

8 Jan 2005,  
05:32 PM

Link #1

**blutach**  
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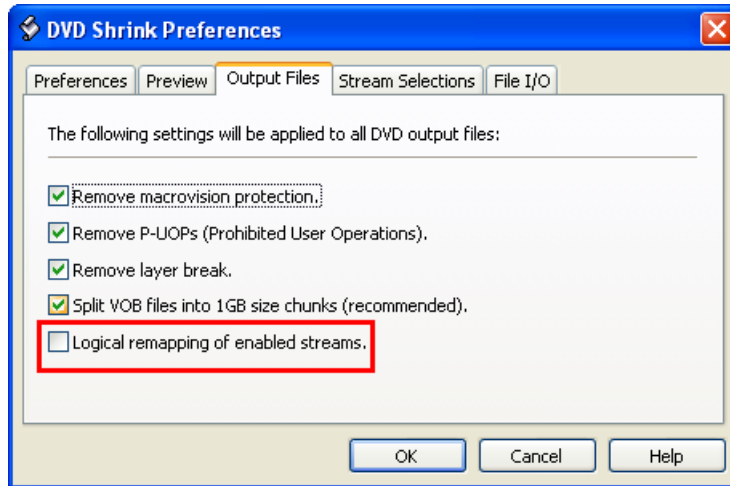


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Logical Remapping Of Enabled Streams

## Logical Mapping of Enabled Streams Explained

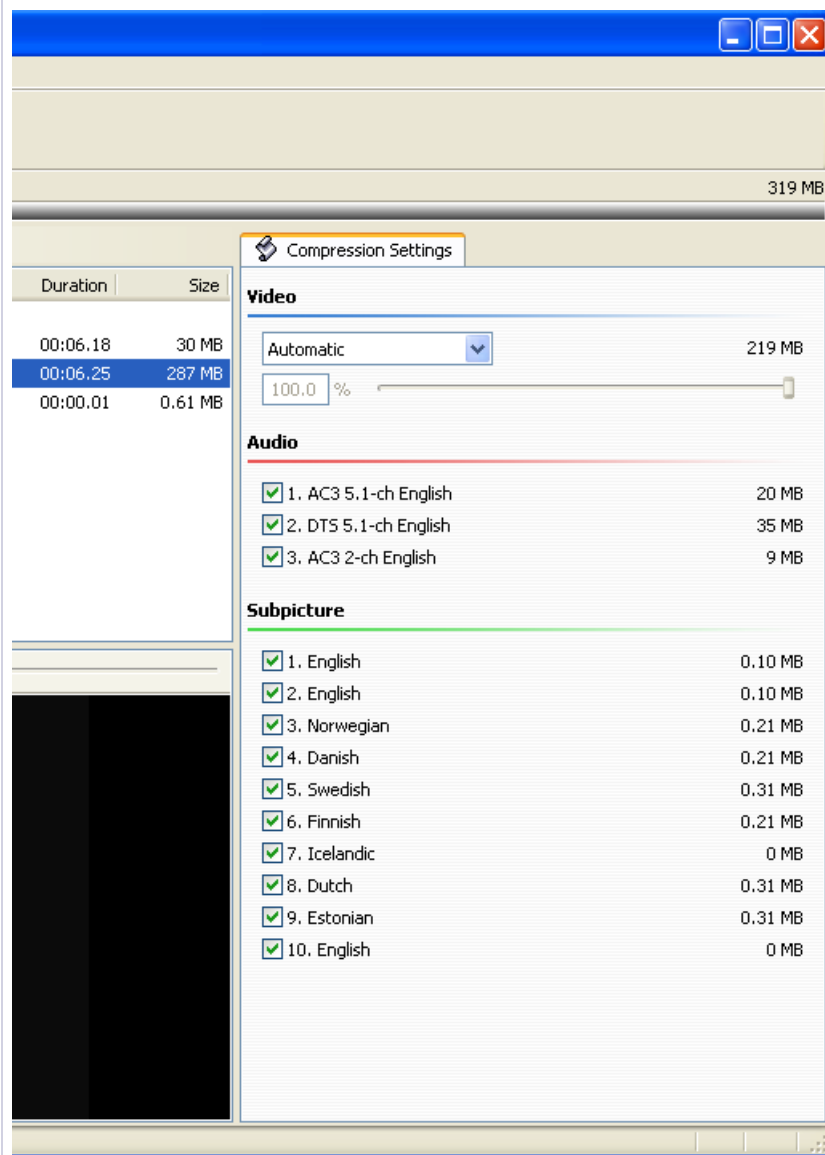
In this FAQ, we are examining this preference (Edit --> Preferences):



(Figure 1)

The only way to look at this is by a very detailed worked example.

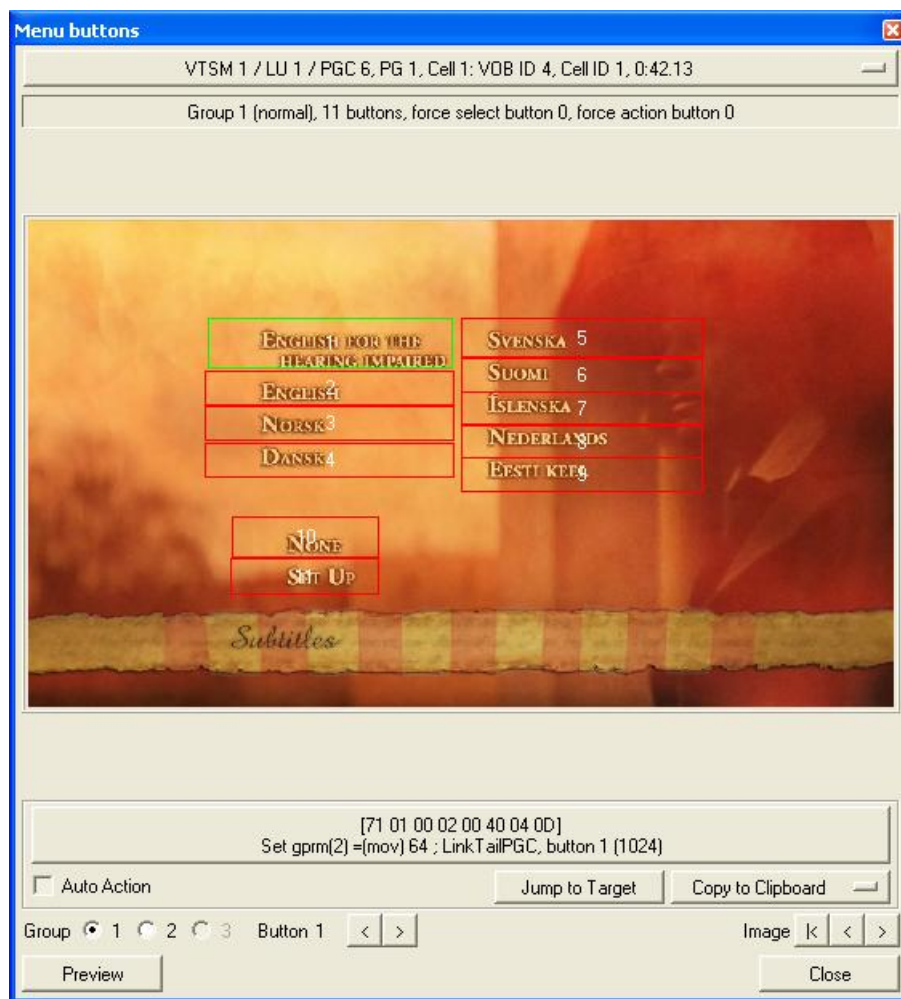
Here's the initial situation:



(Figure 2)

I'm going to ignore the audio streams in this example and focus on the subtitles. The theory and practicality of the matter is the same.

Here's what the subtitle menu looks like (you can see where the buttons go):



(Figure 3)

You'll notice there are 9 subtitles, but DVD Shrink reports 10. The 10th subtitle corresponds to pressing the "None" button (number 10), which turns on the forced stream (the 3rd English) – these are the subtitles that, for example, show when foreign languages are spoken in an English language movie (e.g. Kill Bill, The Last Samurai).

Let's decide to keep subtitles in Danish, Dutch and the 3rd English (forced).

## Full disk backup

Now, note what happens when a menu button is pressed.

In this example, if you press menu button 1 (English for the hearing impaired), a register (this a fancy name for one of your DVD player's internal memory locations) – in this case register 2 – is set to 64 (see under the menu where it says Set gprm(2) = (mov) 64?), which turns the stream on. If button 2 is pressed, the register is set to 65, etc. all the way up to 73 for the "None" button (stream 9).

It's important we remember this "mapping" so I'll put it in a little table:

Code:

Language	Stream Number	Register Value
1. English 1	0	64
2. English 2	1	65
3. Norwegian	2	66
4. Danish	3	67
5. Swedish	4	68
6. Finnish (Suomi)	5	69
7. Icelandic	6	70
8. Dutch	7	71
9. Estonian	8	72
10. English 3 (forced)	9	73

(Table 1)

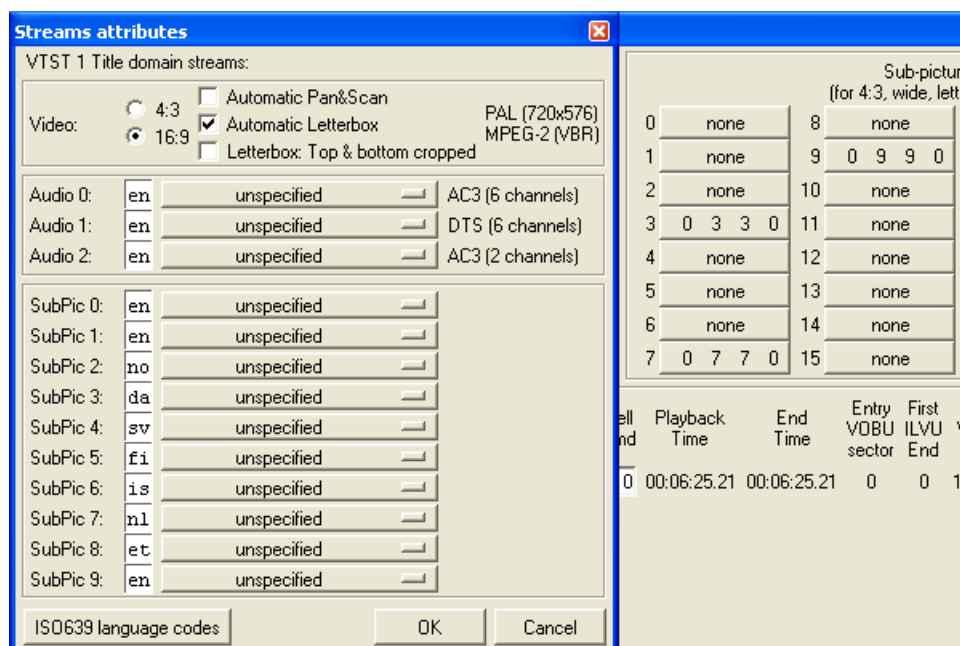
Keen eyes will figure out that to turn a subtitle stream on you add 64 to the stream number. Also note that the official stream number is one less than the stream ID. This is because, like all things computer, they start with a 0.

## Results

### Logical Remapping Off

Here's what we get:

I'll show you the output in PgcEdit, which is easy to see and explain:



(Figure 4)

You can see on the right hand side of the output that the only streams present are 3, 7 and 9 (what we selected!). Further, they stay as 3, 7, and 9. Looking at the left hand side, you can see streams 3, 7 and 9 correspond to Danish, Dutch and English – clearly what we wanted.

Now, here's the rub. When you press Danish in the menu, because it is still mapped to 3, that's what you will get!!! Ditto for Dutch. If you pick None on the menu, you will still get the forced English stream, as it is still mapped to 9. Pressing the other buttons will get the default stream (depending on whether it is set in the IFO) and, in this case, that's the 3rd English stream. In other cases, selecting a non-present stream will get the stream last set in the IFOs before the title actually starts playing.

In this situation, the best thing to do is to blank out the menu buttons that no longer have streams. I use [PgcEdit](#) for this.

The remote will simply cycle through the kept streams. Where they are in the order is irrelevant – it will go from Danish --> Dutch --> 3rd English --> Danish again.

Thus, with logical remapping off, everything is A-OK. There's no problem. **And that's where the story should end.**

However, there will always be people saying, why is this logical remapping thingy there? What happens if I turn it on? What harm does it do? Of course, the answer should be: **It works perfectly with it unchecked – leave it unchecked.** But for completeness's sake, here goes:

### Logical Remapping On

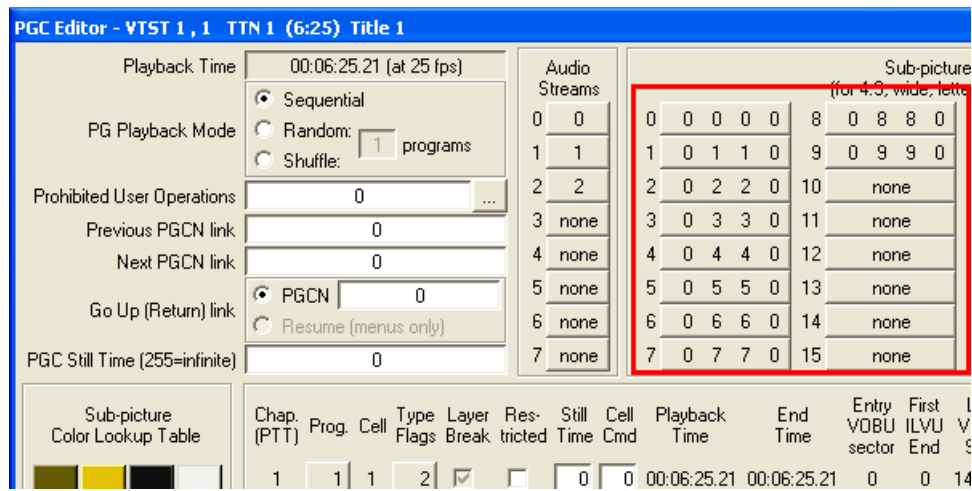
Strange as it seems, it matters what your default languages are in DVD Shrink. I'll show you why.

### Preferred language not in stream list

First, let us assume our language selection in DVD Shrink preferences (Edit --> Preferences --> Stream selections) is not English (or anything else in the list of subtitles). Don't skim this bit just because you are in an English speaking country, OK? All that matters here is that the language selection isn't the same as a language in the list. So, let's assume, just for fun, that you are Corsican.

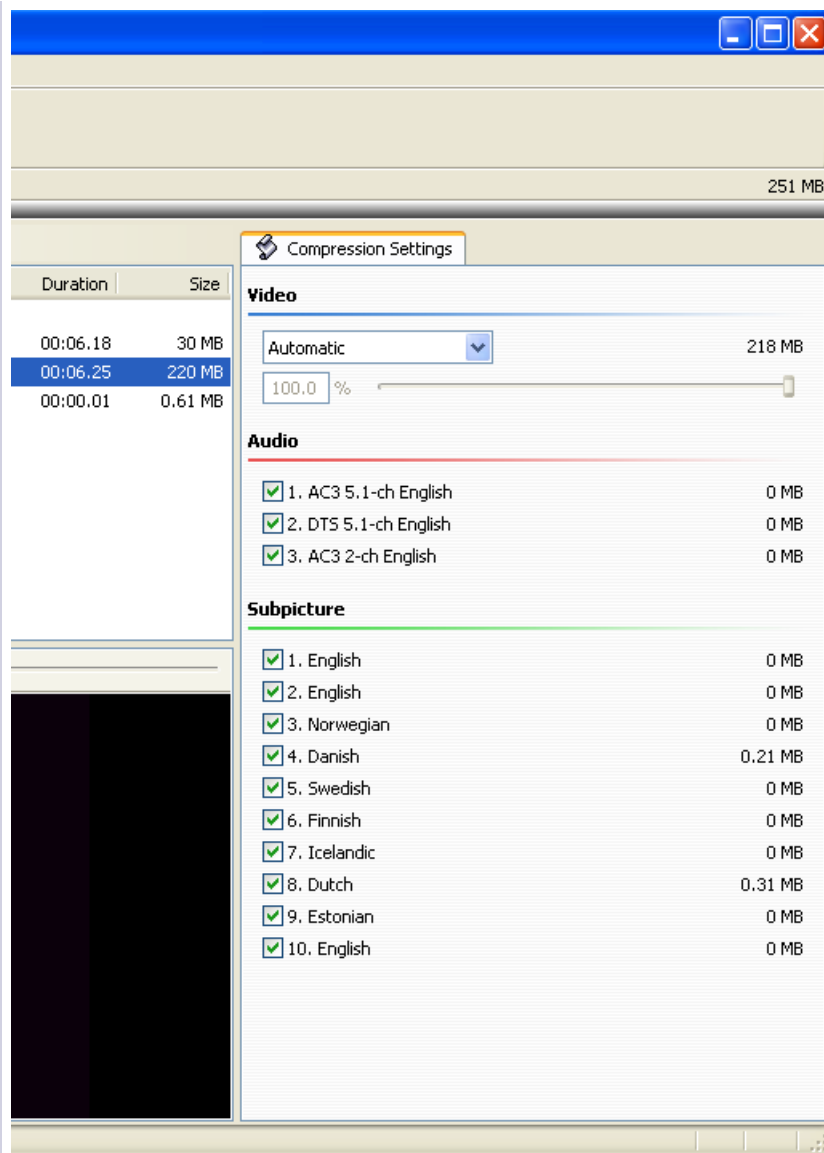
In this case, when you launch DVD Shrink, all the streams will be checked, because there's no Corsican in the subtitles. We uncheck all but Danish, Dutch and the last English. Click backup and away we go.

Here's the results:



(Figure 5)

Well, what do you know? DVD Shrink has kept all the streams as "placeholders", even though logical remapping was on. To prove what streams are actually there, let's look at DVD Shrink.



(Figure 6)

As you can see, the only subpicture numbers present in quantity are 4, 8 (and in fact 10 is there, too, because in this very short DVD that I constructed, it had almost 0MB to begin with – you can check it out in figure 2 above). The rest are zeroed out.

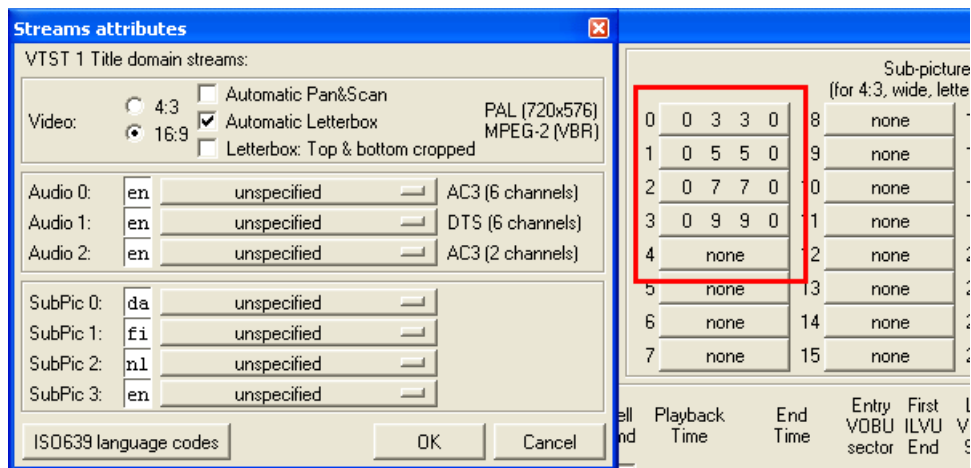
Here, there has effectively been **no remapping of the enabled streams, despite the option being ticked!**

In this case, there is no harm done by having “logical remapping” ticked. The streams are there as 0 bytes and the ones selected are in the right place. If you press a stream in the menu that isn’t there, no big deal. You get the right stream, but nothing will show because it has been stripped out. Importantly, if you push a menu button for a stream which is there, you’ll get what you ask for. However, you’ll be pressing that remote a few more times to get what you want. You will cycle through every stream, most of which have been stripped.

### What happens if your preferred language is one of the languages in the list?

In this case, assuming you decided not to keep that language, DVD Shrink keeps that stream (or streams if there are more than one of them) as a placeholder only – the stream is stripped (0 bytes) but is kept as a placeholder.

I have used Finnish as my default stream (although I have decided not to keep it - remember we're keeping Danish, Dutch and English 3 only). The streams are remapped, though, as you can see.



(Figure 7)

Let's get this straight now:

Code:

Language	ID	Stream number
Danish	3	0
Finnish	5	1 (empty stream - all content has been stripped)
Dutch	7	2
3rd English	9	3

(Table 2)

Now, DVD Shrink is a very smart program. It can go through the various commands in the program chains of the DVD and remap those commands. If logical remapping is on, what the program does is go through the DVD's commands and changes the commands that set the subtitles (and audio streams if you are stripping them) to those that are present.

To see what I mean, let's examine some of the code.

The following code comes from the **original disk**:

Code:

```

1 (SetSTN) Set Audio stream = 0 ; Set Sub-picture stream = 9, on      3rd Eng
2 if ( gprm(3) == 1) then { (SetSTN) Set Sub-picture stream = 1, on }
3 if ( gprm(3) == 2) then { (SetSTN) Set Sub-picture stream = 2, on }
4 if ( gprm(3) == 3) then { (SetSTN) Set Sub-picture stream = 3, on }  Danish
5 if ( gprm(3) == 4) then { (SetSTN) Set Sub-picture stream = 4, on }
6 if ( gprm(3) == 5) then { (SetSTN) Set Sub-picture stream = 5, on }  Finnish
7 if ( gprm(3) == 6) then { (SetSTN) Set Sub-picture stream = 6, on }
8 if ( gprm(3) == 7) then { (SetSTN) Set Sub-picture stream = 7, on }  Dutch
9 if ( gprm(3) == 8) then { (SetSTN) Set Sub-picture stream = 8, on }

```

(Table 3)

What's happening here? Command 1 sets subtitle stream 9 (3rd English) by default. Commands 2 – 9 check to see if register 3 holds a different number to 9 and if so, sets the subtitle to that number. OK?

Now, let's see what the same set of commands look like in our **logical streams enabled disk**:

Code:

```
1 (SetSTN) Set Audio stream = 0 ; Set Sub-picture stream = 3, on 3rd Eng
2 if ( gprm(3) == 1) then { (SetSTN)}
3 if ( gprm(3) == 2) then { (SetSTN)}
4 if ( gprm(3) == 3) then { (SetSTN) Set Sub-picture stream = 0, on } Danish
5 if ( gprm(3) == 4) then { (SetSTN)}
6 if ( gprm(3) == 5) then { (SetSTN) Set Sub-picture stream = 1, on } Finnish (
7 if ( gprm(3) == 6) then { (SetSTN)}
8 if ( gprm(3) == 7) then { (SetSTN) Set Sub-picture stream = 2, on } Dutch
9 if ( gprm(3) == 8) then { (SetSTN)}
```

(Table 4)



Close this window



23 Jan 2005,  
10:35 PM

Link #2

## blutach

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Join Date: Oct  
2004  
Location: is  
everything!  
Posts: 24,032

 (Continued)

Something different here, that's for sure! First, command 1 now maps the default stream to 3. This is good as this is what the 3rd English stream is (see figure 7 above). Notice also lines 4, 6 and 8. They correctly map to the languages DVD Shrink has kept. Finally, notice also lines 2, 3, 5, 7 and 9. They just have SetSTN but nothing following them. In DVD-speak, this means that even if the condition being tested is true, don't change the stream. Cool.

This is all good, except for one small thing. There is no Finnish stream. It is blank. So if you press Finnish on the subtitle menu, you get no subbies. This isn't a big deal, because you took the stream out anyway. However, there will be an extra click to cycle through on the remote as it will go from Danish --> Finnish (no stream) --> Dutch --> English and then back to Danish etc.

**However, the menu buttons are not remapped.** DVD Shrink is smart but it's a tough job to remap menu buttons when they set the streams with **indirect** commands like in this example (DVD Shrink remaps the menu buttons just fine if they directly set the streams with a SetSTN, but this is not always the case). Does this present a problem? Let's see.

Remember figure 3? That showed what this menu actually did. It set register 2 (to 64 through 73, depending on what button was pressed) and looped out of the menu. Then the "post commands" are executed. Here are the post commands from the original disk's subtitle menu:

Code:

```
1      (SetSTN) Set Sub-picture stream = gprm(2)
```

What does this command mean? It simply says to set the subtitle number corresponding to the button pressed (refer to figure 3 and table 1 - if, for example, button 5 (Swedish) was pressed, register 2 was set to 68). All this command does is set the subtitle stream according to what's in register 2. (This is what I mean by indirect command setting).

Now, **in the remapped disk, the command is exactly the same.** There's no cute cycling through numbers as in tables 3 and 4 above, nor is there any remapping them either to do nothing or to change the actual stream number.

So what happens? If I press button 1 (English for Hearing Impaired), I get subtitle stream 0 - which is, rather unfortunately, Danish. Hmm. Button 2 (normal English) gets me the 2nd stream (the empty Finnish), Button 3 (Norwegian) gets me Dutch and worst of all, Button 4 (Danish) gets me the 3rd English stream. Buttons 5 - 10 would most likely go to the default 3rd English stream. ***This isn't what we wanted and can be a real problem.***

Of course, you can cycle through these with the remote and get the right stream, but **this is a major source of frustration for "stream strippers"**. You could keep all the subbies in, of course, or as above, set your native language to Corsican (or whatever) but what happens when you really want to strip a stream - like a big fat DTS audio stream or a useless Director's Commentary? You're back to "Remote Control Button Pressing" and wondering what the heck's happening, and so it's off to the forums to see if anyone's got the foggiest idea of what's going on.

The other alternative is to reprogram the menu commands, but you really gotta know what you're doing here. Remember, other parts of the disk have been adjusted by DVD Shrink and work just fine (see Table 4 above).

**Oh yes, of course you could try unticking the bl&\*dy box, couldn't you??? Now *that* would solve your problems!!!**

Or, if you don't care about menus, you could work in reauthor mode, and that's what we come to next. As you'll see, it's a whole lot more straightforward.

## Reauthored Disks

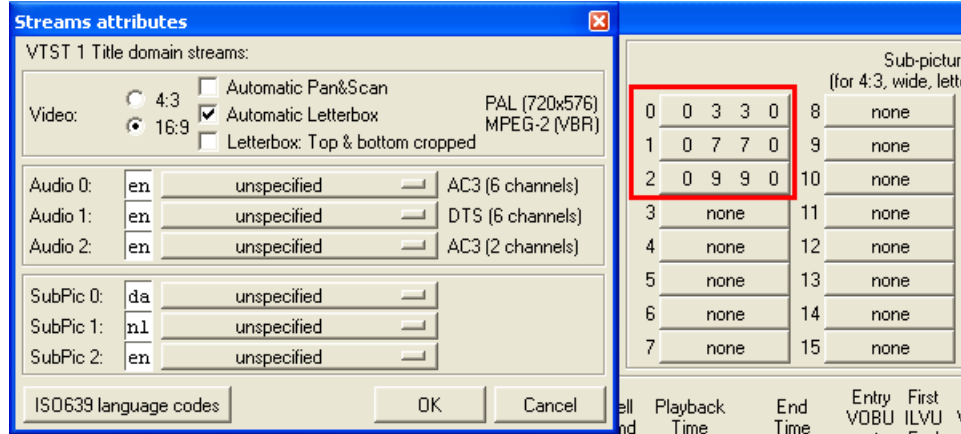
In reauthor mode, there are no menus. Nada. So the problems mentioned above are totally irrelevant. You use the remote anyway to get the stream you want.

One thing we do need to examine is the "forced stream" aspects - remember, if nothing else is set, we always want that on because it contains (amongst other things) translations into your language of foreign languages spoken during the movie. But DVD Shrink has a neat way of doing this. You simply right click on the title that you've dragged in to the main screen --> Set default streams --> Set

subpicture stream and in this case you would select 10. English. Clicking OK tells DVD Shrink to write a special command (you guessed it - a SetSTN) just before the title is executed.

Tests with both logical remapping enabled and disabled show **exactly the same output**. And it doesn't matter what your default language is either. This is exactly what is expected. In reauthor mode, DVD Shrink writes a new set of very, very simple command files (IFOs) that essentially say, set the subtitle (and audio) stream you requested, play the title, then exit.

The stream output (for both remapping on and off) looks like this:



(Figure 8)

Essentially, the streams have been remapped, irrespective of whether the box is checked or not. This is because, in reauthor mode, all that matters is using the remote to cycle through the streams.

## Conclusion

1. In full disk mode, due to menus being kept, you should leave this option **unchecked**.
2. In reauthor mode, it doesn't matter. DVD Shrink produces the same DVD structure, irrespective of whether this option is checked or not. May as well leave it **unchecked**.

As usual, please direct questions to the forum, **NOT** this FAQ.

Regards

Les

**Essential progs** - [[PgcEdit](#)] [[VobBlanker](#)] [[MenuShrink](#)] [[IfoEdit](#)] [[Muxman](#)] [[DVD Remake Pro](#)] [[DVD Rebuilder](#)] [[BeSweet](#)] [[Media Player Classic](#)] [[DVDSuEdit](#)] [[ImgBurn](#)]

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*Explore the sites and the programs - there's a gold mine of information in them*

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