AutoDetect (SCTE-35)

Automatic Ad insertion
using SCTE-35 cue messages

Revision as of.
October 28, 2015.

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

Note: This user's guide contains information relevant to or based on Soft-Lab-NSK products.

The AutoDetect (SCTE-35) software is designed to automatically insert local blocks of programming while retranslating programs from the main station (MPEG-2 transport stream) using SCTE-35 messages (cueing messages that adhere to the ANSI/SCTE 35 standard). The AutoDetect (SCTE-35) software is included in the AutoDetect plug-in.

Insertion via SCTE-35 messages can be done in real time or while airing programs from the main station with a fixed time shift and an unchanged schedule – FDTimeShift function.

Note: The AutoDetect plug-in is a program option for the following products: Forward TT, Forward TA, Forward TP, Forward TS. The plug-in is purchased in addition to the main product. The plug-in is designed to automatically insert ads using different kind of cues (video, audio jingles, DTMF, VITC marks, etc.). For more information on working with the AutoDetect Software see the user's guide «AutoDetect. Broadcast automation based on detecting cue tones».

✔ **Important:** 1. The plug-in AutoDetect is necessary in order to use the AutoDetect (SCTE-35) software.

2. The AutoDetect (SCTE-35) software is installed separately from the AutoDetect software (see «Installing the software»).

3. The use of the AutoDetect (SCTE-35) software is limited to programs that come in to the broadcasting server as MPEG-TS.

One SCTE-35 message contains information about the start and end of the avail. Therefore there are two events that are planned by the AutoDetect (SCTE-35) software based on one SCTE-35 message — the start and end of the local ad window.

This guide contains instructions on installing the AutoDetect (SCTE-35) software and setting up automatic ad insertion via SCTE-35 cue messages.

Installing the AutoDetect (SCTE-35) software

1. Pre-installation notes

1. The AutoDetect (SCTE-35) software is installed by a special program — a plug-in installer. The installer file is ForwardTxPlugins_Setup_x_x_x.exe, where x_x_x is the version number of the installer.

Note: Installers of the newest versions of software and instructions on installing the software can be found on the «SoftLab-NSK» website in the «Download » section.

2. The version of the software must be the same for the main product and the plug-in. It is recommended to use the most recent version.

3. If the software of the main product and/or the plug-in is version 5.6.0 or older, deinstall it and install a more recent software.
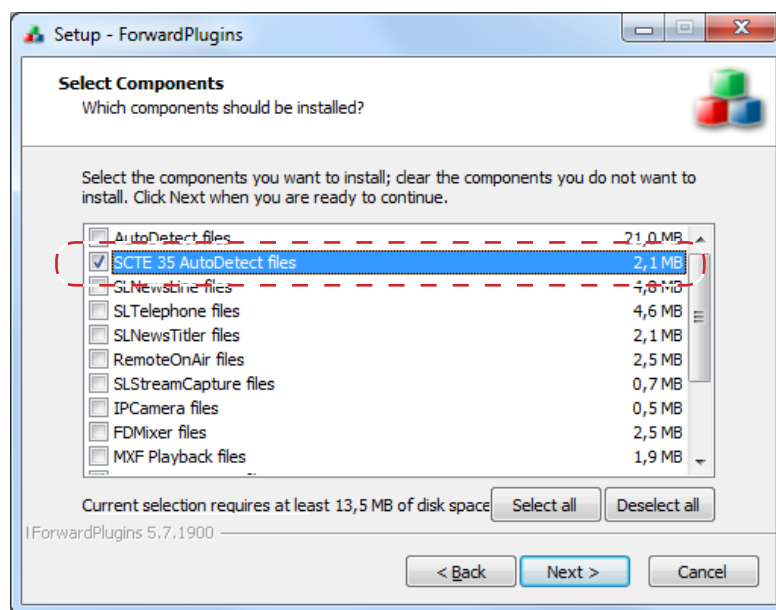
2. Installation

The AutoDetect (SCTE-35) software is installed in addition to the main product. We recommend following these steps while installing:

1. Activate the plug-in registration (if you have not yet done so). To do this, double click the registration file (*.reg) that was received in addition to the plug-in, and agree to add the information contained within to the Window's registry.

   The registration will be activated after restarting the computer. This can be done after you install the plug-in software.

✔ **Important:** The registration will be complete ONLY after you have restarted the computer.

2. Launch the plug-in installer (ForwardTxPlugins_Setup_x_x_x.exe file, where x_x_x is the version number of the installer).

3. The Installation Wizard should open. Follow the step-by-step instructions of the Wizard. When choosing the software to install, make sure to check the option for SCTE 35 AutoDetect Software Components.

4. After you've completed all of the Wizard's instructions, re-start your computer.

5. The installation should result in the addition of the NRSCTEConfig program to the software. The NRSCTEConfig program is responsible for the configuration of AutoDetect (SCTE-35) software's events.

   The NRSCTEConfig program's file is ~\Plugins\AutoDetect\ SCTE35\NRSCTEConfig.exe, where ~ is the full path to the folder in which the ForwardTS or ForwardT Software (depending on what main product you're using) is installed. By default, it would be C:\Program Files\ForwardTS or C:\Program Files\ForwardT Software, respectively.

   To start the program you can:

   ● use the desktop shortcut located in the AutoDetect folder on your desktop;
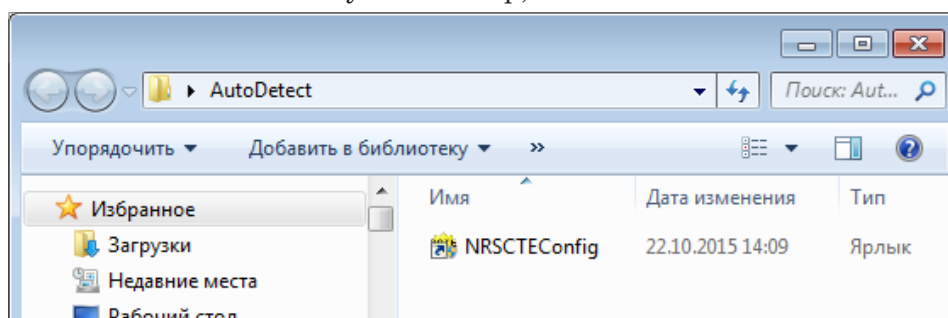
   ● use the Start Menu: All programs > ForwardTS (or ForwardT Software) > Plugins >AutoDetect >NRSCTEConfig.

Setting up insertion via SCTE-35 messages. Common Procedures

To set up automatic insertion local ads via SCTE-35 messages, complete the following:

1. The reception of the main station's programs and the translation of programs by the FDOnAir software must be set up before attempting to automate the insertion of ads.

   The specific settings that need to be used while using the SCTE-35 messages for different modes of broadcasting the main station's programs (with no time shift or with a fixed time shift) can be found in the «Setting up program reception» section below.

2. Using the NRSCTEConfig program, set up the AutoDetect (SCTE-35) software's events — for more information, see the «NRSCTEConfig program. Setting up AutoDetect (SCTE-35) software's events» section.

3. Set up the FDOnAir program for work with the commands: Wait signal, Resume schedule/AutoDetect (SCTE-35) — for more information, see the «FDOnAir. Setting up translation» section.

4. Create a broadcast schedule, add the Wait signal, Resume schedule/AutoDetect (SCTE-35) commands and execute it — for more information, see the «FDOnAir. Setting up translation» section.

Setting up program reception

## 1. For translation without a time shift

To set up program reception from the main station, create and start a graph for receiving video, audio and data from the MPEG-TS (through IP or ASI interface) into a named region of the board with which the broadcasting server (FDOnAir) works.

Note: For more detailed information on working with graphs and step-by-step instructions, see the user's guide: «SLStreamer Lite, SL Streamer Pro. Programs for configuring, monitoring & managing digital broadcasting schemes».

This section contains only the most important aspects to pay attention to while creating a graph. All specific examples are provided based on a virtual board (FDVrt) receiving the transport stream from an IP source.

Complete the following steps:

1. Make sure that the stream with the program is being received by the computer. For example, the VLC player can be used to view a stream from an IP source.

2. Start the FDConfig2 program by clicking on the desktop shortcut. In the window of the program, make sure that:
   - you have the licenses for the necessary products (1);
   - in the list of devices used there is at least one virtual board (FDVrt (2)) and you have the license to work (3) with it.
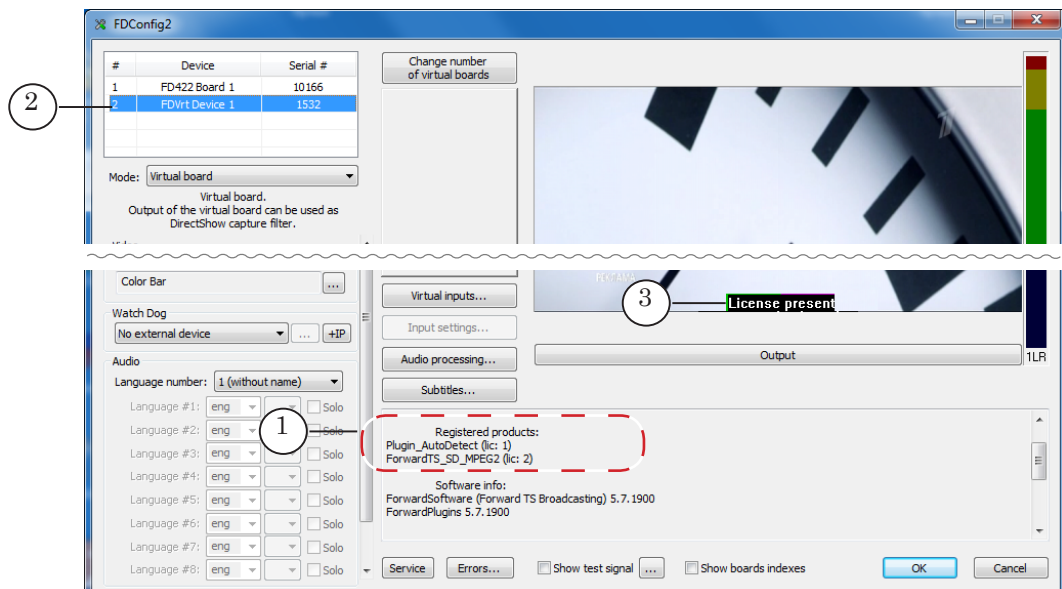

Close the FDConfig2 program window.

3. Start the SLStreamer Pro program. Create a graph, adding one unit after another. The graph needs to contain at least 4 units: Input (1), Input Program (2), Output Program (3), Output (4). For specifics of each unit, look below.
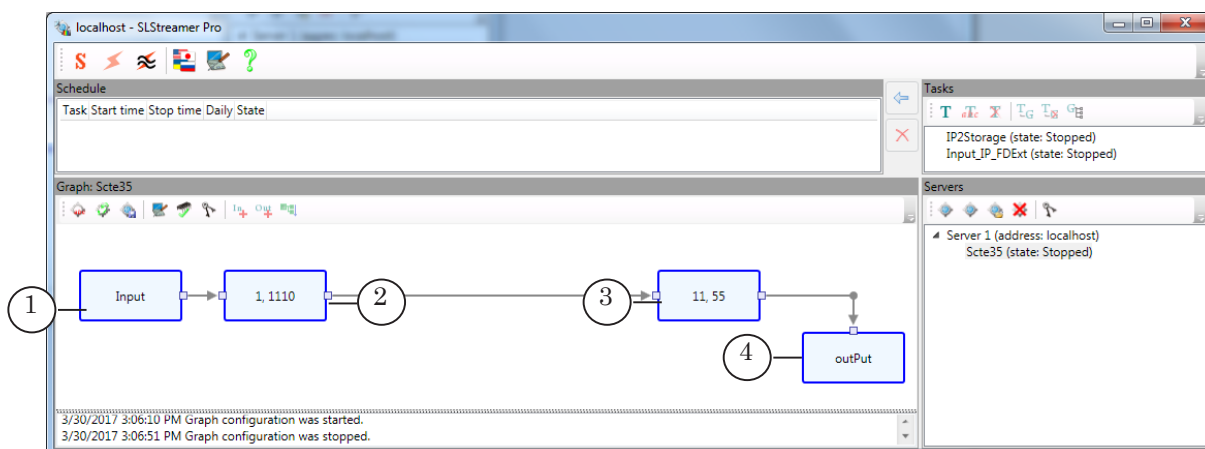
Note: Step-by-step instructions on creating a graph are located in the «SLStreamer Lite, SL Streamer Pro. Programs for configuring, monitoring & managing digital broadcasting schemes» user's guide, chapter «SLStreamer Pro. Working with the program» section «Creating a graph without a template. Order of operations».
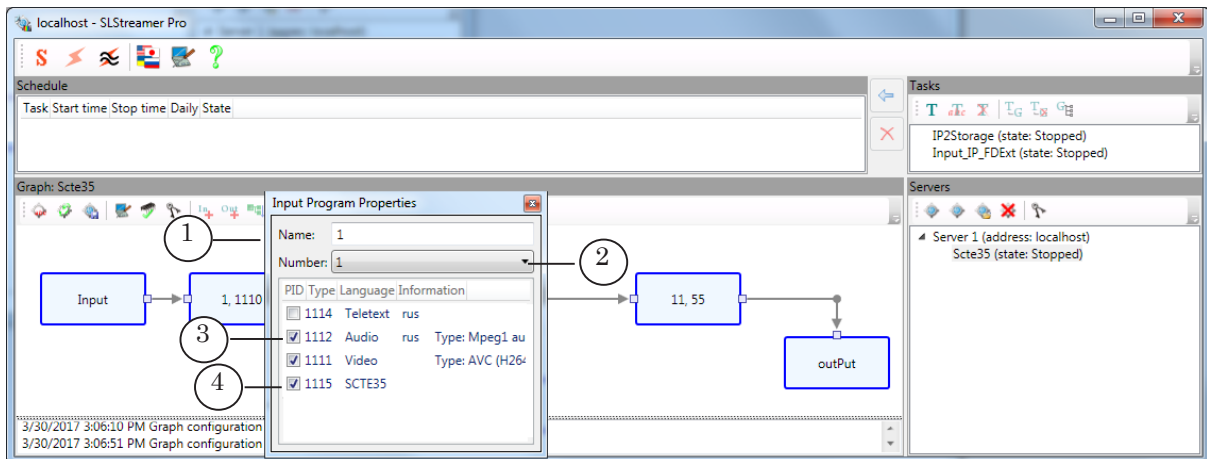
4. In the unit settings for the Input unit (1), set the parameters for the source of the stream including its: IP address (2), Type (3), Interface (4), etc.
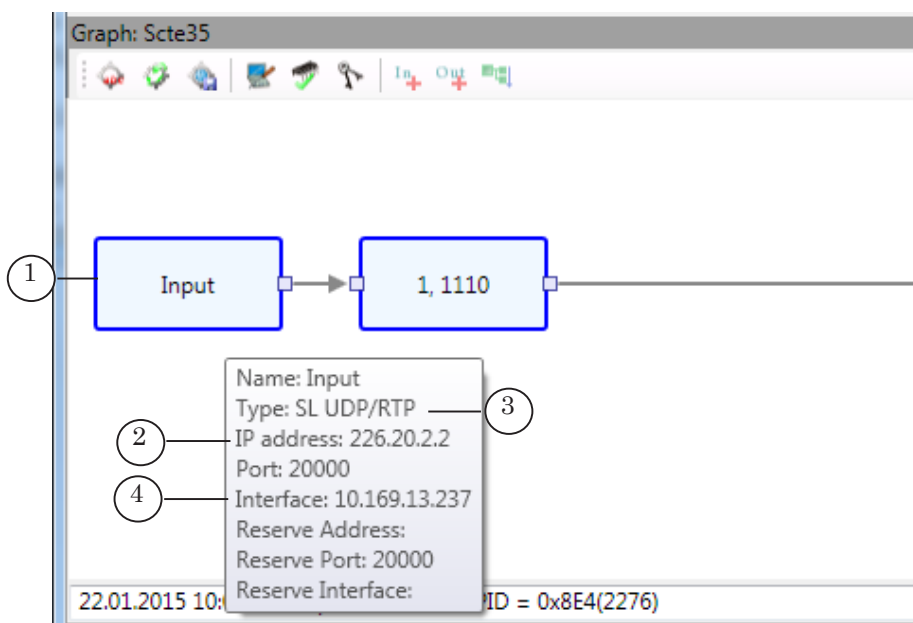
5. In the unit settings for the Input Program unit (1):

- in the drop-down list Number (2) you will find the numbers of the programs that are contained in the input stream. Choose the number of the program you wish to process;
- choose the audio, video, etc. streams you wish to process by checking their boxes (3). Make sure you check the stream containing the SCTE-35 cue messages (4).
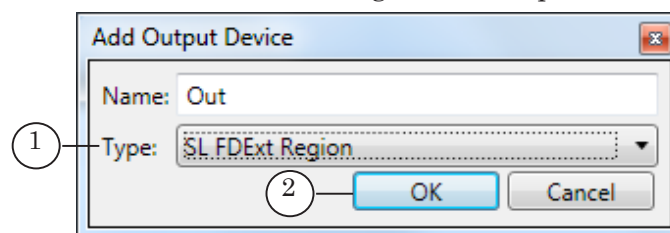

6. In the unit settings for the Output Program set the Name (1) and Number (2).
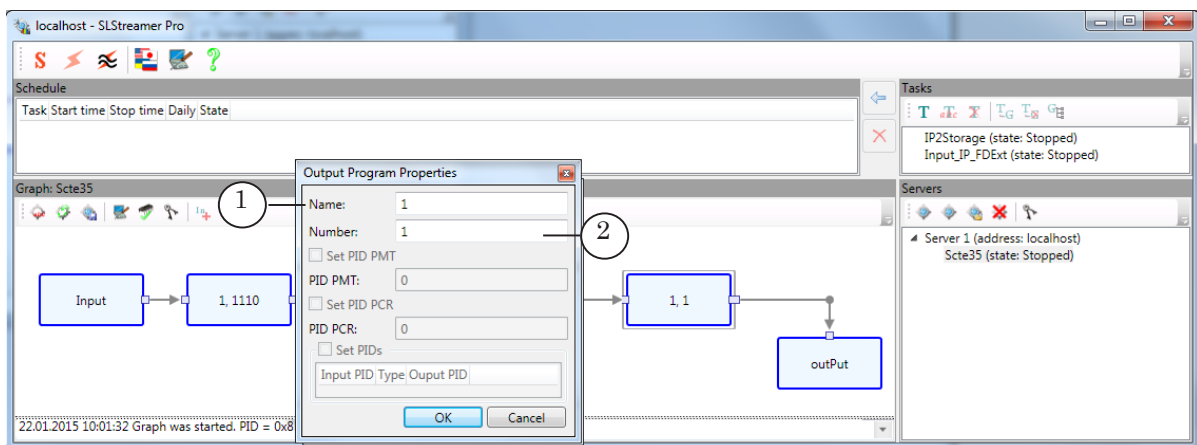
7. Set the Output unit for receiving the stream onto the virtual board.

1. In the window Add Output Device choose SL FDExt Region in the drop-down list Type (1). Press the OK button (2) to continue to the settings of the output.
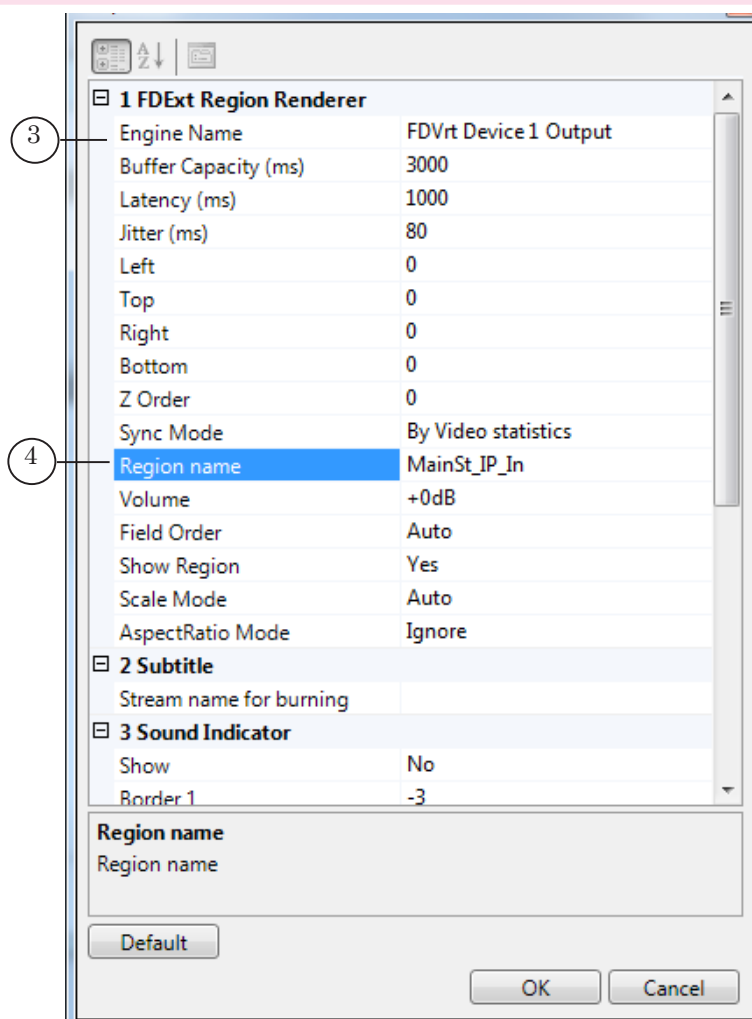
2. In the next window, set the following parameters:
- in the drop-down list Engine Name (3) choose the virtual board you are using;
- specify the name of the region (4) on the virtual board where the data from the IP stream will be sent.

✔ **Important:** Please remember the region name — it will be necessary for the following steps.

8. Save the graph. Start the graph. Make sure that the task is Running (1) and that the graph has been started (2).

2. For translation with a time shift

2.1. Basics

To organize a translation of content that is being received from the main station in a MPEG transport stream with a fixed time shift and without changing the order of the programs, complete the following steps:

✔ **Important:** This function is only available with the IP2PostPlay plug-in.

1. Set up the recording of the streaming content to PostPlay storage. (You will need to use the IP2PostPlay plug-in for this. For more detailed instructions see the «IP2PostPlay. Recording streaming audio and video in PostPlay's storage» user's guide.):

1. Using the PostPlayStorageConfig program create a Post-Play storage.

2. Using the SLStreamer Pro program create and start a graph for receiving the video, audio and data from the stream into the PostPlay storage.

When creating the graph make sure that in the Input Program unit settings is present and checked for processing the stream with the SCTE-35 messages.
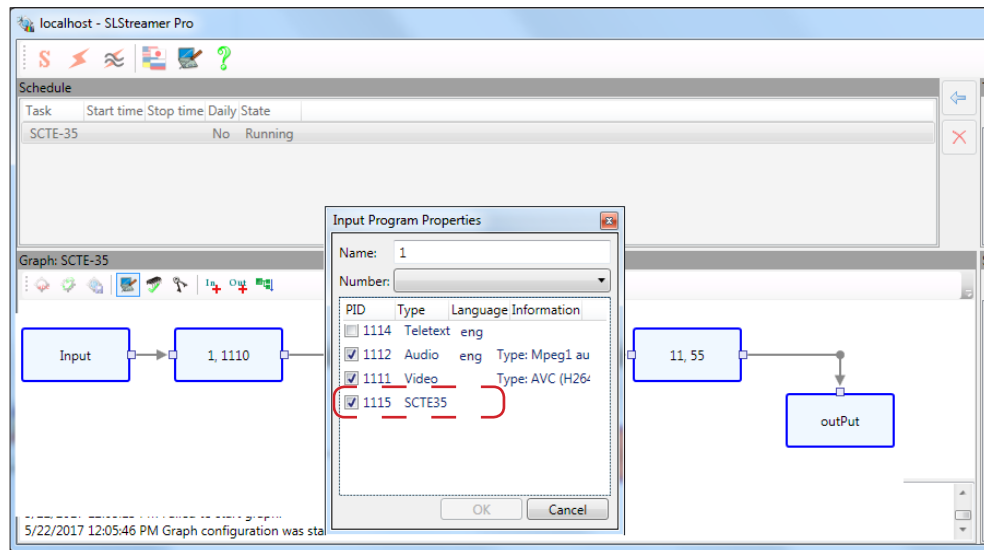
3. Set up the FDTimeShift function for transferring the content from the PostPlay storage to the FDOnAir program with a time shift: use the FDTimeShift and FDOnAir programs for this. More information will be given below. For even more detailed information, see the «FDOnAir Application. FDTimeShift Video Line. Rebroadcasting with a Time Shift via FDOnAir» user's guide.

2.2. The FDTimeShift Function

For setting up the FDTimeShift function follow these steps:

1. Start the FDTimeShift program with the help of the Start Menu: All programs > ForwardTS > PostPlay > FDTimeShift. The next steps will be completed in the program window.

2. Set the time shift of the translation by:

1. Pressing the Change (1) button in the Playback delay group.
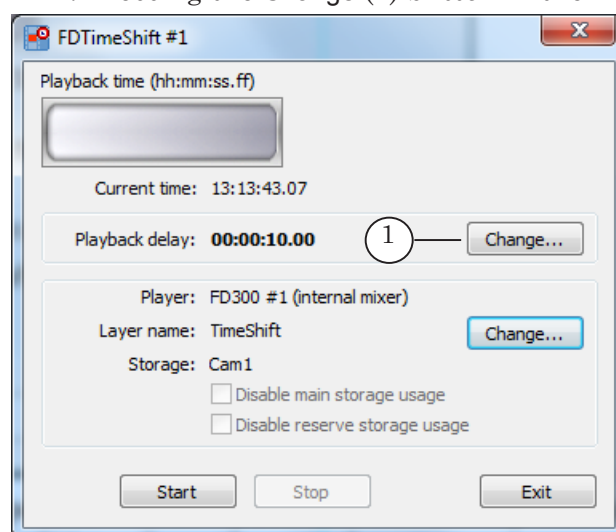
2. In the newly opened window, set the necessary amount of time (2) and press OK to close the window.
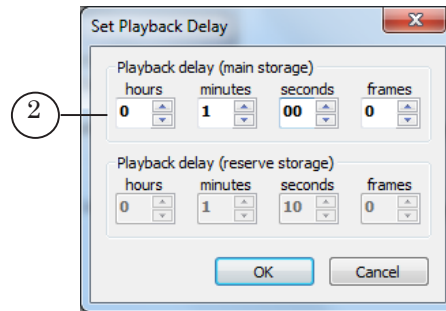

Note: We recommend choosing a small time shift, for example one minute, when setting up AutoDetect. This will make it easier to check the execution of events. After you have finished setting up AutoDetect, return to the FDTimeShift settings and set the delay time necessary.

✔ **Important:** The delay cannot be longer than the time allotted by the Post-Play storage (the storage capacity).

3. Select the PostPlay storage from which the video and audio will be read and the device to which the data will be transferred:

1. Press the Change button (3).
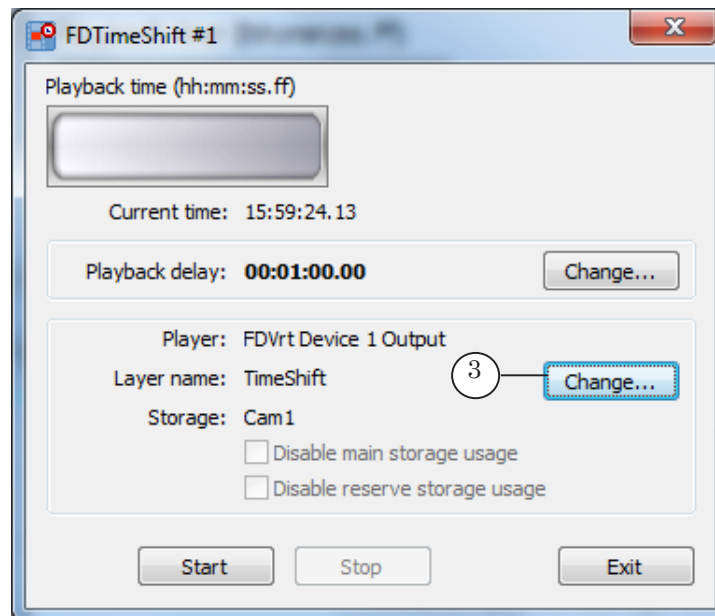
The next steps will be completed in the opened window.

2. Make sure that the Together With OnAir application option (4) is selected.

3. In the Device drop-down list (5), select the board with which the broadcasting server (FDOnAir) is configured.

4. In the Layer Name field (6) enter the name of the region on the chosen board to which the data from the storage will be transferred.
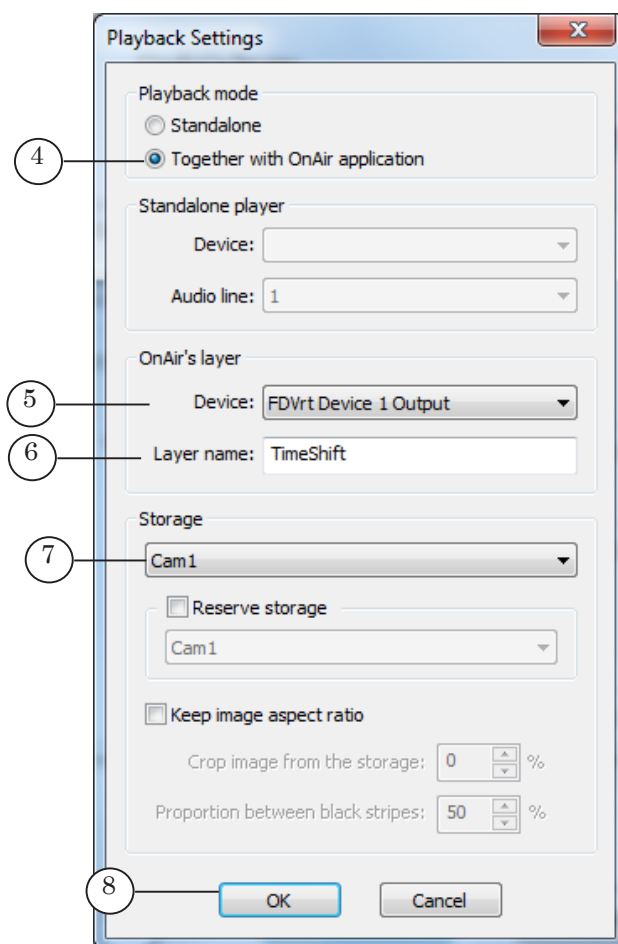
✔ **Important:** Please remember the entered name — it will be necessary for completing the set up.

5. In the Storage drop-down list (7) select the name of the storage from which the audio and video data will be read to air in FDOnAir (this name is selected in the setting of Output Device unit in graph receiving the input stream).

6. To save any changes and close the window, press the OK button (8).

4. Start the transfer of data from the storage to the named region by pressing the Start button (9) in the main window.
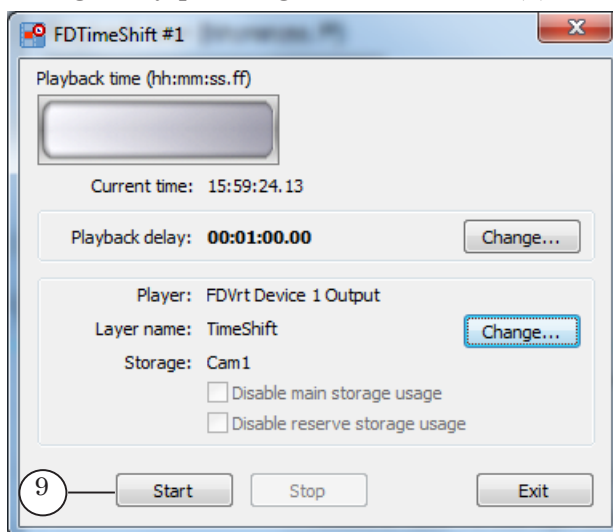
5. Wait until the No Data Available message changes to Playback (10). This means that the data from the storage are being successfully transferred to the board. Only after this can you start setting up AutoDetect events.
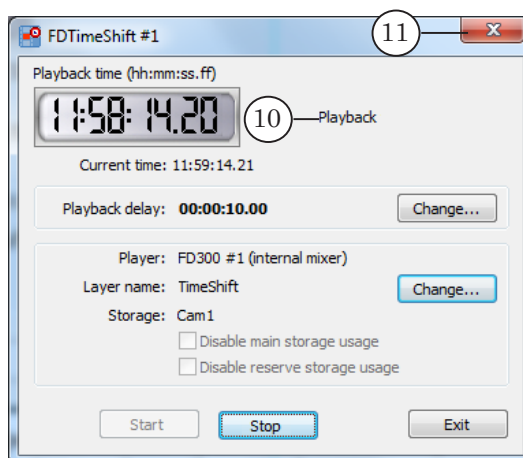

6. Close the window by pressing the Exit button (11).

✔ **Important:** The FDTimeShift program must be working by transferring data from the storage to the board the entire time while a program is being translated from it.

7. Start the FDOnAir program. Set a Video Input N command (N is 1–6). For example, to set up the Video Input 1:

1. In the FDOnAir main window press the Settings button.

2. In the newly opened window go to the Input Settings tab (1).

3. Check the Input 1 box (2), and press the button next to it (3). In the newly opened menu choose the named region (4) in which the data from the stream comes in (this region was named when setting up the time shift in the FDTimeShift program, see above under number 3).

4. Press the Close button to close the settings window. Video Input 1 command is now set up to control the translation of programs with a time shift, that are received from the stream from the main station.
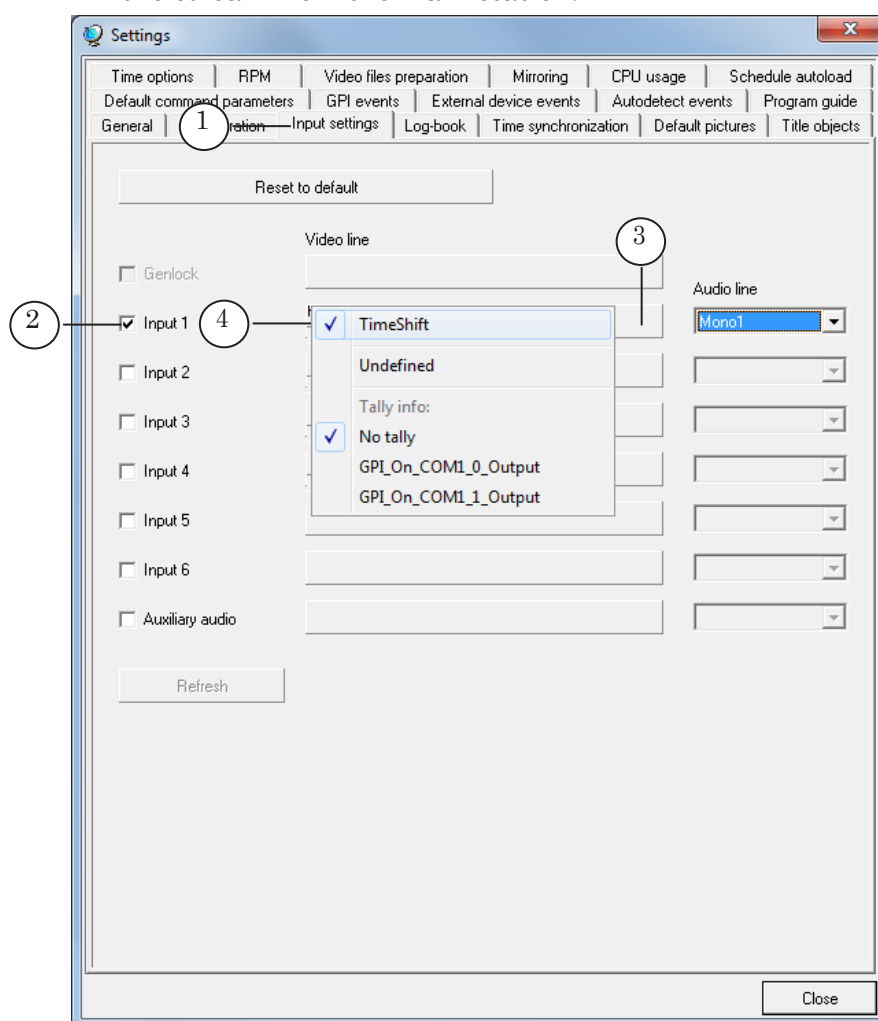
NRSCTEConfig. Setting up AutoDetect (SCTE-35) events

✔ **Important:** It is necessary for setting up AutoDetect SCTE-35 events while the stream with the program is being received into the named region (the graph for receiving the stream data is being executed; in the case of translation with a time shift the FDTimeShift program is working by transferring data from the storage to the board).

To set up an AutoDetect (SCTE-35) event, complete the following steps:

1. Make sure that the FDOnAir program is closed.

2. Start the NRSCTEConfig program through the Start Menu: Programs > ForwardTS > Plugins > AutoDetect > NRSCTEConfig.

   (The program file is ~\Plugins\AutoDetect\SCTE35\NRSCTEConfig.exe, where ~ is the full path to the folder where the ForwardTS software is installed. By default, this is C:\Program Files\ForwardTS).

3. In the program's main window press the Add button (1).
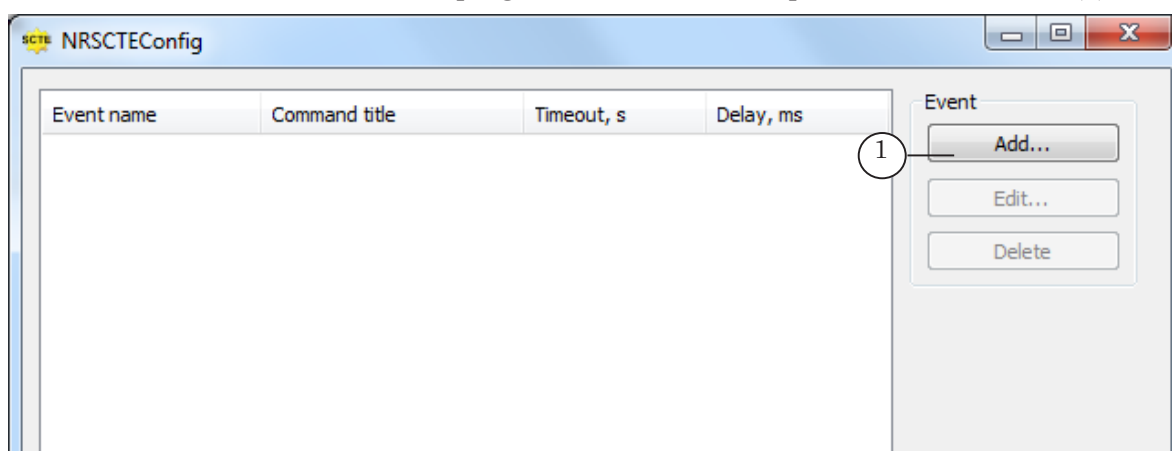
The next steps will be completed in the opened Add event window.

✔ **Important:** Two AutoDetect (SCTE-35) events will result from this set up — one for entering the local ad window (In) and one for exiting it (Out).

4. In the Device drop-down list (1) choose the virtual board you are using.

5. In the Layer Name drop-down list (2) choose the name of the region which is receiving the program data from the main station.

Note: When working in Real Time mode choose the board and region that you have set in the unit settings of the Output Device unit in the receiving graph (see the «Setting up program reception» section, subsection «1. For translation without a time shift»). When working in Time Shift mode, choose the board and region that you have set while setting up the FDTimeShift function (see section name above, subsection «2. For translation with a time shift»).
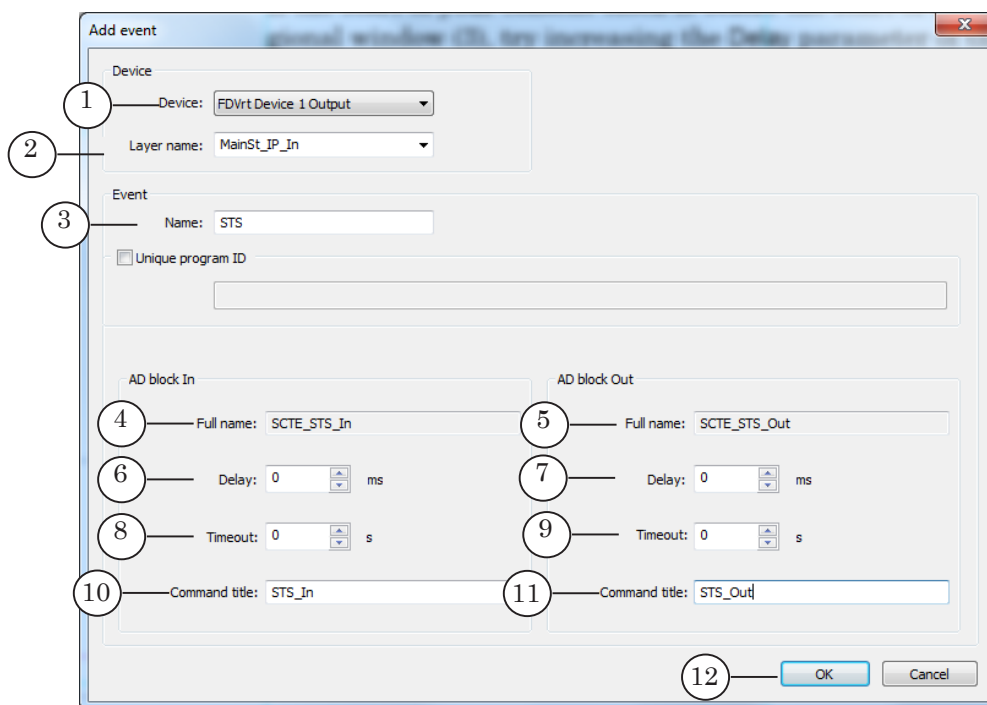
6. In the Name field (3), set an informative name for the event you are creating.

   This name will be used in the automatically formed names of the events for entering (4) and exiting (5) the local window.

Note: The full name of an event contains the type of cue — SCTE, the name given by the user in the Name field, and the purpose of the command — In is input, Out is output.

7. For each event (for input and output) set the following parameters:

   1. Delay (6, 7). While first setting up, we recommend you keep the value of this parameter at 0.

   This parameter's function is to regulate the precision of the insertion of the ad block. If with the Delay parameter set at 0 the local window is not functioning, choose a value (in ms) for this parameter through trial and error (see section «Delay Function's Value. Calculations»).

   2. Timeout (8, 9) — 0 or the longest possible length (in seconds) of executing a command in the schedule. If the value is set to 0, the command will be executed until the SCTE-35 message is received.

3. Command title (10, 11). The set name will be displayed in the list of commands of the FDOnAir program schedule (see section «FDOnAir. Setting up translation»). It is necessary for the names of the input and output commands to be different from each other.

8. Press the OK button (12) to close the Add Event window and save any changes.

9. Information about the added events (1, 2) should appear in the table of the main window.
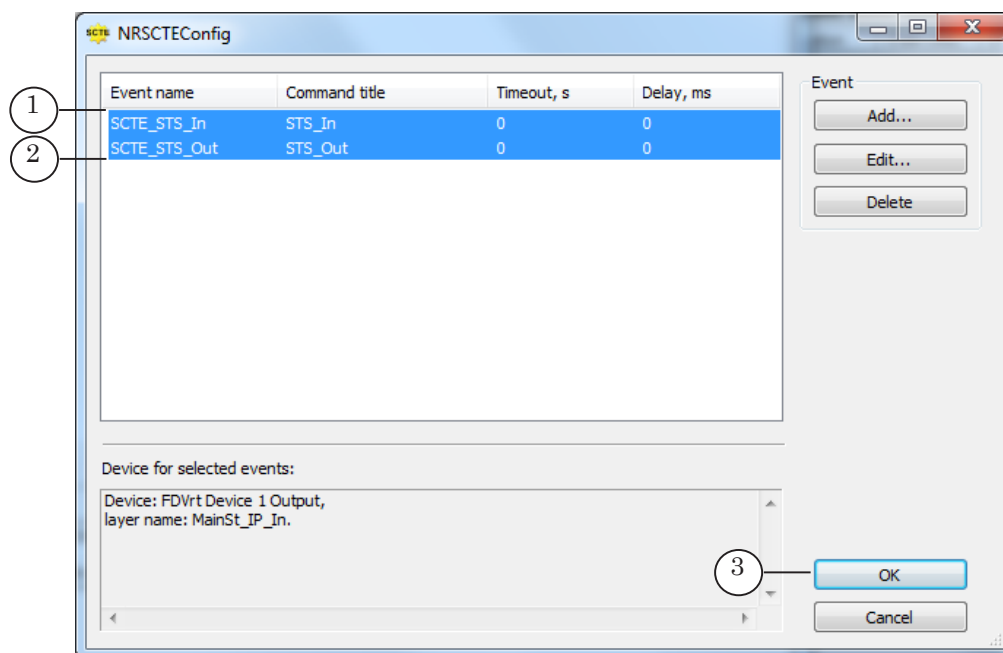
10. Press the OK button (3) to close the program window and save any changes.

11. For the program to recognize cues and automatically insert local blocks into the proper times, use the Wait signal command in the FDOnAir schedule (see next section).

NRSCTEConfig. Setting up AutoDetect (SCTE-35) events

FDOnAir. Setting up automatic insertion

To automatically control the start/stop of local ad blocks using SCTE-35 messages, create a FDOnAir schedule that uses the Wait signal, Resume schedule/AutoDetect (SCTE-35) commands:

1. Start the FDOnAir program by double clicking on its desktop shortcut.

2. In the program's main window, press the Settings button (1).
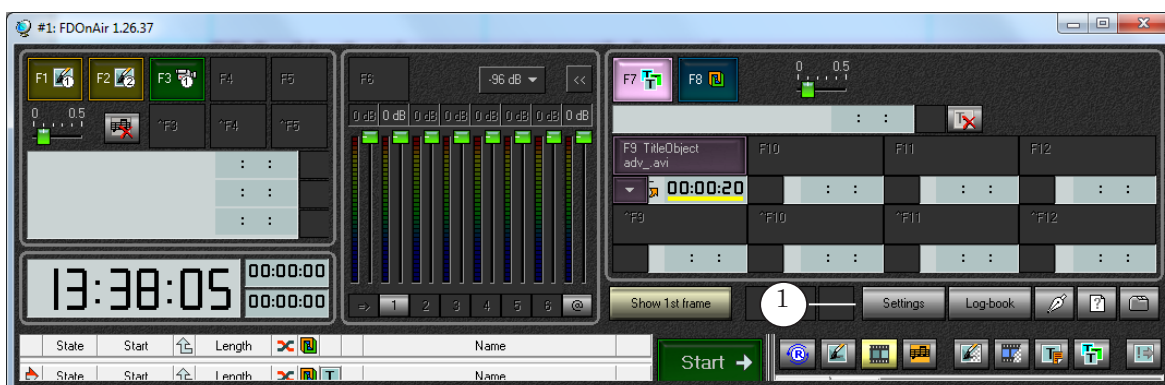
3. In the newly-opened window go to the Configuration tab (1) and make sure that in the Video device group of lists the following options are chosen: FDExt (2) and FDVrt Device N Output (3), where N is the number of the virtual board used (this must be the same board that was set in the settings of the Output Device unit of the graph that receives the stream, as well as in the settings of the AutoDetect (SCTE-35) events).
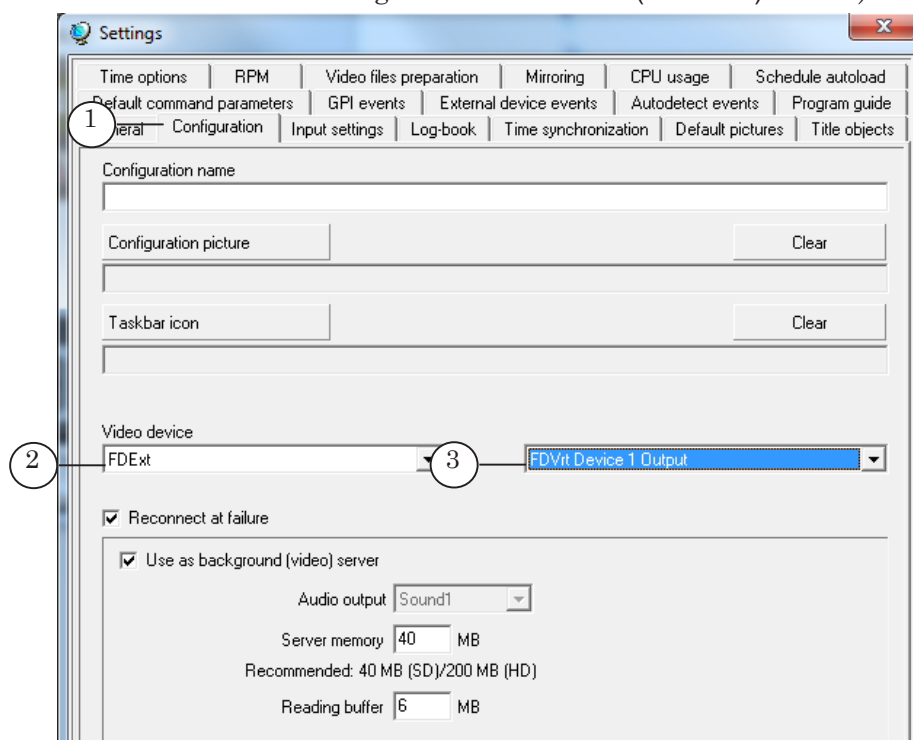
4. Switch to the Input Settings tab (1) and make sure that one of the Video Inputs, for example Input 1 (2) is using data from the named region that receives data from the main station's stream (the same named region set in the unit settings of the Output Device unit of the graph receiving the stream, as well as the AutoDetect (SCTE-35) event settings).
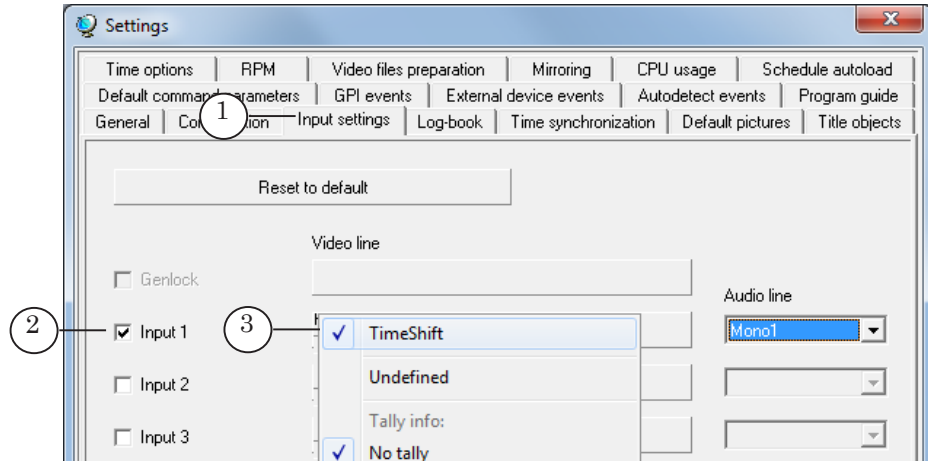

5. Switch to the AutoDetect Events tab (1) and set up the Wait signal, Resume with schedule/AutoDetect commands:

1. Press the Add Input GPI button (2).
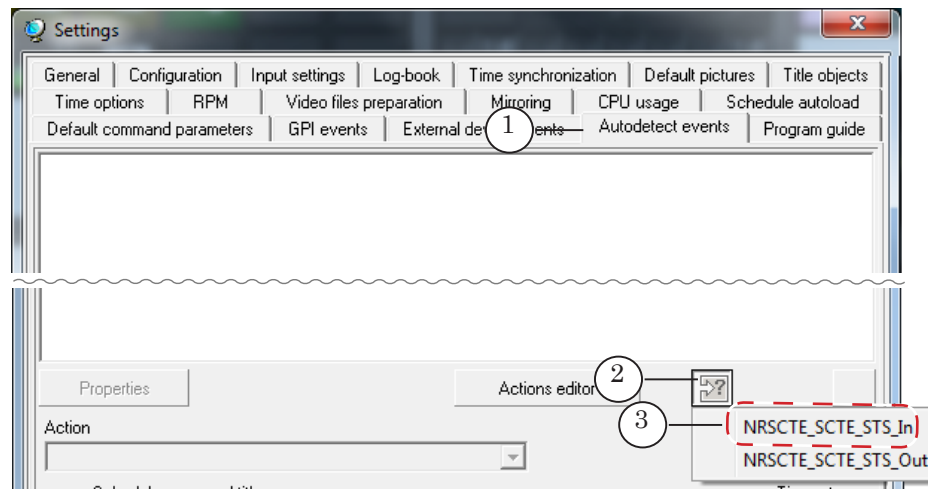
2. A list of events that you can use will appear. Choose the event for entering the block by the signal of SCTE-35 message: its name will contain the words SCTE and In (3).

3. The Wait signal and Resume with schedule/AutoDetect command to enter the ad block will be added to the list of commands (4).
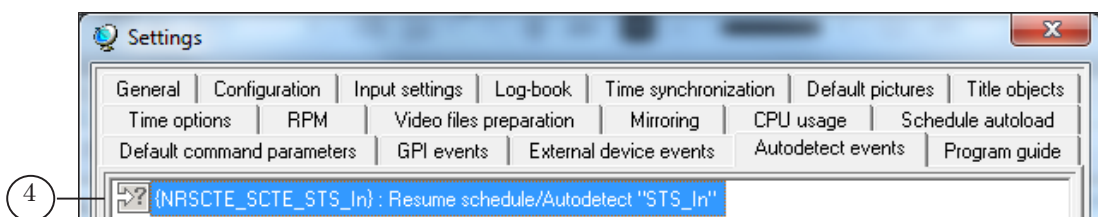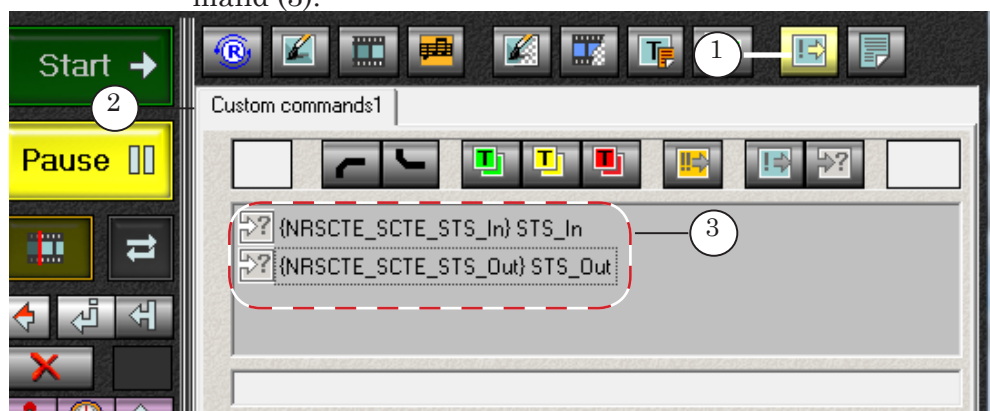
4. If necessary, add the command to exit the block (5) the same way: the name for the event will contain SCTE and Out.
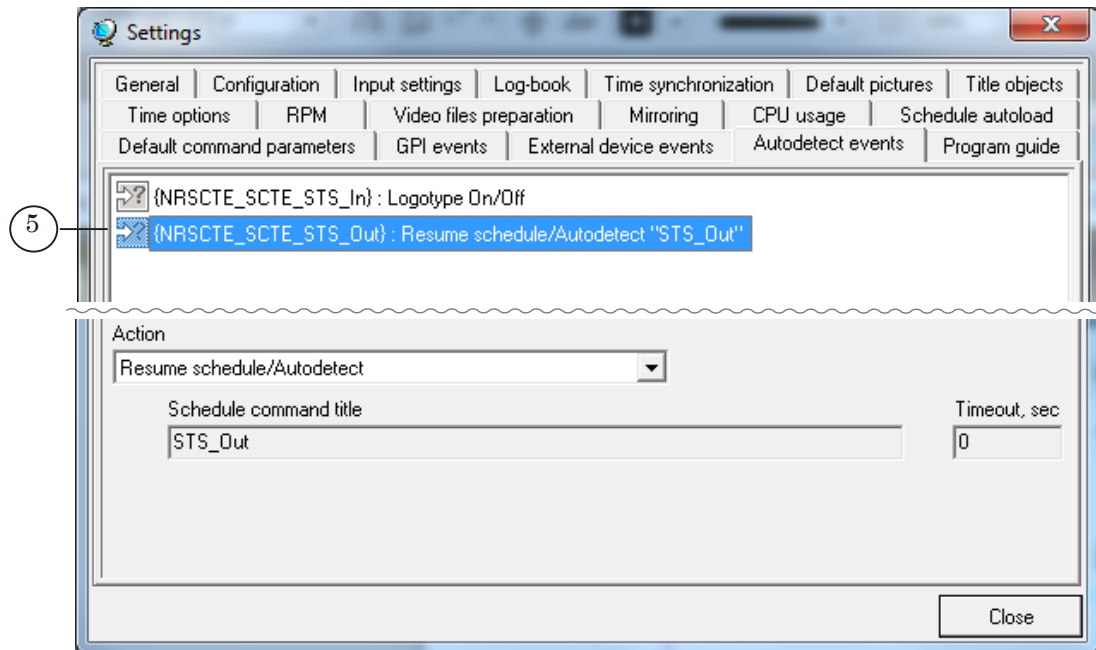
6. Press the Close button to close the Settings window.

7. In the main program window organize the necessary broadcasting schedule (see example below).

8. To add commands that control the automatic insertion of local blocks with the help of SCTE-35 messages to the schedule:

1. In FDOnAir's main window press the Custom Commands button (1) — a page for custom commands (2) will open. The Wait signal that you set up previously (see step 5) commands will be listed here.

2. In the schedule move the editing cursor to the line after which you'd like to insert the Wait signal command to enter the ad block, and double click the line with the proper command (3).

3. If necessary, add the command to exit the block the same way.

Example: On the picture below you can find an example schedule with commands cued by SCTE-35 messages.

1. At the Wait time (1) command's set time the scheduled block will start and translation of the video from the IP stream (Video Input 1(2)) will start.

The translation of video from the stream will continue until another full screen video will start broadcasting (in our case — ad videos).

2. The start of the next block will be determined by the Wait time command (3), and the time set is a little before the expected start of the regional block. After the time arrives, the next command will come into effect — Wait signal: STS_In (4). This means that the program will start looking for SCTE-35 messages in the input stream.

If for this command the Time Out parameter (set during event set up) is set to 0, then the program will keep waiting for the cues until they arrive. If it is set to some other value, then it will wait for either the cues to arrive or until the set time passes.

3. When the cues arrive (or if Time Out is in effect, when the time runs out) the next command on the program schedule will start — playing the ad video(s) (5). The rest of the commands will be executed one after another, in order.

4. In the command line for the last ad video to play an additional command is added — Next command simultaneously (6). Therefore, when the last ad video start the next command is also executed — Wait signal: STS_Out (7).

5. After the exit AutoDetect event is executed the Video Input 1 command (8) will start translating the video input once again. Everything else proceeds by the schedule.

For more recommendations and examples of schedules with automatic insertion of ad blocks, see the «AutoDetect. Broadcast automation based on detecting cue tones», section «Schedule examples».

Delay Parameter Value. Calculations

The Delay parameter (counted in milliseconds) is one of the customizable parameters of AutoDetect (SCTE-35) events. This parameter allows you to regulate the precision of the insertion of local content into the stream coming in from the main station. This parameter is set during the set up of an AutoDetect (SCTE-35) events in the NRSCTEConfig program. By default, the Delay parameter (1, 2) is set at 0 ms.
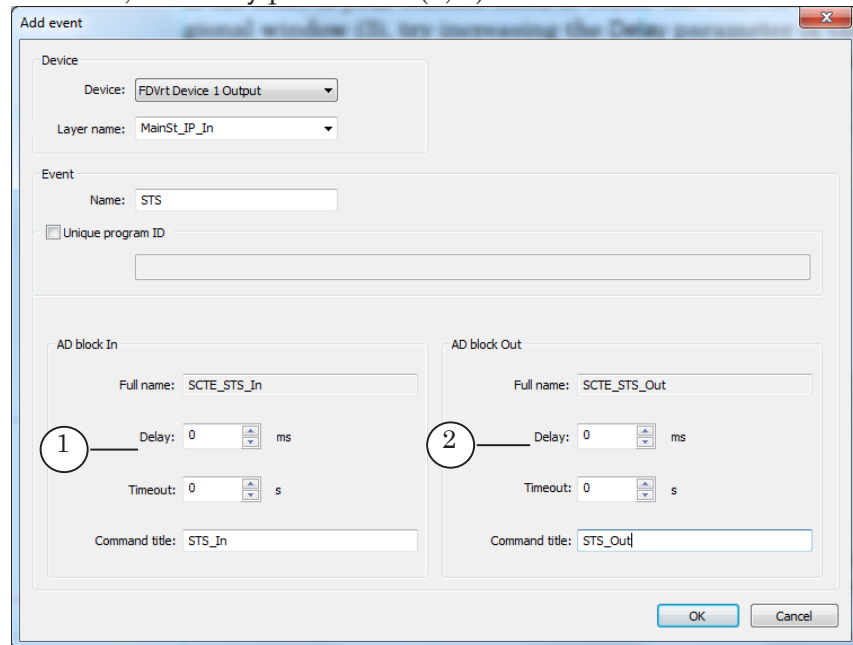
If the start of the local ads block is before the start of the regional window (3), try increasing the Delay parameter of the enter block command (1), if it starts after the start of the regional window, decrease it.
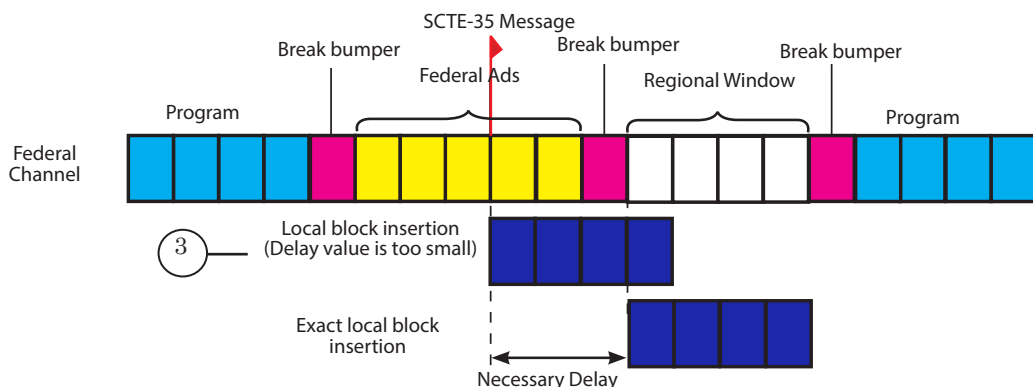
For a timely exit from the local content block, set a proper Delay value for the exit block command (2).

You can find out the necessary value for the Delay parameter at the office of the main station, where the SCTE-35 cue messages are inserted, or you can figure out the value through trial and error.

Below are some recommendations for figuring out the necessary value:

1. Information before you begin:

   1. It is assumed that all steps for setting up the Wait signal command have been completed, the stream with video, audio, and data is being received onto the selected board, and the value of the Delay parameter is 0 ms for both the enter and exit commands.

   2. When searching for the necessary value, we recommend using the AutoDetect (SCTE-35) events to overlay a logotype onto the input video rather than inserting full screen video. This will allow you see the boundaries of both the expected size of the regional window and the boundaries of the inserted block simultaneously.

   To overlay a logotype, prepare a title project with a logotype (the Picture title element, for example).

Note: The FDTitle Designer program is designed to create title projects (see the «FDTitle Designer. Title project designer» user's guide for more information).

2. In the FDOnAir window open the Settings window and complete the following steps:

   1. In the Title Objects tab (1) upload the prepared title project and in the Logotype (F8) drop-down list (2) choose the necessary title object (Logotype in our example).
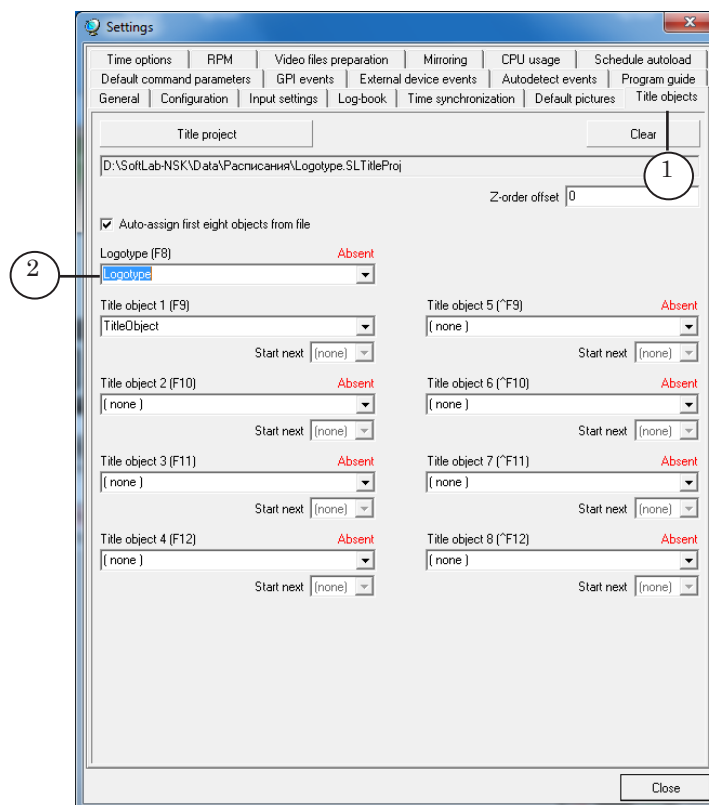
2. Open the AutoDetect Events tab.

3. Click on on the NRSTE_SCTE_STS_In (3) command.
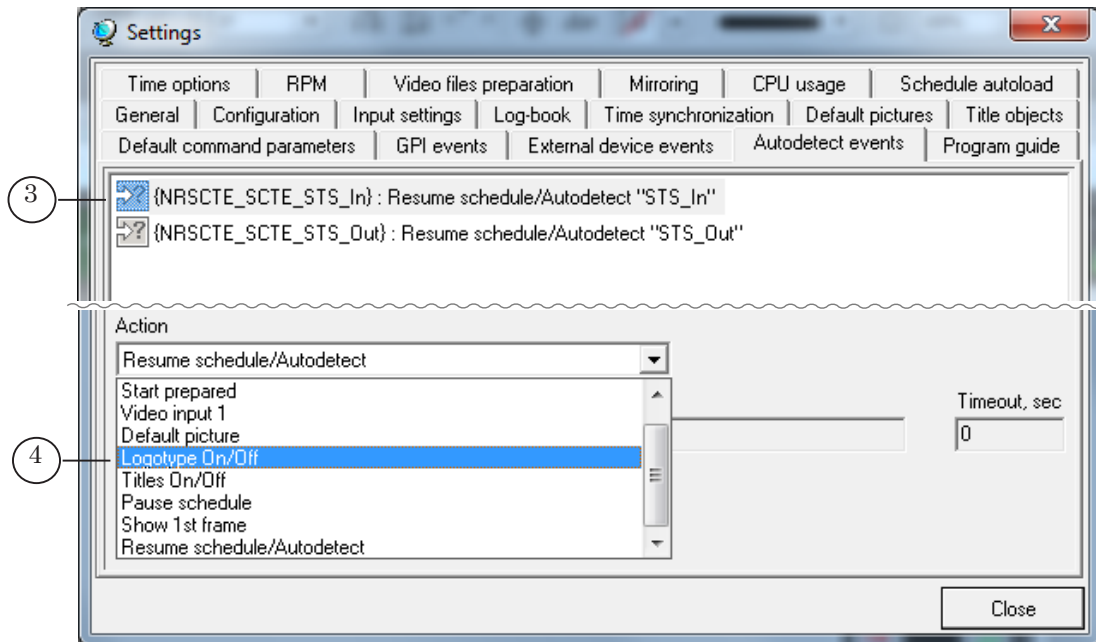
4. In the Action drop-down list (4) choose Logotype On/Off.

5. Click on on the NRSTE_SCTE_STS_Out command and choose the Logotype On/Off action the same way.

6. The result will be the set up of the Wait signal command with the Logotype On/Off action, which regulates the On/Off settings of the Logotype based on the AutoDetect (SCTE-35) events In (5) and Out (6). You do not need to insert these commands into the schedule in order for them to be executed. It is enough that they are present in the AutoDetect Events tab list.
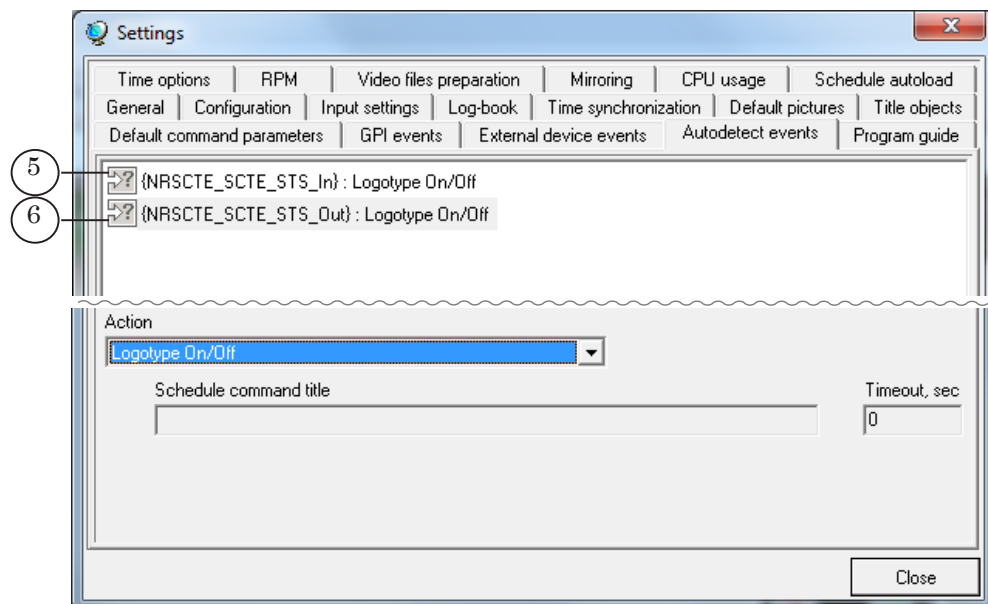

7. Close the Settings window by pressing Close.

3. In the FDOnAir main window make sure that the F8 (Logotype On/Off) button is off. If not, switch it off.

4. Press the Video input 1 (F3) button (1) — this will start the translation of the video input.

5. If the input signal contains SCTE-35 messages, the AutoDetect (SCTE-35) module will detect them, and the FDOnAir program will execute the NRSTE_SCTE_STS_In: Logotype On/Off command, which will turn on the logotype if it wasn't on already, and turn off the logotype when the SCTE_STS_Out: Logotype On/Off command is executed.

6. With the help of the FDCapture program record a fragment of the translated video from the FDOnAir output that contains local blocks. Make sure that the following were recorded:

   1. The time of turning the logotype on and off (marked with a star on the picture below).

   2. The whole interval designated by the main station for the regional window (marked with a «1» on the picture below).
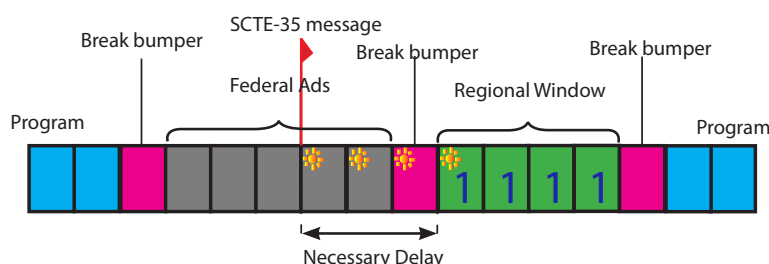
7. Close the FDOnAir program.

8. With the help of the recording, calculate the difference between the moment when the logotype turns on and the start of the regional window. Set this value (in milliseconds) as the Delay parameter value for the enter block command NRSTE_SCTE_STS_In in the NRSCTEConfig program.

9. Calculate the difference between the time when the logotype turns off and the airing of the last frame of the local block. Set this value as the Delay parameter value for the exit block command NRSTE_SCTE_STS_Out.

10. Repeat steps 3–9 until the logotype shows up exactly within the boundaries of the regional window.

11. After you've finished calculating the value of the Delay parameter, reset the rest of the settings: shut off the logotype, reset the Wait signal, Resume schedule/AutoDetect commands, set the necessary broadcasting schedule, etc.

Useful Links

Description of products, software download, documentation, ready solutions

For ForwardT products:

http://softlab.tv/forward/forwardt_all.html

For ForwardTS products:

http://softlab.tv/forward/streaming.html

Technical Support

E-mail: forward@softlab.tv

forward@sl.iae.nsk.su

forward@softlab-nsk.com

Forums

http://www.softlab-nsk.com/forum

Recommended documents:

1. AutoDetect. Broadcast automation based on detecting cue tones

2. SLStreamer Lite, SLStreamer Pro. Programs for configuring, monitoring & managing digital broadcasting schemes

3. FDTitle Designer. Title Project Editor

4. FDConfig2. Program for control and customizing of FDExt boards work parameters

5. FDOnAir. Broadcast automation (basic user's guide).

6. IP2PostPlay. Recording stream audio and video data in Post-Play storages

Translated
21.06 2017