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Analyze Your DVD

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Your discs are already made, and you need to program a DVDplay synchronizer to work with them. What do you do? You start by analyzing your discs to see what is possible and what is not.

Introduction

Analyzing your discs involves verifying the structure of the disc. Finding out what types of markers exist on the disc, such as Titles, Chapters, or Frames, and which ones you can use to define the starting and ending points for the synchronizer.

The synchronizer requires a specific point on each disc that it can search to and use as the start and another for the end point. Setting a start point is the easy part. Finding a marker that can identify an ending point is not always as easy. If the discs were made according to our recommendations in our DVD Authoring Tips or Authoring for Synchronizers tutorials, then setting an end point is simple. Otherwise you need to analyze your discs to make sure it is even possible to define an ending point.

Basic Structure

The first step is to verify the basic structure of the disc. By default it should always contain at least one title and one chapter. Beyond that is specific to each disc.

Before looking at your discs, lets talk about the names of different sections and markers on DVD discs. DVDs main structure is known as a Title. Some authoring software calls this a "track". A DVD may contain up to 99 Titles. Each title is a unique entity containing video and audio clips, and markers for chapters and frames. Typically a DVD contains a Main Menu, or Startup Menu which has links to all the Titles on the disk. Titles are separate entities on the disc, and contain their own separate video and audio clips.

Within a title you have Chapters. By default the first frame of a title is considered chapter 1. Optionally there may be other chapter marks at specific locations within the title. A title can contain up to 99 chapters. If frame numbers have been enabled, then each title has a unique set of frame numbers. Each title starts at frame number 1, and contains as many frames as are needed to hold the video within it. The frame numbers start over again at frame 1 at the beginning of each title.

Analyzing the basics

To check the basic structure of your disc, you need to put the disc in a Pioneer DVD-V7400 (or DVD-V7300D) player. If the synchronizer is already connected to the player, turn the synchronizer off. If after putting the disc into the player, it starts playing, then stop the disc from playing. It must not be playing for this part of the test.

Hit the "Display" button on the front of the player, or the one on the remote control unit. The video output of the player will now show the basic structure of the disc. It will say "Information: DVD" and below that will be columns for "Title" and "Chapter". The number of rows in the list will show how many titles the disc has. Each will be numbered 01, 02, 03, etc... So if the list has only one line, and it is for Title 01, then the disc only has 1 title. If you see three lines, numbered 01, 02, and 03, then the disc has 3 titles, and so on...

Next look in the chapter column. It shows the number of the first chapter followed by the number of the last chapter. So if it shows 1~1 then there is only one chapter on the disc. If it shows 1~2 then there are 2 chapters, 1~5 shows 5 chapters, and so on.

You now know the basic structure of your disc. How many titles and how many chapters per title.

Analyzing a Title

Within a title may be one or more chapters, and there may or may not be frame numbers that can be used. Some authoring software does not enable frame searching, so your discs may or may not be able to actually use frame numbers as starting and ending points for the synchronizer.

Start your disc playing. Be sure the synchronizer is not connected, or is turned off. Once the disc is playing, hit the "Display" button either on the front of the player, or on the remote control. The top line of the screen display will say "Play" on the left, will show the title and chapter number of the chapter currently playing (such as 1~1 for Title 1 Chapter 1). On the right will be the elapsed time.

On the second line should be a display of the current frame number and the total number of frames in the title. On the left should be the word "Frame" followed by a rapidly changing number which is the current frame number. That is followed by a "/" and a static number (the total number of frames in the title). If you are not seeing this, then your disc might not have frame numbers enabled. You can try hitting "Display" again to be sure (it should cycle between several different displays, but one should say "Frames"). If the word Frames never shows up on the left of the second line, then your discs do not allow frame access, so you are not able to use frames in the synchronizer settings.

If you do see the frames displayed, then you now know the total number of frames on the current title. To be sure that frames can be used by the synchronizer, you can use the remote control to search to specific frames. This only works if the disc is playing. First hit the "Frm/Time" button on the remote control and the second line of the screen display should now change to "Frame : 1". If you now hit

numbers on the remote, you can enter the number of a frame to search to. You will see the number change on the screen. Then if you hit the "Search" button on the remote, the player should search to that frame. If, instead, you see an icon of a disc with a red circle around it and a line through it, that means that frame searching is not enabled on the disc. If the remote control can search to a specific frame, then so can the synchronizer.

When locating the frame to use as an ending point, we suggest not selecting the last frame on a title, or even within the last 15 or so frames. It is best to pick a frame that is a second or more from the end, though if you need to it is possible to go right up to the last frame.

You can also use the same method described above to test searching to a chapter. Hit the "Title/Chp/Frm/Time" button, and it will show Titles. Hit it again and it will show Chapters. Now you can enter a chapter number and then the Search button to have it search to a chapter.

Summary

You should now know how many titles your disc has, how many chapters are in each title. You should also know how many frames are in each title, and whether or not you can search to specific frames or chapters.

You should now be able to use this information to decide how to set the synchronizer's start and end points. Both the start and the end point programmed into the synchronizer **MUST** exist on the disc. You can not set it to end at chapter 2 if there is no chapter 2. The end point needs to be unique, and must be after the start point. So you can not start at chapter 1 and end at chapter 1. If there is no second chapter then you can not end on a chapter. If there is no frame searching, then you can not end on a frame number. If there is no second title, then you can not end on a title. If your disc contains 1 title, with 1 chapter, and frame searching is not enabled, then your disc can not be used with the synchronizer because there is nothing to use as an ending mark.

Be sure to check our web site for updated versions of this and other tutorials.
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