movies\reel_8.avi
logoOn
titlingOn
movie <0:02:00.70> 0:07:59:32 D:\Users\UserR\Movies\reel_8.avi
movie 0:00:10.51 D:\Users\UserR\Movies\reel_1.avi
movie 0:01:04.92 D:\Users\UserR\Movies\reel_2.avi
movie 0:20:24.79 D:\Users\UserR\Movies\reel_3.avi
```

Viewing Data on the Computer Monitor without Using an FD300 Board. The SLTitlePreview Program

The FDOnAir output data can be previewed without an FD300 board, – in the SLTitlePreview window.

1. General Information about the SLTitlePreview Program

SLTitlePreview is designed to adjust broadcasting in the FDOnAir program. Using SLTitlePreview, it is possible to check the schedule execution and field order in the video files.

SLTitlePreview allows you to preview data broadcast on air by the FDOnAir program. The data can be previewed on the computer monitor without using an FD300 board. Video is played in the program window. To play audio data, an audio device specified in the system as default (Control Panel > Sounds and Audio Devices > Audio) is used.

When working, the program emulates a video device named DirectShow FilterN, where N denotes the number set by the user. The name is used in FDOnAir to call the SLTitlePreview window.

The program can be used to check executing the following commands of the FDOnAir schedule:

- playing video and audio clips;
- displaying pictures from files (captions);
- overlaying titles.

When executing the command Video input n (broadcasting passthrough video), the SLTitlePreview widnow displays a background filling (chequered pattern), a test sound signal being played on the audio device.

✔ **Important:** The program does not support playing «old» titles, that is full-screen titles with alpha channel (such titles are controlled not in the title project but by the commands for controlling full-screen titles).

2. Launching the Program

The full path to the program file:
C:\Program Files\ForwardT Software\SLTitlePreview\SLTitlePreview.exe

It is possible to launch different instances of the program with different settings. The command line for launching a specific instance of the SLTitlePreview program has the following format:
   "The full path to the program file" #N
where N denotes the instance number.

The command line for launching a second instance of SLTitlePreview looks as follows:
"C:\Program Files\ForwardT Software\SLTitlePreview\SLTitlePreview.exe" #2

To launch different instances of the program, it is recommended to create the corresponding shortcuts on the desktop.

3. The Order of Launching the FDOnAir and SLTitlePreview Programs

When using SLTitlePreview, observe the following order of launching programs: first launch and adjust (when necessary) all the instances of SLTitlePreview, then – FDOnAir.

Close the programs in the reverse order: first – FDOnAir, then – SLTitlePreview.

4. The Main Program Window

The main program window is the video data preview window.

The window title bar displays the instance number and the application name, information about the current configuration: IDN, which denotes the emulated device number (DirectShow Filter), frame size, and frame frequency. FDOnAir identifies an instance of the SLTitlePreview program by the device number.

Click on the program icon located in the window title bar. The system menu opens.
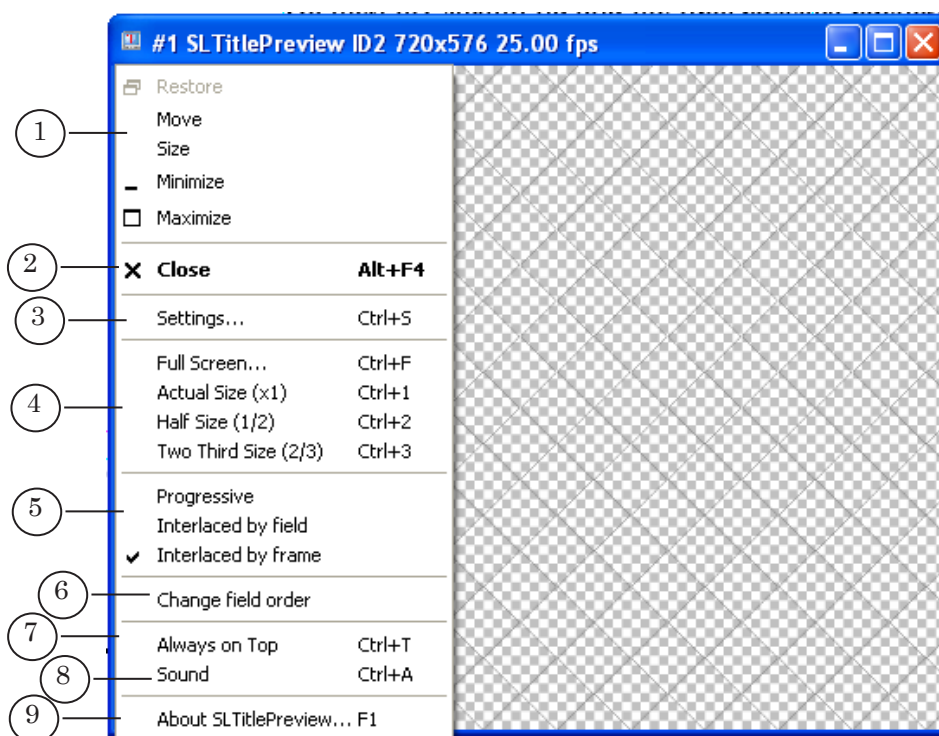
The menu contains all the program commands:

- for controlling the window position and size (1);

- Close (2) – exit the program;
- Settings… (3) – open the settings window to set the parameters for the emulated device;
- select the program window size (4);
- select a playback mode (a scan type) (5):
    - Progressive;
    - Interlaced by field;
    - Interlaced by frame;
- Change field order (6) – change the field order to the opposite. The command is disabled, when the progressive scan is selected;
- Always on Top (7) – enable/disable displaying the window on top of all other windows;
- Sound (8) – enable/disable playing a test audio signal in the absence of audio data;
- About SLTitlePreview (9) – open the information window.

✔ **Important:** The commands Close (exit the program) and Settings… (open the settings window to set the device parameters) are disabled if the FDOnAir application set to use the current instance of the program is running.

Each playback mode has one's own way to display half-frames in the preview window (if the initial field order in the file is as follows: T1, B1, T2, B2, T3, B3…):

- progressive scan – displaying the whole frame top to bottom in one continuous process with the specified frame frequency: T1+B1, T2+B2, T3+B3…;
- interlaced by field – displaying fields separately with the doubled frame frequency: T1, B1, T2, B2, T3, B3..;
- interlaced by frame – displaying fields in pairs with the doubled frame frequency: T1+B1, B1+T2, T2+B2, B2+T3, T3+B3… ,

where T denotes the top field, B – bottom field, and they are followed by the frame sequence number.

✿ **Tip:** The ability to change the scan type allows you to set the playback parameters in accordance with the current task.

If necessary to just check the schedule execution (commands execution order, overlaying titles, etc.), it is convenient to use progressive scan – check Progressive. In this case, there is "comb" in the preview window, but no frame flicker.

If necessary to check whether the field order in the files is correct, select interlaced scan – check Interlaced by field or Interlaced by frame. If the image flickers when playing a file in this mode, and the flicker disappears when the option Change field order is

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checked, the conclusion to be drawn is that the field order is incorrect.

5. The Settings Window

The Settings window is used to set the parameters for the video device emulated by the program. To open the window, select Settings… from the system menu of the main window.

It is impossible to open the window when FDOnAir, which is set to use the current instance of SLTitlePreview, is running.
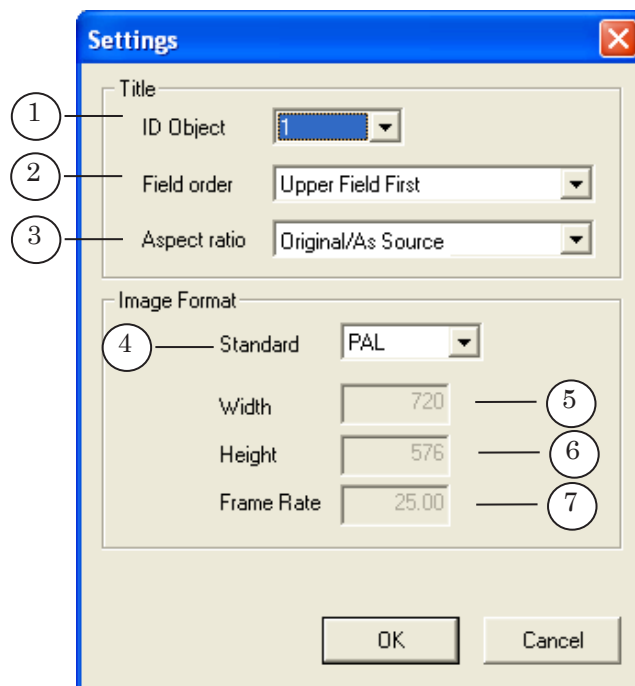
The ID Object drop-down list (1) is used to select a number of the device DirectShow Filter. The possible values are from 1 to 10. FDOnAir identifies an instance of the SLTitlePreview program by the window number.

By default, the device number matches the instance number of the program. It is recommended to use the default number.

The rest of the Settings window elements are used to specify the parameters of the video playback:

- Field order (2) – the type of scanning and field order;
- Aspect ratio (3) – the ratio of the image width and height;
- Standard (4) – the television standard. When selecting Custom, the below fields become available for editing:
  - Width (5) – the frame width;
 - Height (6) – the frame height;
  - Frame Rate (7).

6. The Setting Procedure and Using the Program

✔ **Important:** All the SLTitlePreview instances that will be used, must be launched and set prior to launching the FDOnAir program.

1. Launch the SLTitlePreview program.

2. Click on the program icon in the main window title bar (1) and select Settings... from the system menu (2).
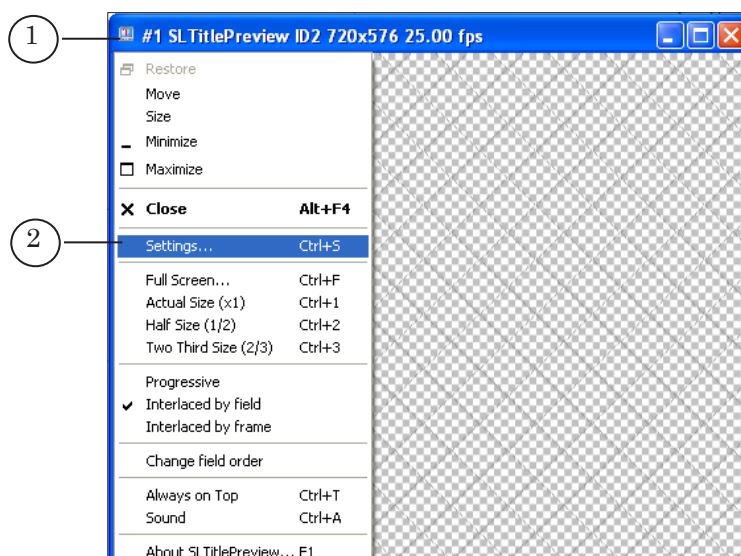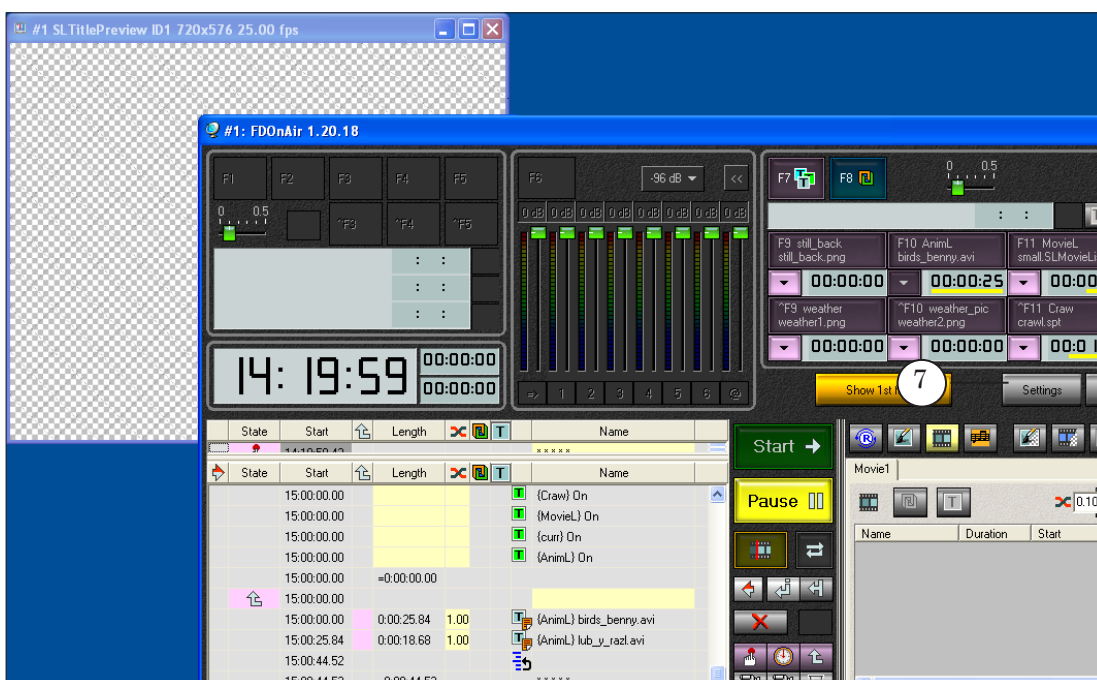

3. The Settings window (3) opens. Make the settings. For example, select the required field order and television standard from the Field order (4) and Standard (5) drop-down lists respectively.
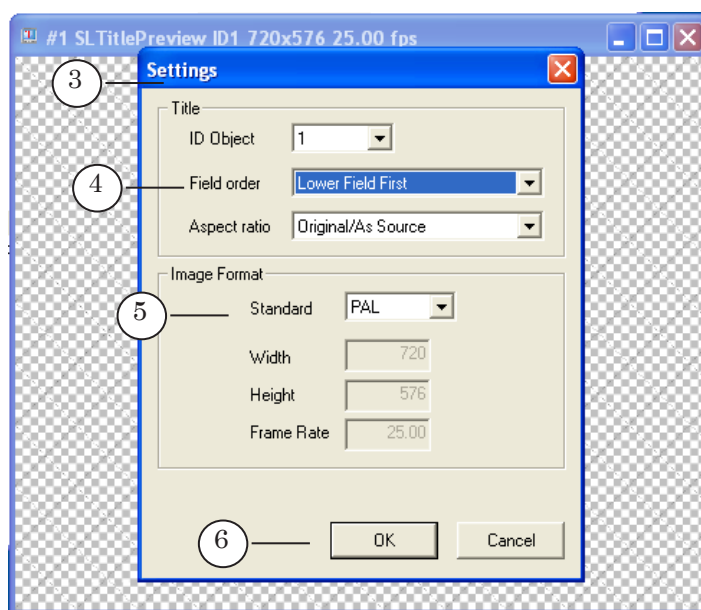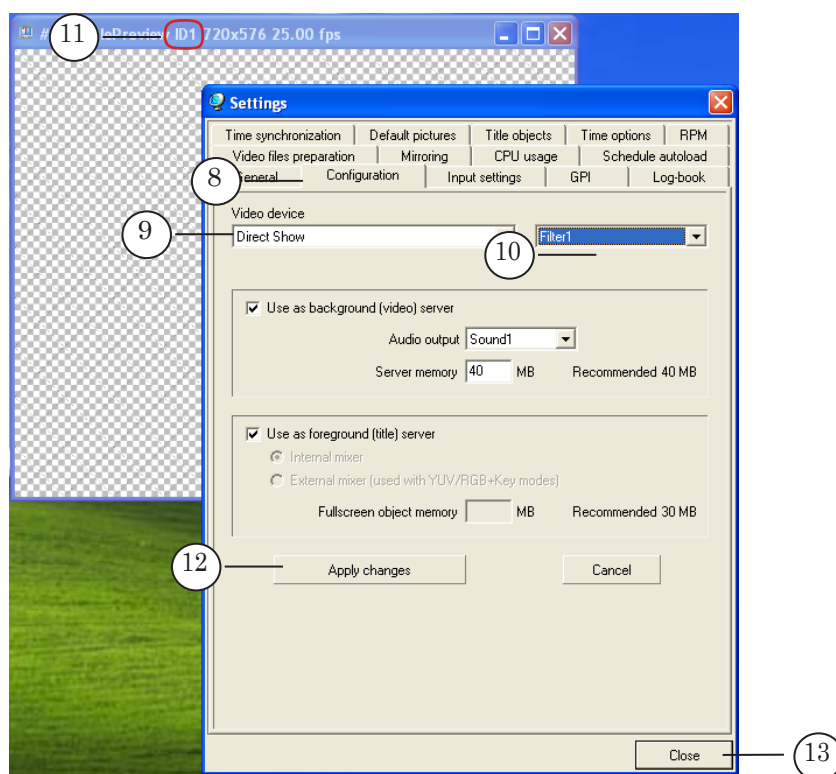

4. Click OK (6) to apply the changes and close the window.

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5. Launch the FDOnAir program. Click Settings (7).

6. In the Settings > Configuration tab (8), select from the drop-down lists under Video device:

- the video device type (9) – Direct Show;
- the device (10) – FilterN, where N denotes a number that matches the preview window number of SLTitlePreview (11).

7. Click Apply changes (12), then – Close (13).

✔ **Important:** The changes take effect only when the Apply changes button is clicked!

8. When starting playback, the data played on air by the FDOnAir program are displayed in the SLTitlePreview window.

Checking whether the field order in the files is correct:

9. To check whether the field order in the files is correct, select interlaced scan – check Interlaced by field or Interlaced by frame (15), with the option Change field order being unchecked (16).

10. If the video in the preview vindow flickers, possibly, the field order in the file is incorrect.

11. Check the option Change field order (17). If the flicker disappears, the conclusion to be drawn is that the field order is incorrect indeed.

Caching Video Files from a Remote Computer for Broadcasting. The SLFileForwarder Program

Video files located on a remote computer can be broadcast on air via the FDOnAir program. To avoid problems related to transmitting data via the net and organize uninterruptedly transmitting such files, it is recommended to use the SLFileForwarder program.

1. General Information about the SLFileForwarder Program

SLFileForwarder is an add-in program used along with the FDOnAir program.

SLFileForwarder is designed to automatically copy files from a remote computer, references to which are in the FDOnAir current schedule, to a special cache folder on the local hard disk.

SLFileForwarder works with the FDOnAir active schedule as follows:

- Periodically scans the schedule selecting Play video clip commands. The scanning is performed from the current position of the schedule execution downwards a certain number of lines.
- When a command occurs with a reference to a file located in a remote folder, and the current limitations by time are observed:
  - copies the file to cache on the local disk;
  - when the file is completely copied, changes the initial path to the file to the new one in the command line;
  - when the same full path to the file is detected, changes it to the new one as well.

2. The Program Operation Rules and Parameters

Monitoring the schedule and caching files are performed automatically according to certain rules. If necessary to make a decision about further actions, the program uses the parameter values: previously specified by the user or calculated on the basis of the current characteristics.

2.1. The Schedule Scanning Depth

The schedule scanning depth is determined according to the following rule: «scan forward no deeper than Time limit hh:mm from the current execution position, and until the number of files to be copied is less than Files limit». The limitations are specified when setting the program:

- Time limit – by time;
- Files limit – by the number of files.

2.2. Limitations by Time When Caching Files

To make a decision on whether to start caching a certain file, the program uses the parameter values previously specified by the user and values calculated in the course of operation.

The following values are specified when setting the program:

- Data rate – maximum speed when caching files (Kbyte/s);
- Min time – limitation on the minimal delay time between the file caching start and playback start (in seconds).

The following values are estimated by the program immediately before making a decision:

a) time before the file playback start;

b) time required for copying the file completely (file size/ Data rate).

A decision is taken according to the rule: «start copying the file to cache if the "a" time is above or equal the "b" time and above Min time».

Note: Time remained before a file playback start is always less than the Time limit value. The value limits the schedule scanning depth by time, and the reference to a file cannot be detected earlier than Time limit hh:mm before the file playback start command.

2.3. The Program Operations When the Schedule is Changed

If the sequence of files is changed in the course of the schedule execution, the program has to make a decision whether to continue or stop caching the current file.

In this case, the program estimates the already copied file part volume and compares it with the specified threshold value Drop limit (percent of the whole file size). The following rule is applied:

- if the volume is above the specified threshold, the current copying is continued until caching the file is complete;
- if the volume is less or equal to the specified threshold, caching the file is stopped, caching the next in turn file being started.

The threshold value Drop limit is specified when setting the program.

2.4. Using the Cache

The cache parameters are specified by the user before getting started:

- Cache folder – the full path to the folder;
- Cache size.

The copied files are stored in the cache until the allocated space is sufficient to write new files. When the cache is full, the program removes from it the "oldest" files, which are not to be used in the near future (there are no references to the files in the schedule at the specified scanning depth).

When exiting the FDOnAir and SLFileForwarder programs, the cache is not cleared. Files written to it can be used in the next application sessions.

2.5. Local Folders

The file names that are to be considered local are specified when setting the program. All subfolders of a folder specified as local are considered local as well.

All the other folders are considered by the program to be remote. Files from them are copied to the cache.

3. Logging the Program Operation

Logging the SLFileForwarder operation is performed automatically. Information about the workflow with the event date and time indication is written to the following log files:

- the SLFileForwarder log file – which files are copied to the cache, which are not, the error messages occurred when caching files;
- the protected log file of the FDOnAir program – messages about changing paths to files in the executed schedule commands.

The paths to the log files are specified when setting the programs.

A message line in the FDOnAir log file looks as follows:

date time SLFileForwarder#N FDOnAir#N Log Line "NS NL L T command_line_A" was replaced by "NS NL L T command_line_B"

where:

- #N denotes the program instance number;
- NS – the number of a schedule table in the FDOnAir window. Possible values:
  - 0 – the upper table;
  - 1 – the lower table;
- NL – the sequence number of a line in the schedule table. The line numbering begins with zero;
- L and T – logotype and titles markers respectively. Possible values:
  - 0 – disabled;
  - 1 – enabled;
- command_line_A and command_line_B – the lines with the initial and final commands respectively.

4. Launching the Program

The full path to the SLFileForwarder program:
C:\Program Files\ForwardT Software\OnAir\SLFileForwarder.exe

It is possible to launch different instances of the program – one for each instance of FDOnAir. To do so, use a command line in the following format:

"Full path to the program file" #N
where N denotes the instance number.

Example: The command line for launching a second instance of SLFile-Forwarder looks as follows:
"C:\Program Files\ForwardT Software\OnAir\SLFileForwarder.exe" #2

To launch different instances of the program, it is recommended to create the corresponding shortcuts on the desktop.

5. Modes of Operation

The program has two modes of operation:

- passive – the program is not performing any actions being ready to switching to the active mode. It is recommended to make all settings in this mode;
- active – scanning the schedule and caching files. While operating in this mode, an error condition can occur, e.g., in the absence of connection to FDOnAir. When the error condition is removed, the program automatically resumes scanning the schedule and caching files. Information about errors (time and cause) is written to the program operation log file.

Switching from one mode to another is performed using control commands of the program icon context menu.

6. Interface

When launching the program, its icon is displayed in the system tray. The appearance of the icon depends on the program current status:

- – Stopped (the program is operating in the passive mode);
- – Running (the program is operating in the active mode);
- – Error (the program is operating in the active mode, there has been an error(s) occured).

The tool tip displayed when pointing the cursor at the program icon contains information about the instance number and the current status.

To proceed to setting the parameters and controlling the program operation, use the icon context menu (right-click on the icon to open).
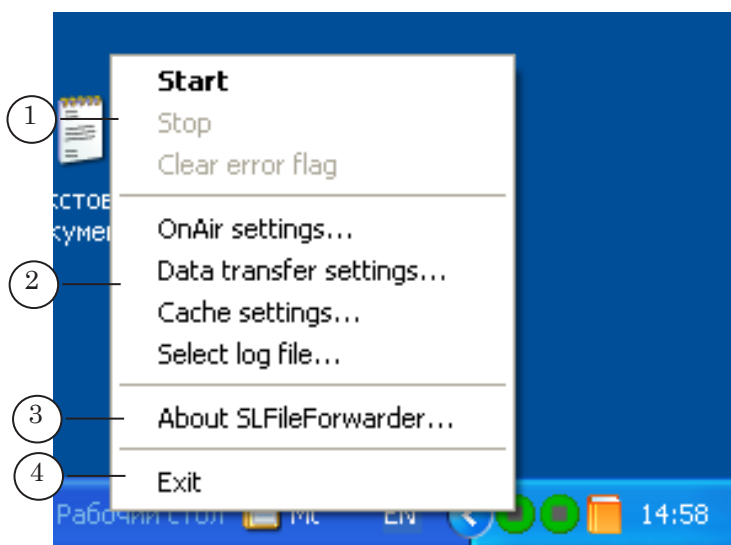

The menu contains the following commands:

- to control the program mode (1):
    - Start – switch to the active mode;
    - Stop – switch to the passive mode;
    - Clear error flag – reset the error indication;
- to open the settings windows (2):
    - OnAir settings… – setting interaction with FDOnAir;
    - Data transfer settings… – parameters for data transfer via the net;
    - Cache settings… – parameters for the file cache;
    - Select log file… – specify the program own log file path name;
- About SLFileForwarder… (3) – call the program information window;
- Exit (4) – exit the program.

7. Setting Parameters for Working with FDOnAir

The OnAir Settings window is designed to adjust the interaction of the program with a specific instance of FDOnAir. To open the window, select the same-name command from the context menu of the program icon.
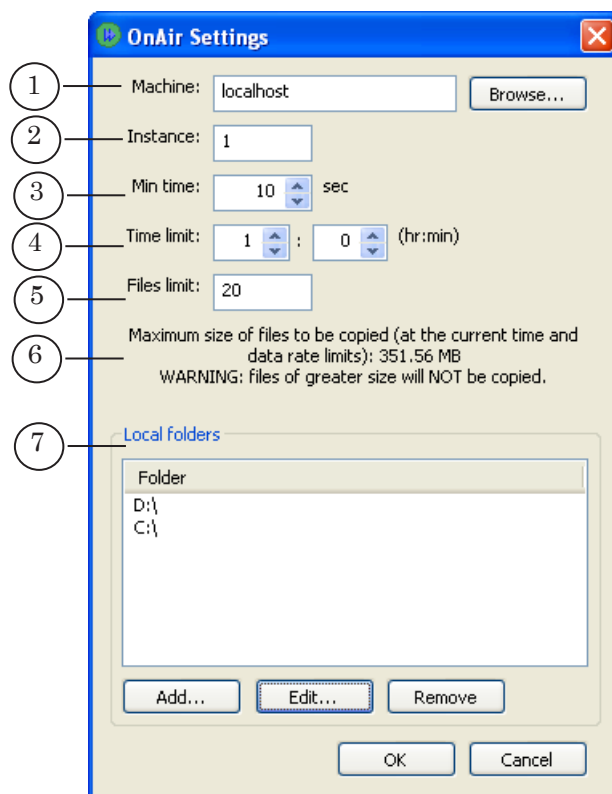
The window contains controls for setting the following parameters:

- text fields to select an instance of FDOnAir:
  - Machine (1) – the name or IP address of the computer on which the FDOnAir program is running. To open the standard dialog for selecting a computer, use the Browse... button located next to the field;
  - Instance (2) – the FDOnAir instance number;
- the Min time text field (3) – the least possible delay time between the file cashing start and playback start (in seconds);
- text fields to set limitations on the schedule scanning depth:
  - Time limit (4) – by time (hh:mm);
  - Files limit (5) – by the number of files;
- the information field (6) contains a warning about the maximum possible (considering the current settings) size of files that will be cashed;

- the Local folders area (7) – to specify the folders that are to be considered local. All subfolders of a folder specified as local are considered local as well. The area contains the following controls:
  - the Folder field – to display the list of folders;
  - the Add... button – to add a folder to the list;
  - the Edit... button – to change the path to a folder;
  - the Remove button – to remove a folder from the list.

8. Setting Parameters for Data Transfer

The Data Transfer Settings window is designed to adjust the parameters for copying data from remote computers to the local disk. To open the window, select the same-name command from the context menu of the program icon.
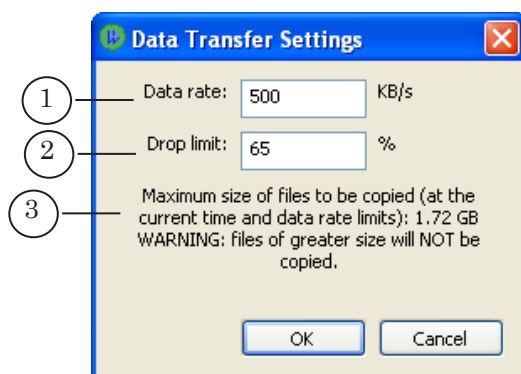
The window contains text fields to adjust the following parameters:

- Data rate (1) – the maximum permissible network data transfer rate (Kbyte/s);
- Drop limit (2) – the threshold value (as a percentage of the file total size) used when making a decision whether to stop/continue the current copying operation;
- the information field (3) contains a warning about the maximum possible (considering the current settings) size of files that will be cashed.

9. Setting the Cache

The Cache Settings window is designed to set the cache on the local disk: selecting a folder and specifying the cache size. To open the window, select the same-name command from the context menu of the program icon.
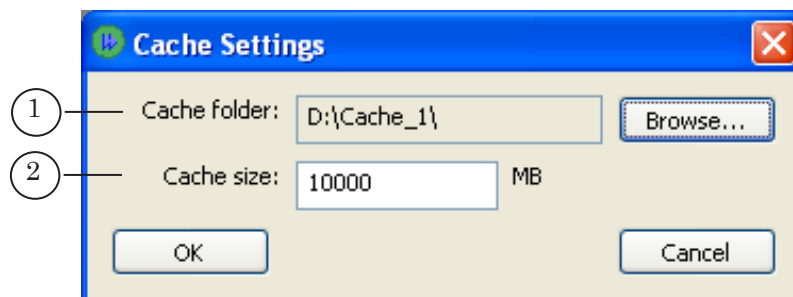

The window contains text fields to set the following parameters:

- Cache folder (1) – the full path to the folder on the local disk, to which remote files are to be copied;
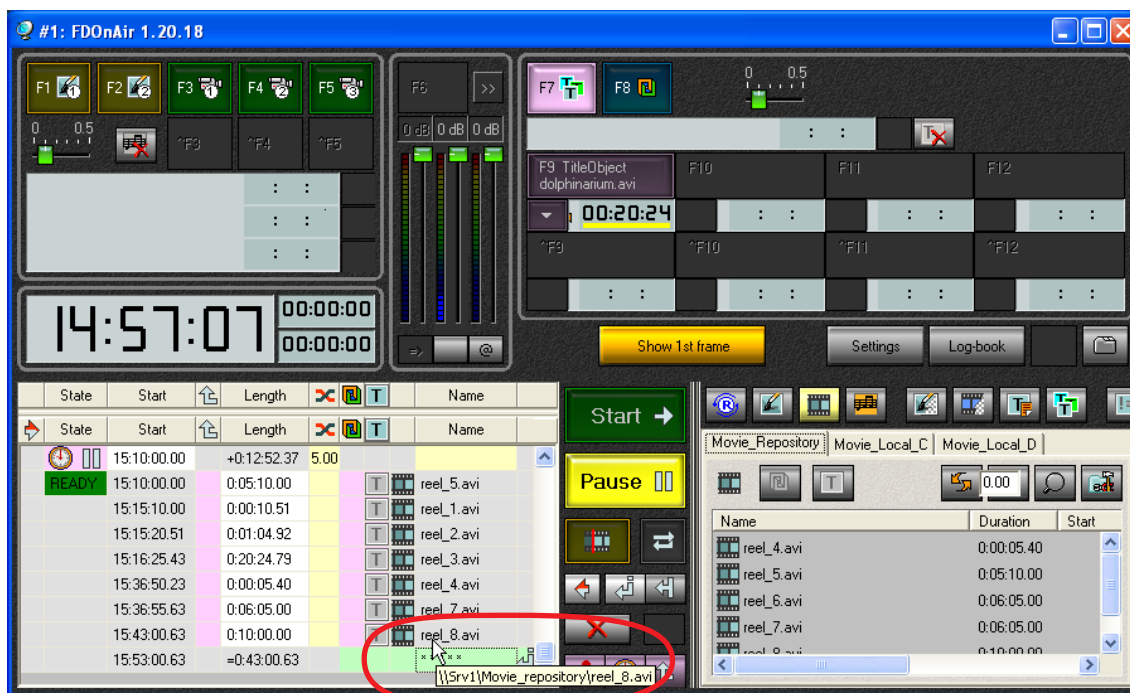- Cache size (2) – the volume of the disk space (in megabytes) allocated for cache.

10. Setting and Using the Program

1. In the FDOnAir program, select Settings > Mirroring (1). Check the Receive and execute commands checkbox (2).
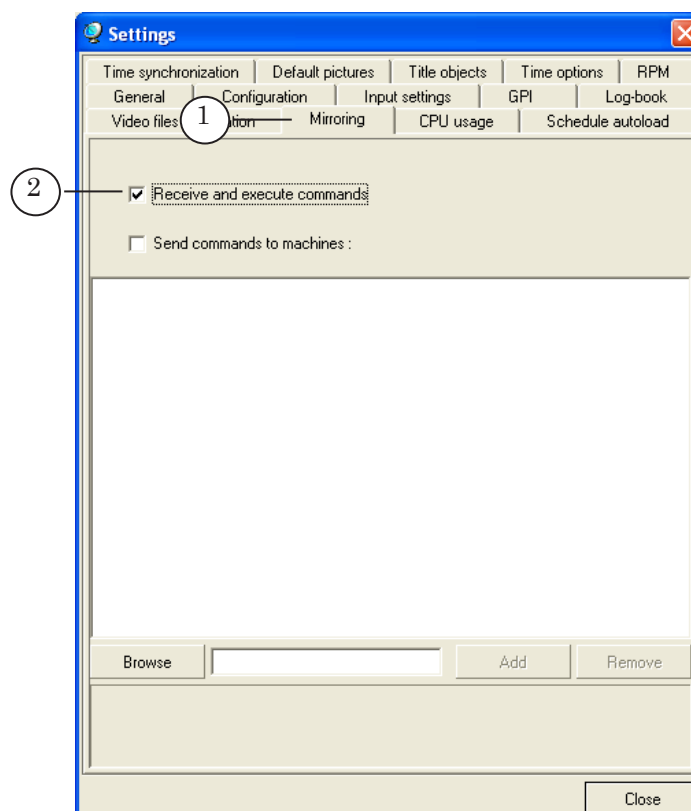
2. Download from a file or create a new schedule. The Figure shows that the sample schedule has an indication of a remote file playback.

3. Estimate the sizes of the schedule files that are to be copied to the cache.

4. Launch SLFileForwarder. If necessary, change the current program settings (steps 5–9). To open the settings windows, use the commands of the program icon context menu.


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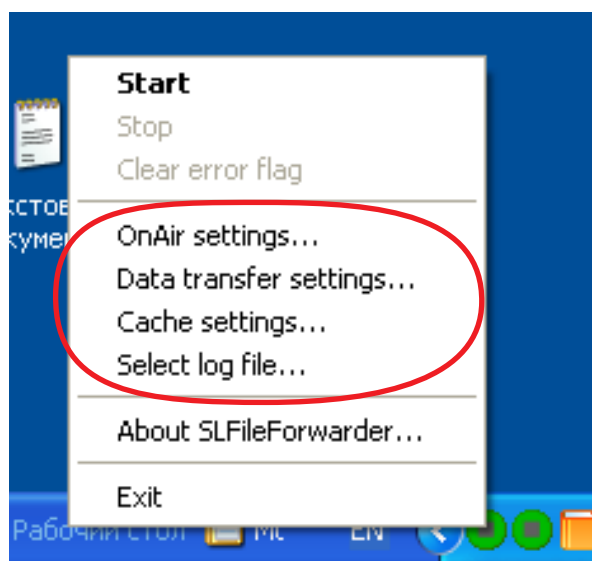
5. Open the Data Transfer Settings window. Specify the maximum permissible speed of copying files in the Data rate field (1). When specifying the value, consider the sizes of the files that are used in the schedule (the larger files, the higher must be the speed) and the hard disk parameters (read/write speed).
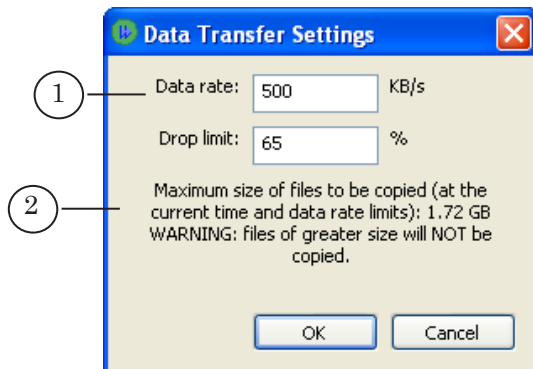
Tip: 1. When using MPEG files, a 500 KByte/s Data rate will fit; as for AVI files, it is advisable that you specify 3000–6000 KByte/s.

2. Consider the information (2). It indicates the maximum possible file size for caching at the current settings. When calculating, the values specified in the fields Data rate (1) and Time limit (in the OnAir Settings window) are used.

Perform steps 6–8 in the OnAir Settings window.

6. Ensure the computer name in the Machine field (1) and the FDOnAir instance number in the Instance (2) field are specified correctly.
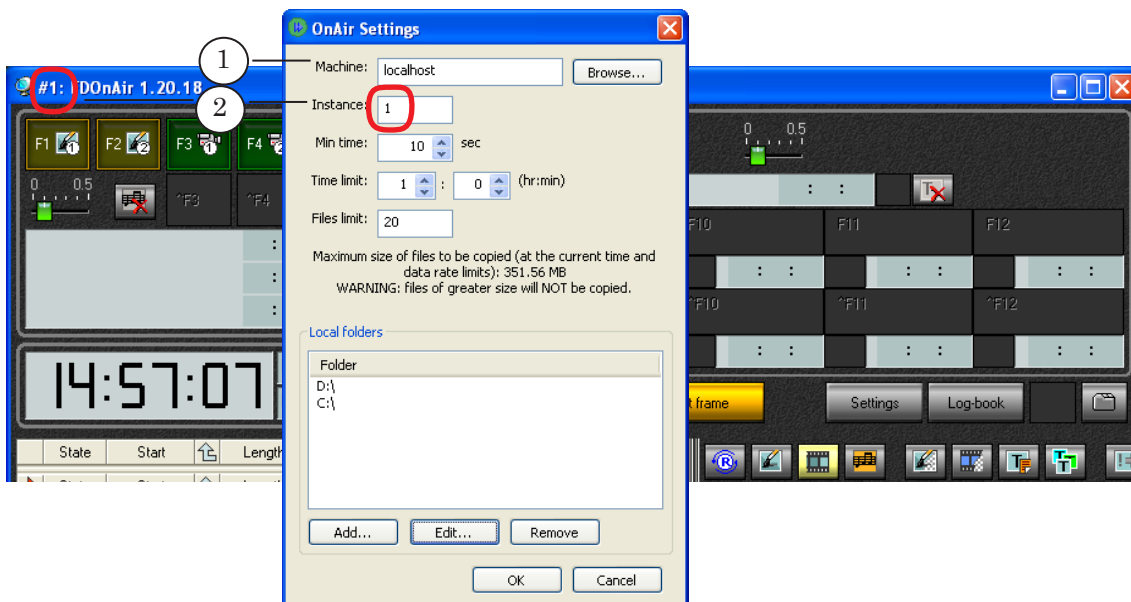
7. Set limitations on the schedule scanning depth in the fields Time limit (1) – the maximum time, and Files limit (2) – the number of files.

   Be aware that the Time limit value affects the time interval between detection of the command with the file name and the file playback start: the interval is always less than the value. Therefore, fit the value to provide time for each file to be copied. The Time limit value must exceed the value calculated by the formula:
   Maximum file size/Speed of copying files.
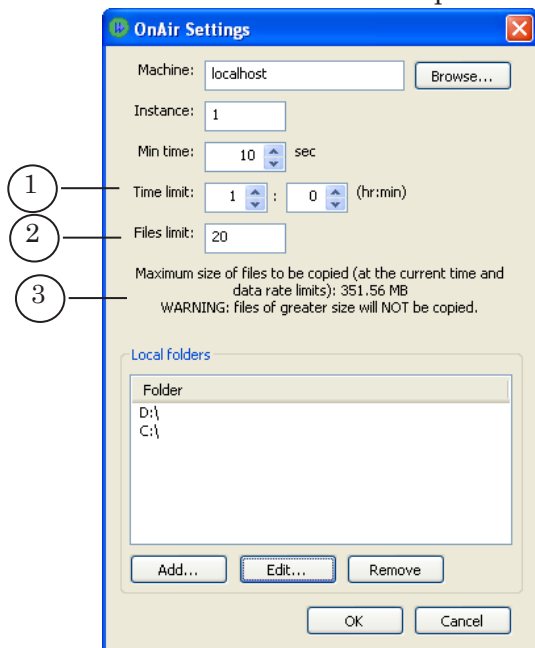
⚙ **Tip:** Consider the information (3). It indicates the maximum possible file size to cache at the current settings. When calculating, the values specified in the fields Time limit and Data rate (in the Data Transfer Settings window) are used.

8. Not to copy local folders to the cache, be sure to specify the names of the files that are local in the Folder list under Local folders.

9. Ensure a cache size sufficient to store the required data volume is specified in the Cache size field of the Cache Settings window.
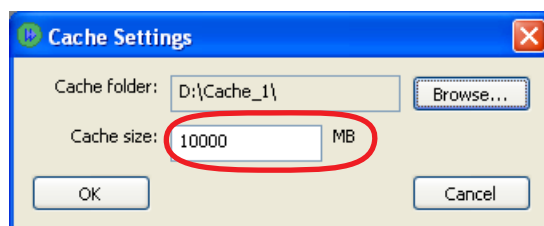
10. Switch SLFileForwarder to the active mode: select Start from the program icon context menu.
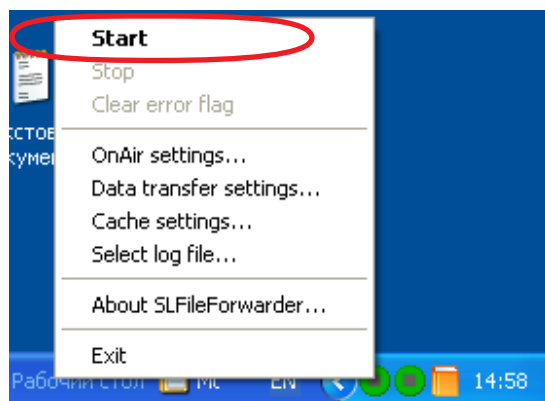
☼ **Tip:** It is recommended to switch the program to active mode before-hand, with a float before the start of the schedule.

11. The program icon changes.

12. Scanning the current schedule is started: lines below the current execution position are scanned at the specified depth.

When a remote file name is detected: the file is copied to the cache, whereupon the full path to the file is changed to the new one.


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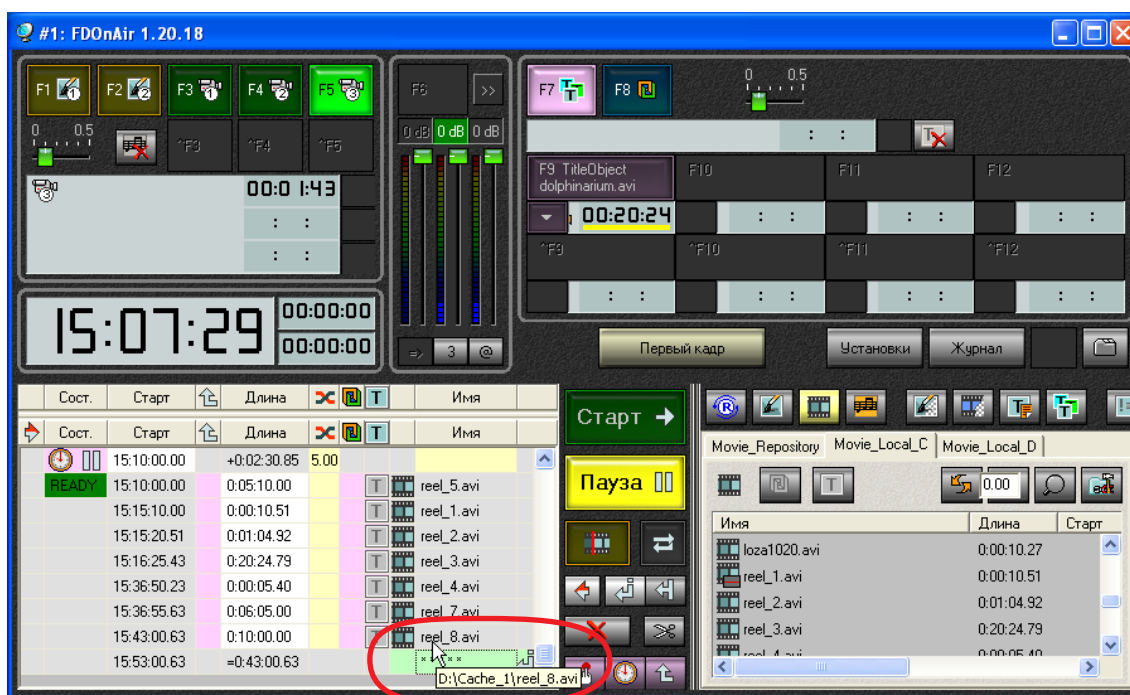
13. Error messages are logged to the log file. If an error occurs in the course of operation, the program icon changes its appearance to an error flag.
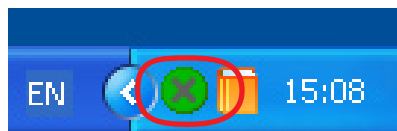
14. To reset the error indication, select Clear error flag from the context menu of the program icon.
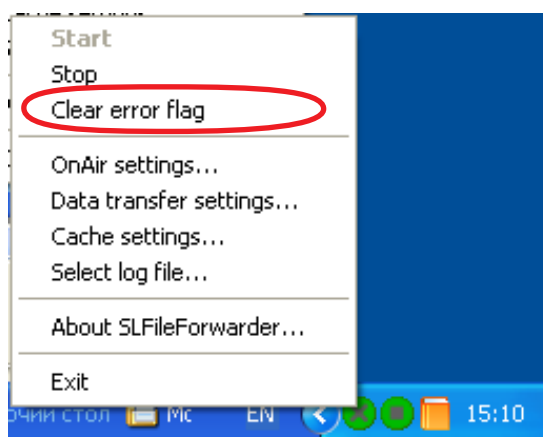
15. To switch the program to the passive mode (stop monitoring schedule and copying files), select Stop from the context menu of the program icon. It is recommended to change the program settings in this mode.

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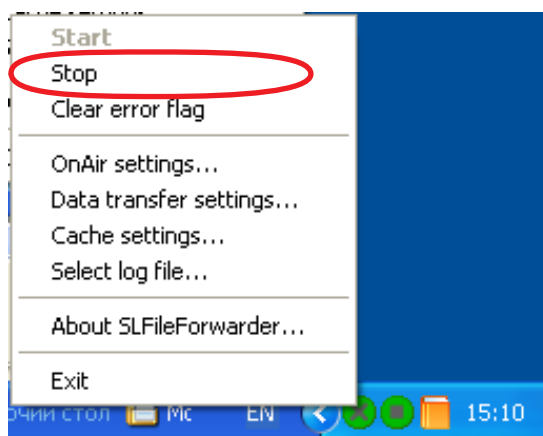
Video Files Playback Settings File

1. Function

In the FDOnAir program, AVI and MPEG files playback is based on common settings specified in the FDConfiguration and FDSoundControl programs.

Sometimes it is necessary to change the playback parameters for certain files. For example, to increase the volume or intensity level. To do so, use special files for settings – SLIni files.

2. Ways and Rules of Use

A settings file is a text file containing records with the required values of playback parameters. There are two ways to use such files – to adjust the playback parameters for a separate file or a group of files from the same folder.

When using settings files, be sure to observe the following conditions:

1. The file lines must match the required recording format.
2. The file name is specified by certain rules depending on the way of use.
3. The file must be in the same folder as the file(s) whose playback parameters are to be adjusted.

3. The File Name

A name to the file is assigned depending on the way of its use.

1. The name of a settings file for playing a specific file must look like this:

    VFileName.SLIni or VFileName.VFileExt.SLIni

where:

- VFileName and VFileExt – denotes the file name and file name extension of the video file for which the settings file is intended;
- SLIni – the required file name extension of the settings file.

> **Example:** The settings file name for a video file comm_1.avi must look like this comm_1.SLIni or comm_1.avi.SLIni

2. The name of a settings file for playing a group of files from the same folder must look like this:

    default.SLIni

The file settings are valid for all the folder files that do not have their own settings files.

> **Example:** Assume the following files are located in the same folder:
>   comm_1.avi
>   comm_1.SLIni
>   comm_2.avi

comm_3.avi
comm_4.avi
default.SLIni

In this case, when playing the file comm_1.avi, FDOnAir will use the parameter settings from the file comm_1.SLIni; when playing the rest of the files (comm_2.avi, comm_3.avi, comm_4.avi) – the parameter settings from the file default.SLIni.

4. The Settings Recording Format

The settings file can be created, edited, and overviewed via any text editor, e.g., Notepad. An example of a settings file opened in Notepad is shown in the figure below.
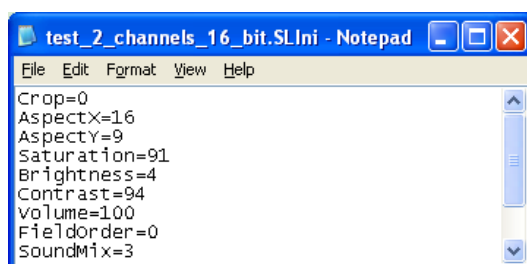
The file must contain a sequence of lines. Each line indicates a parameter value. The order of lines in the file can be arbitrary.

The settings recording format looks like this:

Parameter name=Value

where:

- Parameter name – denotes a parameter;
- Value – denotes an integer from the specified range.

A list of the parameters used (names and possible values) is given in the table below.

**Table**   Parameters used in the settings file

Name	Description	Possible Values
Parameters for selecting an aspect ratio and scaling the frame to fit the screen size. Used all together only. If at least one of them is missing in the file, the rest are ignored.		
AspectX	Number of units horizontally	e.g., 16 (for 16:9)
AspectY	Number of units vertically	e.g., 9 (for 16:9)
Crop	Percent of the black bars cropped. This value determines the frame scale on the screen: the larger the value, the larger the displayed image (see example below).	An integer from 0 to 100. For example: 0 – scale the image so that the width fits the screen, there being black bars at the top and bottom; 100 – scale the image so that the height fits the screen completely (without black bars), a part of the image being cropped at the left and right.
Video Parameters		
Contrast	The image contrast (in percent of the initial level).	An integer from 0 to 100. A value of 100 corresponds to the initial level.
Saturation	Color saturation (in percent of the initial level).	An integer from 0 to 1000. A value of 100 corresponds to the initial level.
Brightness	The image brightness (in conventional units).	An integer from -255 to 255. A value of 0 corresponds to the initial level.
FieldOrder	Field order.	0 – initial field order; 1 – top field first; -1 – bottom field first.
Audio Parameters		
SoundMix	Selecting an audio channel for playback.	1 – left channel only; 2 – right channel only; 3 – left and right channels.
Volume	The volume level (in percent of the initial level).	An integer from 0 to 1000. For example: 0 – no sound; 100 – initial volume level; 1000 – volume level 10 times as high as the initial.

Example: Assume PAL is being used: frame size – 720x576 (that is, aspect ratio – 4:3). Let us consider the playback parameter settings of a wide-frame video file with a frame size of 1280x720 (16:9).

To scale the image to fit the screen, check the option Scale images to screen size in the General tab of the FDOnAir Settings window.

1. No other settings being specified, the screen image looks like shown in Figure (1).

Figure (2) shows the screen image when the settings file containing the following lines:

...
AspectX=16
AspectY=9
Crop=0
... is added to the folder with the video file.
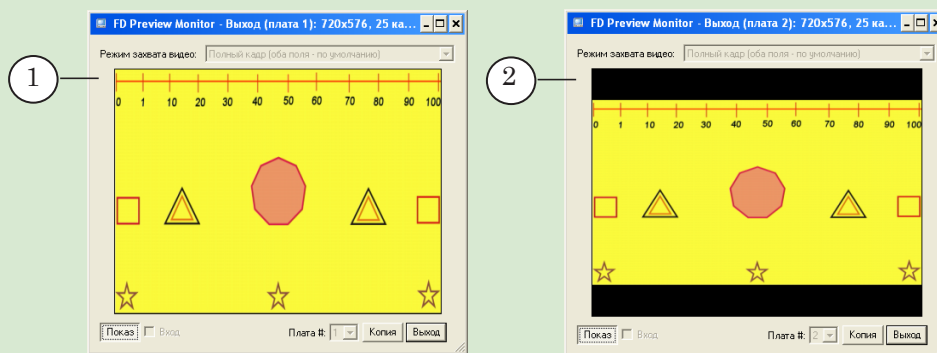
2. The frame scale on the screen depends on the Crop parameter. The Figures show the screen image at different values of the parameter:

- Crop=0 (1);
- Crop=50 (2);
- Crop=100 (3).
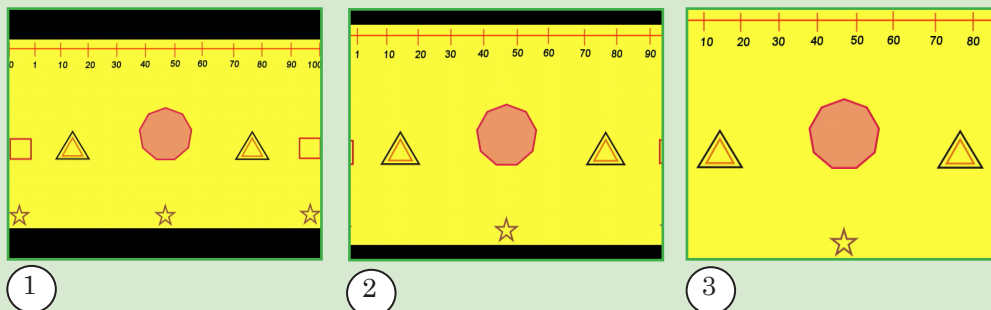
The TrimEditor Window

1. Functionality

The FDOnAir program provides a possibility of selecting any necessary fragment of audio/video clip for playback. It does not require clip modification and creating of any new files.

The TrimEditor program is designed to preview audio/video clips, to select clip fragments with frame accuracy and to configure parameters of its playback.

Example: 1. Let it is necessary to insert 2 ads when broadcasting of the reel_3.avi clip. In this case it is possible to split the clip into 3 fragments (1) via the TrimEditor program.
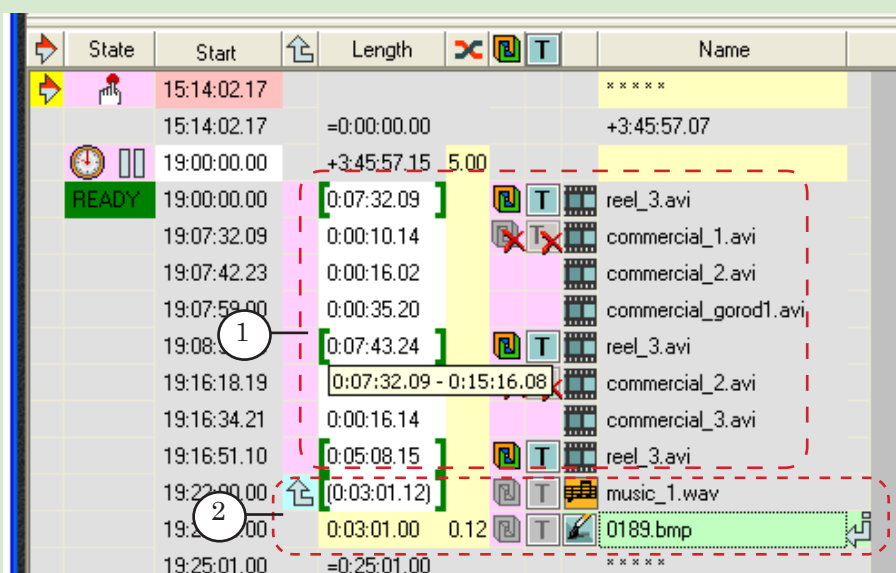
2. Let it is necessary to playback image with sound from audio file during some period.

You may select fragment of the audio file of necessary duration and adjust its playback (2) via the TrimEditor program.

2. Launch of TrimEditor

Left-click the row with the command of audio/video clip playback (1) in the Length field in the table with schedule in the FDOnAir main application window to open TrimEditor. The TrimEditor window appears.

Current position is clip start, i.e. 00:00:00.00.
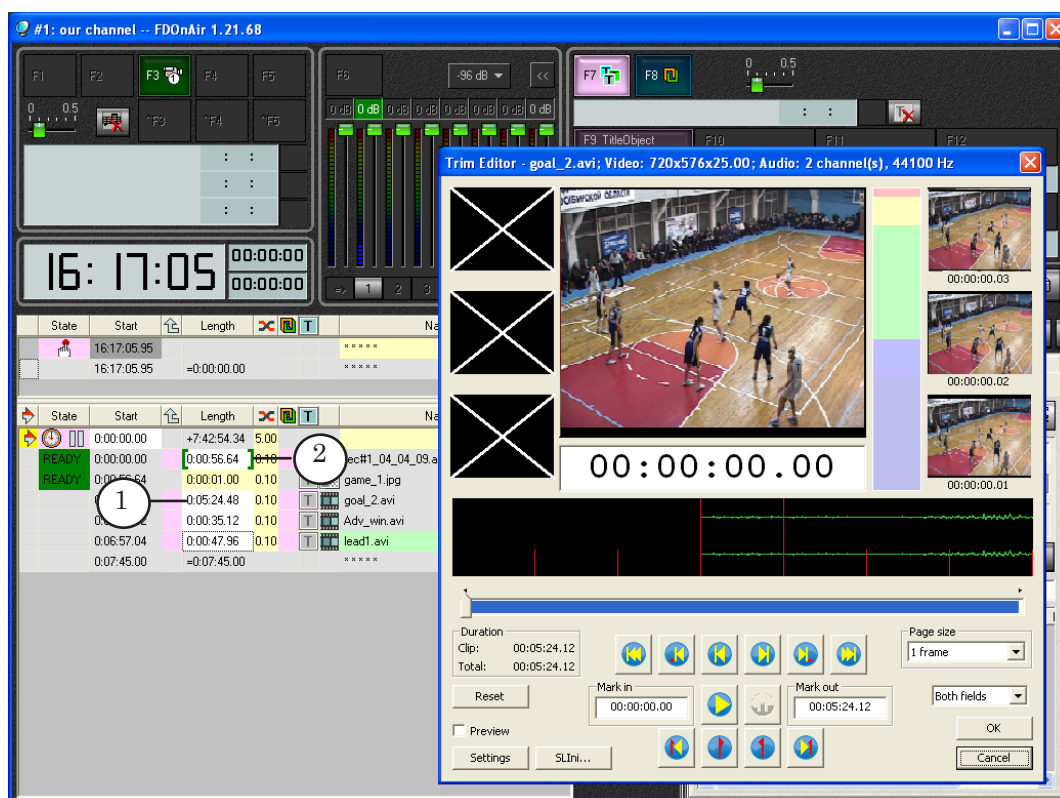
Square brackets in the Length field in the table with schedule (2) denote that clip fragment is marked for playback. A tooltip with marks of fragment start and end appears when pointing a cursor in this field.

3. Main Window

View of clips and specifying of necessary fragment are implemented in the main window.

You may find some useful information on the clip in the title bar (1): file name; frame size; frame rate; number of audio channels and sample rate. Duration of the selected fragment and full clip duration are displayed in the Duration group fields (2) in the hh:mm:ss.frames format.
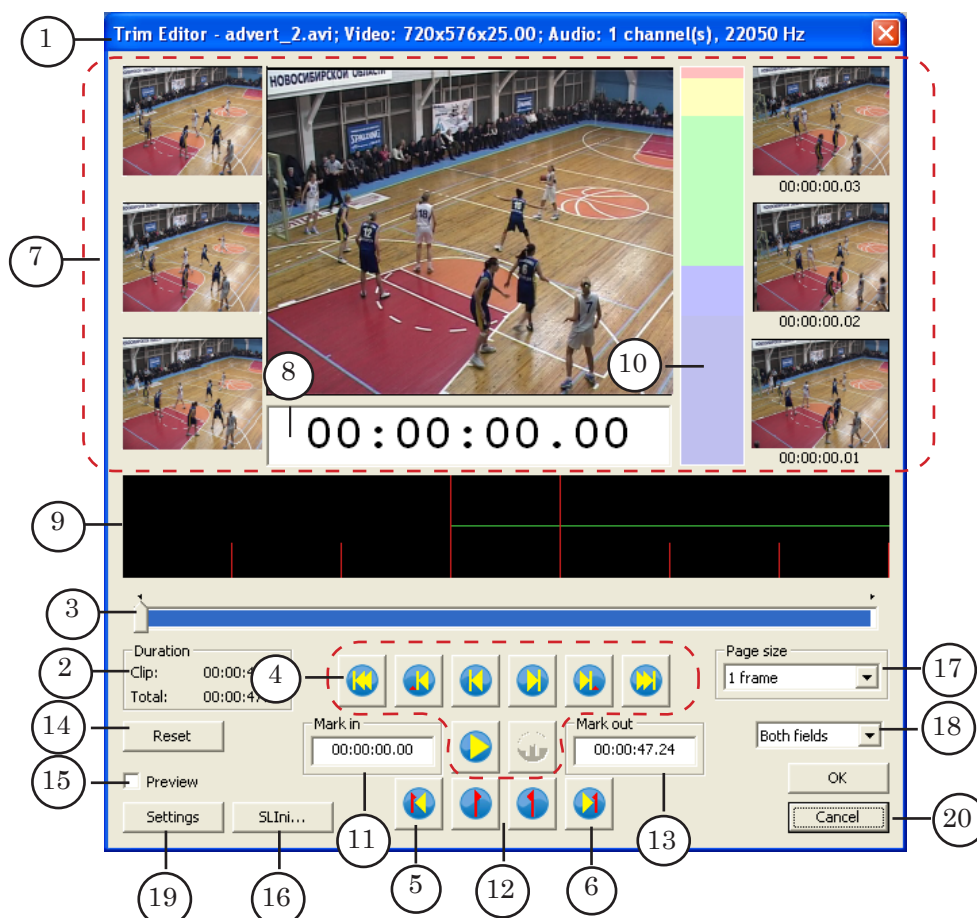
TrimEditor Main Window:
1 – title bar; 2 – information fields; 3 – slider; 4–6 – scroll arrow buttons; 7 – preview panes;
8 – time indicator of current position; 9 – audio track; 10 – audio indicator; 11–13 – mark in and
mark out elements; 14 – the Reset button; 15 – show preview window on/off; 16 – button for clip
playback parameters adjusting; 17 – drop-down list for page size configuration; 18 – drop-down list
for video display mode selection; 19 – button for keyboard shortcuts configuration; 20 – buttons for
closing the program window.

Main program window elements are used to:

- scroll the clip and pass to the necessary time mark (3–6);
- display data on a current position: audio, video and time (7–10);
- select and adjust start and stop of clip marks (11–14);
- configure page size (17) and video display mode (18);
- open additional windows: preview window (15), window for adjusting of clip playback parameters (16) and window for keyboard shortcuts configuration (19).

Use the following buttons (20) to finish working with the program:

- OK – apply the settings and close program window;
- Cancel – close the program without settings applying.

4. Parameters Adjusting

The program provides a possibility of adjusting the following parameters:

1. Page size: displaying of audio data scale and step when scrolling the clip depend on page size.

   Page size is equal to one frame by default. Specify necessary page size from the Page Size drop-down list (1).

2. Mode of video displaying in preview windows: both fields, upper field or lower field. Select necessary mode from the drop-down list (2).

3. Keyboard shortcuts: assign shortcuts for buttons by clicking Shortcuts... (3).
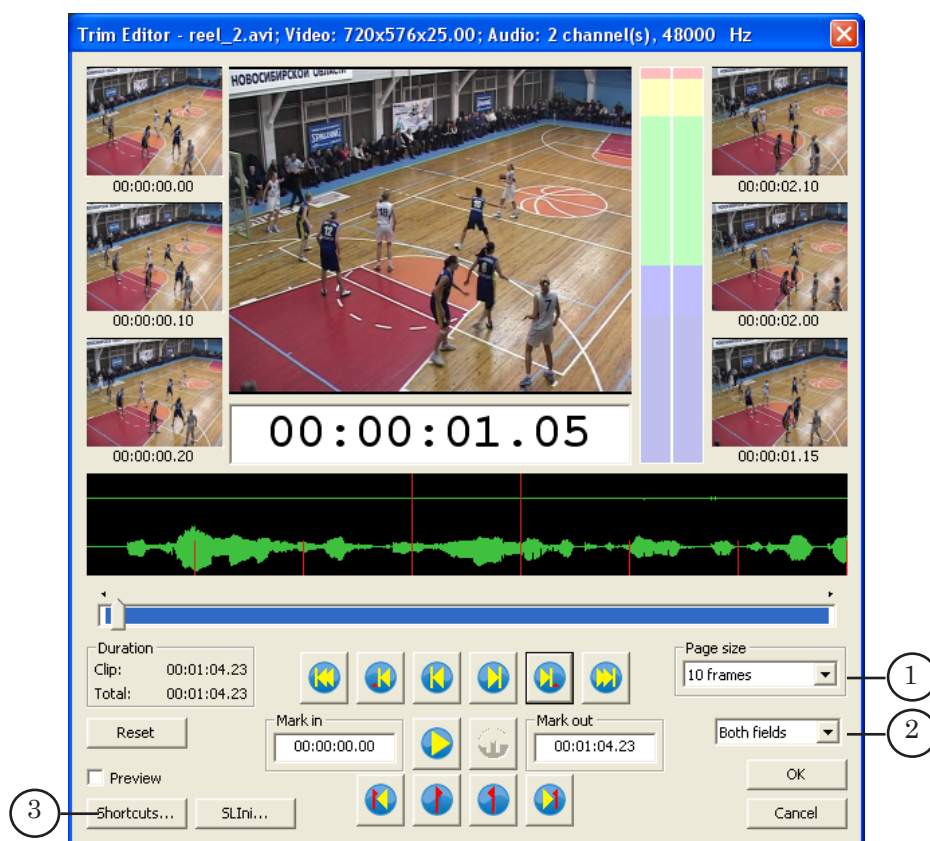
The program is first launched with default settings.
Settings specified during the last program session will be activated at the following session.

5. Clip Scrolling

There are different ways of clip scrolling and passing to the necessary time mark:

1. Automatic scrolling via the Start/Stop and the Pause buttons (1).
2. Moving of the slider (2).
3. Via the buttons (3, 4). Detailed information on the buttons is given in the table below.
4. Via the current position indicator (5). You may pass to any time mark with a frame accuracy with the indicator. Left-click the indicator field and type necessary value. Passing will be implementid on-the-fly.
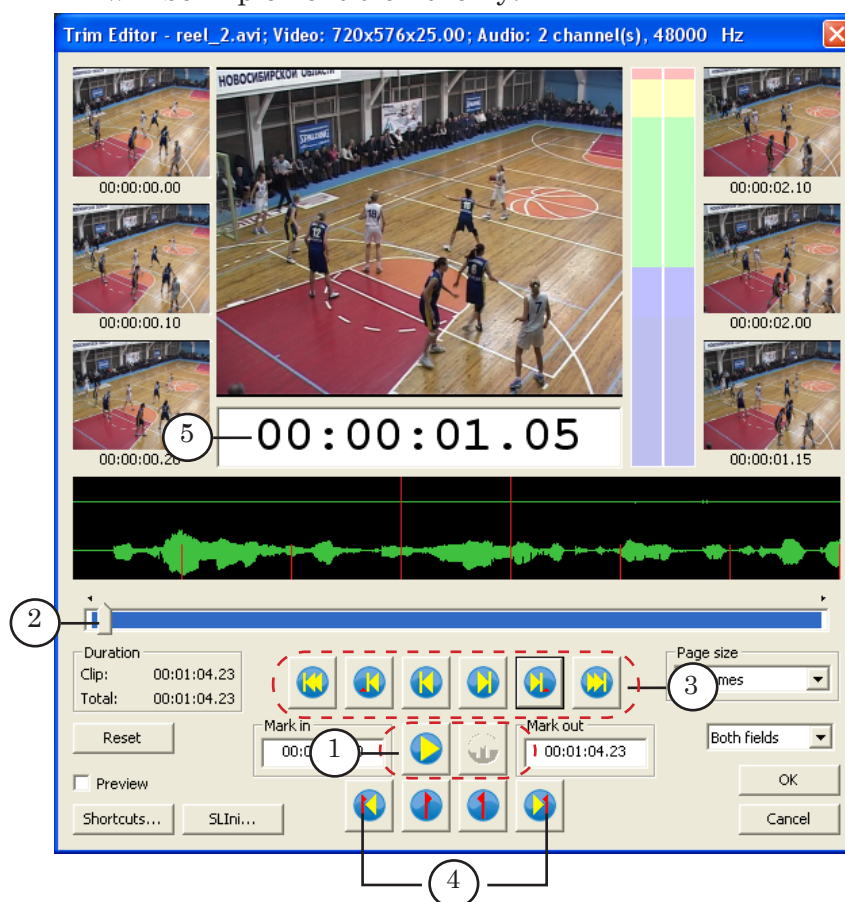

Table 1. Buttons for varying of current position

Button	Purpose	Shortcuts (by default)
Step-by-step varying		
	Pass to clip start.	Home
	Page down. Select page size from the Page Size drop-down list.	PageDown

| Button	Purpose	Shortcuts (by default)
	Pass 1 frame back.	-
	Pass 1 frame forward.	+
	Page up. Select page size from the Page Size drop-down list.	PageUp
	Pass to clip end.	End
	Pass to fragment start (Mark In).	Ctrl+Home
	Pass to fragment end (Mark Out).	Ctrl+End
Buttons for automatic scrolling control		
	Start/stop of clip scrolling. The current position will be moved to clip start when stopping.	Enter
	Stop clip scrolling by fixing current position.	P

6. Video Preview

The additional Preview window (4) and a group of panes (1–3) are used to preview video data. Put the Preview check mark (5) to open the additional preview window.
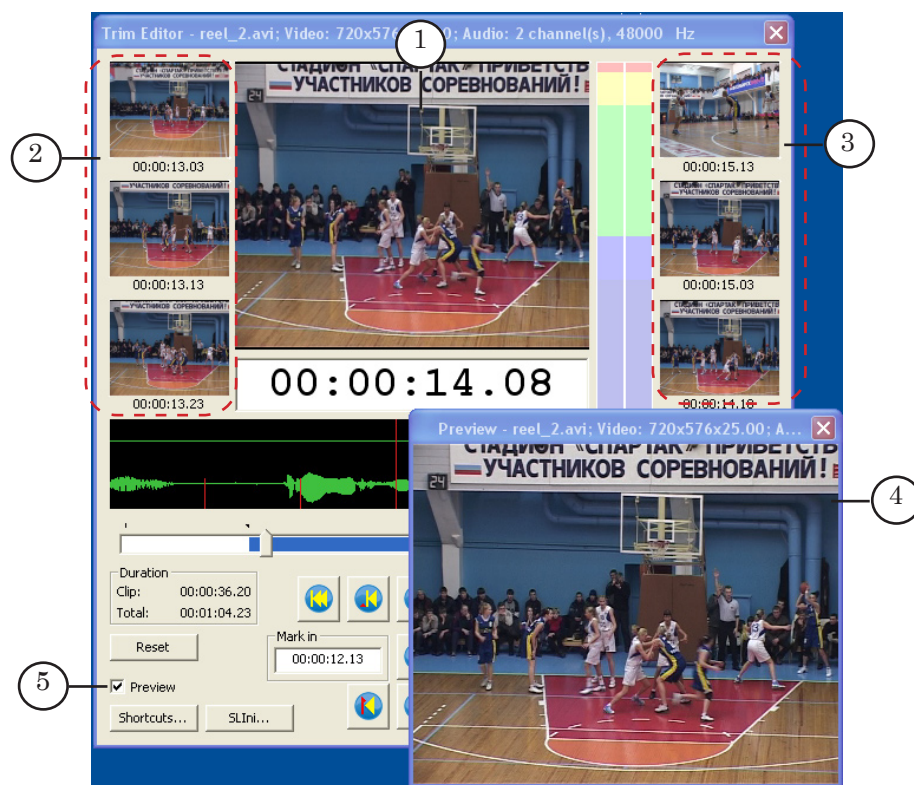
Video frame corresponded to the current position will be displayed in the central pane (1). Frames on pages up (2) and down (3) relatively the current position are displayed in the left and right panes.

The interval between frames in adjacent panes equals to page size (4). Indicators located under every pane display corresponding time marks (hh:mm:ss.frames).
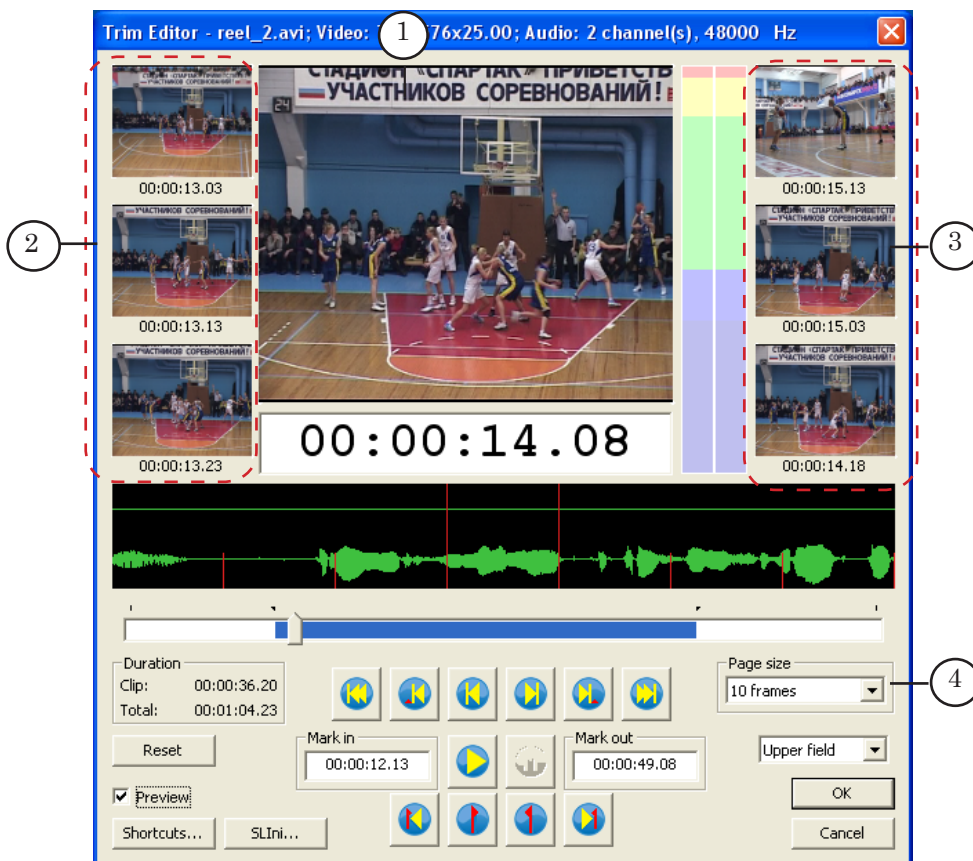
Additional Preview window can be placed anywhere on the screen. You can specify any window size by dragging it via the cursor or selecting a standard size in the system menu (1). Size of the image will be proportionally adjusted to the selected size.
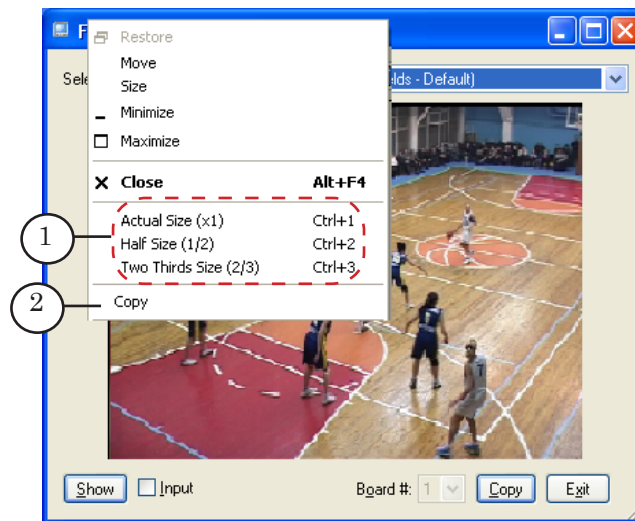
The Copy command (2) in the system menu is used to copy current frame to the clipboard. In this case image size corresponds to a current one in the preview window.

7. Audio Data Control

If the clip is scrolled automatically the sound is played via the audio device specified as default one.

Tip: To identify default audio device or to select another one as default (if necessary) complete the following: double-click Sounds and Audio Devices item located in Control Panel. Open the Audio tab in the appeared window. Use the Sound Playback group (2) to adjust the settings.
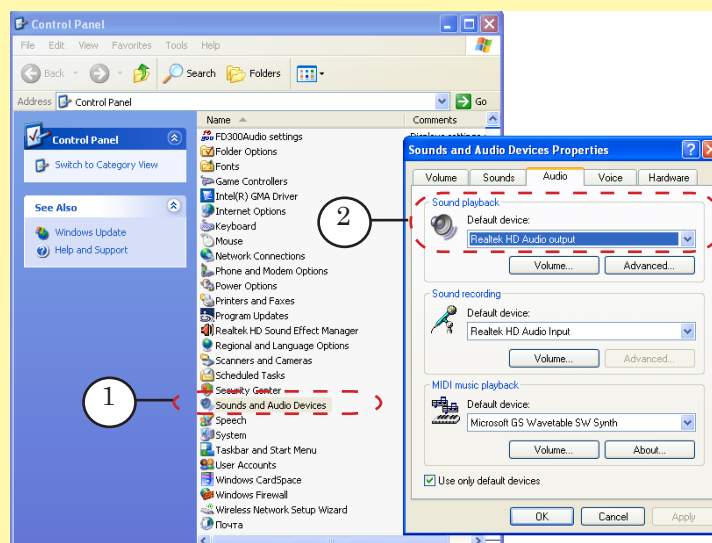
The following elements are used to control audio data visually:

- audio track (1) that displays a waveform: fragment corresponded to the current position ± 3 pages. Page bounds are marked with red;
- audio indicator (2) that indicates audio level during automatic scrolling.

Scale of soundtrack data depends on the value specified in the Page size drop-down list (3).
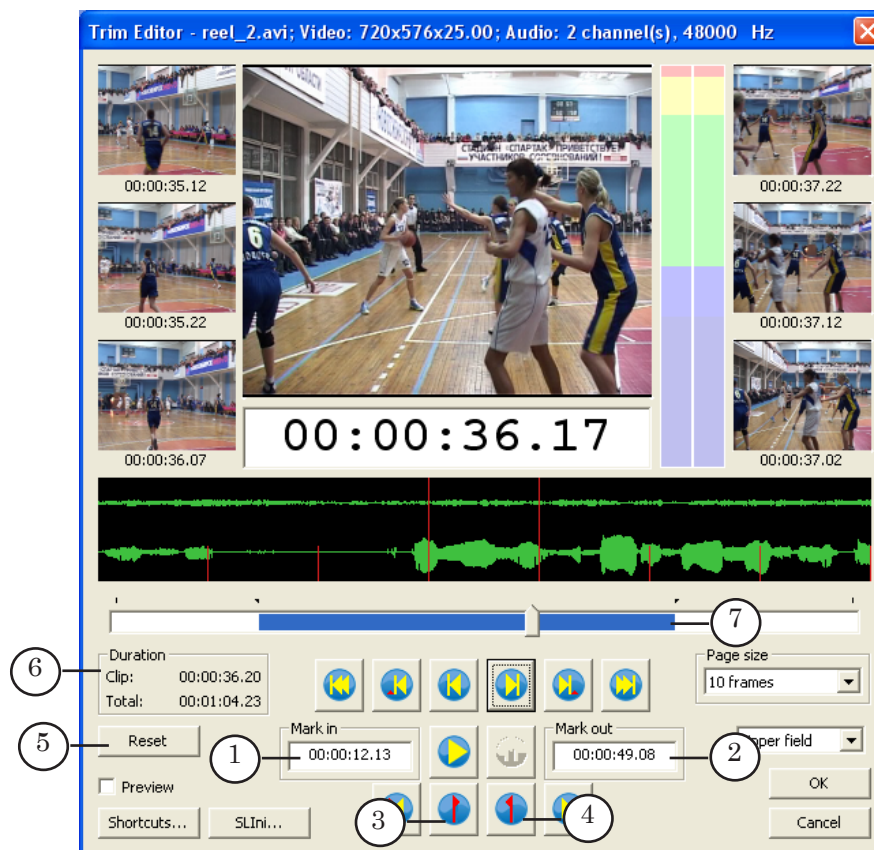
8. Marking of the Fragment

Specify duration of clip fragment by setting the Mark In and Mark Out marks.
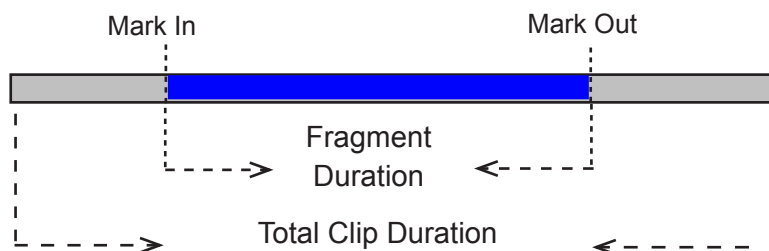
Marks can be set in different ways:

1. by specifying Mark in (1) and Mark out values (2) in corresponding fields if the exact time of fragment start and end are known.

2. if the exact values are unknown then scrolling the clip and examining audio and video data pass to the necessary position and click a corresponding button: (3) – to mark start of the fragment, (4) – to mark end of the fragment.

Click Reset (5) to reset mark values.

Current duration of the fragment is displayed in the Duration group in the Clip field (6) and it is marked by blue (7) on the slider.

Table 2. Buttons for fragment marking

| Button	Purpose	Shortcuts (by default)
	Mark fragment start.	I, Insert
	Mark fragment end.	O, Delete

9. Configuration of Clip Playback Parameters

To adjust parameters of some audio/video clips playback, for example, to adjust volume or image brightness settings file is used (SLIni file). For more details on this issue, see the "Video Files Playback Settings File" section of this document.

The SLIni file can be created either manually via any text editor or automatically via the TrimEditor program. When using the TrimEditor program necessary name and location of the file will be automatically specified.

✔   **Important:** Remember that the SLIni file created in the TrimEditor program will be automatically saved in the same folder where configured audio/video file is located. Settings recorded in the file will be active while these files are in one folder.

Use the SLIni... button to open the window for clip playback parameters adjusting. The button is located in the main program window.
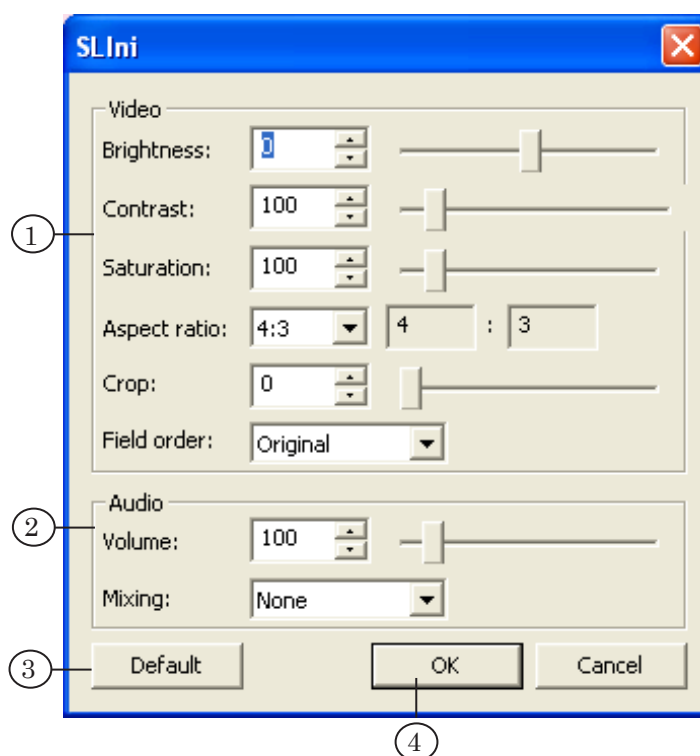
The SLIni window contains control elements that are used to adjust video (1) and audio (2) playback parameters (detailed information is given in the table below). The Default button (3) is used to revert to default settings.

When clicking the OK button (4) all specified parameters will be automatically saved in corresponding SLIni file.

Table 3.   Control Elements

Name	Parameter	Possible values
Video parameters		
Aspect ratio	Frame aspect ratio	e.g., 16:9
Crop	Percent of the black bar trimming. Zooming of frame displaying depends on this value. The larger the value, the larger the image (see the example in the "Video Files Playback Settings File").	An integer from 0 to 100. Where: 0 – scale the image so that the width of the image fits the screen. In this case black bars will be visible at the top and bottom of the screen; 100 – scale the image so that the height completely fits the screen (without black bars). In this case part of the image at the left and right will be «cropped».
Contrast	Image contrast (in percent of the initial level).	An integer from 0 to 1000. 100 denotes initial level.
Saturation	Color saturation (in percent of the initial level).	An integer from 0 to 1000. 100 denotes initial level.
Brightness	Image brightness (in standard units).	An integer from -255 to 255. 0 denotes initial level.
Field order	Order of fields output.	Original denotes initial fields order; Upper field first denotes upper field first; Lower field first denotes lower field first.
Audio parameters		
Mixing	Selection of audio channel for playback.	None denotes playback without modifications; Left+Left – left channel only; Right+Right – right channel only; Mean+Mean – mixing of left and right channels.
Volume	Sound volume (in percent of the initial value).	An integer from 10 to 1000. Where: 100 – initial volume level; 1000 – value 10 times as high as the initial one.

10. Keyboard Shortcuts Assigning

You may assign keyboard shortcuts to activate commands of the program.

Use the Shortcuts... button located in the main application window to open the Settings window and to assign keyboard shortcuts.
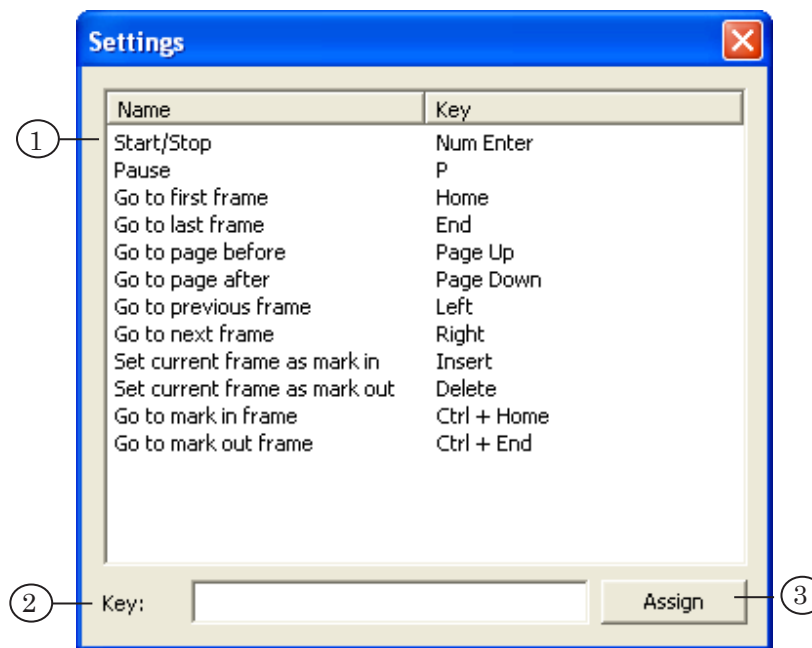
The table (1) displays the commands and assigned to them keyboard shortcuts. Complete the following steps to assign new shortcuts:

1. Left-click the line of the command that is being configured (1).

2. Enter necessary combination in the (2) text field. For this set a cursor in the field, left-click the field and press corresponding keys.

3. Click Assign (3).

4. New keyboard shortcut appears.

Useful Links

ForwardT software set: description, download, documentation, solutions

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

Support

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

e-mail: forward@sl.iae.nsk.su

       forward@softlab-nsk.com

Forum

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

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