

## DVDlab

- [Home](#)
- [Screenshots](#)
- [Encoder](#)
- [Banners](#)

## DVDlab PRO

- [Home](#)
- [Screenshots](#)
- [History](#)

## DVD-9 DL

- [Home](#)

## Resources

- [Tips & Tricks](#)
- [Help](#) 
- [Help](#) 
- [Help](#) 
- [Help](#) 
- [Help](#) 
- [FAQ](#)
- [History](#)

## DVD Tools

- [Timecode calc](#)
- [Re-Aspect](#)

## Articles

- [H\\_Theater](#)
- [DOF Machine](#)
- [3D Video](#)

## Photo-Brush

- [Start here](#)

## Real-Draw

- [Start here](#)

## CompactDraw

- [Start here](#)

## PhotoSEAM

- [Start here](#)

## Multimedia Builder

- [Start here](#)

## Other tools

- [UltraSnap](#)
- [Camera Tools](#)

### Multiple VTS, IFO import, re-authoring

This tutorial is for DVD-lab PRO beta and it described advanced DVD structure. Please note all this is an optional and may be overwhelming for novice or sunday school DVD producer. It is not necessary knowledge if you want to create a normal DVD.

The article below can be used both as educational as well as practical way of creating advanced DVD structure similar way like many Hollywood DVD studios do every day.

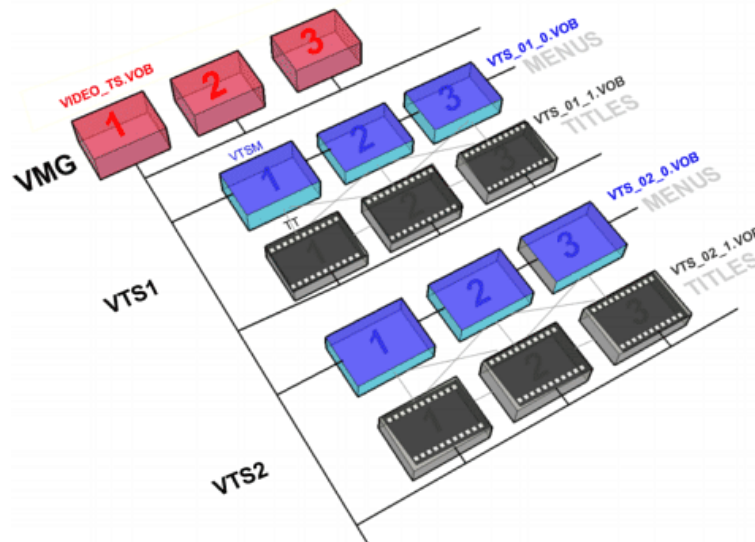
**Additional Note:** The PRO version will be in its release a true MULTI-VTS software. That means none of the things below will be necessary - you will be able to design the whole structure inside DVD-lab pro without compiling and then importing! See [screenshot](#).

### First lets have some background

A DVD is created from **one or more** VTS - video title sets. VTS is called "title set" because there can be more titles (movies) in each set, not only one. Each VTS has also a Menu domain (VTS-M). Similarly in the menu domain you can have more than one Menu. This all sounds familiar because the DVD-lab Standard version uses full featured VTS - you can have multiple movies, multiple menus and links between them.

The only serious limitation of a VTS is that the movies in one VTS should have similar properties. For example all must be 720 x 480, have same aspect ratio and all should have the same type of audio (ac3 for example). The reason for this is probably pure technical. All titles (movies) in one VTS are in the same vob file (VTS\_xx\_y.vob divided into maximum of nine 1GB blocks).

To be able to put on DVD different types of video the DVD allows to have more than one of these VTS's. You can have in fact 99 different VTS but in real-life, if your VTS is mature enough (as in DVD-lab) you need basically two of them - one for movies in 4:3 aspect and one for 16:9.



Using multiple VTS sounds like a good deal, until you start reading the "small print" or in other words the DVD rules. There are various limitations. For example you can't link directly an item (Movie or Menu) from one VTS with Movie or menu of other VTS. To be able to actually go to different VTS, DVD's have a kind of switch board called VMG (Video Manager which should be *de facto* called Video Tile Set Manager if we want to be correct). The menus in VMG domain can be used to link to different VTS's.

It sounds like a complex issue and it quite is. DVD specs don't really tell you what you have to do. They

give you the various little places where you can put your menus and movies (VMG, VTS-TT, VTS-M) and set of rules that limits the way how each can be called, interacted and linked. Then each "item" has a commands and pre-commands - a machine language where you can (by using registers and conditions) actually make all this work a different way. This is also the sixty thousand dollar question of every DVD developer - does each standalone player implements 100% of all these *rules*? The answer is "*No, but take two capsules of Advil and the headache is gone for a day*".

Simply said, there isn't exactly any prescribed way how to make a DVD. You may find DVDs all made in one VTS (like DVD-lab - Standard version or ReelDVD created DVD's), you can find DVD's where each movie is always in separate VTS (no matter if it has different attributes or not) and all menus are in VMG etc.

In many cases it is usually the software which choose the predefined path in which the structure is created.

In professional production, however, the DVD structure is created to best **fit the project**. That means a mixture of VTS's and multiple titles in single VTS, some menus in VMG, some in VTSM etc.

Creating such a free structure was so far possible only in high-end authoring tools such as Scenarist but now also DVD-lab PRO will give advanced users the possibility to create a DVD structure that fits to the project rather than try to fit the project to pre-definned structure of common authoring software.

This is what PROs were telling us all the time: Creating advanced DVD's requires thinking, preparation and also some idea of how the DVD structure works.

That's why there are the two flavors of DVD-lab. The Standard and PRO. The Standard will give user a clear way in creating the DVD flow by using the single VTS scenario to its full potential. Users of Standard version are not required to understand the DVD structure - they simply links Movies and Menus in free fashion.

Users of DVD-lab PRO have now the *additional* ability to create second VTS and therefore have DVD with multiple aspects.

### A real-life project

*Again, please note that this below is mostly for educational purposes. The release of PRO version will be true Multi-VTS software and many steps below will not be necessary.*

For this project I will use few of my older short Movies. I want my disc to have these assets:

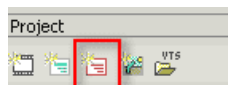
- Movie A - I&J, **16:9** short movie, with scene selection
- Movie B - Nostalgia, **4:3** short movie with scene selection
- Special feature - bonus short film Movie C: Making of.. **4:3**, and some Photos also in **4:3**

Obviously, because of the various aspects we need to build Multi-VTS DVD.

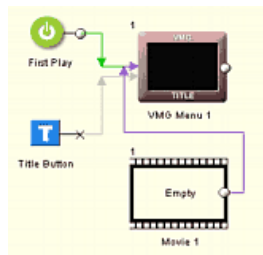
### Let's start

If you read the above you already know that we definitely need a VMG menu (at least one) that can be used to switch between the various VTS.

To add a VMG menu, click the VMG menu button in project



This will add empty VMG Menu. We will make it a First play which is kind of logical choice. Also note, once you have VMG menu you cannot assign Title button to anywhere else. This is because the Title button (if a VMG menu exist) should always open the Title menu which is the first VMG menu.



Ok, so this menu will be our Main menu, our Home or or Title menu, whatever you like We will use this VMG menu to choose one of the Movie menu and the special features.



Here goes the design. This is our main (Title) VMG Menu.

How DVD-lab works with multiple VTS?

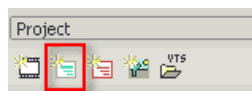
It can import ready made VTS as VTS 2 into a project. So we will have to do this in two compiles. This actually has its own advantages. We can test and compile each VTS separately which makes much easier to fix errors. Here comes the decision which Movie will be the Imported VTS (VTS2) and which will go to the main project. In our case it is more or less already decided - we have more 4:3 features and just one 16:9 so the 16:9 (I&J) will be the imported VTS2.

We will for now leave the 16:9 for later and continue with this project adding all the 4:3 features.

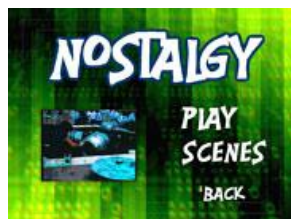
**VTS (ROOT) menu** (this is the 'Normal' DVD-lab menu).

From this menu viewer will select either to play the movie or go to scenes. Here comes another part of the decision making - we can actually make this menu VMG as well. But to be more "logical", we will have this as VTS menu.

We will add VTS menu. Click on the VTS menu button in Project.



This menu will be for selecting to play the movie or scene selection and also ability to return back to our Title.



Now we need to

- add Movie object,
- then drag our 4:3 Movie 'B' (Nostalgia) files to this object
- add chapters, either manually or automatically.
- from the Wizard add Scene Selection menus for the Movie.
- create proper linking between menus and movie

This all should be easy, if you are familiar with DVD-lab. If not, you have to read help or other basic tutorial.

### Links

We will just look at the last part - creating links. You probably know there are few ways of adding links. One is to open each menu and right-click on the button, then select the proper link from the pop-up menu.

Other, faster is from Connections. This is the one I use often. Click the *Draw Button Links* button:



Then drag a link from the menu (for example from VMG) to another object (for example to Menu 1). A small preview of VMG (the menu from we draw the link) will appear where we can choose which button from the VMG menu will link to the Menu 1 by simply clicking on that button.



These are Button links - a links from a Button on menu to an item.

There are other type of links as well - end links. Both menus and Movies have end links, but since we have still menu, such menu never "ends" so the only interesting end link is for Movie. We draw the end links with the *Draw End Links* button (the one above the *Draw Button Links*).

So we have to do this for all links which are:

#### **VMG menu:**

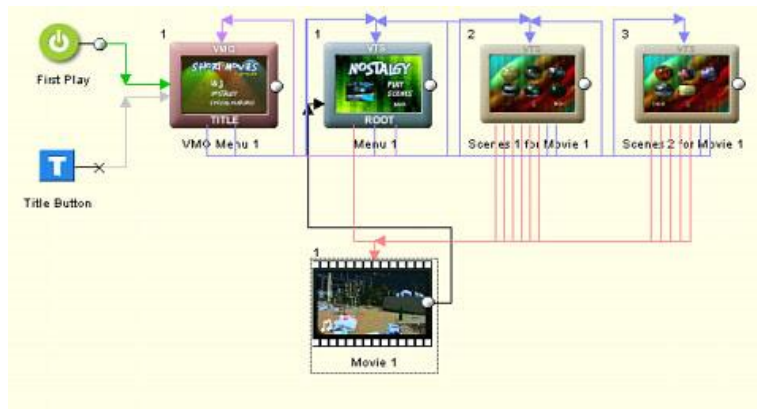
- Button Nostalg links to Menu 1

#### **Menu 1 (VTS)**

- button Play links to Movie 1
- button Scenes links to menu "Scenes 1 for Movie 1"
- button Back links to VMG menu

#### **Movie 1 (end link)**

- we can leave it on RET (return to last viewed menu in this VTS) or link it directly to Menu 1.



This is how the design should be so far.

### Special Features Menu

We still have one more part in this VTS to do: The *Special features* menu.

Again a decision to be made VMG or VTS menu?

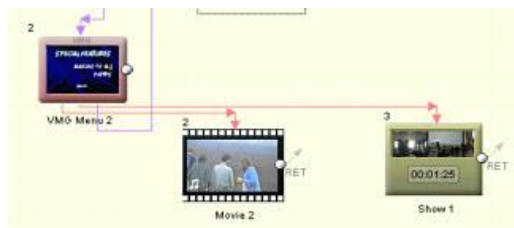
Here is a simple answer. Since we call Special features from VMG menu and VMG menu can call only the first Root menu in VTS (which is already taken by our Nostalgia), we have to use VMG menu for Special Features. VMG menus can link to each other without problems (as well as VTS menu can link to other VTS menus). Different case would be if we call Special Features menu from VTS (Menu 1). But we don't so the only thing that will work is VMG menu.

Now you see why creating advanced DVD need some knowledge.

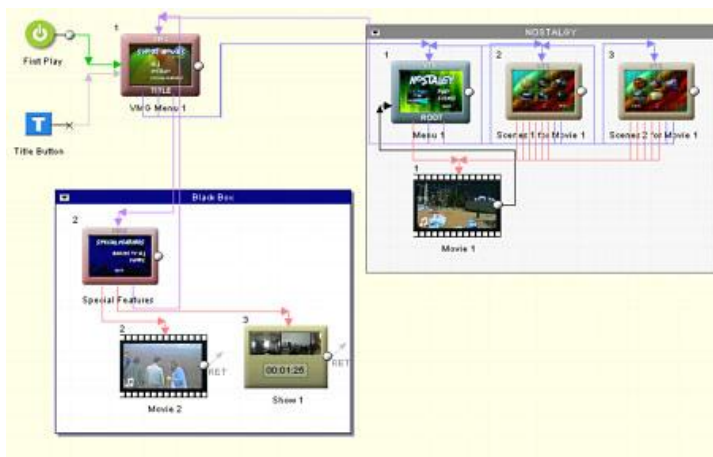
We create another VMG menu for special features. This will have the link to Making of.../ a short bonus feature and a Pictures which will be as a slideshow.



Then add our next movie : "The Making of..." and create one Slideshow with the pictures. (Again, this is not described here)

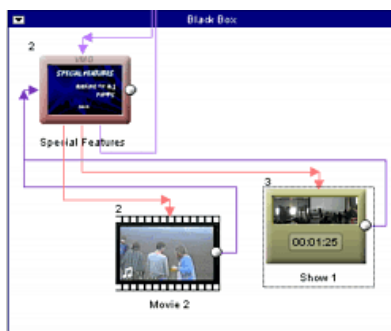


Then link the buttons to the Movie and Slideshow, link the *Back* button to the Title VMG menu and Link the *Special features* button from Title VMG menu to the *Special features* menu.



Here is the whole 4:3 features structure. I added **components** around the two distinct parts - just to visually separate them .

There is also a little bug I see already - The Movie 2 and Show 1 have RET as end link. Now this would work with VTS menus, but we call these from VMG menu. The RET will not return there, most likely end up in the ROOT VTS menu (Menu 1, the Nostalgia menu). We will correct it right away, before we forget:



Ok, now all looks fine to the naked eye.

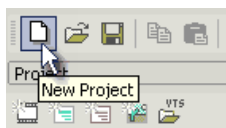
So the only link that is not yet used is the I&J on VMG Title menu..- our 16:9 feature.

At this moment we can freely compile this project and test if all works and if we didn't forget anything. But it is not necessary to compile yet.

What is really necessary at this moment is to **Save** our work. Again: Save the work.

## The VTS 2

Saving our previous work was important simply because the next step is a bit innovative - Create New Project.



We need a new project for our VTS 2.

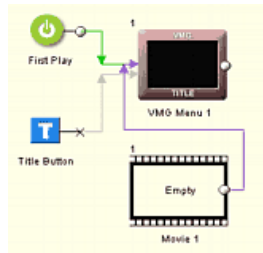
Normally the VTS doesn't need to have VMG menus, right? The VMG menus will be in the main project we just closed.

But we will add a dummy VMG menu even to this project.

Why?

Simply because it will allow us to create return link from the VTS we are about to create, back to the VMG Title menu. Again, this will be a dummy VMG, that will be not used in the final product, but it will allow us to make here a return link which ultimately will become the VMG menu on the previous "Main"

project. If you still don't understand, just don't create any VMG menu and you will soon see that we will be not able to return from this VTS to the Title menu any other way than pressing Title button on remote (that thing will work always)



So I did create VMG menu, but again, this is DUMMY, a **placeholder** just for my return link, Don't put anything there.

For our things we will create a **VTS menu**.

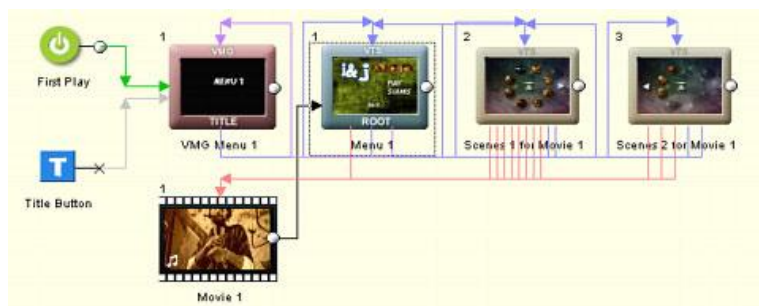


### VTS menu (ROOT)

This will be similarly like the "Nostalgia" menu, but all about our 16:9 short film "I&J". Here is another thing to consider: you may actually use widescreen menus if you want since the feature is widescreen. But I didn't, I used 4:3 because players usually have no problems with menu and movie in same VTS being different aspect.



And again, very similarly to the Nostalgia above, we will create the project and the links. We will also link the button "Back" with our VMG dummy menu. (That was the whole circus with the dummy VMG menu about)

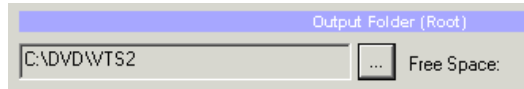


**Note.** I also boldly added simple link, a text to the VMG dummy menu where I told you we will put nothing. This is because when I compile this project I can actually test it in PowerDVD and this link will allow me to go to the VTS. But again, later when importing, the VMG will be not imported so it is just for my own ego.

### Compile (1st time)

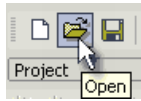
The last part of this sub-project, our future VTS 2, is to compile it. In **compile window** choose a special location for this project:



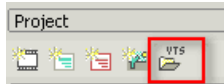


Then compile and save the project if you need to make changes.

The VTS2 is all done. Now back to our *main* project by simply opening it:



All should be as we left it unless some bug is eating our data. Now we need to import the whole VTS 2. For this we have **VTS import button** on Project window

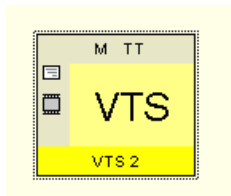


You have to navigate to the place where you compiled the VTS 2 (the I&J project), which was C:\DVD\VTS2 in my case a sI remember. You will see two folders there, open the VIDEO\_TS one and you will see the 2 IFO files there. One is the VIDEO\_TS.IFO - this is the VMG and we don't want that (in fact you can't even import it since DVD can have only one VMG)  
You need to open the VTS\_01\_0.IFO which is our VTS with lovely I&J feature we created a few minutes ago.



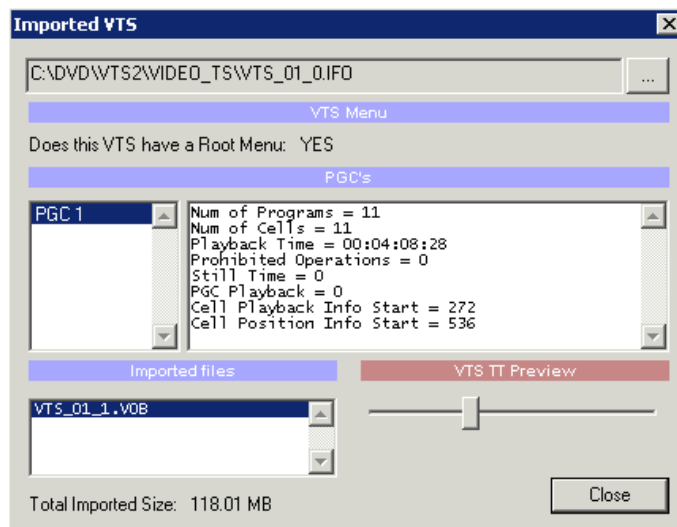
This will add a new icon to the Connections: **VTS import**. There is not much to do with it, except put some link to it from VMG.

The VTS Import has two input connectors - one is **Root Menu (M)** and the other is **First Movie (TT)**.



Now just for fun and good health, doubleclick on it. It will open a small info dialog where we see few things:





First what we see is that this VTS has a Root Menu. Oh, good, so we can link to it (of course it has, we did create the menu in our I&J project so it should be there!)

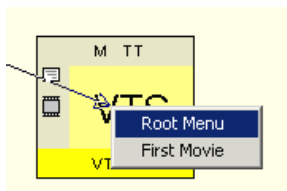
The next we see is that we have just one PGC. If we had more "Movies" in our project then these will show here as more PGC's.

The PGC also shows some more info, for example that Num of Cells is 11. These are our chapters from the project +1. Also you may see that the total time of the PGC is 4 min 08 sec and 28 frames.

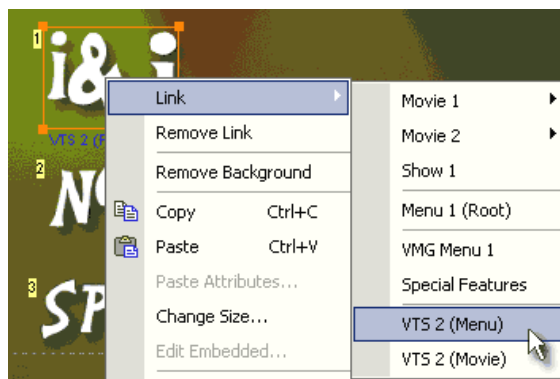
The last info are the imported VOB files - we see that we have only one VOB since the file is rather small.

**Link the VMG with VTS Import** - the I&J button to our VTS object.

This can be done again few ways, but in each way you will have to specify what you want the link to target - the Root Menu or First Movie?

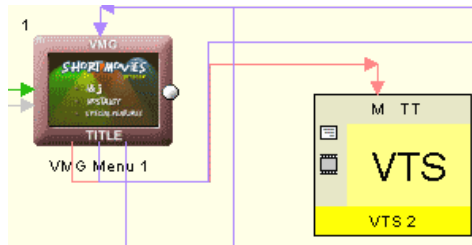


When you draw links in connection you will have to choose what is the target for the link on this VTS.

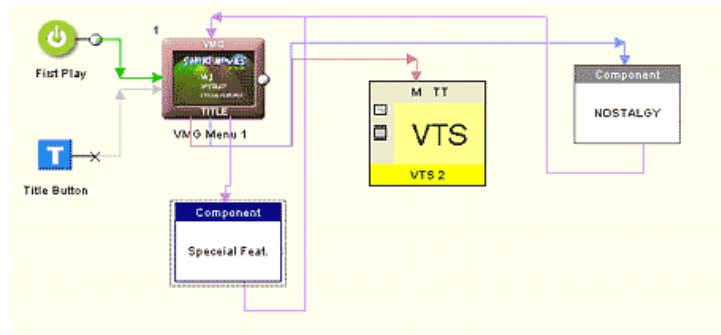


If you use pop-up menu then you will see the two targets listed there as VTS 2 (Menu) and VTS 2 (Movie).

In our case we want to link to a **Root Menu** of this new VTS. Therefore the link from VMG I&J button will end up connecting to (M)

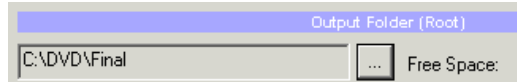


Now let's see the whole structure. Here I simply closed the Components just to make it more clear. The VMG menu connects to three parts of our project - NOSTALGY, Special Features (all will be in VTS 1) and the imported VTS 2



### Compile (2nd time)

The very last thing is to compile. Important, you will have to choose a different output folder than for the VTS 2 (I&J project). Here I go, I will choose c:\DVD\Final



That's it. If you did everything right, the DVD should be working right away. (Mine worked !). It may look like creating this project is a consuming task, but in fact once you understand few basic principles, it isn't. The longest part was to describe it.

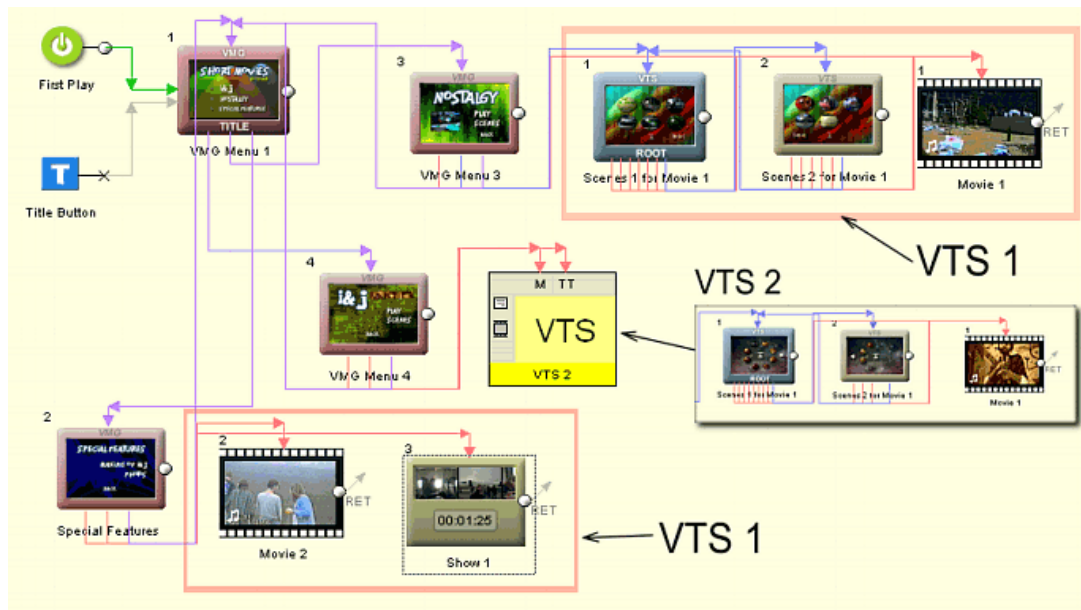
The benefits of doing it this way (and very few software will allow you to do this, Scenarist being one) is that you have full control over the DVD structure.

At this moment we can have only 2 VTS in DVD-lab PRO. If you think about the structure above, then it would seem that a third VTS would probably fit this scenario better, where we will put our Special Features.

### Alternative way (bad way)

The scenario above is still quite simple, but two people may each one choose maybe a bit different structure. The way we did it is probably the best way for what we needed, but we will put here another structure, just to show few potential pitfalls.

For example other alternative structure may be where each of the secondary menu is also VMG. See the image below:



In this structure we put all possible menus as VMG. We can't put scene selection as VMG because they connect to each chapter (cell) of the Movie. VMG can't do that so for scene selections we have to use VTS menu. But all others are VMG. We also removed the original Root menu from our I&J project and left only the movie and scene selections (the smaller rectangle with VTS2 above). Now on Main project the I&J menu (VMG Menu 4) the Play button links to First Movie of the VTS import and the Scenes button links to the Root Menu of VTS import.

There are already few possible problems with this scenario I see right away:

- The Menu button on remote is connected with ROOT menu - but what are our Root menus? They are the Scene Selection menus. If you play movie and you press Menu Button on remote, you will get to Scene selection menu. Nah.

- The End link of the movies has RET which will ultimately return to the ROOT menu, which is again the scene selection. In the Nostalg movie we can fix it right away and connect the end of the Movie 1 to the VMG menu 3. In the Special Features as well to link to Special Features VMG.

In the Imported VTS this isn't that obvious, we can link the end of the movie to the VMG dummy menu (not shown here) which will then in real life end in the VMG menu 1. The best way would be to actually create 4 dummy VMG menus in our I&J project and link the end of the I&J Movie 1 to the forth VMG dummy which in the final project will be mapped to the VMG menu 4.

So you see, a professional DVD creation is not just putting few movies and menus where the software guides you, but to actually create your own structure that you feel is appropriate for the DVD.