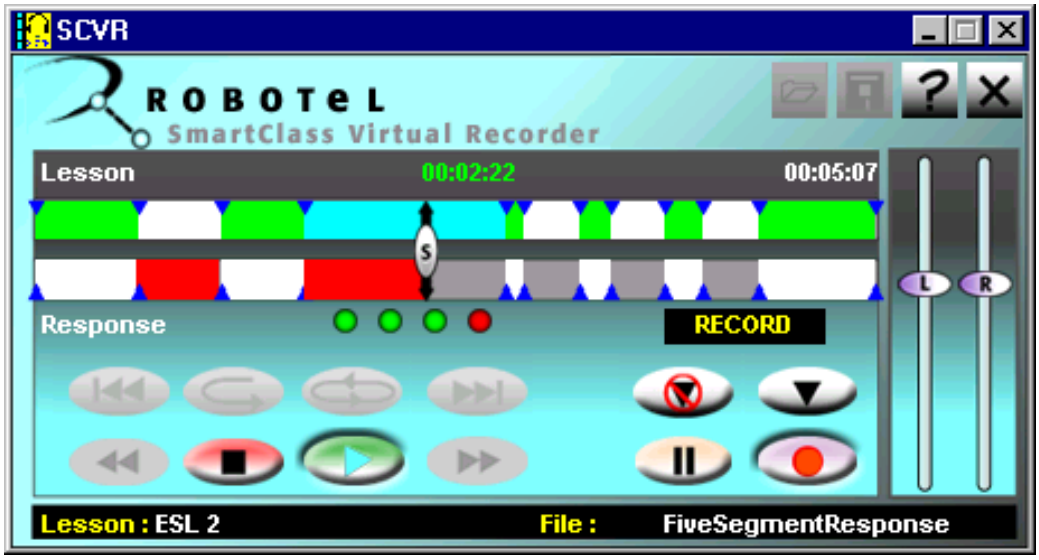
User Guide

SmartClass Virtual Recorder SCVR 2.0



20002-10-17

User Guide_SCVR_ENG_2002-10-17

User Guide Revision History

REVISION DATE	CHANGES
2002-02-19	Initial Release
2002-02-26	User Guide format corrections
2002-09-20	Updated User Guide format for PDF Bookmarks Added references to Practice License
2002-10-17	Added User Guide revision history page Introduced documentation sections & section page numbering Updated Workstation Requirements page Updated 3rd party Logo and Trademark information

TRADEMARKS

DISCLAIMER

COPYRIGHT

CONTACT US

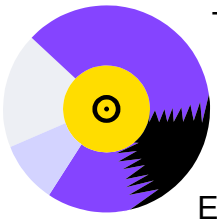
Robotel Electronique, Inc.

3185 rue Delaunay
Laval, Québec
CANADA H7L 5A4

Tel:	(800) 964-1448 (North America) (450) 680-1448 (Worldwide)
Fax:	(450) 680-1983
Customer Service:	(450) 680-1969, ext. 315, 316 serveclient@robotel.ca
Tech Support:	(450) 680-1969, ext. 306, 307 support@robotel.ca

http://www.robotel.com

CONTENTS OF THE SCVR CD-ROM



The SmartClass Virtual Recorder application is made available in Practice, Student or Teacher license configurations. Single copies of Practice licenses are provided without charge for all users completing the proper registration request form.

Electronic copies of the SCVR installation software and documentation are available to all users. A CD-ROM copy of the SCVR installation software is automatically provided to all users purchasing a Teacher license. An SCVR installation CD-ROM and printed copies of all SCVR documentation are available to all other users for a nominal fee. The SCVR installation CD-ROM includes the following content:

- SCVR Installation Software
  - SCVR Player
  - SCVR Lesson Editor
  - Java® technology (Java Runtime Environment & Java Media Framework)
- SCVR Documentation
  - SCVR License Agreement
  - SCVR User Guide
  - SCVR Installation Guide
- Media Clips Directory
  - Sample lesson and multimedia files
- Adobe ® Acrobat ® Reader ®
- Apple® QuickTime®
- Syntrillium® Cooledit 2000®
  - Demo copy
- Musicmatch® Jukebox®
  - Demo copy

CONTENTS

5. User Preferences

APPENDICES

########

1. OVERVIEW

Congratulations! Thank you for your interest in our SmartClass Virtual Recorder, (SCVR). We are confident that you will be pleased with SCVR's capabilities and performance.

USER GUIDE STRUCTURE

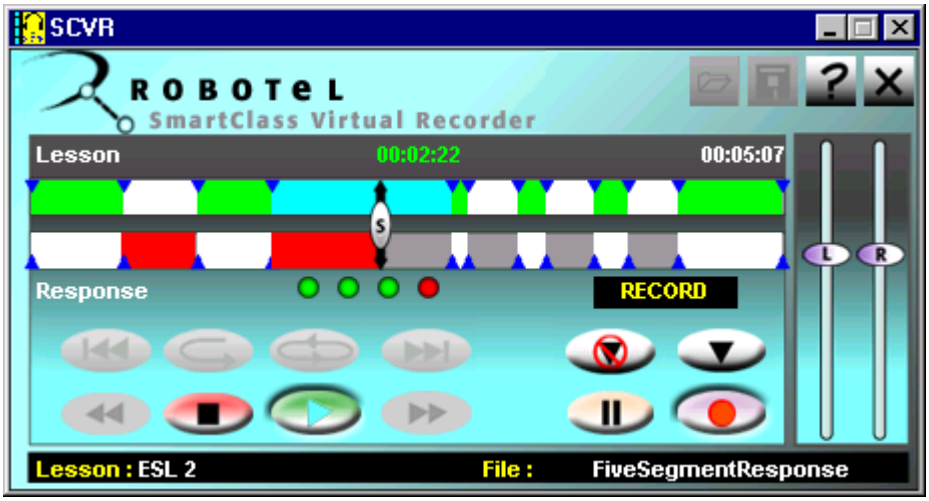
This guide provides a complete description of how to use the SmartClass Virtual Recorder (SCVR) application. For information regarding SCVR installation, please refer to the SCVR Installation Guide.

- This introductory chapter provides a brief overview of SCVR and addresses the different license options for SCVR.
- Chapter 2 covers the SCVR Player. This application is included in all versions of the SCVR product, including Practice, Student and Teacher.
- Chapter 3, titled SCVR Lessons, describes the process for building SCVR lessons from lesson planning through to lesson creation.
- The SCVR Lesson Editor, (associated exclusively with Teacher/Author installations), is discussed in Chapter 4.
- Chapter 5 deals with a number of configuration considerations for SCVR. This chapter is titled User Preferences.
- The user guide concludes with a set of appendices. These sections include supplementary information related to digital audio & multimedia content creation and SCVR workstation and server requirements.

INTRODUCTION

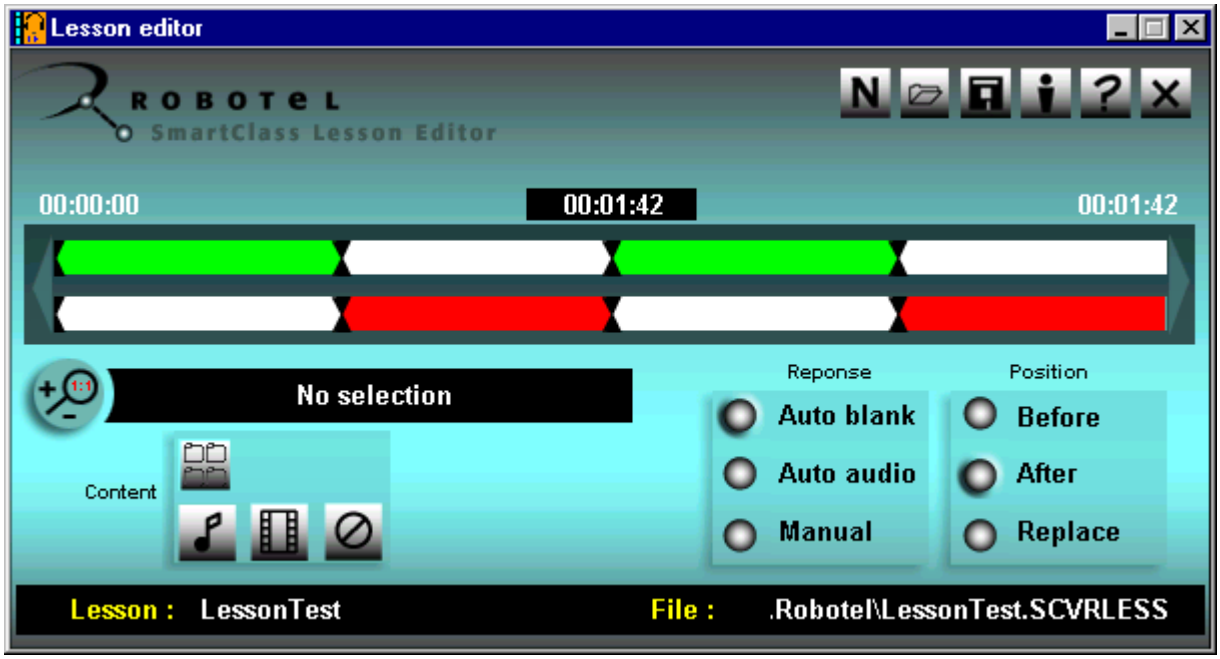
SmartClass Virtual Recorder, (SCVR), is a software based digital media recorder/player that is designed for use in computer-based language learning environments.

SCVR Player: With the SCVR Player, (shown below), students can play their favorite digital audio or multimedia clips, including WAV, MP3, AU, SND, AIFF, MPEG, MPG, AVI, QT and MOV files, and record their own voice-overs on these files. The Player uses a combination of standard tape transport style controls and digital bookmarks to enable rapid navigation and review of materials.

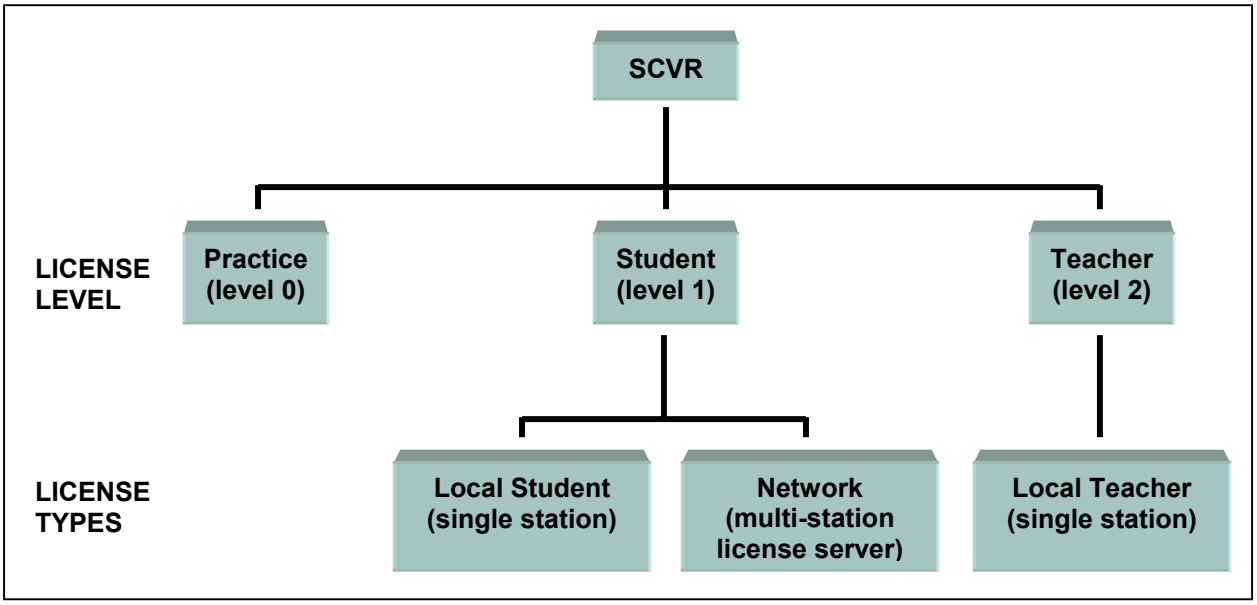


Lesson Editor: Additionally, Instructors can use the SCVR Lesson Editor, (shown overleaf), to build powerful interactive language lessons that schedule both the delivery of presentation materials, (digital audio and video clips), and the timing of student responses, (digital audio). Instructors can create virtually any type of learning exercise, including:

- Pronunciation Drills
- Grammar Drills
- Vocabulary Drills
- Listening Comprehension
- Transcription
- Translation
- Reading Aloud
- Group Exercises and Testing



SCVR LICENSING OPTIONS



License Level: SCVR currently supports three levels of license, Practice, Student and Teacher. The Student license includes the SCVR Player application. The Teacher license includes both the SCVR Player and the SCVR Lesson Editor applications. The Practice license, (which in fact is an unlicensed version of the product), enables all of the capabilities of the SCVR Player, except for the ability to permanently save a recording.

The *Student* license is normally appropriate for students taking full-credit language courses and/or for instructors who do not require SCVL lesson authoring support.

The *Teacher* license is normally appropriate for teachers and/or authors.

The no-charge *Practice* license is normally appropriate for students who need to practice language lessons, (for example at home on their home computer), but who do not need to submit their recordings for credit. The Practice version of SCVR can also be used as a multimedia file player. (There are no time restrictions with the practice license.)

License Type: The SCVR application is copy protected using a software-based license lock and key system. Practice installations do not require any type of key. Local Student, Local Teacher and Network licenses, however, require that key information be identified before the license can be installed.

During the installation of Student or Teacher level licenses, you will encounter a screen titled the Robotel License Manager. This screen identifies a unique *Site Code Key* for

the workstation on which you are installing the software, and prompts you to enter a corresponding *User Key*.

As shown in the diagram (on the preceding page) there are three types of licenses, (Local Student, Network, and Local Teacher), each identified by a different User Key. The User Key must be matched to the license type being installed.

- *Local Teacher License:* Teacher licenses must always be installed as a local license on computer workstations that require SCVR Lesson Editor (authoring) support.

- *Local Student License:* Student licenses can also be installed as local licenses on all computer workstations where the SCVR Player application is to be used. This is typically the case for home computer installations.

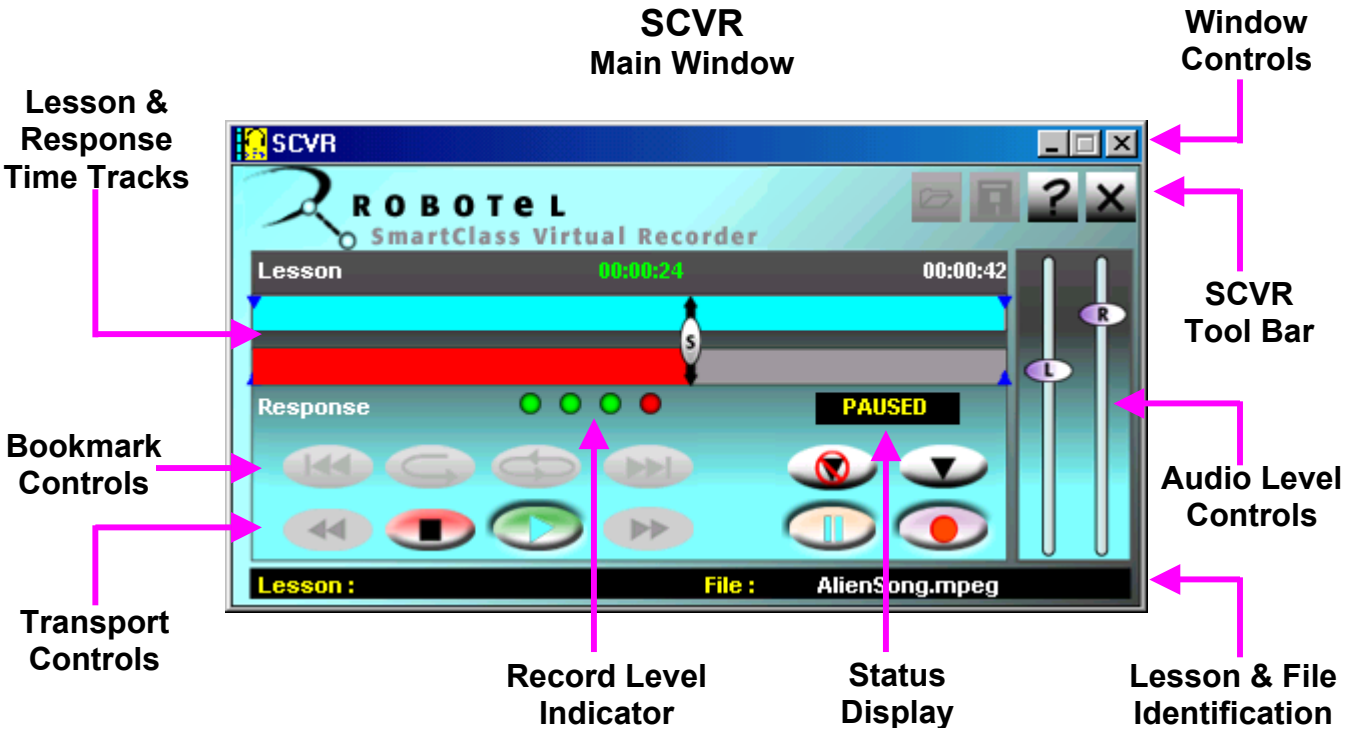
- *Network License:* In networked environments, such as classrooms, where there are multiple workstations requiring only SCVR Player support, it is possible to simplify both the SCVR software and license installation by creating a multi-user license pool on a single computer workstation, known as a *license server*.

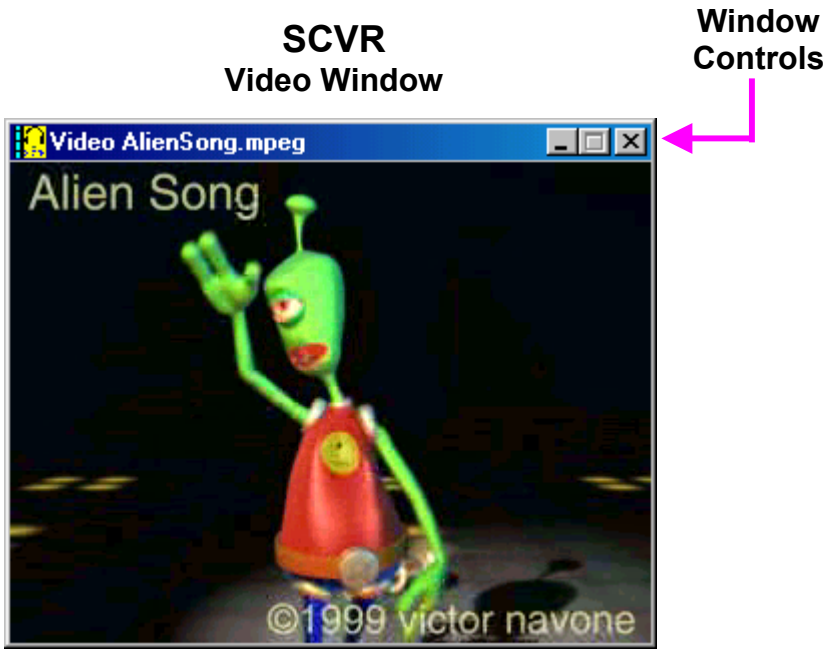
To obtain the User Key, you must contact Robotel's Customer Service department via email, fax or phone and identify the Site Code Key of your computer. The Customer Service department will verify that you have purchased the appropriate licenses for the SCVR software, and will issue via return email, fax or phone the required User Key(s).

########

2. SCVR PLAYER

OVERVIEW





Launching the SCVR Player

You can launch the SCVR Player by clicking on the desktop icon, (shown to the left), or by choosing the SCVR Player application from the Windows *Program Group* list (as shown below).

Splash Screen

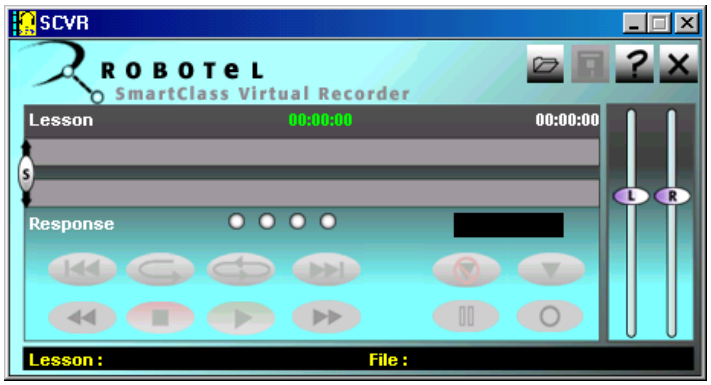
The SCVR Player splash screen will immediately appear on your display. At the bottom of this screen, there is a gray-colored status bar that shows the progress of the license verification procedure.

(If you have installed a Practice version of SCVR, a small warning window will pop up and suggest that you can register your application. Just click on the OK button to acknowledge this message.)

If you are operating in a License Server network environment, it is possible that the server will not be on-line, or that all license copies are currently in use. In such case, a warning message will appear.

Normally, the splash screen will disappear on its own, and the SCVR Player application will be launched.

Player Application



When the Player first launches, all functions (except for the Window Controls and SCVR Tool Bar) will be grayed-out, indicating that they are not accessible. This is shown at left.

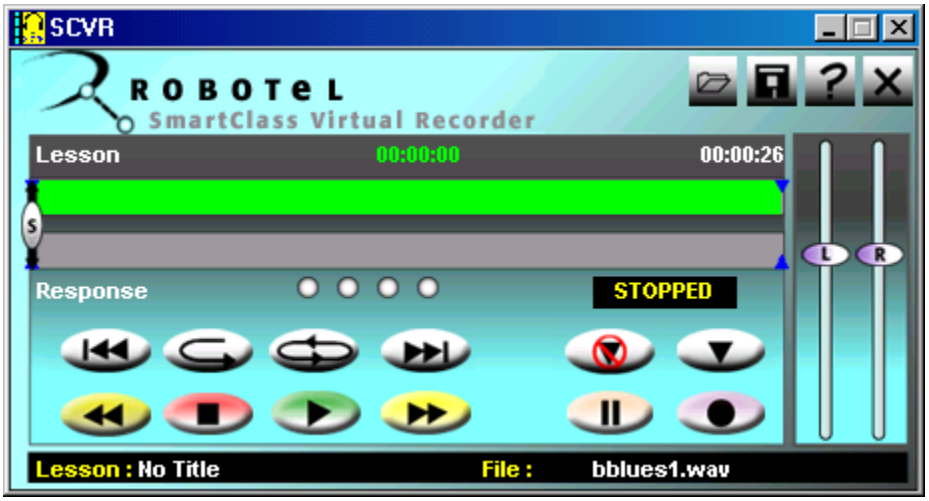
Opening a Media File

To begin using the Player, you must first open a media file, by clicking on the "🗁" icon in the SCVR Tool Bar. The following file types are currently supported:

WAV, AU, MP3, SND, MID, AIFF
AVI, MPEG, MPG, QT, MOV
SCVRRSP, SCVRLESS

If there is a problem in supporting the selected file, the following error message will appear.

If the file is supported, the file will be opened, and the Player GUI will appear as shown below:

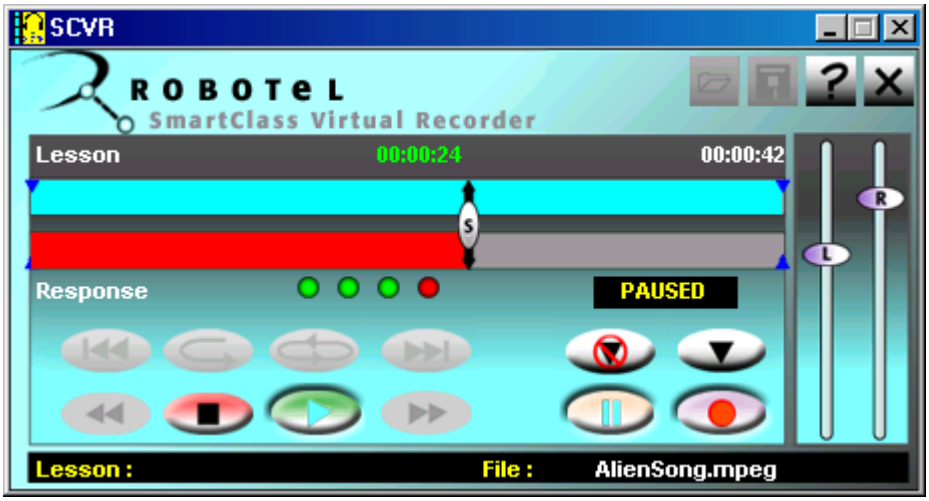


CONTENT TYPES

SCVR uses a color code to identify different content types. The code is shown in the following table.

Lesson Track	Response Track
Audio	No Response
Audio/Visual	Audio Response
Blank	Record Disable

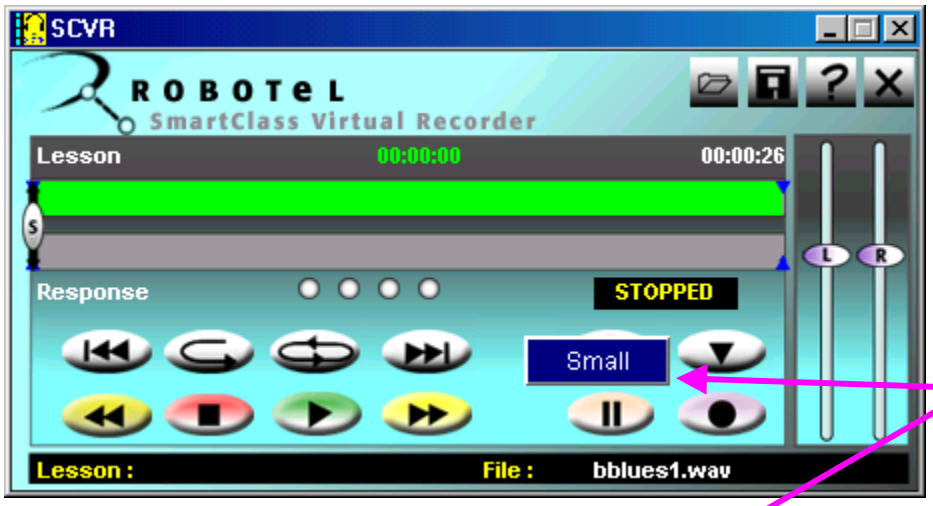
MAIN WINDOW (Large)



NAVIGATION WINDOW (Small)

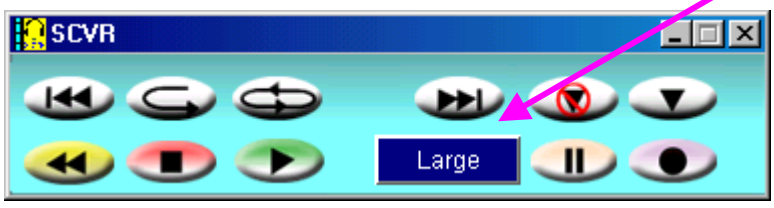
In situations, (such as viewing full screen video), where it is desirable to minimize the on-screen space taken up by the SCVR Main Window, it is possible to toggle back and forth between the Main Window view and a much simplified Navigation Window view.

To toggle between Main and Navigation views, simply use your mouse to position the cursor over an open area on the window and do a right click. This will open a small menu box with a size value; (Small – if in the Main view, or Large – if in the Navigation view). Click on this box to toggle the view.



SCVR
Main Window

View
Toggle Buttons



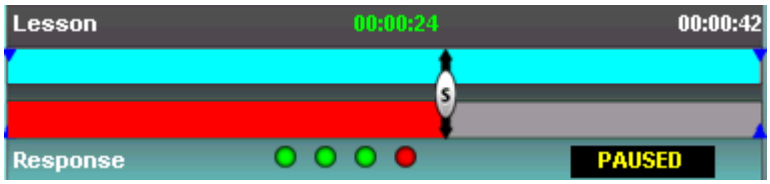
SCVR
Navigation Window

VIDEO WINDOW

The Video window will appear when a multimedia file having video content first begins to play. The window will automatically size itself according to the native resolution of the video content, (e.g. 320 x 240 pixels).

It is possible to re-size this window by using your mouse to position the cursor over the window and right clicking on it. When this is done, a small zoom window will open. Select the desired magnification.

LESSON & RESPONSE TIME TRACKS

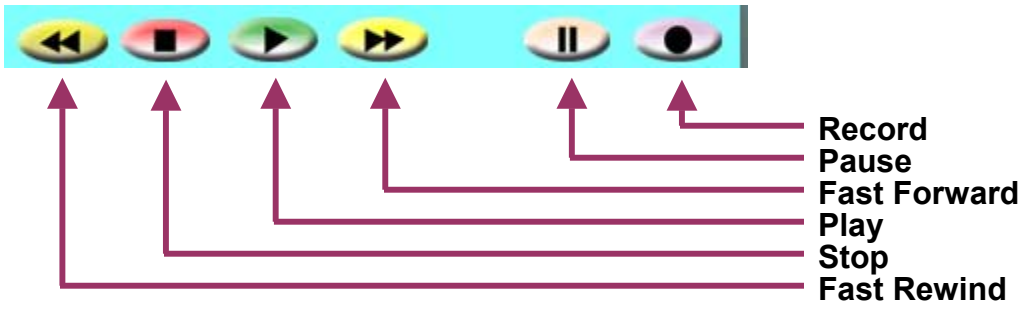


The upper track is the *Lesson* track, and the lower track is the *Response* track. The white time readout in the upper right shows the total track time, in this case 42 seconds, (HH:MM:SS). The green time readout, which is centered above the lesson track, shows the current slider position. Currently, this is 24 seconds, (HH:MM:SS).

The *Slider* is the oval bearing the "**S**" label and having two attached vertical black arrows. The slider moves from left to right as the *SCVR* plays a lesson. The oval portion of the slider can be grabbed, by positioning the cursor overtop, and pressing and holding down on the left mouse button. By moving the mouse, the slider can be dragged to any position on the time track.

The two time tracks are normally shown as medium-gray in color, (as seen on the rightmost portion of the response time track). Portions of the time tracks are overlaid with different colors, (e.g. **green** or **red**), to visually identify the lesson structure and the current response status.

TRANSPORT CONTROLS



This set of control buttons is referred to as the *Transport Controls*, because it mimics the functionality that one would traditionally associate with the tape transport apparatus used with a mechanical tape recorder. The buttons have the following functions:

Play – The *Play* button is used to play the lesson content. If a response has already been recorded, then both the lesson and response will play concurrently. If no special functions have been enabled, (see Bookmark Controls), then play will cause the slider to advance from left to right until the end of the time track is reached. When reaching the end, the slider will be repositioned at the beginning of the time track and the *Stop* function will be enabled.

Stop – The *Stop* button is used to reset any currently active transport functions to the default or stopped state. If *Stop* button is pressed while the system is playing back or recording, that function will be cancelled, and the slider will be repositioned to the left side of the time track.

Pause – The *Pause* button is used to suspend any currently active transport functions without resetting. If *Pause* button is pressed while the system is playing back or recording, the system will retain its current state, however, the slider will be paused at the current time index. By pressing on the *Pause* button a second time (or by pressing on the *Play* button), the previous playback or recording activity will be resumed.

Fast Forward – The *Fast Forward* button is used to move the slider rapidly forward on the time track (to the right). This button can be activated during playback or while the *SCVR* is stopped.

Fast Rewind – The *Fast Rewind* button is used to move the slider rapidly backward on the time track (to the left). This button can be activated during playback or while the *SCVR* is stopped.

Record – The *Record* button is used to enable the creation of an audio response. Audio recording can only be performed during those blocks of time that have been scheduled on the response track, (shown in gray).

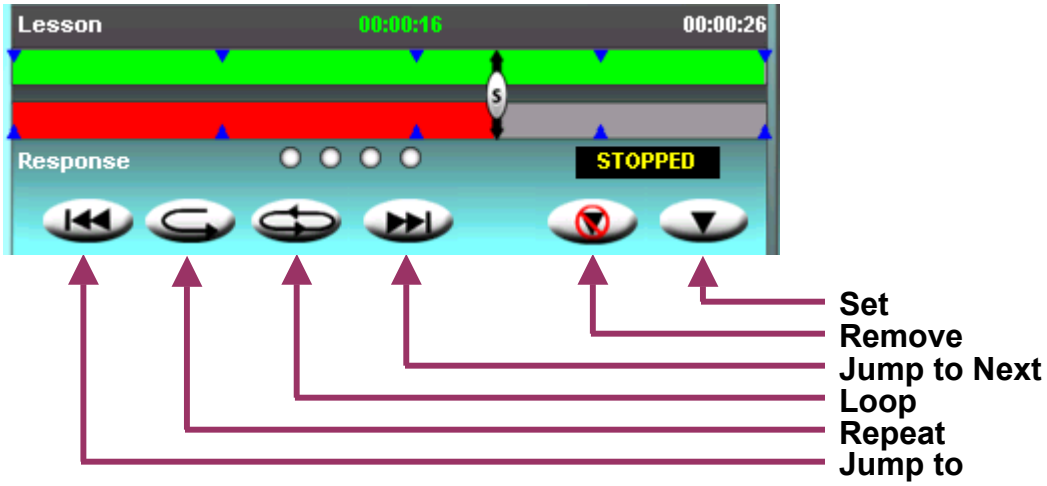
NOTE:

When the record button is first activated, the play and pause buttons are also activated. The SCVR is

NOTE:

When a button is activated, the small icon in the center of the button will change in color from black to cyan, (light blue).

BOOKMARK CONTROLS



Set Bookmark – The *Set Bookmark* button is used to define a user bookmark on the time track. In the above drawing, three bookmarks, (pairs of blue triangles), have been set. When this button is pressed, a bookmark is set at the current slider position. Note that *default bookmarks* are automatically set at the beginning and the end of the time track and at the beginning of each presentation segment. Note that *manual bookmarks* are only stored temporarily. They are erased when the current file or lesson is closed.

Remove Bookmark – The *Remove Bookmark* button is used to remove a user bookmark from the time track. In order to remove a bookmark, the slider must be positioned exactly on one of the bookmarks when the remove bookmark button is pressed. Note that *default bookmarks* can be temporarily removed, but will reappear the next time the file is opened.

Jump to Next – The *Jump to Next* button will cause the slider to advance to the time index corresponding to the next bookmark. This function is available when the system is stopped, playing or paused.

Jump to Previous – The *Jump to Previous* button will cause the slider to return to the time index corresponding to the previous bookmark. This function is available when the system is stopped, playing or paused.
Note that when navigating across multiple bookmarks during playback, this button must be held down.

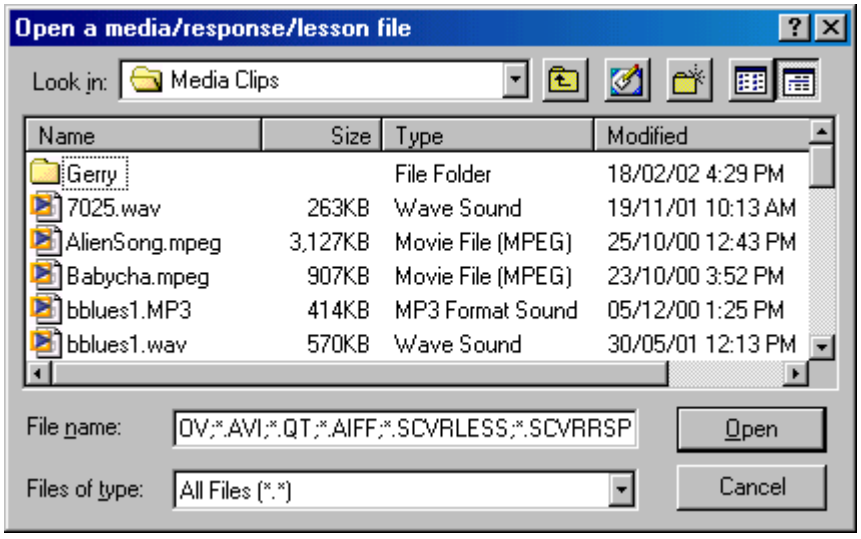
Loop – The *Loop* button is available during playback, pause or stop modes. When this function is set, playback will automatically loop between the previous and next bookmarks with respect to the current slider position. This capability is also know as an A/B roll function, with the next and previous bookmark corresponding to the B and A points respectively. To disable the *Loop* function, press on the *Loop* button a second time. Note that the Loop button will be highlighted when this function is enabled.

Repeat – The *Repeat* button is used to re-play the last few seconds of *presentation* and/or *response* content.

SCVR TOOL BAR

Open Lesson – The *Open Lesson* button, as the name suggests, is pressed when the user wishes to open a file. This can be a lesson file, an existing response file, or a simple multimedia file.

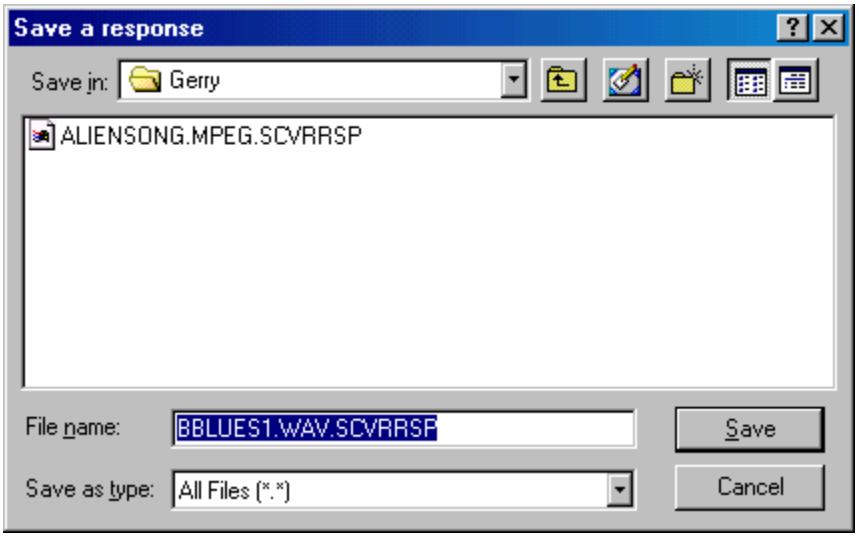
When this button is pressed, an *Open Lesson* window is displayed. *SCVR* includes a default directory setting that allows the user to customize which folder is accessed when this function is invoked. (See Chapter 5, User Preferences, for details.) In any case, there are directory navigation buttons included in the *Open Lesson* window, to enable the user to select any local or network-based folder for which he has access rights.



Save Response – The *Save Response* button is pressed when the user wishes to save his current recording to a *Response* file. The *Response* file will not include the lesson information, but will include metadata that links the *Response* file to a specific *Lesson* file.

When this button is pressed, a *Save Response* window is displayed, (see overleaf). *SCVR* includes a default directory setting that allows the user to customize which folder is used for storing *Response* files. (See Chapter 5, User Preferences, for details.) *Response* files are saved with an "*.SCVRRSP*" extension.

Note that the Save Response button is not enabled on the Demo license version of SCVR.



Help – The *Help* button launches the help application. Note that the Help file uses a PDF format, and requires that Adobe Acrobat 5.0 (or newer) be installed.

Exit – The *Exit* button closes the *SCVR* application.

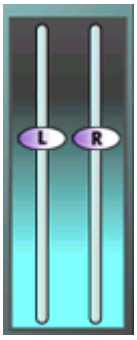
STATUS DISPLAY

The status display provides visual confirmation of the current state of the SCVR Player. Status options are as follows:

- Loading
- Stopped
- Paused
- Fast Rew
- Moving
- Go Back
- Play
- Fast Forw
- Forward
- Loop On
- Loop Off
- Record

AUDIO CONTROLS

Playback



When playing, it may be desirable to elevate and/or decrease the lesson track or response track volume level.

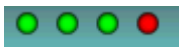
There are two independent audio level controls; one, (with an oval having the label "**L**"), for controlling the level of the *Lesson Audio*, and the other, (with an oval having the label "**R**"), for controlling the *Response Audio*.

The "**L**" and "**R**" correspond to *Lesson* and *Response*, and not to left and right. In fact, the lesson track may include stereo audio. The response track is monophonic, but can be heard on both sound card audio channels.

Recording

When the SCVR Player is configured for recording, the function of the "**R**" control changes from playback level to record level.

When recording is first enabled, both Record and Pause functions are triggered.



While in the Pause mode, use the "R" control to set the recording level, using the *Record Level Indicator* lights as a guide. You should see the leftmost two to three green lights appearing when you speak, but the red light should rarely (if at all) flash on.

LESSON & FILE IDENTIFICATION

SCVR is capable of playing both simple multimedia files, (e.g. trumpet.wav), and powerful lesson files, which may contain multiple presentation files and scheduling information.

Lessons are created using a special *Lesson Editor utility* that is included with the Instructor versions of *SCVR*. Lessons use a special compound file type having an "*SCVRLESS"* extension, (e.g. French101.SCVRLESS). In essence, the lesson file acts as a scheduler for triggering events and/or enabling *SCVR* functions.

Normally, the ID bar at the bottom of the *SCVR* main window will show the lesson name and the lesson file name, (both assigned by the lesson author at creation time).

WINDOW CONTROLS

Exit – The *Exit* button is used to close the *SCVR Player* application.
Note that this button performs the identical function to the exit button in the *SCVR* tool bar.

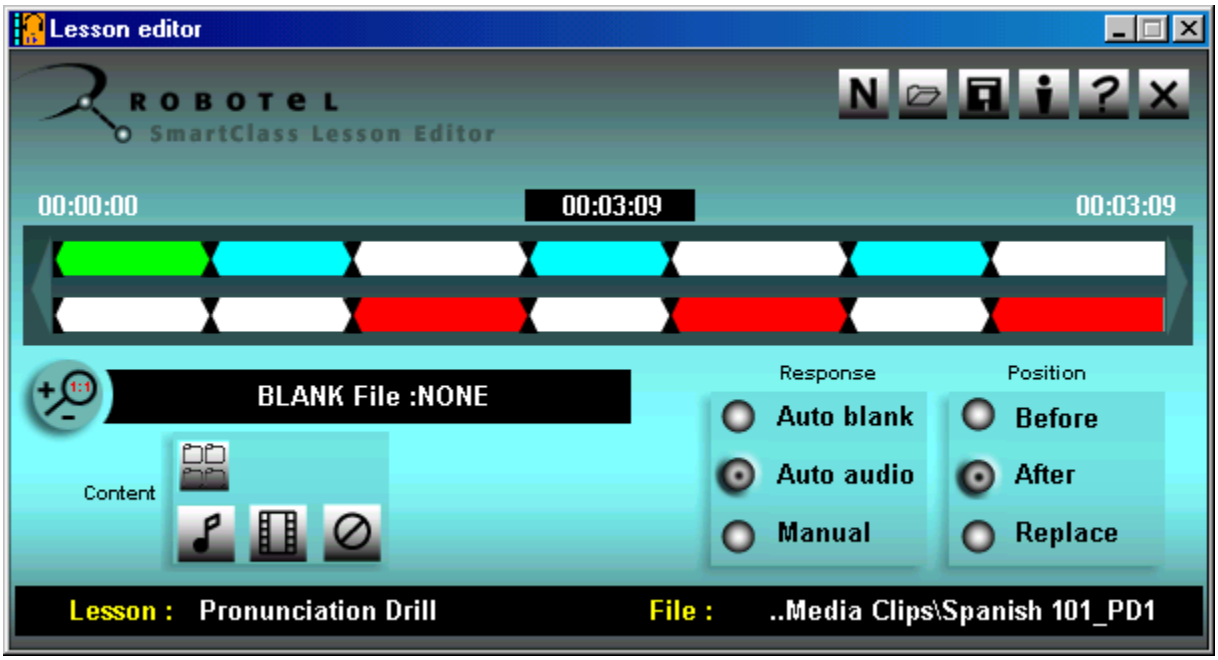
Minimize – The *Minimize* button behaves exactly as with a typical Windows application, and minimizes the SCVR Main Window into a horizontal bar on the Windows taskbar at the bottom of the display.

########

3. SCVR Lessons

This section is only available with the Teacher level license for SCVR.

OVERVIEW



The SCVR Lesson Editor allows instructors to build language lessons, incorporating multimedia digital content, in a simple and powerful fashion.

This chapter describes how to build different lesson types, including those shown below, and how to use the Lesson Editor GUI, (Graphical User Interface).

- Pronunciation Drills
- Grammar Drills
- Vocabulary Drills
- Listening Comprehension
- Transcription
- Translation
- Reading Aloud
- Group Exercises and Testing

THE LESSON CREATION PROCESS

Good lessons don't just happen. They are planned in advance.

When developing lessons for SCVR, the following lesson creation process is prescribed:

- **Develop the lesson plan**
- **Digitize any new or legacy analog audio and multimedia content**
- **Assemble a media file library in a single "working directory" folder**
- **Use the SCVR Lesson Editor to build multimedia lessons**

This chapter of the SCVR User Guide addresses lesson plan development, creation of a library of multimedia files, and using the Lesson Editor to build multimedia lessons. Appendix A describes how to digitize audio and multimedia content.

DEVELOPING THE LESSON PLAN

With digital recorders, (or virtual recorders), like SCVR, the challenge is to integrate multimedia content, random access media and proven exercise structures into an optimal lesson format.

While there are many different formats for computer-assisted language learning lessons, most lessons share some common characteristics. We should think of lessons as having a modular format, (very much like a storyboard), where the lesson planning process is largely an exercise in selecting the right *modules* and sequencing these modules in the most effective manner.

Most lessons will incorporate some combination of the following modules:

Introduction Module - There typically is an introduction module, comprising a single audio or multimedia clip, which describes how the lesson is structured and what is expected of the student. Normally, the student is not expected to respond during this module.

Exercise Module – The heart of the lesson is a set of one or more exercise modules, all typically following the same pattern. These are the modules that expect a student response. The format of these modules varies according to the type of lesson. Exercise modules often comprise multiple files.

Presentation Module – Presentation modules, as the name suggests, are used to present information to the student. Generally, a presentation module precedes a set of exercise modules where the student is asked questions about the content he has just heard and/or seen.

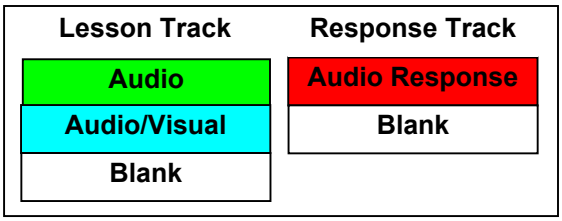
Example Module – Following the introduction, there may be an example module that models the desired stimulus-response exchange that is expected of a student, but does not require them to respond. Example modules will mimic the format of the exercise modules, albeit the example student response is pre-recorded.

Comment Module – Comment modules are essentially introduction modules, albeit inserted into the body of the lesson. They are frequently used where the exercise changes format, and a refresher explanation of the structure and expected response is deemed appropriate. Students normally do not respond to comment segments.

Blank Module – Blank modules (comprising an entirely blank lesson track) are those in which there is no lesson content, (e.g. reading aloud exercise). These modules are also used when the lesson content is presented independently of the SCVR application in a live environment, (e.g. the instructor verbally asks questions of the class, or broadcasts an audio or multimedia clip to the entire class). Blank modules enable SCVR to record an open-ended student response in such scenarios.

CONTENT TYPES

The SCVR Lesson Editor uses a color code to identify different content types. This code, shown in the table at right, will be used in the lesson examples that follow.

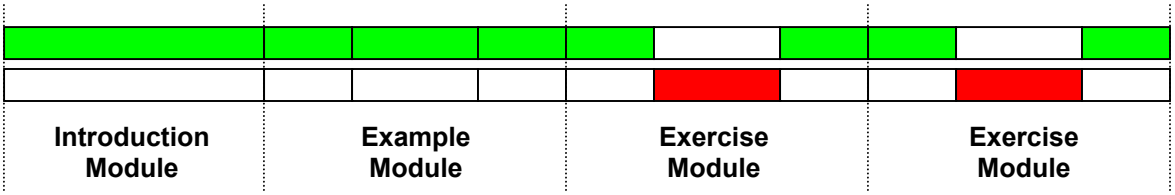


LESSON TYPES

The following subsections examine the different formats that can be used to meet various language learning objectives. The three broad categories are Drills, Comprehension and Speaking Practice.

- Drills
  - Pronunciation Drills
  - Vocabulary Drills
  - Grammar Drills
- Comprehension
  - Listening Comprehension
  - Simultaneous Translation
  - Transcription
- Speaking Practice
  - Reading Aloud
  - Dialog
  - Group Exercises
  - Group Tests

Drills

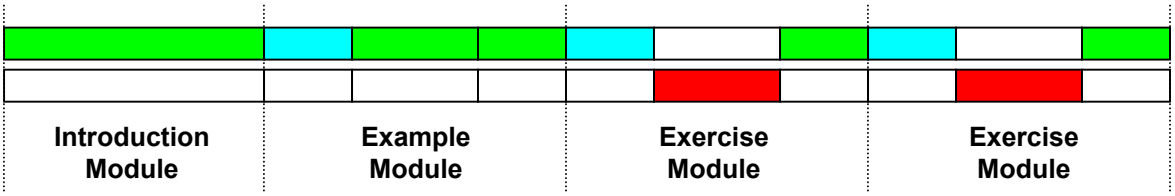


The lesson format shown above is one frequently associated with drill-style language learning exercises. The example and exercise modules comprise three distinct clips; the stimulus, the response, and the desired response. (A modified version of this format, without the desired response clip, may also be used.) Note that the response clip is normally given an extended duration in comparison to the stimulus, to ensure that the student has sufficient time to respond.

For **pronunciation drills**, the *stimulus clip* may be a word or phrase that the student needs to repeat. The stimulus clip has been pre-recorded by the teacher. The *response clip* is the student's audio response to the stimulus. The *desired response clip* is a pre-recorded proper student response (normally recorded with a voice distinctly different than that of the teacher). This structure provides the student with immediate feedback regarding the correctness of his response.

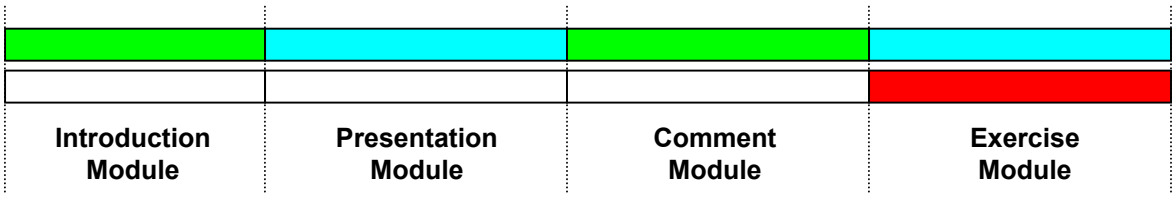
For **grammar drills**, the student may be required to respond to a phrase by reversing the order of the subject and object, (*The boy rides the bicycle.* becomes *The bicycle is ridden by the boy.*) Alternately, the student may need to listen to a sentence with a missing word (or multiple-choice set of options), and supply the correct word or option.

For **vocabulary drills**, the student may be required to respond with a synonym, (substitution), for the word being presented by the stimulus clip. Alternately the stimulus may comprise a video file showing an object to be identified by the student in his response. (See modified lesson format below.)



In legacy audio-cassette-tape based language lab environments, this type of lesson format was defined as AAC, or Audio Active Comparative. With SCVR, the student can review his responses, and if he has sufficient time, he can re-record a new response. This capability is sometimes called AACC, or Audio Active Comparative Corrective.

Comprehension

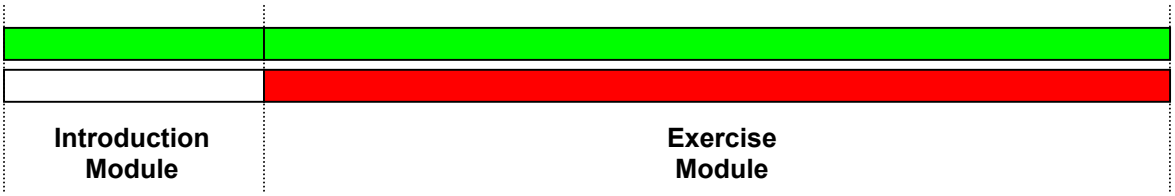


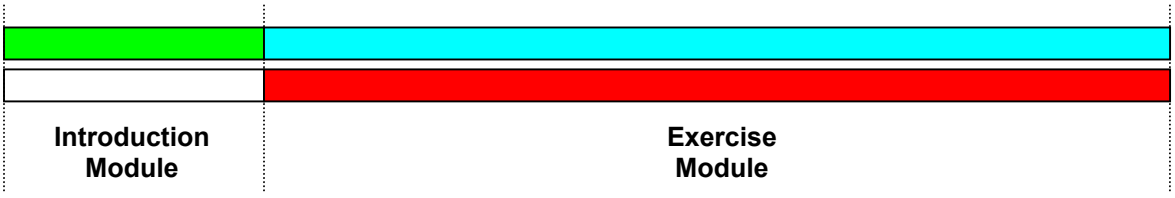
The lesson format shown above is based on presenting the student with some information, and then asking the student to respond in some way to the information that he has just heard and/or seen.

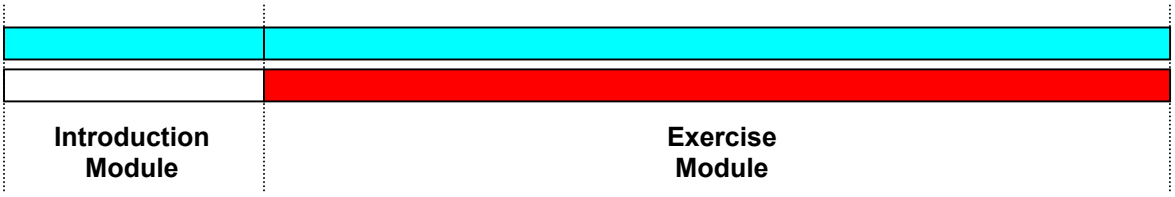
For a simple **listening comprehension** exercise, the presentation module may comprise a multimedia clip containing a foreign language audio track. This clip depicts an everyday dialog such as ordering a meal in a restaurant or asking for directions.

After reviewing the presentation module, a comment module prompts the student to lower the volume on the lesson track to zero, and reminds him that he will now see the same multimedia clip, but he must now provide a response describing what is going on in the video.

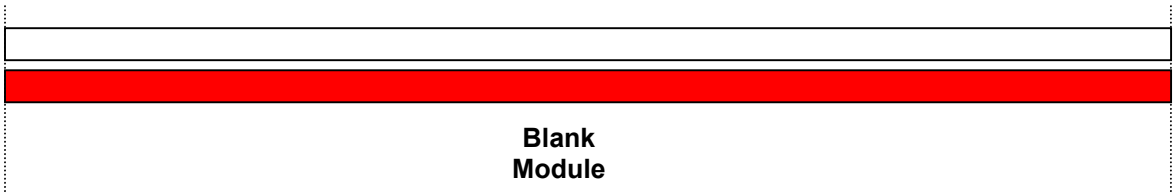
For a **simultaneous translation** or **transcription** exercise, the presentation format might be modified as shown below, so that the student is required to translate on-the-fly, without the benefit of pre-screening any presentation material. The first example uses an audio lesson track, while the second example shows a multimedia lesson track. The third option shows multimedia files for both the Introduction and Exercise segments.







Speaking Practice



The SCVR Lesson Editor is essentially a scheduler. When there is a need to record an open-ended student response, a real (or artificial) time limit must be placed on the response. This is done using a single blank module to build the lesson structure.

For **reading aloud** exercises, this format is ideal. The student can record for as long as he needs, up to a maximum of the amount of time dictated by the blank module.

Also, students can work in pairs for **dialog** exercises, and can use the same lesson format to record their dialog.

This same format is great for **group exercises** or **group tests**, where the lesson content is not embedded in the lesson file, but rather is presented live, or is broadcast to all students from a single media player at the instructor position. This format enables students to capture their individual responses on their local SCVR recorders.

DIGITIZING MULTIMEDIA CONTENT

This topic is covered in Appendix A.

BUILDING THE MEDIA FILE LIBRARY

Before launching the SCVR Lesson Editor, it is recommended that lesson authors first take a few minutes to gather all of the digital audio and multimedia files necessary to build a lesson and store them in a common folder on the teacher workstation or on a network file server.

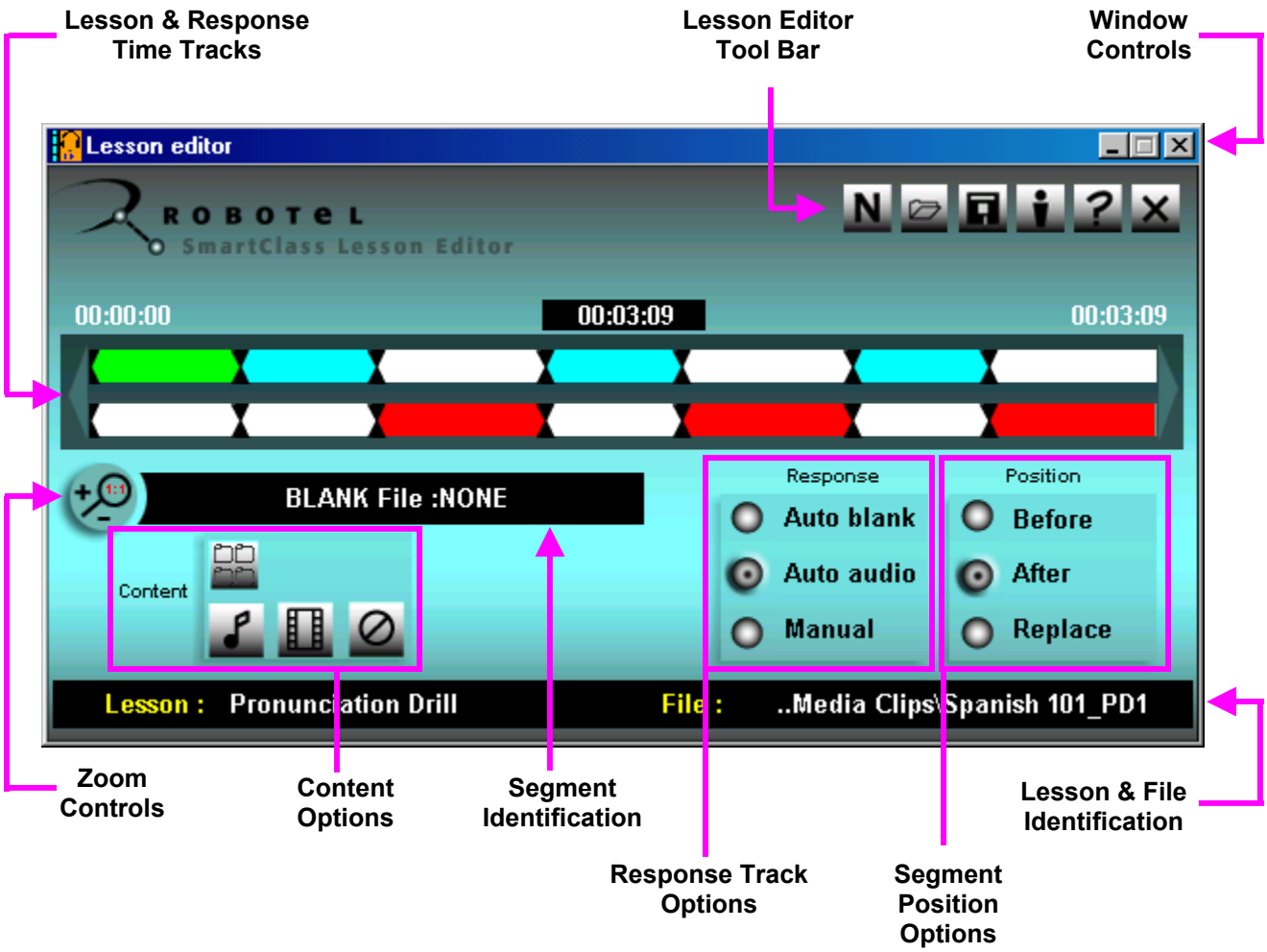
This folder might be named “Spanish 101 PD-1 Working Directory” if your goal was to create a pronunciation drill for the Spanish 101 course.

Creating this library of files in a common folder will greatly simplify the lesson editing process with the SCVR Lesson Editor.

4. SCVR LESSON EDITOR

LESSON EDITOR OVERVIEW

SCVR
Lesson Editor Window



Launching the SCVR Lesson Editor

You can launch the SCVR Lesson Editor by clicking on the desktop icon, (shown to the left), or by choosing the SCVR Lesson Editor application from the Windows *Program Group* list (as shown below).

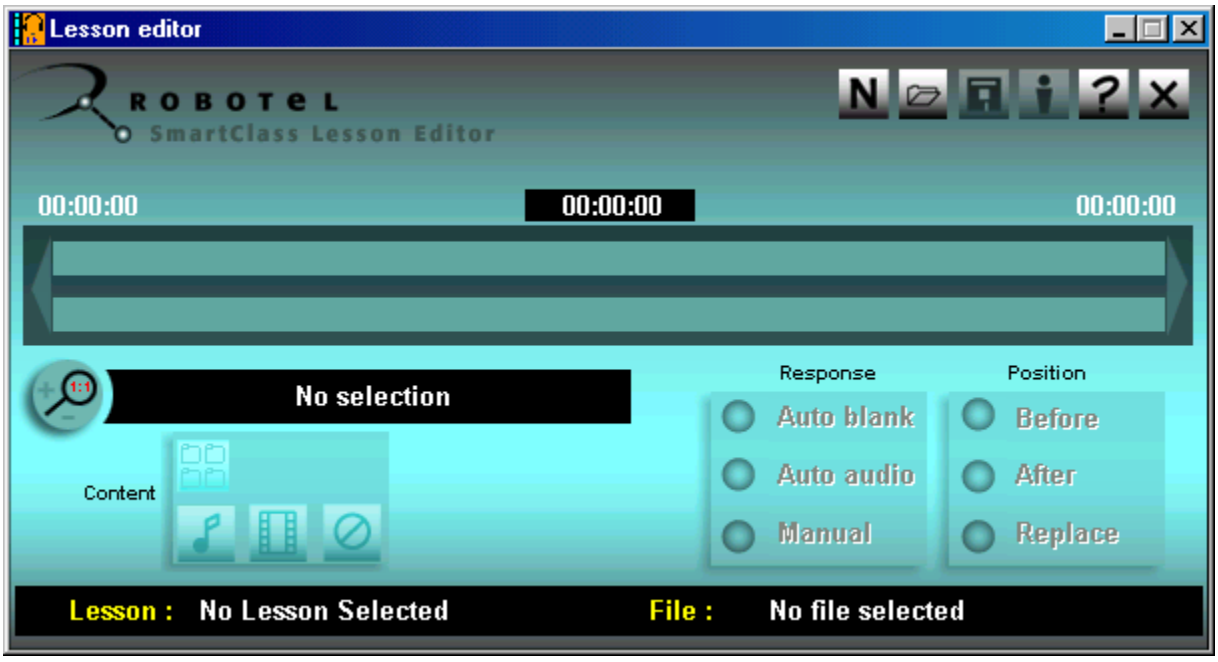
Splash Screen

The SCVR Lesson Editor splash screen will immediately appear on your display. At the bottom of this screen, there is a gray-colored status bar that shows the progress of the license verification procedure.

Normally, the splash screen will disappear, and the SCVR Lesson Editor application will be launched.

Lesson Editor Application

When the Lesson Editor first launches, all functions (except for the Window Controls and Lesson Editor Tool Bar) will be grayed-out, indicating that they are not accessible. This is shown below.

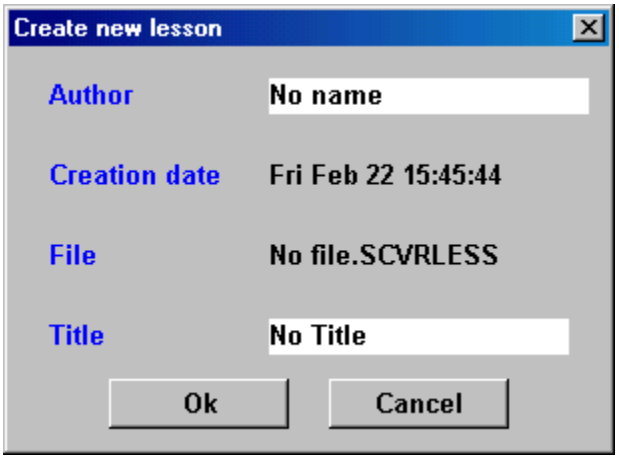


Opening a Lesson File

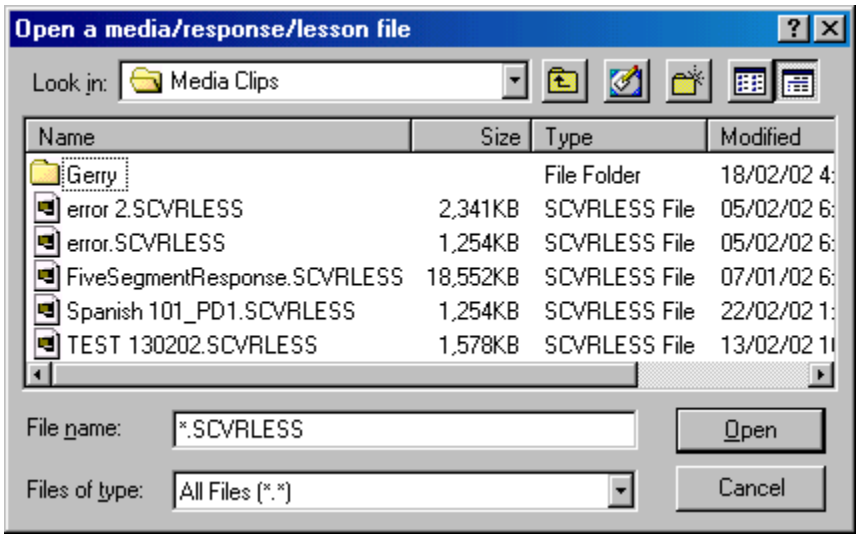
To begin using the Lesson Editor, you must either select the "**N**" (new lesson) icon to create a new file, or the "🗁" (open lesson) icon to load an existing lesson file. The following file types are currently supported:

SCVRLESS

New Lessons – If the "**N**" (new lesson) option was selected, the following window will appear. Enter the appropriate information in the Author and Title fields, and select the *OK* button.



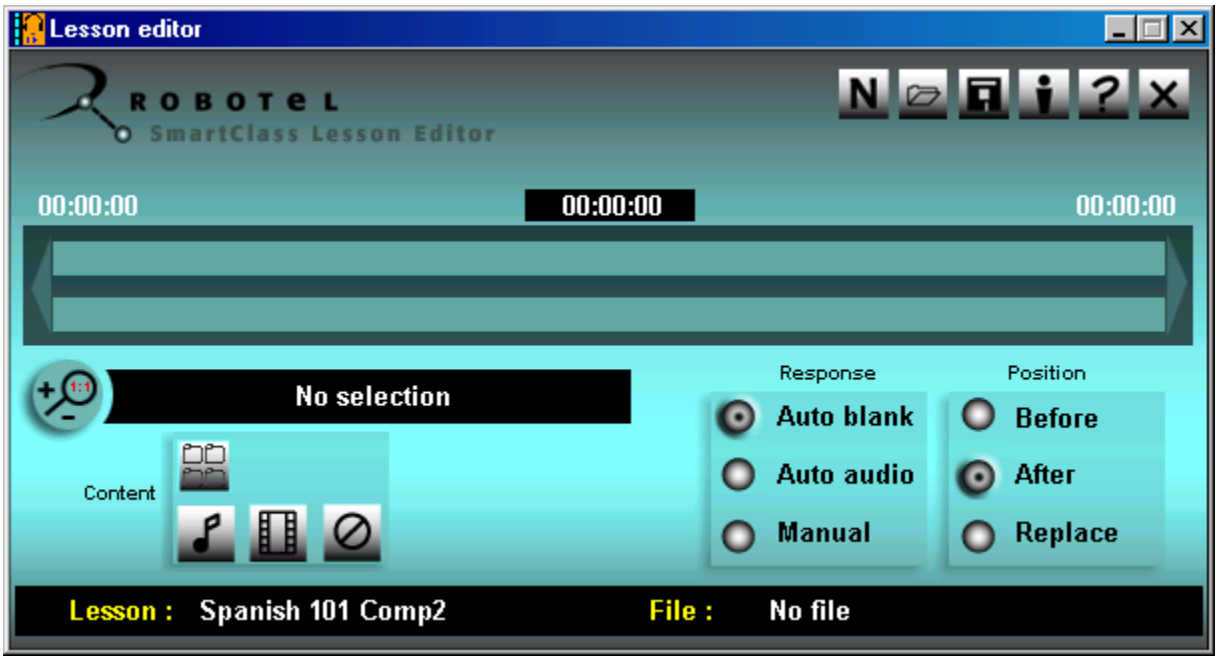
Existing Files – If the "🗁" (open lesson) option was selected, the following window will appear. Navigate to the appropriate folder, highlight the desired file by clicking on it with your mouse, and select the *Open* button.



If there is a problem in with the selected lesson file, the following error message will appear.

Getting Started

After launching a new or existing file, the Lesson Editor controls will be released as shown in the following image of a New File.



CONTENT TYPES

The SCVR Lesson Editor uses a color code to identify different content types. This code, shown in the following table, is virtually identical to that used in the Player.

Lesson Track	Response Track
No Content	No Content
Audio	Audio Response
Audio/Visual	Blank
Blank	

LESSON & RESPONSE TIME TRACKS

The upper track is the Lesson Track and the lower track is the Response Track. The segments of the lesson, (representing different files or content modules), are visually separated by opposing pairs of black triangles. In the above example there are seven (7) distinct segments on each track.

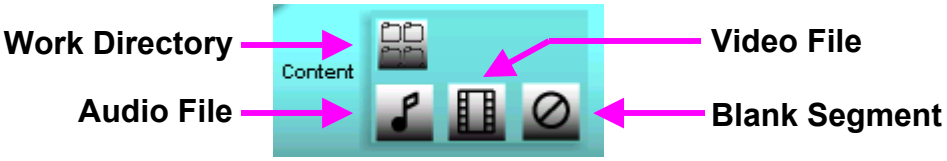
- ***Time Displays:*** There are three different time displays immediately above the Lesson Track. The center main time display, HH:MM:SS, always displays the total length of the lesson. The other two auxiliary time displays at the extreme left and extreme right of the track, HH:MM:SS, indicate the minimum and maximum time values (respectively) currently displayed on the time tracks.

  In the above example, the entire lesson is currently being displayed, so the two auxiliary time displays show 00:00:00 (start of lesson) and 00:03:09 (end of lesson) time values. Because there is a zoom capability, (discussed later in this Chapter), these time values can change, depending on which portion of the lesson is being displayed.

- ***Arrowheads:*** At either end of the tracks, there is a large arrowhead. These arrowheads are used to scroll through the lesson when being viewed in a zoomed mode.

- ***Reference Indicator****:* Note also the small blue triangle, ▼, currently being displayed the lesson track segment the second from the right. This Reference Indicator is used when working with many of the control options discussed later in this Chapter.

CONTENT OPTIONS BUTTON GROUP

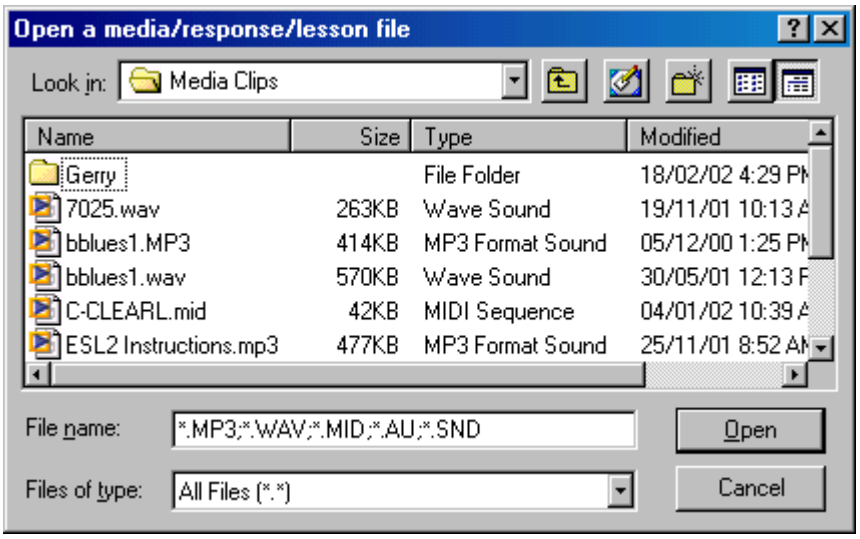


The content options button group is located below the time tracks and to the left. This group of buttons is used for selecting the specific audio files, video files, and blank segments to be inserted into the lesson track.

Audio Files – When this button is selected, an Open File window will appear, and this window will automatically use a set of filters that only displays audio file types supported by SCVR. These types are as follows:

WAV, AU, MP3, SND, MID, AIFF

The Open File window will initially point to the default folder specified for opening lessons in the User Preferences settings discussed in Chapter 5.

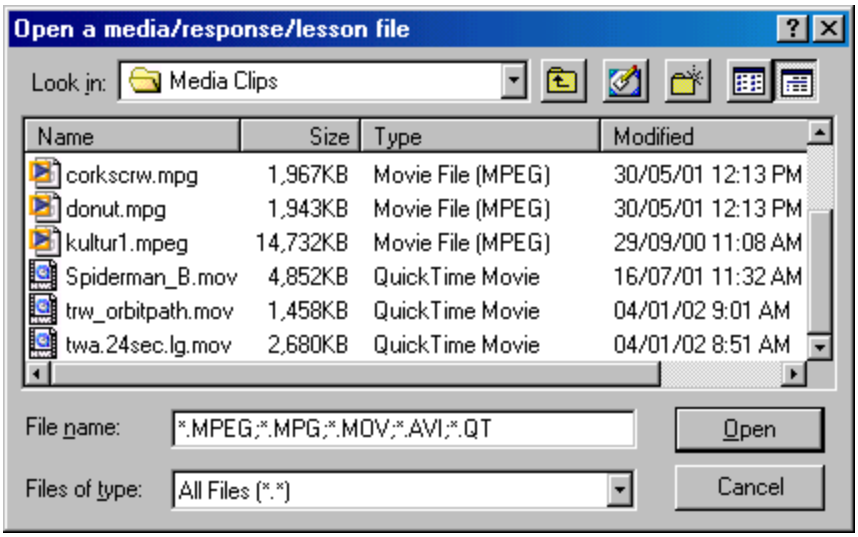


Navigate to the desired folder, highlight the desired file using your mouse, and click on the *Open* button to insert this file onto the lesson track.

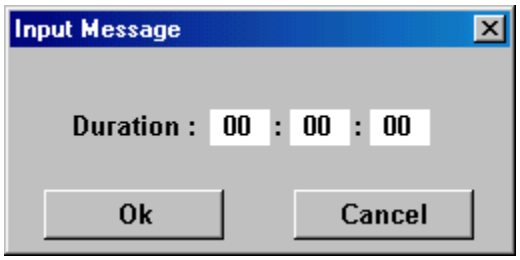
Video Files – When this button is selected, an Open File window will appear, and this window will automatically use a set of filters that only displays video file types supported by SCVR. These types are as follows:

AVI, MPEG, MPG, QT, MOV

The Open File window will initially point to the default folder specified for opening lessons in the User Preferences settings discussed in Chapter 5.

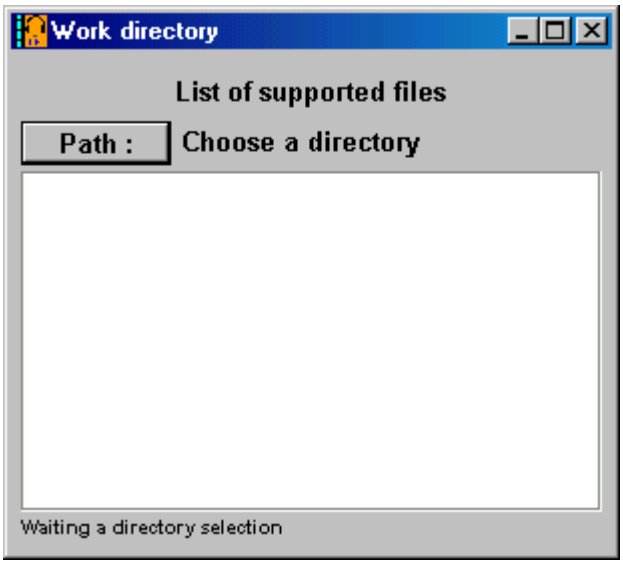


Blank Segment – This button is used to insert a blank segment, (e.g. no content), on the lesson track. Blanks are typically used to provide spaces between content modules, (like questions), so that students have time to respond. When this button is pressed, it launches a timer window as shown below:

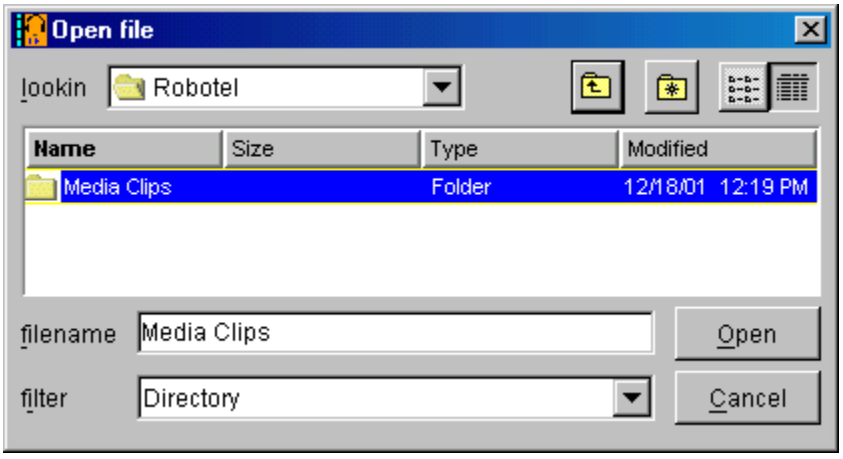


Enter the desired duration of the blank segment (in HH:MM:SS format) and select the *OK* button.

Work Directory – When this button is selected, and auxiliary Work Directory window is launched. You may remember from earlier in this chapter that it was suggested that all digital content files associated with a particular lesson be aggregated into a single work directory folder. If this has been done, you can use the Work Directory function to open a list of all the files in your folder. This provides a good shortcut for building lesson files.

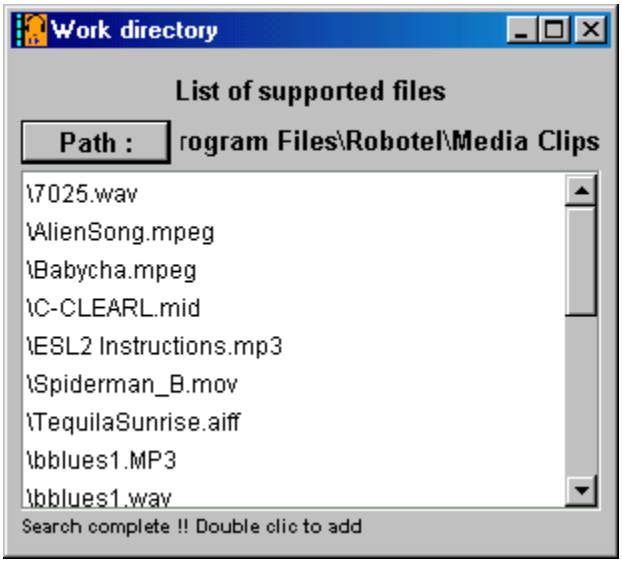


When the Work Directory window is first launched, it does not automatically point to any folder location. To navigate to a specific folder, you must first click on the *Path* button. This opens a browser window as shown below:



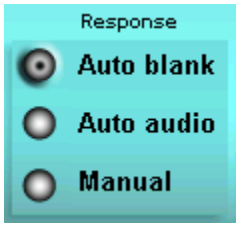
Use the navigation tools to locate the desired directory, highlight this directory in the window, and select the *Open* button.

The Work Directory window will now build a list of all audio and video files in the selected folder, as shown below:



You can now insert files onto the lesson track simply by double clicking on the file name in this list using your mouse.

RESPONSE TRACK OPTIONS BUTTON GROUP



By far the easiest way to build a lesson is by concurrently defining the content of both the Lesson Track and the Response Track. To facilitate this task, the Response Track Options button group is provided. These buttons have a *radio* style, meaning that only one option can be selected at a time.

Auto Blank – When the Auto blank button is selected, at the same time content is inserted onto the Lesson Track, (using the Content Options buttons), a Blank segment of identical duration is inserted onto the Response Track. Student recording is not permitted during blank response segments.

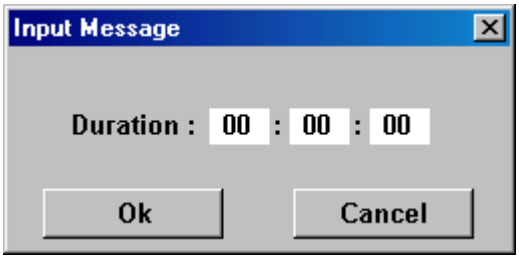
Auto Audio – When the Auto audio button is selected, at the same time content is inserted onto the Lesson Track, (using the Content Options buttons), an Audio segment of identical duration is inserted onto the Response Track. Student recording is permitted during audio response segments.

Manual – When the Manual button is selected, content is only inserted onto one track at a time. If the Reference Indicator, ▼, is

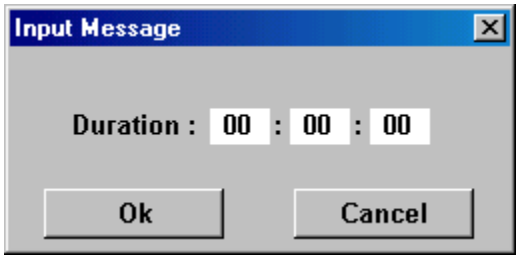
highlighting a segment on the lesson track, the Content Options buttons only place content on the Lesson Track.

To insert content onto the Response Track, you must click on the track using your mouse. This will cause the Reference Indicator, ▼, to appear on the lower track. In the Manual mode, with the Response Track highlighted, the function of the Content Options buttons is modified to permit manual insertion of Blank or Audio segments. (Note that the Video Content Option will be grayed-out.)

Clicking on the Blank button will open the timer window to enable you to select the desired duration of the blank segment on the Response Track.



Clicking on the Audio button will similarly open the timer window to enable you to select the desired duration of the audio segment on the Response Track.



Note that it is impractical to input a manual time value that exactly matches the duration of a pre-recorded audio or video clip: Some offset error will always be present. For this reason, it is strongly suggested that only the Auto Blank and Auto Audio modes be used in building lessons.

SEGMENT POSITION OPTIONS BUTTON GROUP

This button group provides some flexibility on the positioning of new files or segments when building lessons. By default, lessons will be built from left to right on the time tracks with the first segment inserted at time reference 00:00:00 and additional segments being concatenated to the first. It is for this reason that the *After* button is selected by default in this button group.

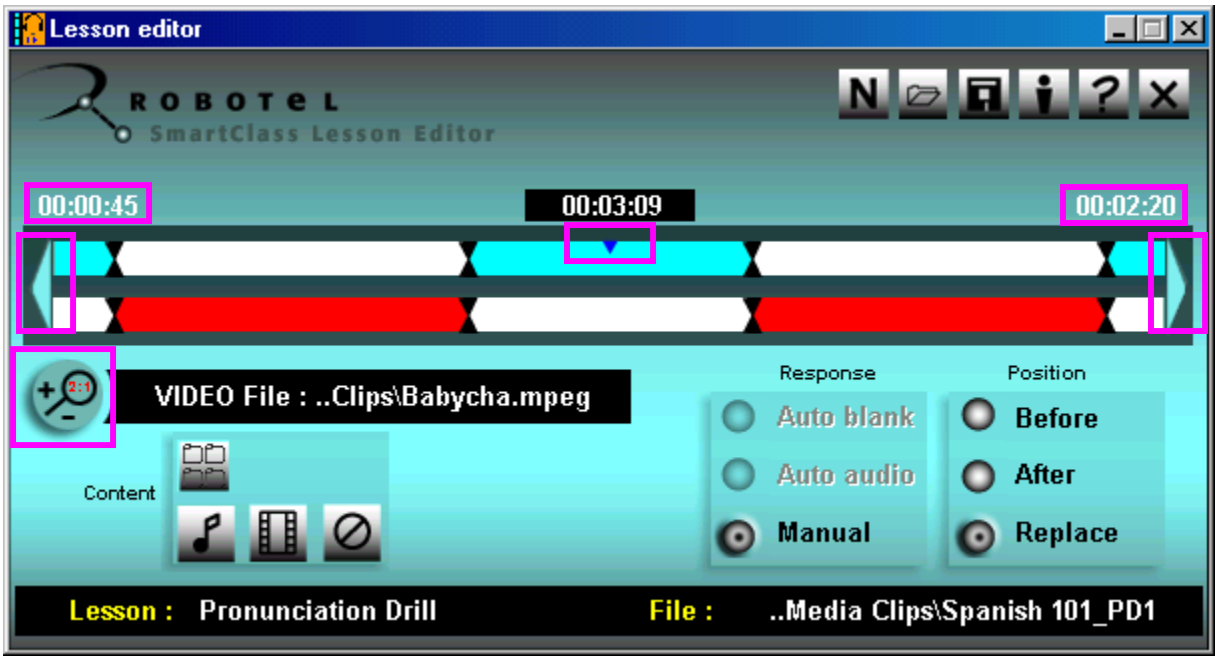
After – This button ensures that new content being inserted onto either (or both) of the tracks is inserted after the current segment highlighted by the Reference Indicator, ▼.

Before – When this button is selected, new content being inserted onto either (or both) of the tracks is inserted before the current segment highlighted by the Reference Indicator, ▼.

Replace – When this button is selected, new content being inserted onto either (or both) of the tracks is inserted in place of the current segment(s) highlighted by the Reference Indicator, ▼.

ZOOM CONTROLS

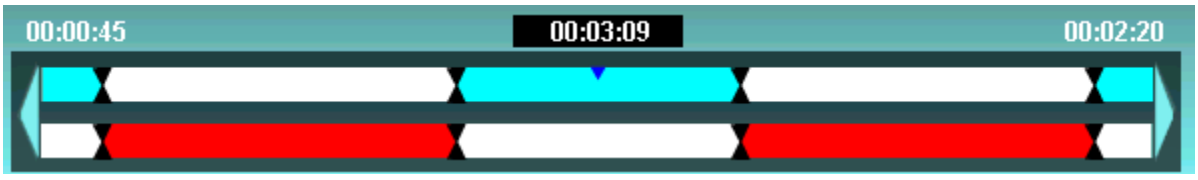
When building lessons that comprise a mix of large and small files, it is sometimes difficult to view the individual smaller segments when the whole lesson file is being displayed. The Zoom function allows you to expand the time scale of the time track display, and show only a portion of the lesson in a larger scale.



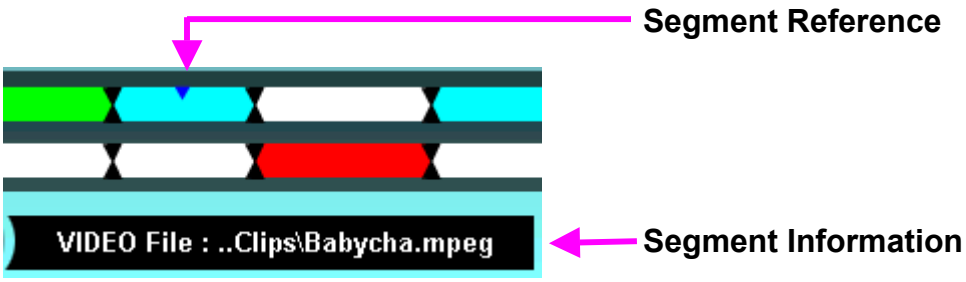
As highlighted in the above image, there are several elements of the Lesson Editor GUI which play a role in the Zoom function.

Zoom Control – The main zoom control is the circle with the magnifying glass icon shown immediately below the response track at the left. The "+" and "-" signs in this circle can be clicked with the mouse to increase or decrease the zoom ratio from the default of 1:1. The small red text shows the current zoom ratio to be 2:1. Note that when the zoom function is invoked, the segment currently highlighted by the Reference Indicator, ▼, will be centered in the resulting modified view.

Time Tracks – When the view is zoomed, the time tracks display only a portion of the lesson as shown below. Note that the two auxiliary time displays above the lesson track indicate the minimum and maximum times seen in the current view. The two arrowheads at the end of the tracks can be clicked with a mouse to scroll the view.

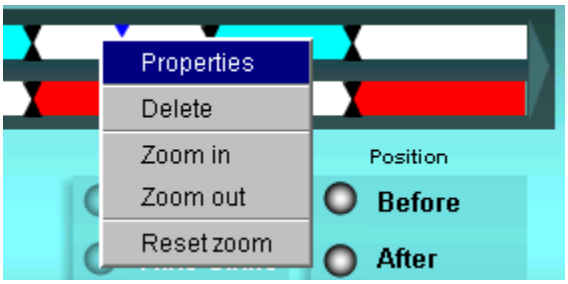


SEGMENT IDENTIFICATION



The Reference Indicator, ▼, is used to highlight a specific segment on either track. When the segment is highlighted, its associated information is shown in the Segment Identification Display.

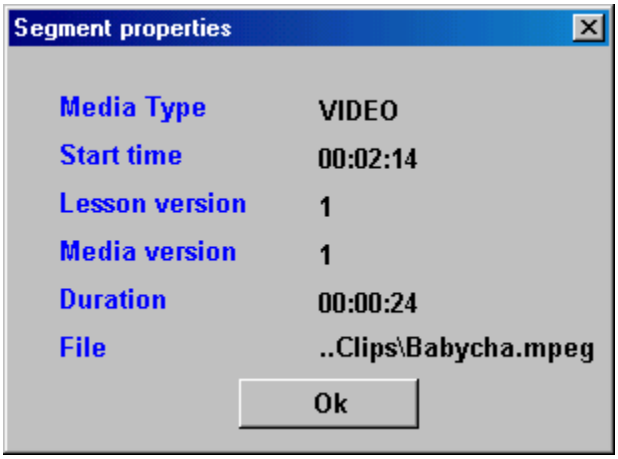
DELETE SEGMENT, SEGMENT PROPERTIES & ZOOM MENU



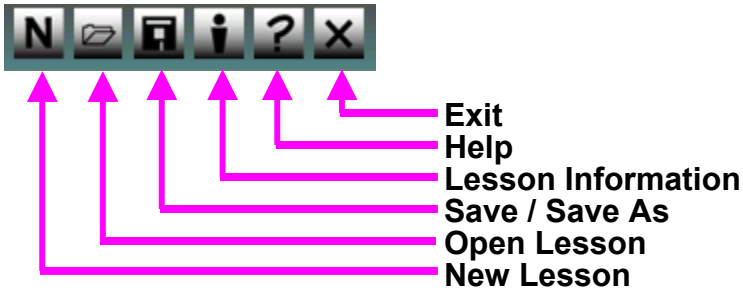
Use your mouse to position the cursor over any desired segment and right-click. This will pop up a small menu (as shown at left), with options for zooming, deleting, or retrieving detailed segment properties.

This menu is the only mechanism available for deleting a segment that has been inserted by mistake. Note that the delete segment function operates on only one track at a time.

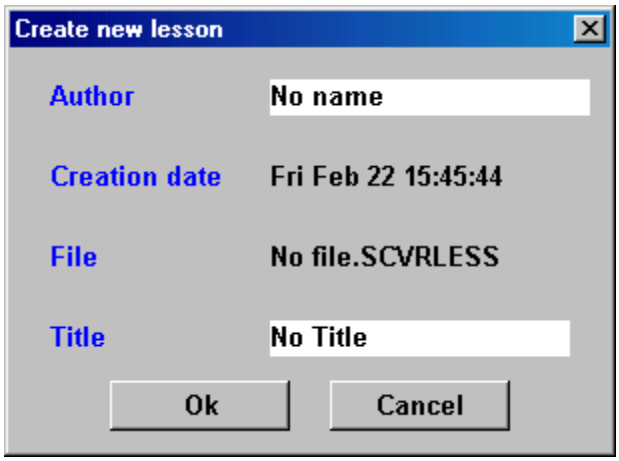
- ***Segment Properties:*** Selecting this function will open the following segment properties window.



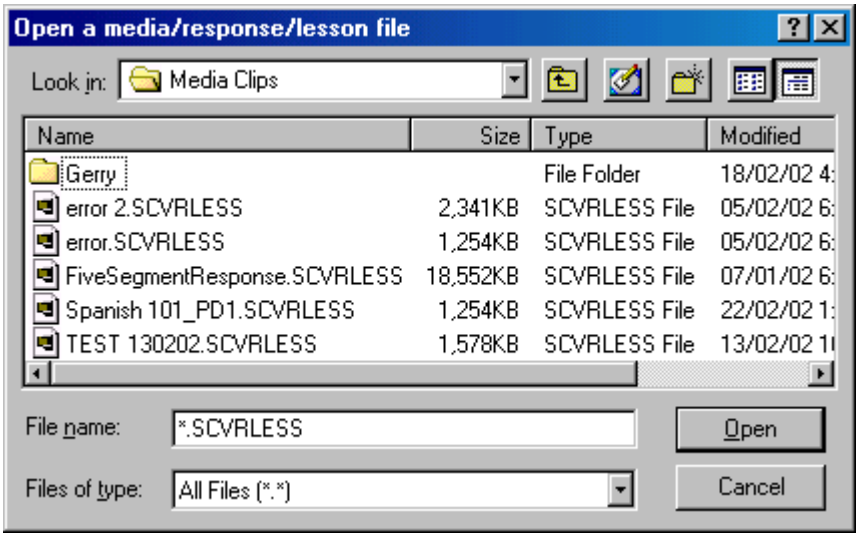
LESSON EDITOR TOOL BAR



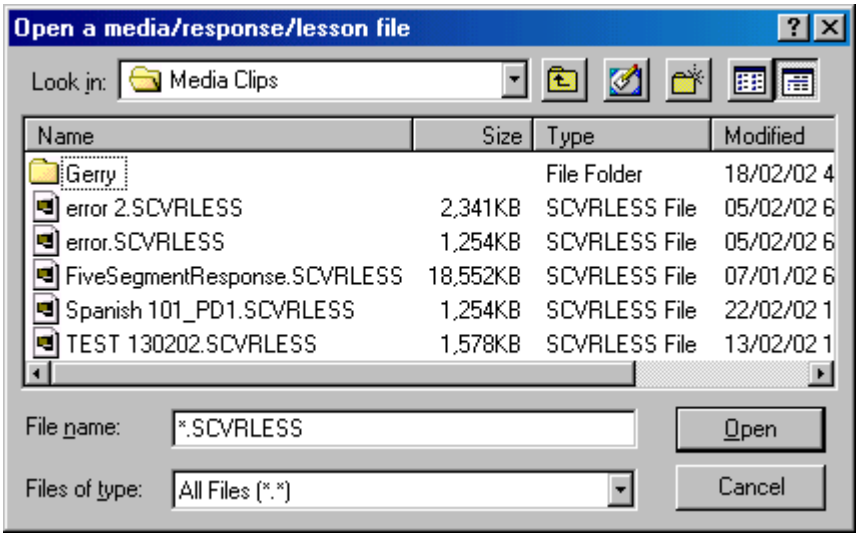
New Lesson – When the New Lesson button is selected, the Create New Lesson window is launched, (as shown below). In this window, the lesson author should enter the Author name and the lesson Title in the corresponding fields, and then click on the OK button.



Open Lesson – When the Open Lesson button is selected, the following window will be displayed. Navigate to the desired lesson file, highlight it in the window, and click on the Open button to open this lesson file.

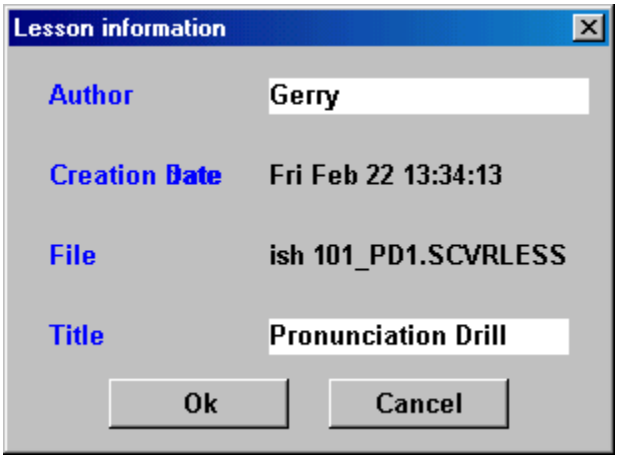


Save / Save As – This button functions as both a Save button and as a Save As button. When this button is pressed, the following window will be opened.



Note that if this function is invoked to save an existing file, the full name of the file would automatically be displayed in the *File name* field.

Lesson Information – When this button is pressed, the following window is launched.



Help – When this button is pressed, the Help file will be launched. Note that the Help file uses a PDF format, and requires that Adobe Acrobat 5.0 (or newer) be installed. See Appendix D for details.

Exit – When this button is pressed, you will exit from the Lesson Editor application. Note that a confirmation window will first be shown, and you will need to confirm your intent to exit the SCVR Lesson Editor by clicking on the Yes button.

LESSON & FILE IDENTIFICATION

The *Lesson* title, shown on the left, is taken directly from the lesson properties screen that the author completed when first creating a new lesson.

The *File* name, shown on the right, is taken directly from the name assigned to the lesson when it is saved. For display purposes, the suffix SCVRLESS is omitted. Note that it is the lesson file name that will be used by the SCVR Player for identifying student responses to a given lesson.

WINDOW CONTROLS

Exit – The *Exit* button is used to close the *SCVR Lesson Editor* application. Note that this button performs the identical function to the exit button in the *Lesson Editor* tool bar.

Minimize – The *Minimize* button behaves exactly as with a typical Windows application, and minimizes the SCVR Lesson Editor Window into a horizontal bar on the Windows taskbar at the bottom of the display.

########

5. USER PREFERENCES

OVERVIEW

This chapter describes all of the set-up options for SCVR that are initially defined during the installation procedure, and are subsequently managed through the SCVR User Preferences file, (SCVRUserPref.dat).

The SCVR User Preferences file is shared by both the Player and Lesson Editor applications on a teacher workstation.

The set-up parameters and options are as follows:

Parameter	=	Option
language	=	english
	=	french
size	=	small
	=	medium
	=	large
input source	=	microphone
	=	line-in
lesson-open-directory	=	<user supplied path>
response-save-directory	=	<user supplied path>
lesson-save-directory	=	<user supplied path>
response-save-format	=	%RESPPATH%\%USERNAME%\%LESSON%.SCVRRSP
	=	%RESPPATH%\%LESSON%\%USERNAME%.SCVRRSP
	=	%RESPPATH%\%USERNAME%%LESSON%.SCVRRSP
	=	%RESPPATH%\%LESSON%%USERNAME%.SCVRRSP

GUI LANGUAGE

GUI is an acronym for Graphical User Interface. This is the way the SCVR application, (SCVR Player and/or SCVR Lesson Editor), is presented on the screen of the local computer.

Currently the SCVR GUI supports options for the following languages:

- English
- French

Additional language support will follow shortly.

GUI SIZE

GUI is an acronym for Graphical User Interface. This option relates to the size of the SCVR user interface on the display screen of the user's monitor.

The SCVR GUI is a fixed size (in terms of pixels), but there are three options of fixed size.

- Small (VGA resolution)
- Medium (SVGA or XGA) (default)
- Large (SXGA resolution or higher)

RECORDING INPUT SOURCE

The SCVR application can be configured to accept its recording input source as:

- Microphone
- Line-in

Note that in environments that include a SmartClass switching system, sound card connections are frequently made via the line-in connector even though the user is using a microphone, as there is a separate audio mixer between the microphone and the sound card.

USER IDENTIFICATION / AUTHENTICATION

In environments where more than one user has access to a workstation, or where more than one user is saving responses onto a common file server, it is important that some mechanism be used to identify response files with users.

The SCVR application can automatically embed student network log-in names into audio response file names and/or subdirectories. SCVR identifies student names based on the network log-in user identification. Identification options are:

- Network Log-In Identification
- No Identification

If network log-in names are not used, responses must be manually named or saved to a unique directory associated with a specific user. If not, it is presumed that responses are for non-credit courses, as instructors will not be able to identify the student creating the response.

RESPONSE DIRECTORY STRUCTURE

This installation option will appear only in situations where the installer has chosen the *Network Workstation Log-In* as the authentication method.

In networked environments, where a central data server is used to automatically collect all student responses, this *directory structure* option will be very important in organizing response files in a fashion that teachers and students can easily locate them.

Also, this directory structure option will have an impact on how the system administrator can assign read and write privileges to server directories and folders.

- ***Response Options (with Log-In Name)***

\Responses\<<Username>>\<<Lessonname>>.SCVRRSP

```
Responses
        User1
                Lesson1.SCVRRSP
                Lesson2.SCVRRSP
        User2
                Lesson1.SCVRRSP
                Lesson2.SCVRRSP
```

\Responses\<<Lessonname>>\<<Username>>.SCVRRSP

```
Responses
        Lesson1
                User1.SCVRRSP
                User2.SCVRRSP
        Lesson2
                User1.SCVRRSP
                User2.SCVRRSP
```

\Responses\<<Lessonname>><<Username>>.SCVRRSP

```
Responses
        Lesson1User1.SCVRRSP
        Lesson1User2.SCVRRSP
        Lesson2User1.SCVRRSP
        Lesson2User2.SCVRRSP
```

\Responses\<<Username>><<Lessonname>>.SCVRRSP

```
Responses
        User1Lesson1.SCVRRSP
        User1Lesson2.SCVRRSP
        User2Lesson1.SCVRRSP
        User2Lesson2.SCVRRSP
```

- ***Response Options (no Log-In)***

  Where NO Log-In (non-credit) is selected, there is no User Name field, so the default directory structure presumes a common Responses directory, which contains all response files. Response file names include only the Lesson Name field; (e.g. LessonName.SCVRRSP). This structure is suitable for single user workstations as might be encountered in a student's home environment.

  \Responses\<< Lessonname>>.SCVRRSP

  Responses
  Lesson1.SCVRRSP
  Lesson2.SCVRRSP

LESSON & RESPONSE DEFAULT DIRECTORIES

There are three different paths that need to be defined as defaults for:

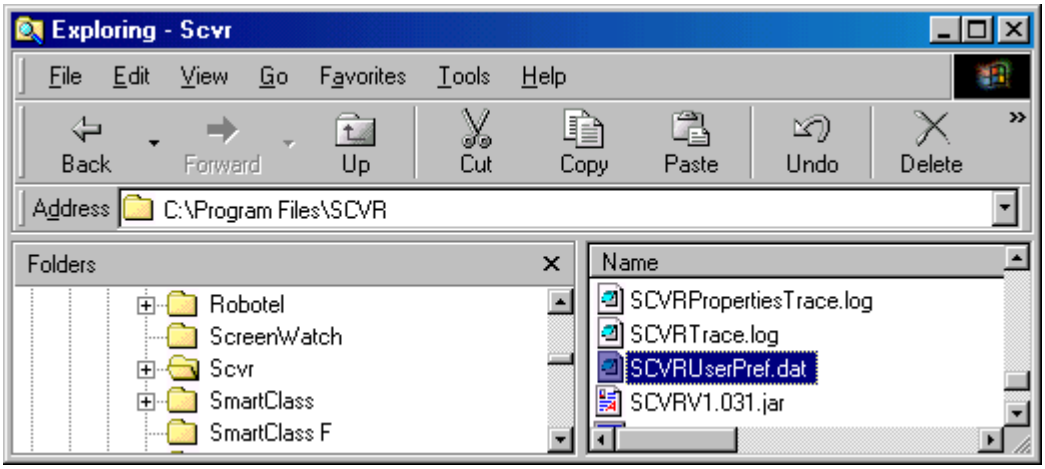
- Opening lessons
- Saving responses
- Saving lessons (for teachers)

In client/server environments, these defaults should be chosen by the system administrator to match server settings. Typically the corresponding server folders will be configured as shared resources.

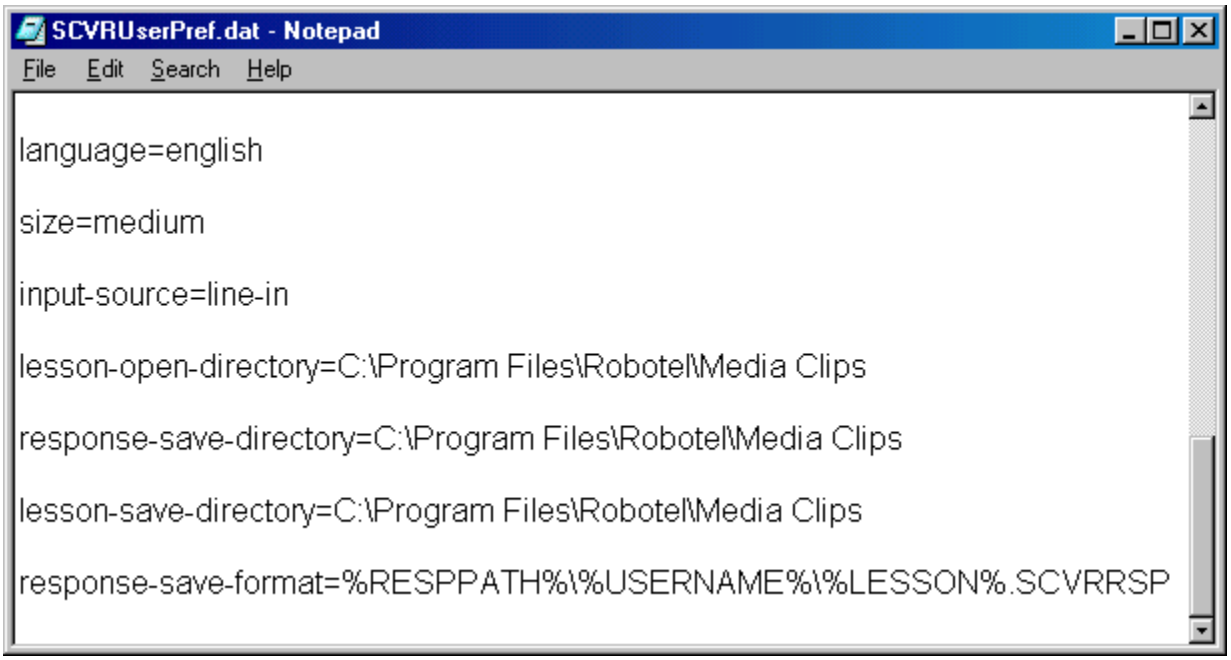
On the local workstation, these directories may be, (but need not be), mapped as local network drives.

MODIFYING USER PREFERENCES

The User Preferences that are selected at installation time are saved in a file called SCVRUserPref.dat, which in turn is saved by default in the Program Files\SCVR folder. You can navigate to this file using Windows Explorer, as shown below:



To modify the User Preference settings, this file can be opened with the Microsoft *Notepad* application, as shown below:



The upper part of the CVRUserPref.dat file contains a number of comment lines, (starting with the # character), that describe the various option values. The lower part of this file, (as shown above) contains the actual set-up parameter list and their current values.

To modify the User Preferences, just edit the option selection, or if the parameter was missing from the list, insert a new line for that parameter with the desired option, and save the modified file. The SCVR application must be closed and re-opened before any changes will take effect.

########

APPENDIX A

CREATING DIGITAL CONTENT FOR LESSONS

As identified in Chapter 3, (Lesson Editor), the lesson creation process comprises the following steps:

- **Develop the lesson plan**
- **Digitize any new or legacy analog audio and multimedia content**
- **Assemble a media file library in a single "working directory" folder**
- **Use the SCVR Lesson Editor to build multimedia lessons**

Once the lesson planning step is completed, the next step is to put together the lesson content files.

In many cases the necessary digital files will be available from existing CD-ROM, DVD or Internet sources. Ensure that you have the author's permission to use existing digital files, and are not in violation of international copyright laws.

Where original files must be created, or where existing analog audio or multimedia clips must be digitized, a separate digitizer application must be used. If re-purposing existing analog materials, again ensure that you have the author's permission to copy and distribute this content, and are not in violation of international copyright laws.

DIGITIZING NEW CONTENT

There are a broad range of audio, video and multimedia digitizing tools available to suit differing priorities for cost, quality and simplicity.

Audio Digitizing

If you are planning to digitize your own materials, ensure that you have a high quality microphone, a good quality PC sound card and a quiet environment in which to record.

Before proceeding to digitize your content, ensure that you have a plan for the type of files that you wish to create: Digitizing options include Quality, Format and Attributes.

- ***Quality*** – Nominally, there are four levels of quality, Telephone, FM Radio, Near CD quality and CD quality. The higher the quality, the more storage space required by the digitized files. Radio Quality is acceptable for most users, but Near CD quality might be a more conservative choice for language learning environments.

- ***Format*** – There are a wide variety of industry standards and proprietary audio file formats. With SCVR, the two main formats are WAV and MP3. MP3 files require less storage space than WAV files as they are compressed, but on the other hand, decompressing MP3 files requires additional computer overhead. As a rule of thumb, if you have a significant amount of audio material to digitize, MP3 is the preferred format. (With the Sound Recorder application, WAV files are generated when you choose the PCM format, and MP3 files are generated when you choose the MPEG-3 format.)

- ***Attributes*** – The file attributes include such considerations as Mono or Stereo, 8-bit or 16 bit sampling, and sampling frequency (8,000 Hz to 48,000 Hz). (For introductions or comments, Mono 8-bit @ 22,050 Hz works well.)

Sound Recorder

The most basic of audio digitizers is the Sound Recorder application that is supplied with every copy of the Microsoft Windows operating system. Sound Recorder is a simple product. It has some limitations in terms of duration of files and special features.

The Sound Recorder application can usually be found under the Accessories section of the Windows program index. It is listed under the Entertainment section of the Accessories program section.

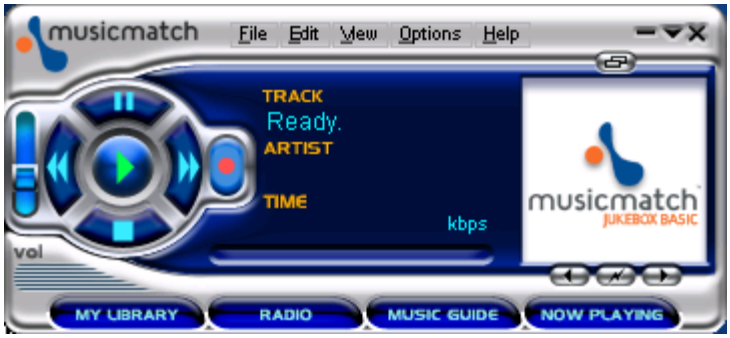
This is a very simple application that can be used by any instructor with minimal computer experience.

Musicmatch Jukebox

Musicmatch Jukebox is available as a no-charge download from the following website:

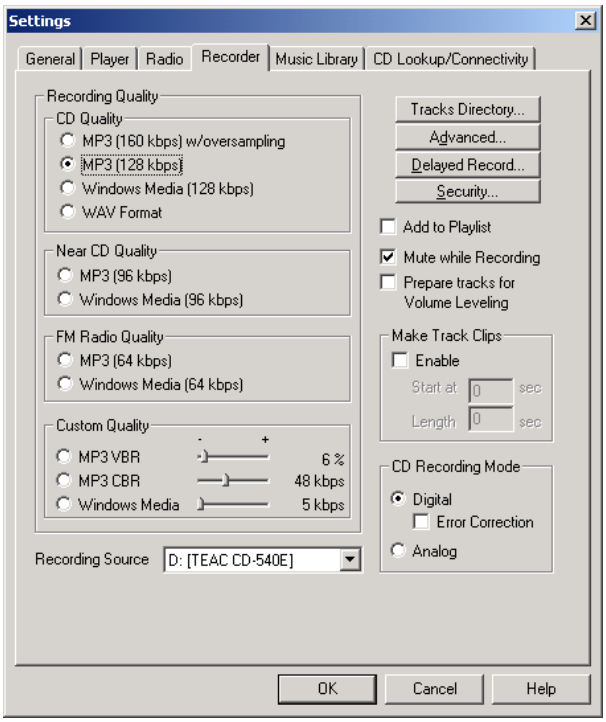
www.musicmatch.com

The basic GUI is shown to the right.

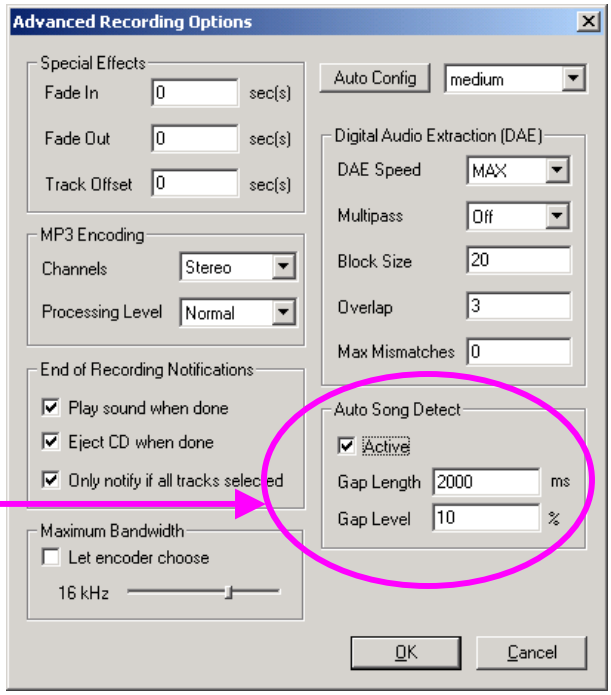


Musicmatch Jukebox is a multipurpose tool that enables recording of digital audio files, (both WAV and MP3), from the microphone or line-in input on your computer's sound card.

The flexibility of this product is indicated in the two menu pages, (shown on the right).



This product includes a facility, (under advanced recording options), for encoding separate digital files for multiple audio segments, when the source analog content has multiple segments separated by periods of silence. This is a great facility for re-purposing existing analog audio lesson tapes.



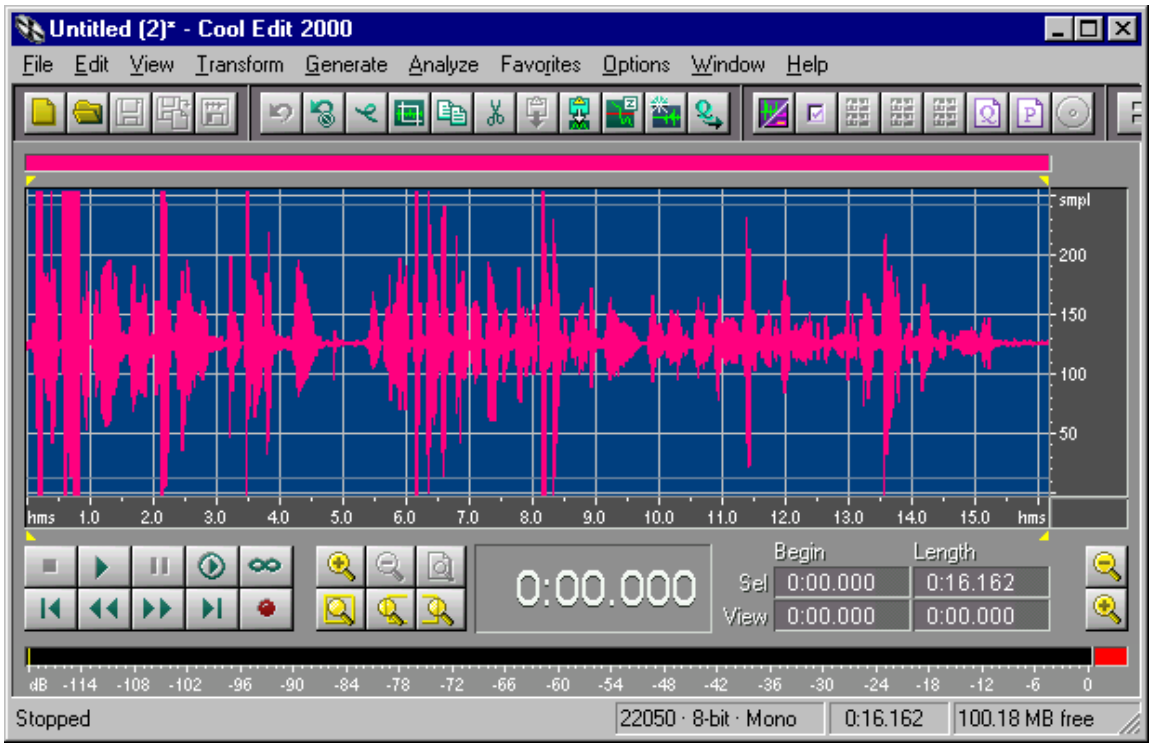
Cool Edit 2000

If a more advanced audio digitizer is required, one excellent commercial package is Cool Edit 2000, available from the following website:

http://www.syntrillium.com

A demo version of the Cool Edit 2000 package can be downloaded from the Internet for free, and a single station license retails for $69.00 (US). A demo copy of the Cool Edit 2000 software is also included on the SCVR installation CD-ROM.

The Cool Edit 2000 package includes extensive audio editing capabilities. This package is recommended for more experienced users and/or more demanding applications.



VIDEO & MULTIMEDIA DIGITIZING

As with audio, there are many video-digitizing solutions on the market, and they vary greatly in features, price and sophistication. Professional quality video, (e.g. equivalent to television), is generally shot using very high quality cameras, and is subsequently edited in a well-equipped (and expensive) studio environment.

However, with the advent of low cost consumer digital movie cameras (and medium cost *prosumer* digital movie cameras), it is possible to create an inexpensive video editing suite on a high performance Windows PC. Most DV cameras include computer transfer and video editing software packages. Additionally, there are aftermarket video editing packages available for under $100.00 (US).

There are a variety of different video digitizing options. The major considerations are the format, (e.g. MPEG-1, MPEG-2, AVI, MOV, QT, etc.), the native resolution, (e.g. 320 x 240, 640 x 480, etc.), and the attributes, (X.XX megabits/second). The general trade off is between size and quality, versus minimum PC horsepower and storage space. Another critical consideration is the file types supported by the SCVR player. Currently this is restricted to MPEG-1, MPEG-2, AVI, QT and MOV.

The thing to remember about digitizing video, is that there are significant ramifications for the computer platform on which the video editing software is to be installed. It will need a large processor, (preferably a Pentium 4), a huge hard drive, and the necessary Firewire or digitizing hardware options.

VideoWave 5.0

One highly regarded aftermarket video-editing package is VideoWave® 5.0 from Roxio®/MGI®:

http://www.mgisoft.com/

########

APPENDIX B

WORKSTATION REQUIREMENTS

WORKSTATION REQUIREMENTS

Before installing the SCVR application software on your computer, it is important to verify that your workstation meets the following platform requirements:

- *Operating System:* Windows 98
Windows 98 SE
Windows ME
Windows NT
Windows 2000
Windows XP
- *Processor:* Pentium II (or better) with MMX support, 300 MHz (or higher)
- *RAM:* 64 Mbytes (minimum), 128 Mbytes (or higher recommended)
- *Hard Disk Space:* 30 Mbytes (minimum) required for SCVR application
Additional space required for content (see table in this section)
- *Sound Card:* AC ’97 compliant
Sound Blaster compatible (recommended)
Direct X compliant and/or certified driver
- *System:* PC 99 compliant
Direct X (Version 7.0 or newer)
- *CD-ROM Drive:* Required for SCVR CD-ROM installation support
- *Network Card:* Required for client/server system configurations

Generally speaking, faster processors and greater amounts of RAM will help improve a computer’s multimedia performance capabilities.

MULTIMEDIA CONTENT STORAGE

Digital video files and digital audio files require a large amount of storage space. Remember that the storage space must support both lessons (and/or multimedia files) *and* responses.

SCVR response files do not duplicate the lesson content. The response file headers just contain a pointer to the associated lesson files, so this greatly reduces the overall content storage requirements, especially in multi-user environments like language labs.

In a classroom environment, there will be separate response files for each student for each lesson, so in your storage planning, allow for single copies of lesson files and multiple copies of response files.

Responses

SCVR currently uses a fixed recording format based on the following parameters:

- File type: AU (equivalent to WAV)
- Sample frequency: 11.025 KHz
- Sample size: 8 bits (mono)
- Net bit rate: 88.2 kbps

Lessons

The last page in this appendix comprises two tables, (audio file types and video file types). These tables provide some solid guidelines for estimating how much network throughput, (bits/sec) and storage space, (Gbytes), you will require for supporting different types of content, (e.g. MPEG files), and different quantities of content, (e.g. 100 hours).

VIDEO SERVER CONSIDERATIONS

Video file servers are frequently used to provide central storage of multimedia lesson content and student responses in language lab environments. With SCVR, it is possible to play multimedia files (but not lesson files) directly from a network server, without downloading locally. This mode of operation, however, presumes that both the server and the network infrastructure are capable of supporting real-time multimedia communications to all system users. Network or server limitations will impact SCVR performance in such environments.

User Access

Most operating systems will not permit unlimited user access to shared files and folders. Conventional desktop operating systems, such as Windows 2000 Professional and Windows XP Professional, limit concurrent access to shared folders to a maximum of 10 users. Operating systems such as Windows 2000 Server are required to support a larger user community.

Performance

In a video server environment where there is a class of N students to support, note that the server throughput (and the networking infrastructure) need to be sufficiently robust to support N times the multimedia file encoded bit rate.

For example, in a class of 25 students using MPEG 1 multimedia content, this implies that the server and network must support a throughput of 37.5 megabits/second, (25 x 1536 kbps). This requires a powerful server, a network up-link to the server of at least 100 Mbps and a switched network infrastructure of at least 10 Mbps.

Content Storage

In an environment having some 100 hours of MPEG 1 video content, and two hours of audio response content, (for each of 100 students), the server would need a hard disk, (or more typically a RAID hard disk array), having a minimum capacity of about 75 Gigabytes.

AUDIO CONTENT GUIDELINES

Audio File Type	Encoder Characteristics				Media Storage Requirements (Gbytes)		
	Freq. (KHz)	Size (bits)	Bit Rate (kbps)	Size (MB/hour)	10 hours	100 hours	1000 hours
WAV	8.0	8	64	28.0	0.27	2.7	27
	11.025	8	88.2	38.6	0.37	3.7	37
	16.0	8	128	56.0	0.54	5.4	54
	22.050	8	176.4	77.2	0.74	7.4	74
	32.0	8	256	112.0	1.08	10.8	108
	44.100	8	352.8	154.4	1.48	14.8	148
	48.0	8	384	168.0	1.62	16.2	162
	8.0	16	128	56.0	0.54	5.4	54
	11.025	16	176.4	77.2	0.74	7.4	74
	16.0	16	256	112.0	1.08	10.8	108
	22.050	16	352.8	154.4	1.48	14.8	148
	32.0	16	512	224.0	2.16	21.6	216
	44.100	16	705.6	308.8	2.96	29.6	296
	48.0	16	768	336.0	3.24	32.4	324
MP3	11.025	FM	64	28.0	0.27	2.7	27
	22.050	~CD	96	42.0	0.41	4.1	41
	44.100	CD	128	56.0	0.54	5.4	54
AU	11.025	8	88.2	38.6	0.37	3.7	37

VIDEO CONTENT GUIDELINES

Video File Type	Encoder Characteristics				Media Storage Requirements (Gbytes)		
	Resolution (H x V)	Fields /sec	Bit Rate (kbps)	Size (MB/hour)	10 hours	100 hours	1000 hours
AVI	160 x 120	10	600	264	2.60	26.0	260
	320 x 240	10	1432	630	6.15	61.5	615
	320 x 240	15	1800	792	7.44	74.4	744
MOV	160 x 120	10	600	264	2.60	26.0	260
	320 x 240	10	1432	630	6.15	61.5	615
	320 x 240	15	1800	792	7.44	74.4	744
MPEG 1	320 x 240	30	1536	676	6.60	66.0	660
MPEG 2	640 x 480	30	3072	1352	13.20	132.0	1320
	640 x 480	30	6144	2704	26.40	264.0	2640

########