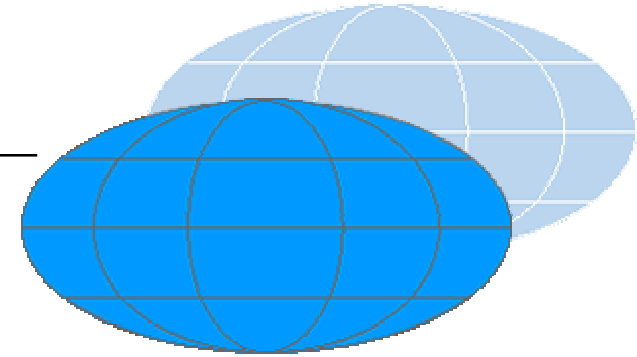


**Virtual Global University**

School of Business Informatics



Prof. Dr. Karl Kurbel

Dipl.-Kfm. Alexei Pakhomov

# **Production and Delivery of Multimedia Courses for Internet Based Virtual Education**

**WORKSHOP**  
**„Production and Delivery of Multimedia Courses for**  
**Internet Based Virtual Education“**

**Presented on:**

**World Congress „NETWORKED LEARNING**  
**IN A GLOBAL ENVIRONMENT“**

**Challenges and Solutions for Virtual Education**

**Technical University of Berlin, Germany**  
**May 1, 2002**

**Prof. Dr. Karl Kurbel, Dipl.Kfm. Alexei Pakhomov**

[www.vg-u.de](http://www.vg-u.de), [pakhomov@euv-frankfurt-o.de](mailto:pakhomov@euv-frankfurt-o.de)

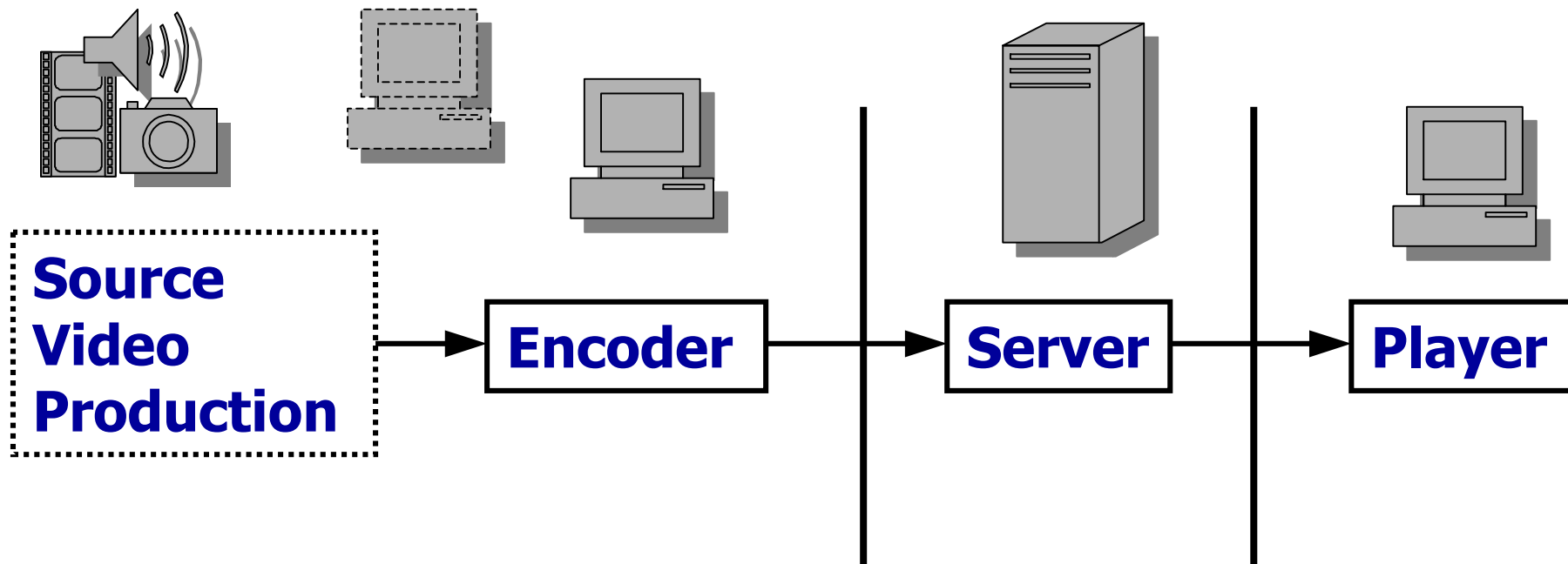
## Production Chain of Streamable Video Content

Recording

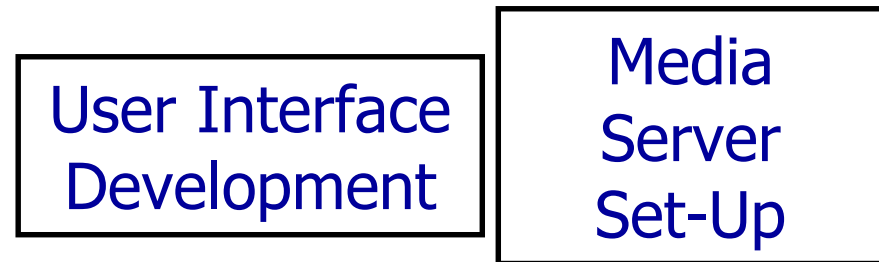
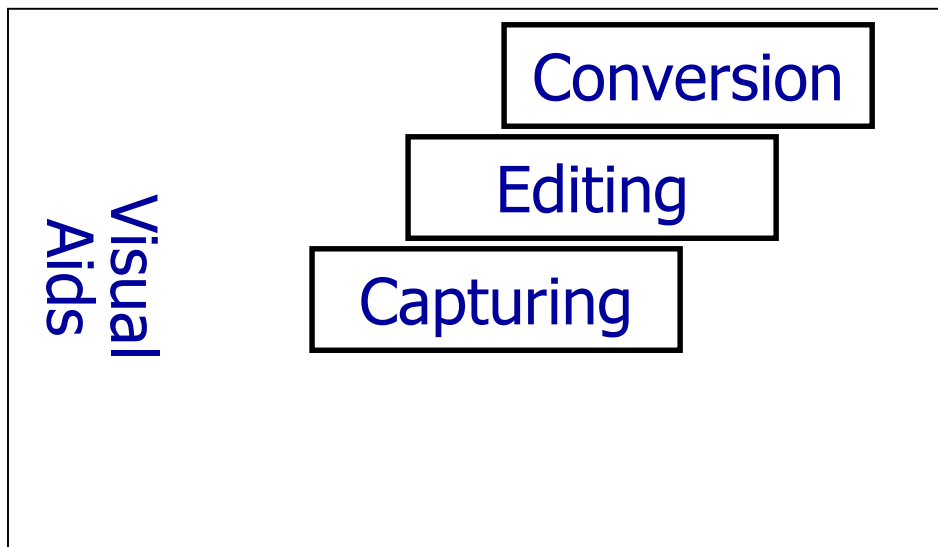
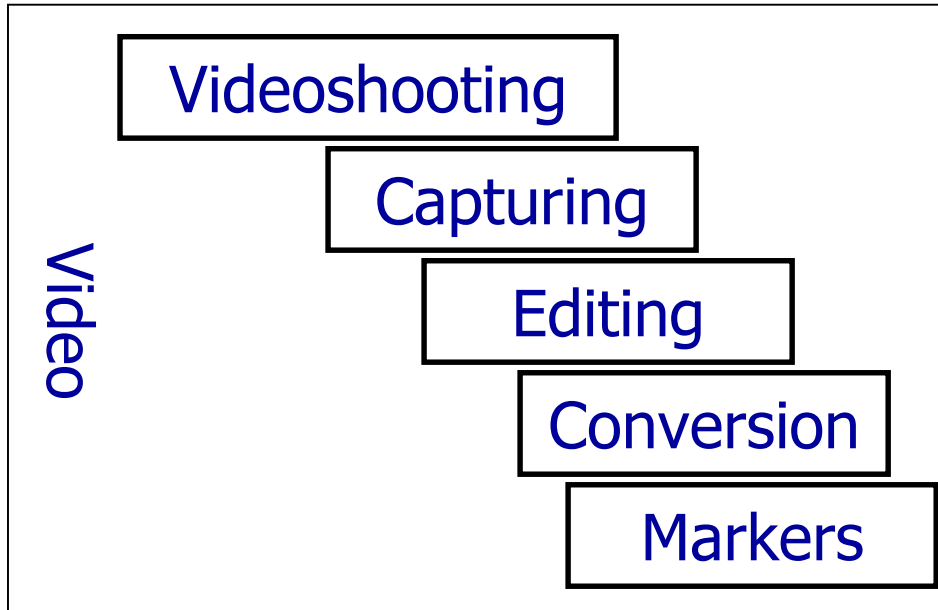
Conversion

Distribution

Consumption

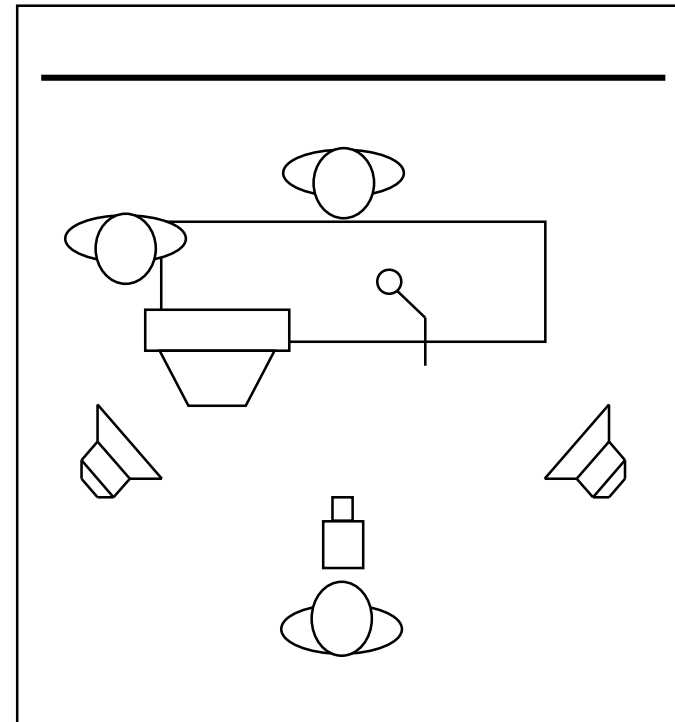


## Basic Production Stages for Video based Courses

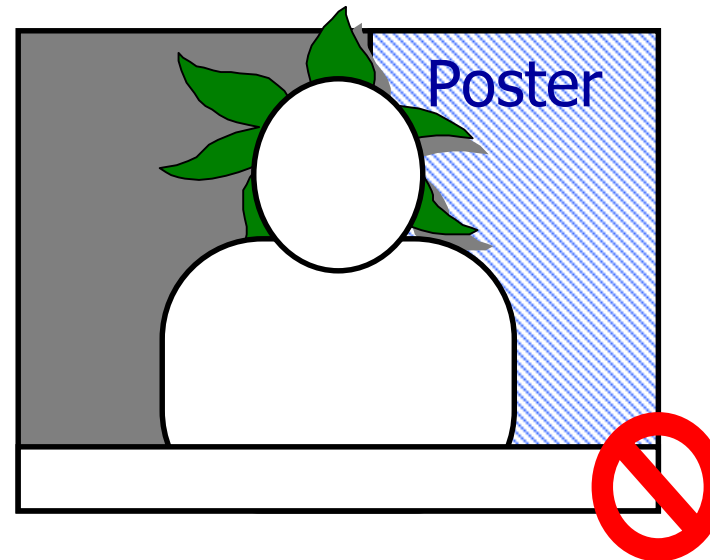
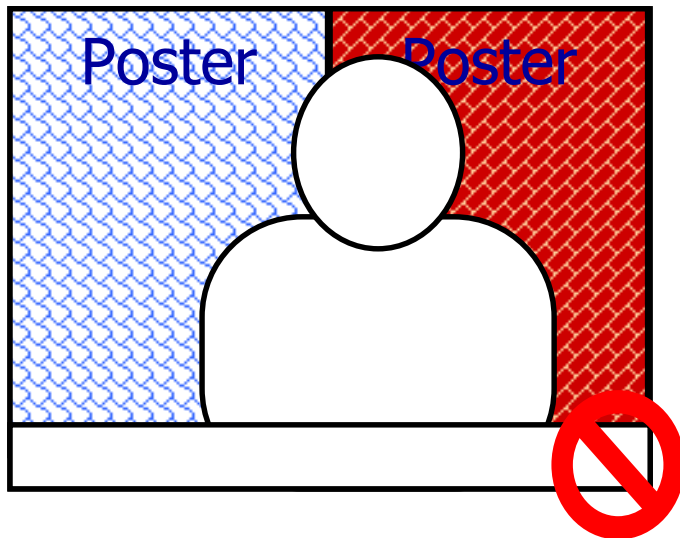
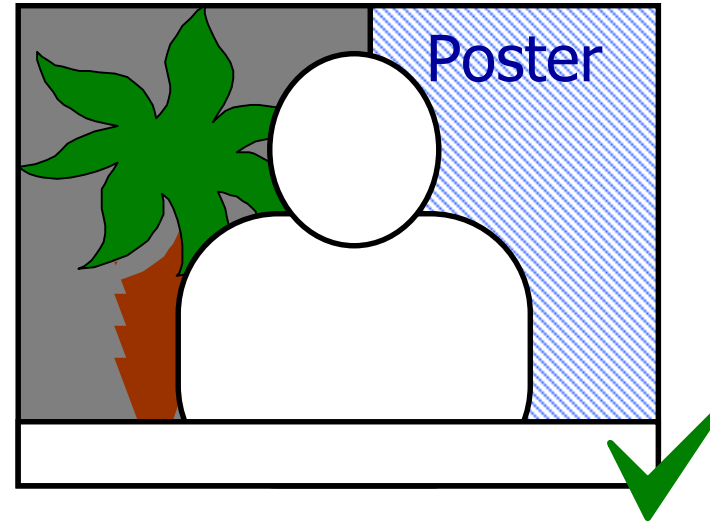
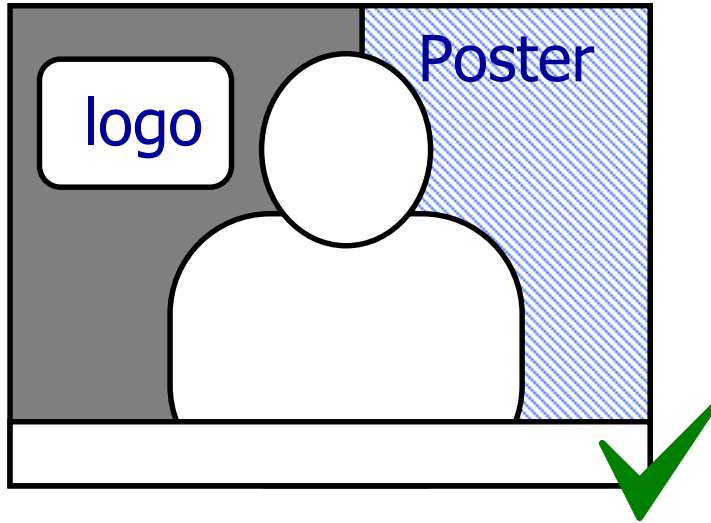


## Videosession requisites

- **Studio**
- **Instructor**
- **Background and Decorations**
- **Microphone**
- **Lights**
- **Camera & Cameraman**
- **PC & „Clicking Assistant“**



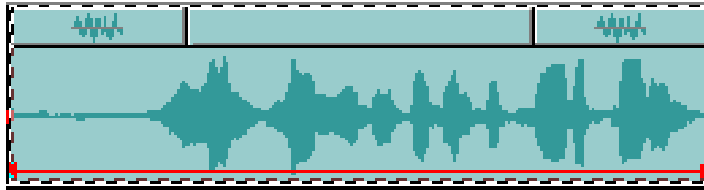
## Background & Decorations



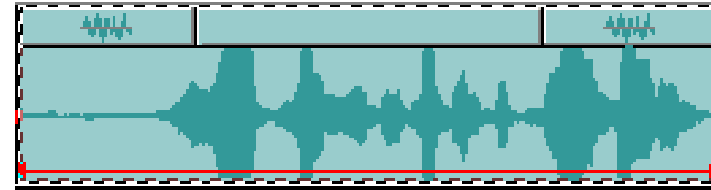
## Microphone

- **External professional microphone**
- **Sufficient cable length**
- **Appropriate distance to instructor**

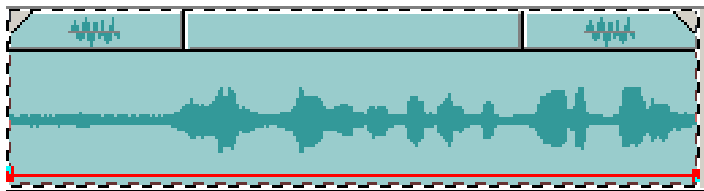
## Microphone



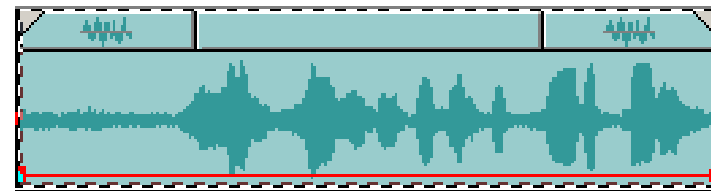
**Properly recorded  
Sound Track**



**Sound Track with  
Signal Pinning**



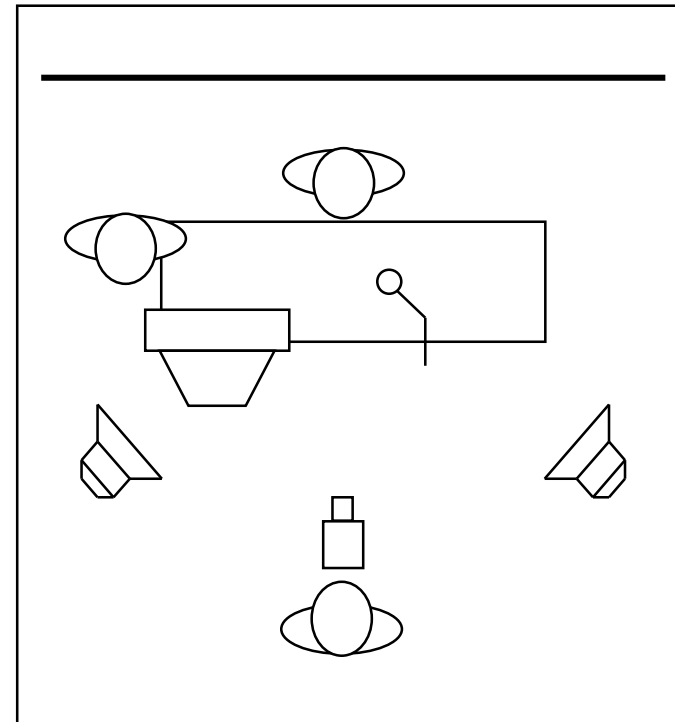
**Sound Track with  
low Signal Strength**



**Sound Track after  
Signal Multiplication**

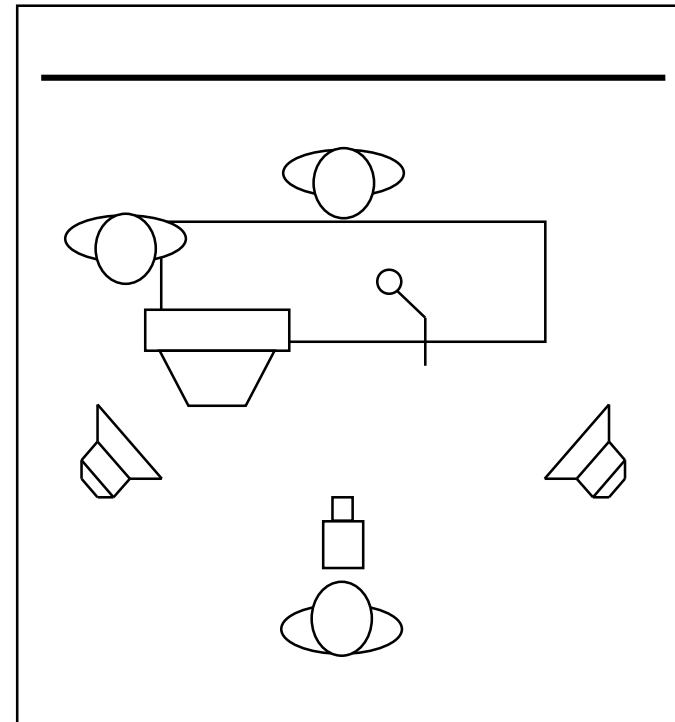
## Videosession requisites

- **Studio**
- **Instructor**
- **Background and Decorations**
- **Microphone**
- **Lights**
- **Camera & Cameraman**
- **PC & „Clicking Assistant“**



## Videosession requisites

- **Studio**
- **Instructor**
- **Background and Decorations**
- **Microphone**
- **Lights**
- **Camera & Cameraman**
- **PC & „Clicking Assistant“**



# Capturing

## **CAPTURING –**

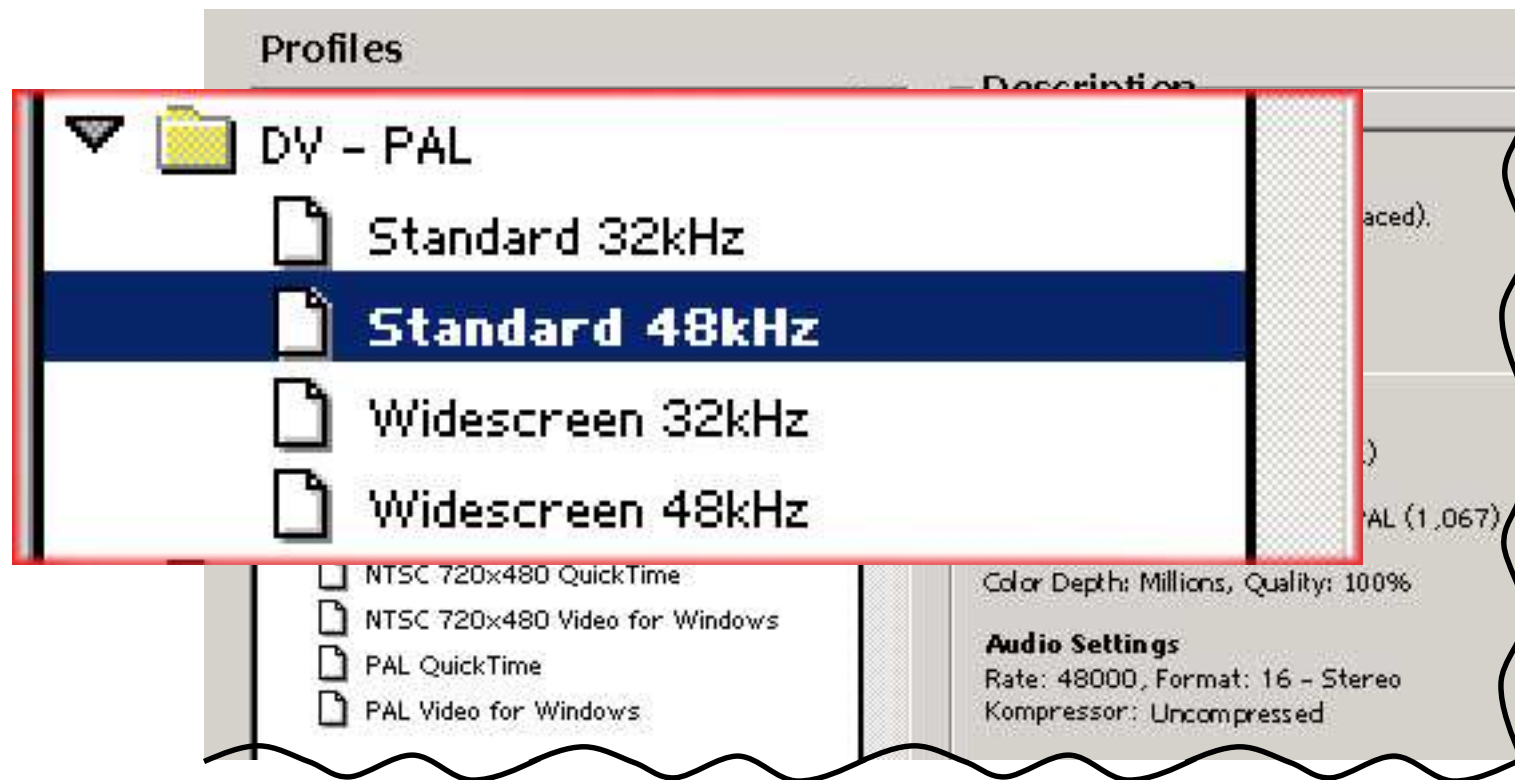
**Acquisition of Image and/or Sound Data**

## **Video (Movie) CAPTURING –**

**Transfer of Video Data to Hard Disk Drive**

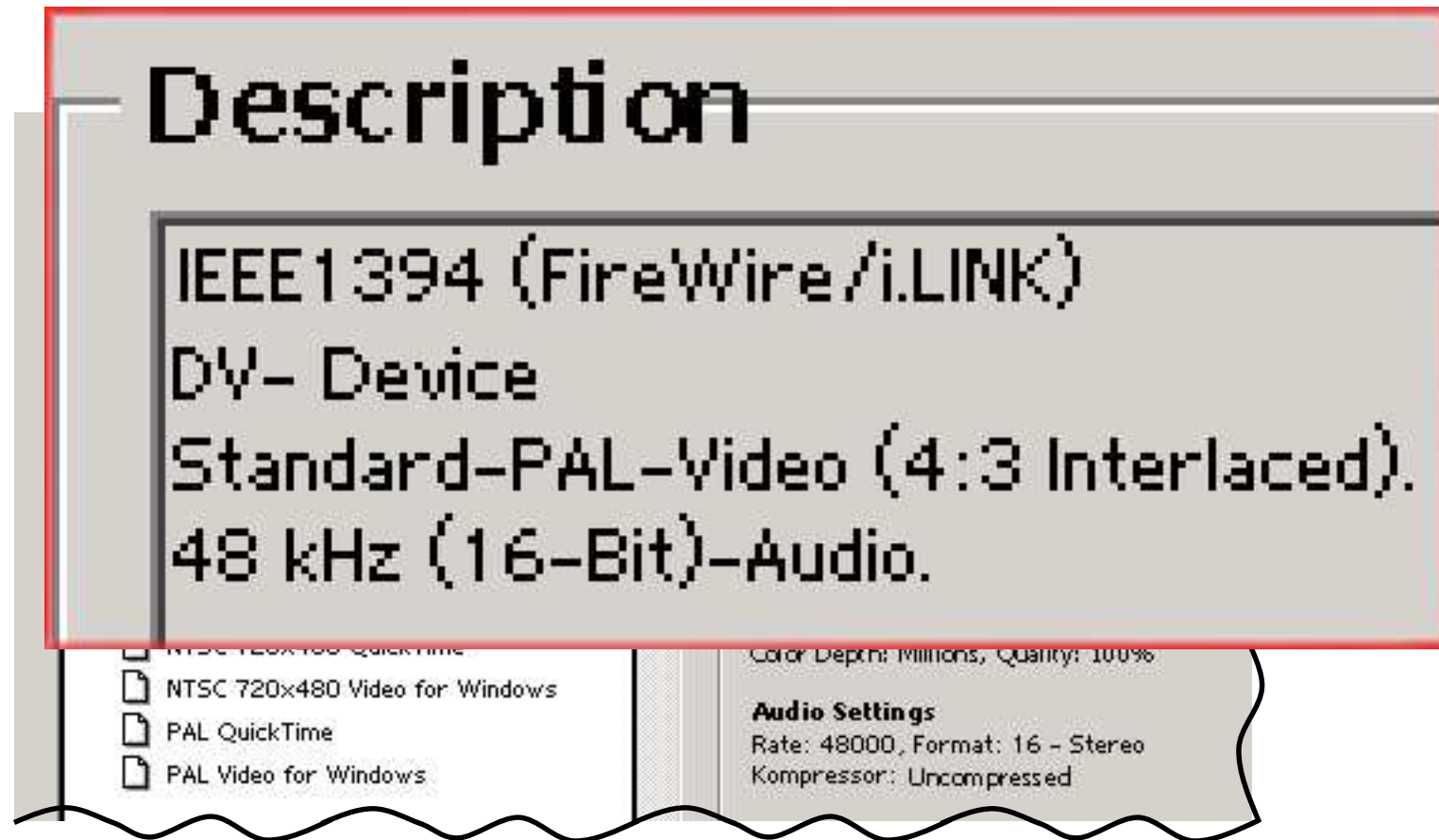
# Capturing

## Starting new Project in Adobe Premiere 6.0



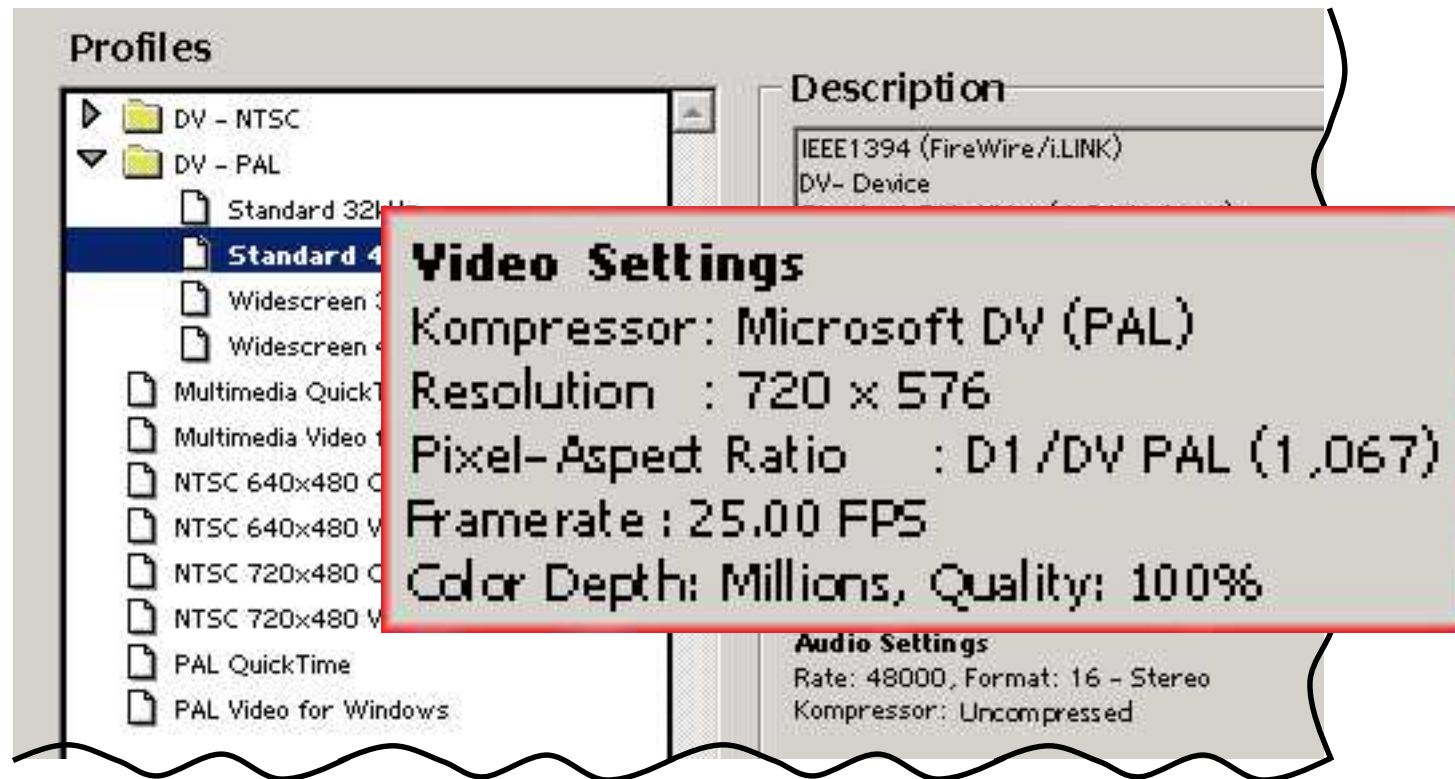
## Capturing

### Starting new Project in Adobe Premiere 6.0

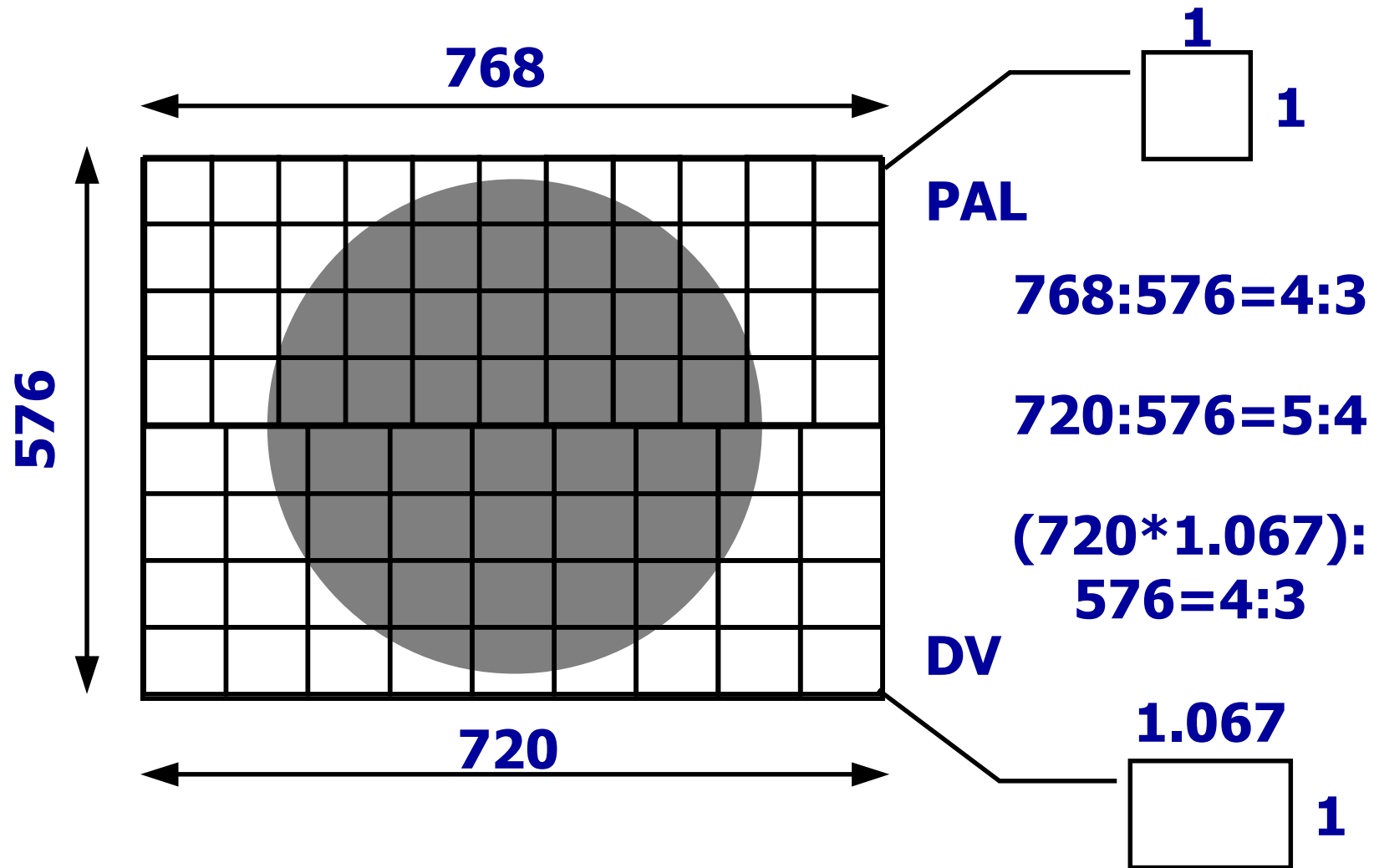


# Capturing

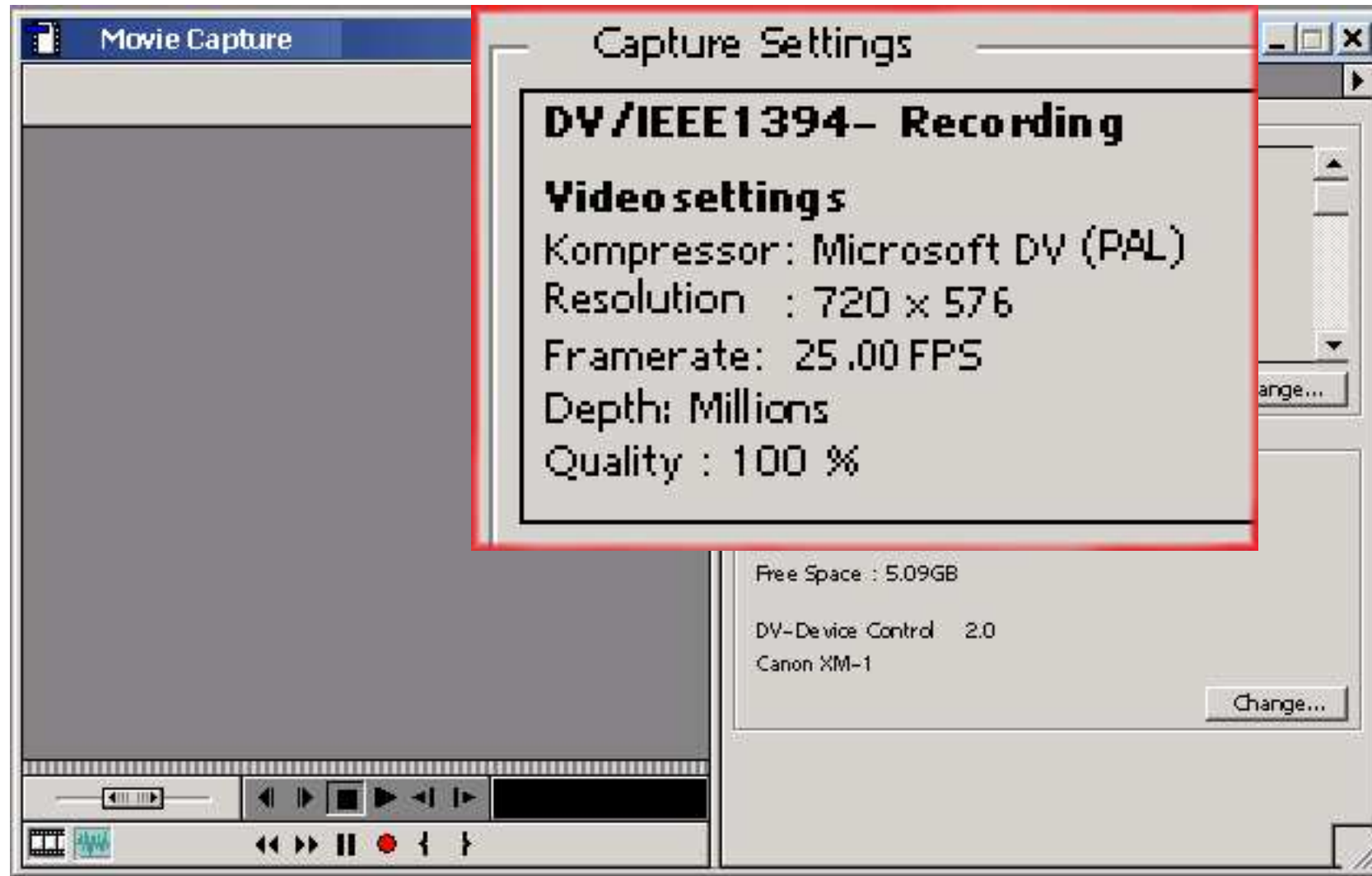
## Starting new Project in Adobe Premiere 6.0



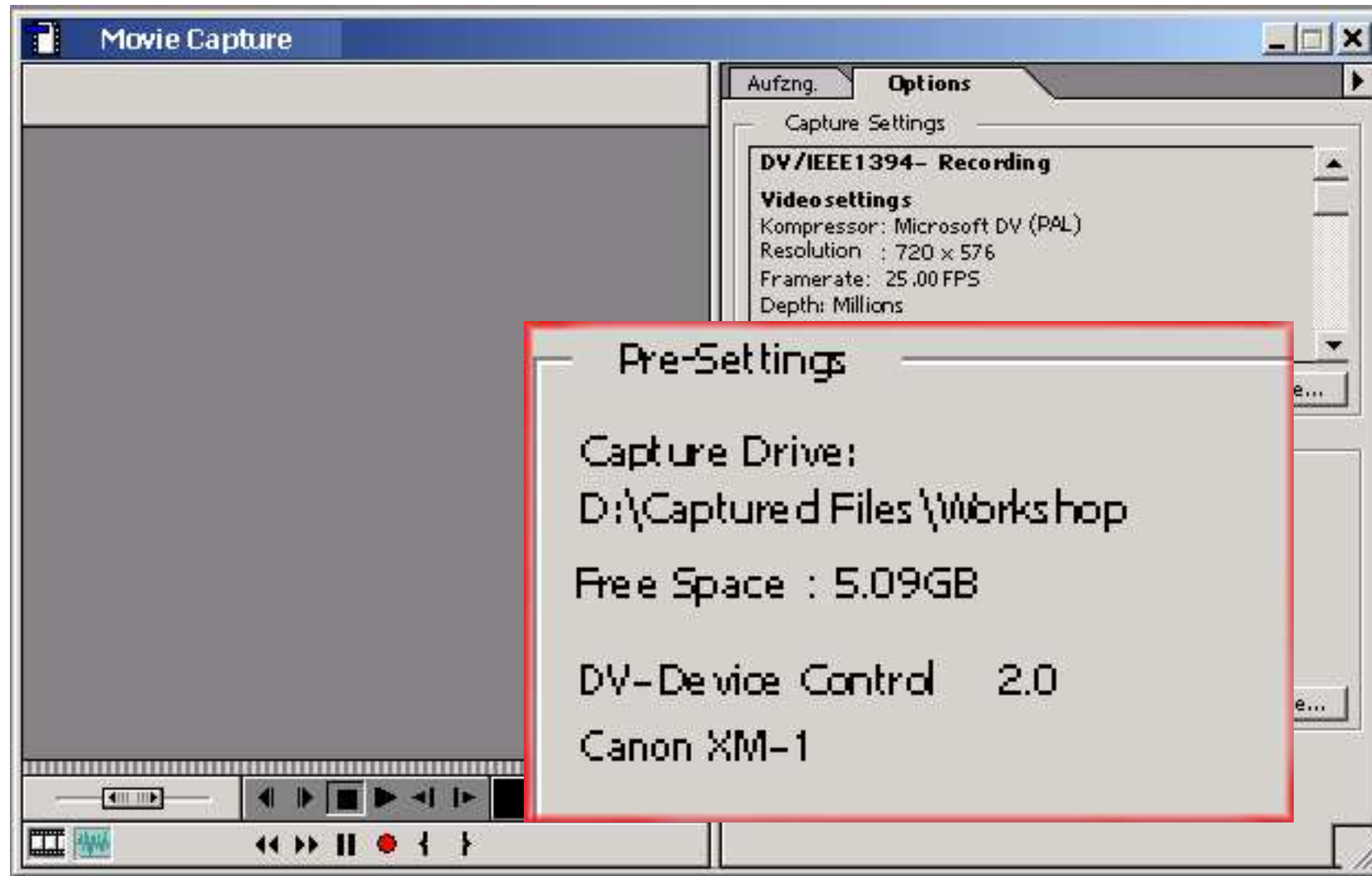
## PAL & DV Resolution



# Capturing



# Capturing



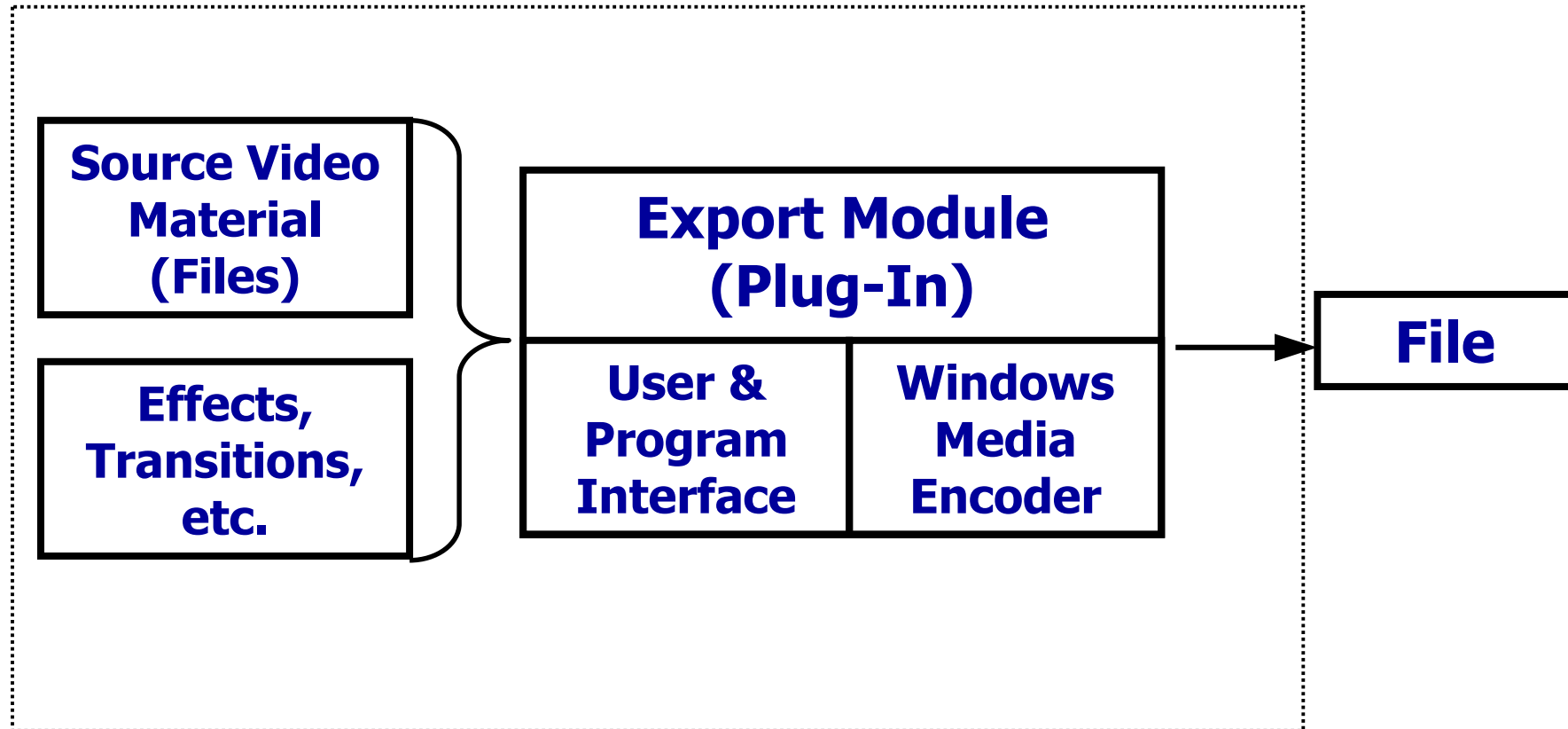
## **Video Editing**

- **Mandatory Objective -  
joining of separate clip parts to a single  
whole**
- **Optional Objectives –  
“cutting off” eventual errors, elimination of  
sound and/or video defects, etc.**

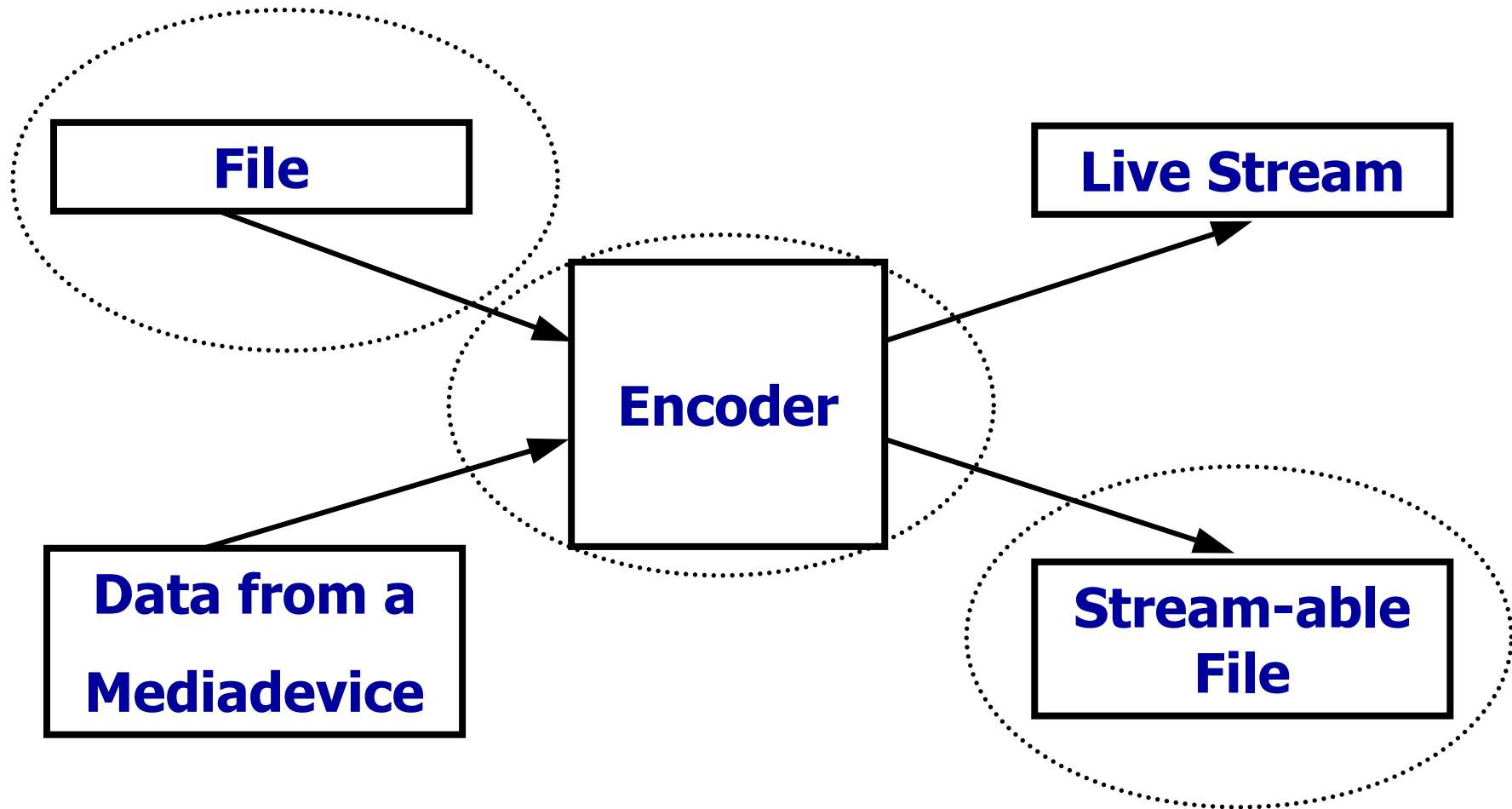
## **Conversion into WMV-Format**

- **Windows Media Plug-In for Adobe Premiere**
- **Windows Media Encoder**

## Video Conversion using a Plug-In



## Video Conversion using WME



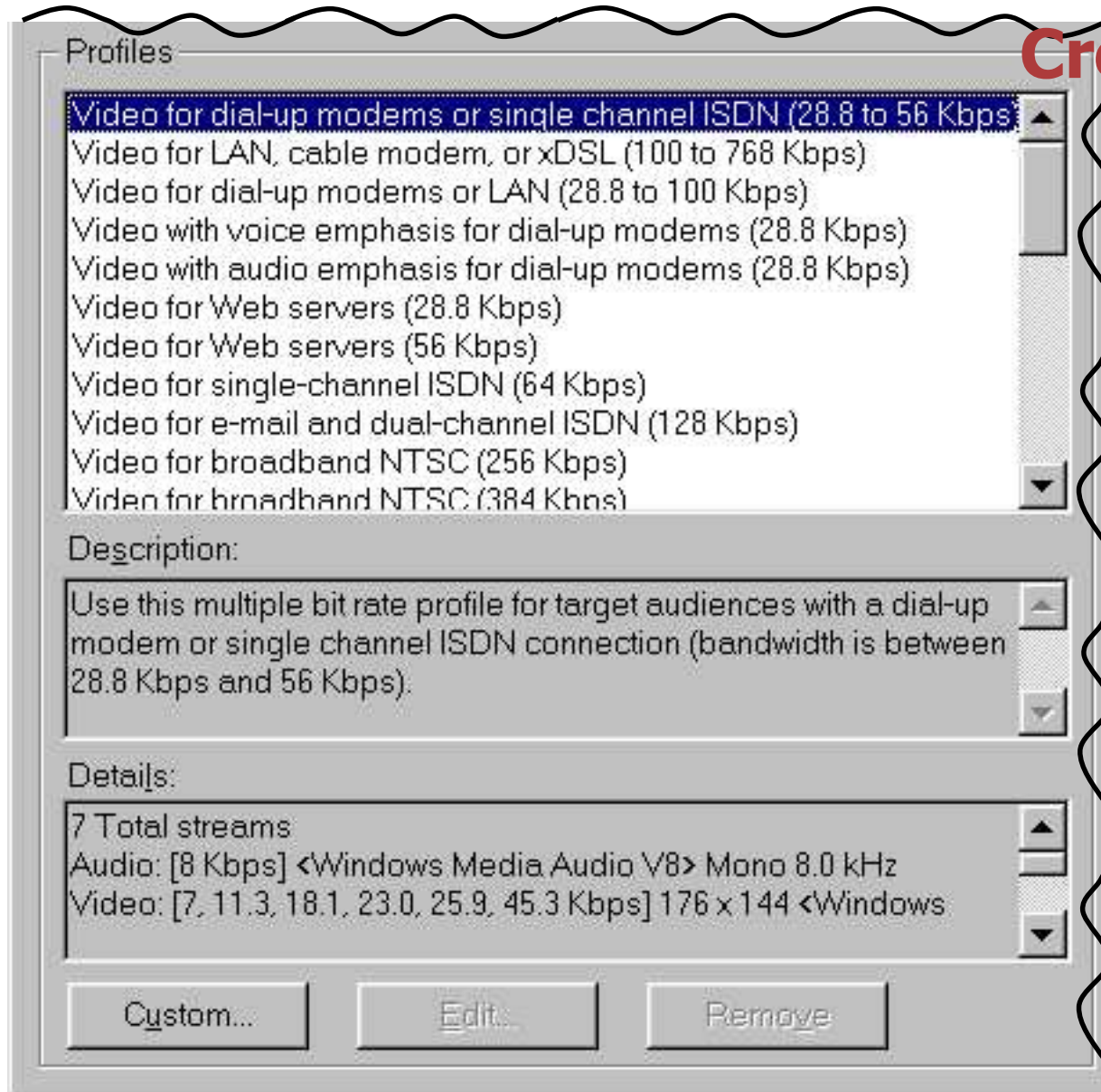
# **Video Conversion using a Plug-In**

## **Windows Media Plug-In for Adobe Premiere**

## Creating a Profile

The image shows a classic Windows-style dialog box titled 'Properties'. It is divided into two main sections: 'Properties' and 'Destination'. The 'Properties' section contains five text input fields, each with a label and a small icon: 'Title:' (with a document icon), 'Author:' (with a person icon), 'Copyright:' (with a copyright symbol icon), 'Description:' (with a speech bubble icon), and 'Rating:' (with a star icon). The 'Destination' section contains a single text input field followed by a small button with three dots. At the bottom of the dialog, there are four buttons: 'OK', 'Cancel', 'Help', and 'About'. The entire dialog box is enclosed in a grey border with a wavy, hand-drawn line on the left side.

## Creating a Profile



# Creating a Profile

**General Information**  
Specify general information for this profile. The source types you select determine the type of encoding session that can use this profile.

Name of profile:


Source types:  Audio  
 Video  
 Script

Output:  Compressed  
 Uncompressed

Description:

## Creating a Profile

**New Audience** [X]

 Enter the name and maximum bit rate for the audience.

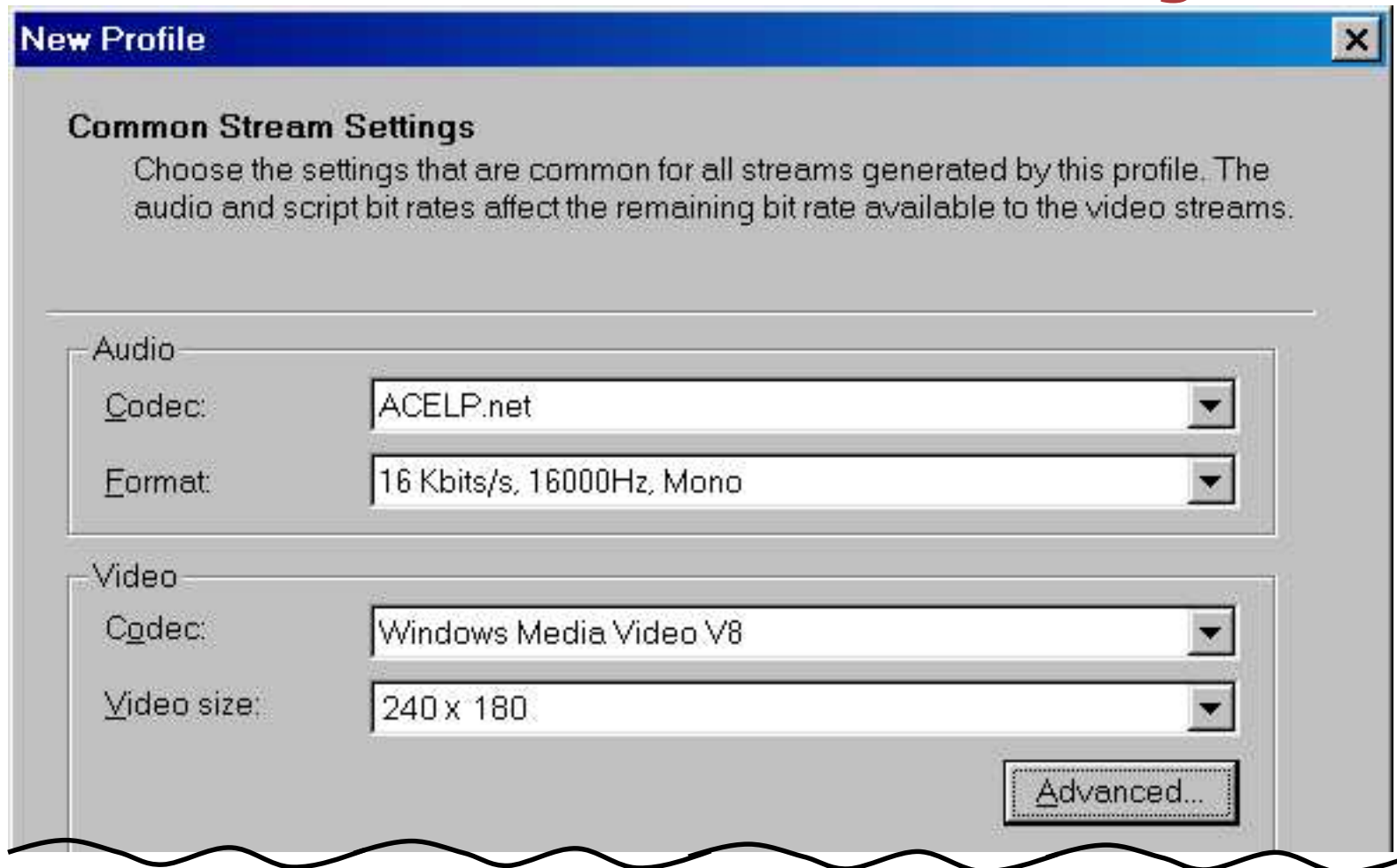
Audience name: 300K\_240x180\_12fps

Maximum bit rate: 250K bps

Note: Type K or M to specify kilobits or megabits, respectively.

OK Cancel

## Creating a Profile



**New Profile** [X]

**Common Stream Settings**  
Choose the settings that are common for all streams generated by this profile. The audio and script bit rates affect the remaining bit rate available to the video streams.

---

**Audio**

Codec: ACELP.net [v]

Format: 16 Kbits/s, 16000Hz, Mono [v]

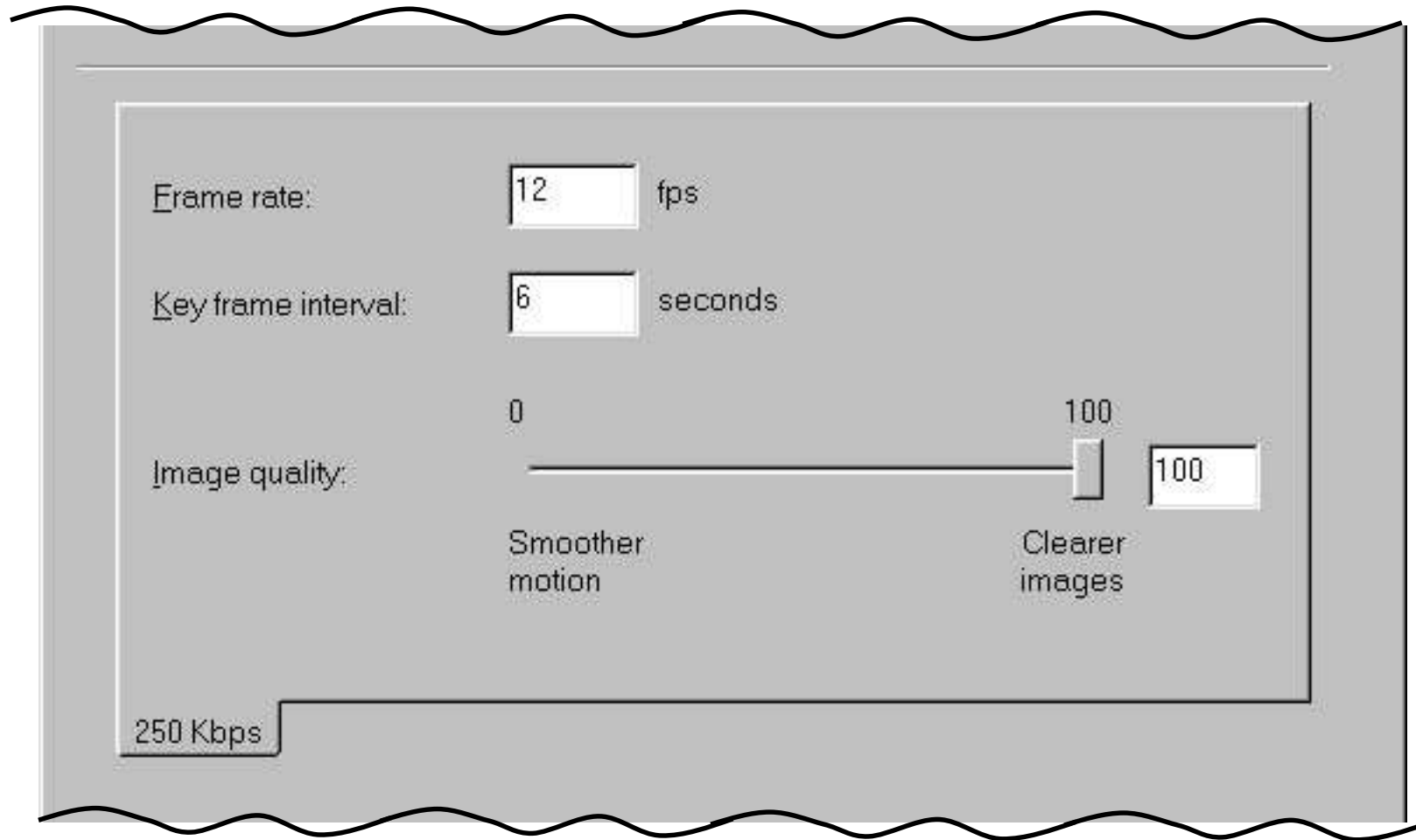
**Video**

Codec: Windows Media Video V8 [v]

Video size: 240 x 180 [v]

Advanced...

## Creating a Profile



## Creating a Profile

**Profile Settings Review**

Review the information for this profile. Click Finish to create the profile or click Back to change your settings.

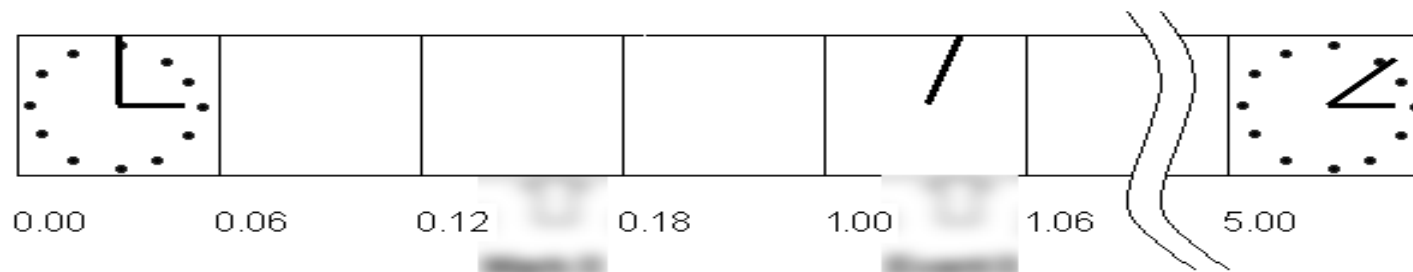
---

Profile name:	Test_Profile
Description:	
Audio bandwidth:	16 Kbps
Audio codec:	ACELP.net
Audio format:	16 Kbits/s, 16000Hz, Mono
Video bit rate:	234 Kbps
Video codec:	Windows Media Video V8
Video size:	240 x 180
Video stream 234 Kbps:	12 fps, 6 seconds per key frame, Quality: 100

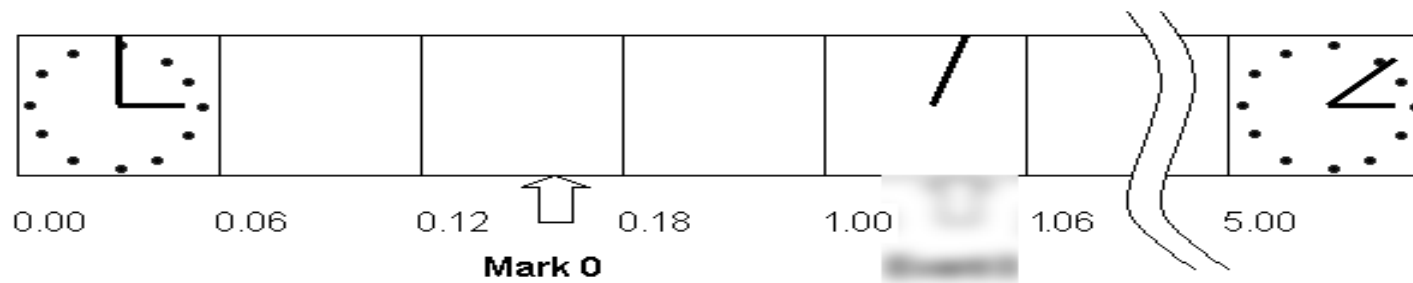
# WMV Video File



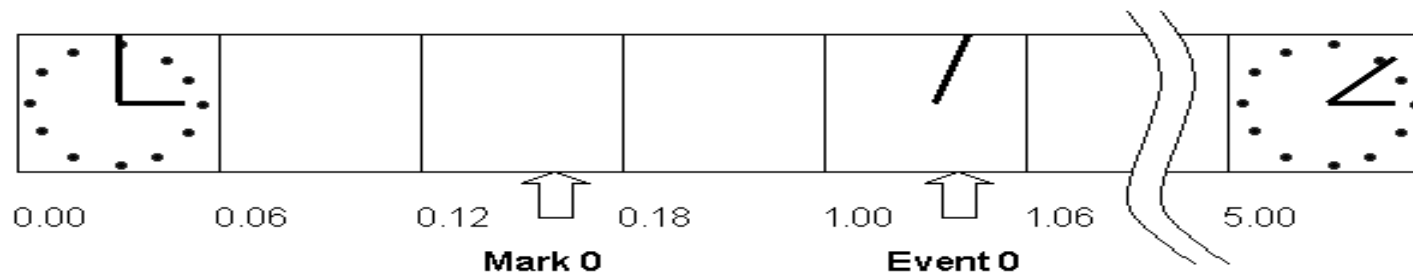
# WMV Video File



# WMV Video File



# WMV Video File



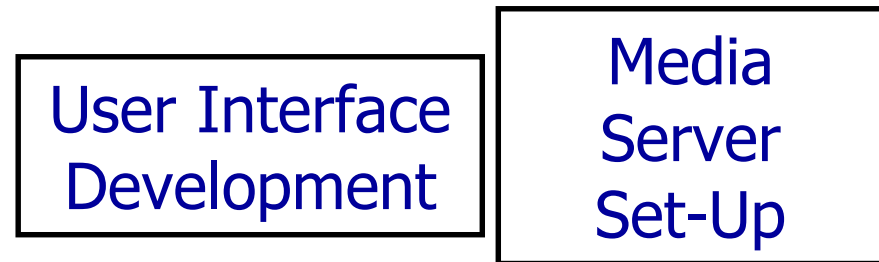
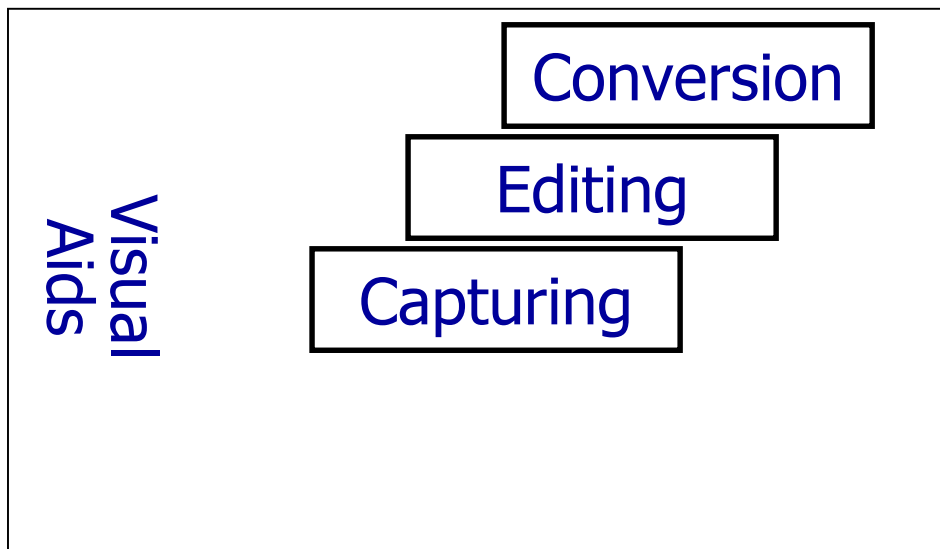
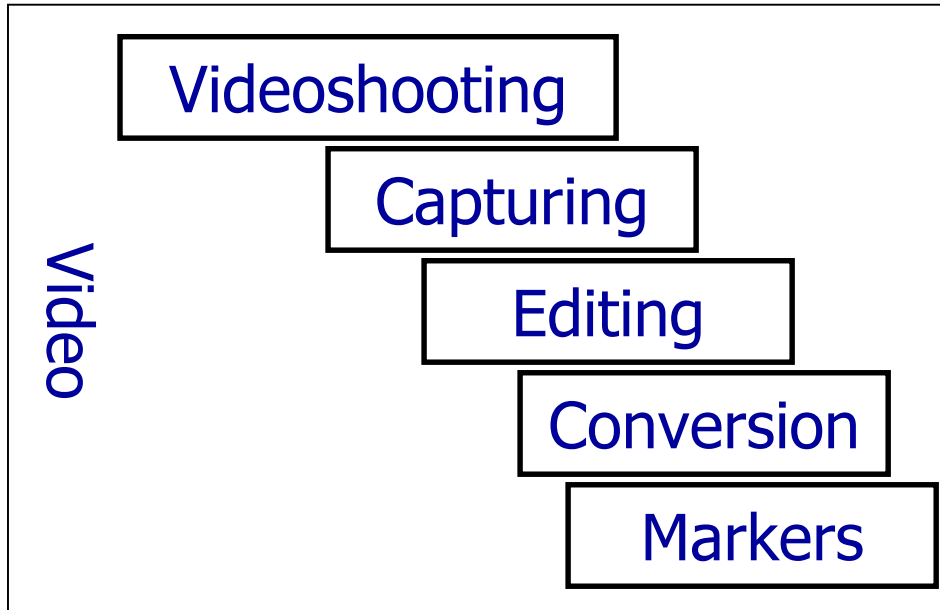
## Common Connection Speeds

<b>Description</b>	<b>Connection Speed</b>	
	<b>Max.</b>	<b>Effective</b>
<b>Modem 28K</b>	<b>28 Kbit/s</b>	<b>18 Kbit/s</b>
<b>Modem 56K</b>	<b>56 Kbit/s</b>	<b>39 Kbit/s</b>
<b>ISDN</b>	<b>64 Kbit/s</b>	<b>62 Kbit/s</b>
<b>Dual ISDN</b>	<b>128 Kbit/s</b>	<b>128 Kbit/s</b>
<b>DSL</b>	<b>700 Kbit/s</b>	<b>400 Kbit/s</b>
<b>Corporate LAN</b>	<b>10-100 Mbit/s</b>	<b>1-2 Mbit/s</b>

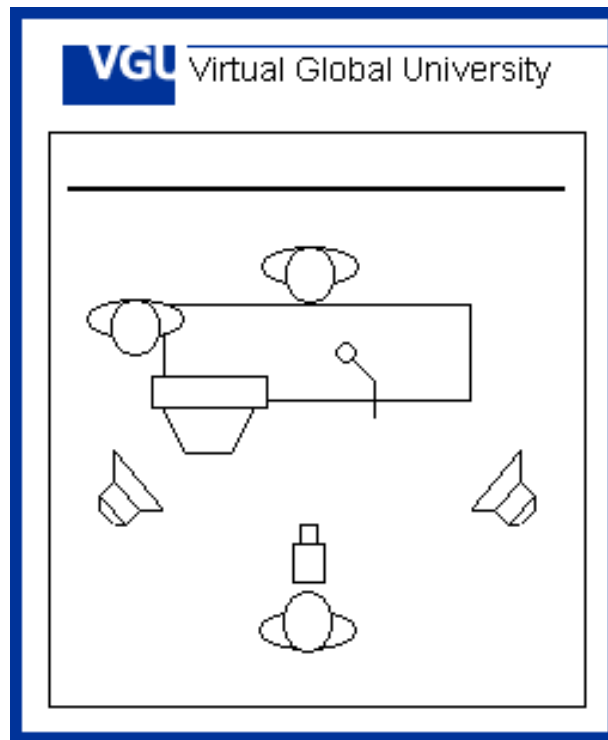
## Optimal Conversion Settings using WM Plug-In for AP

<b>Connection</b>	<b>Resolution</b>	<b>fps</b>	<b>Video</b>	<b>Audio</b>
<b>Modem 28K</b>	---	---	---	<b>16 Kbit/s</b>
<b>Modem 56K</b>	<b>176x132</b>	<b>8</b>	<b>23 Kbit/s</b>	<b>16 Kbit/s</b>
<b>ISDN</b>	<b>176x132</b>	<b>12</b>	<b>46 Kbit/s</b>	<b>16 Kbit/s</b>
<b>Dual ISDN</b>	<b>240x180</b>	<b>12</b>	<b>80 Kbit/s</b>	<b>16 Kbit/s</b>
<b>DSL</b>	<b>240x180</b>	<b>12</b>	<b>234 Kbit/s</b>	<b>16 Kbit/s</b>

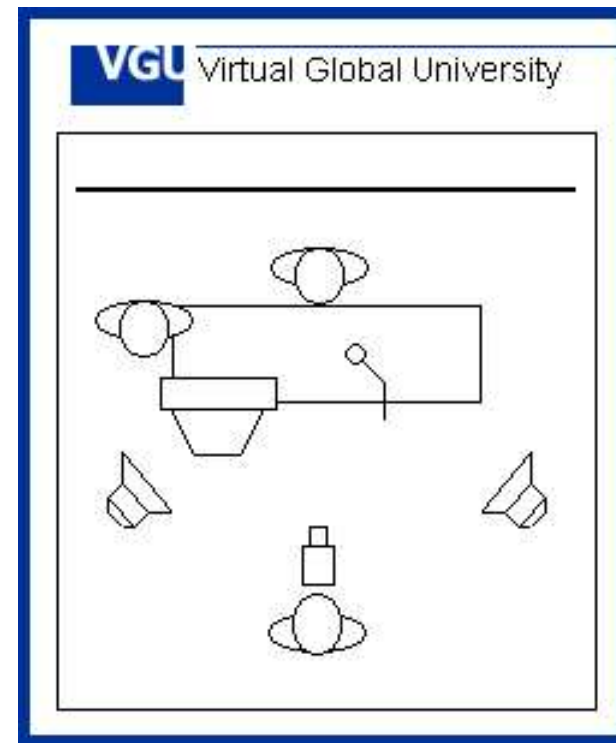
## Basic Production Stages for Video based Courses



## Loss-free Internet-compatible Image Formats

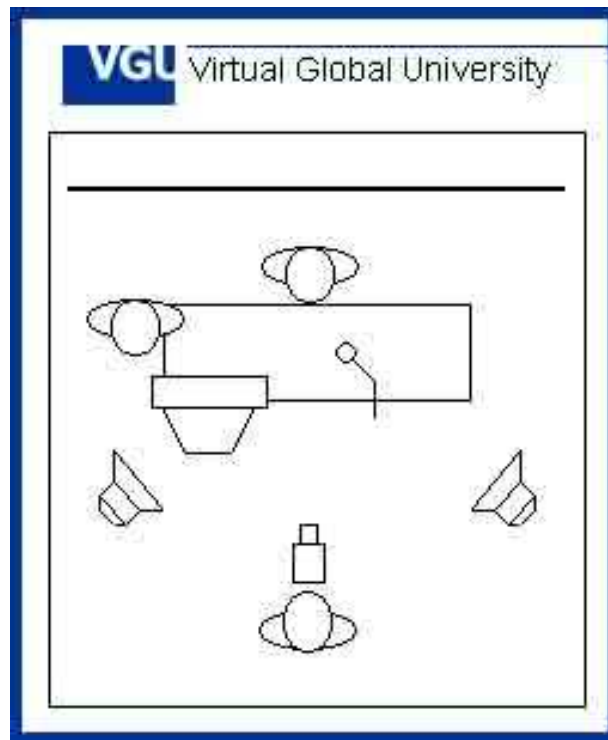


- **GIF 2.7 KB**

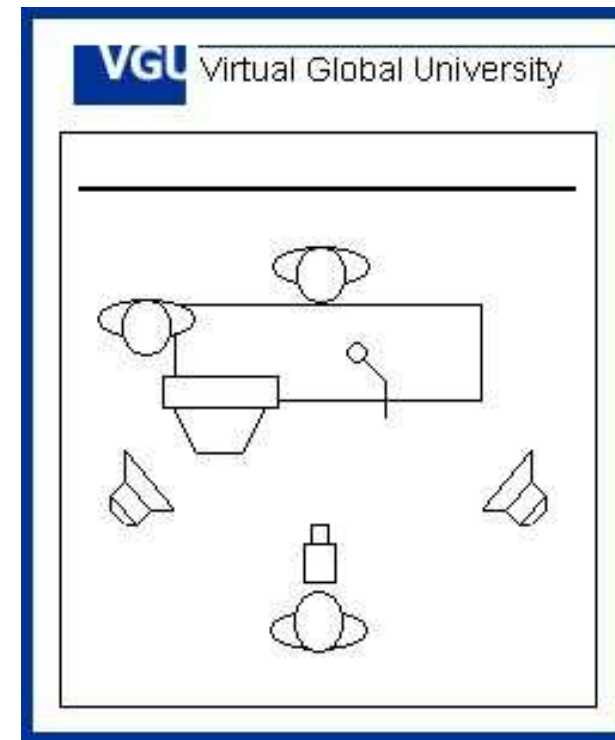


- **PNG 5.1 KB**

## JPEG Image Format

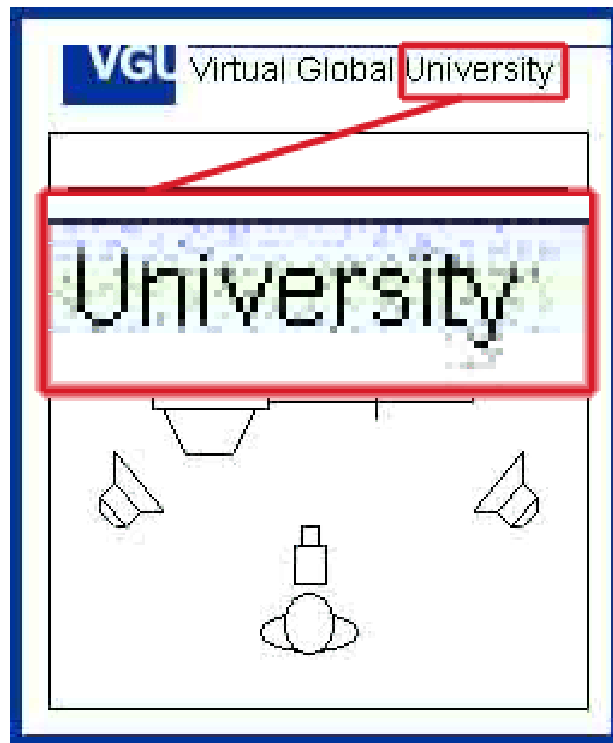


- **JPG (0) 14.8 KB**

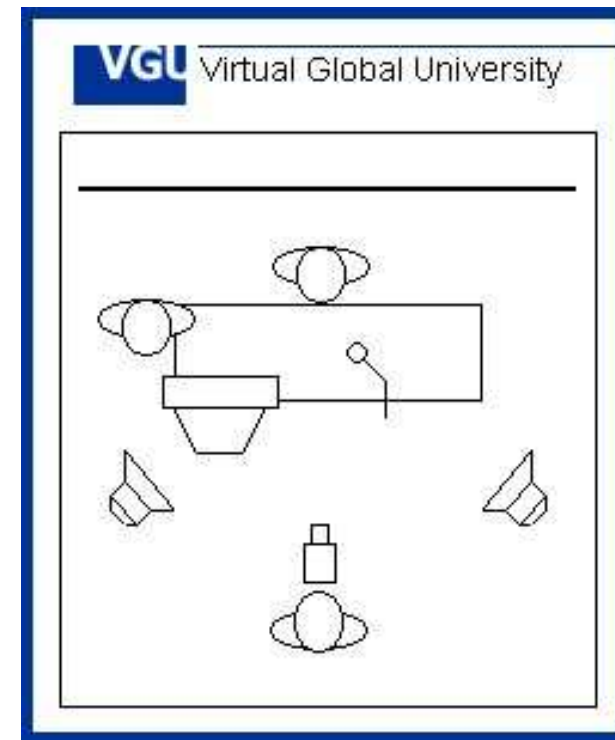


- **JPG (5) 17.9 KB**

## JPEG Image Format



- **JPG (0) 14.8 KB**



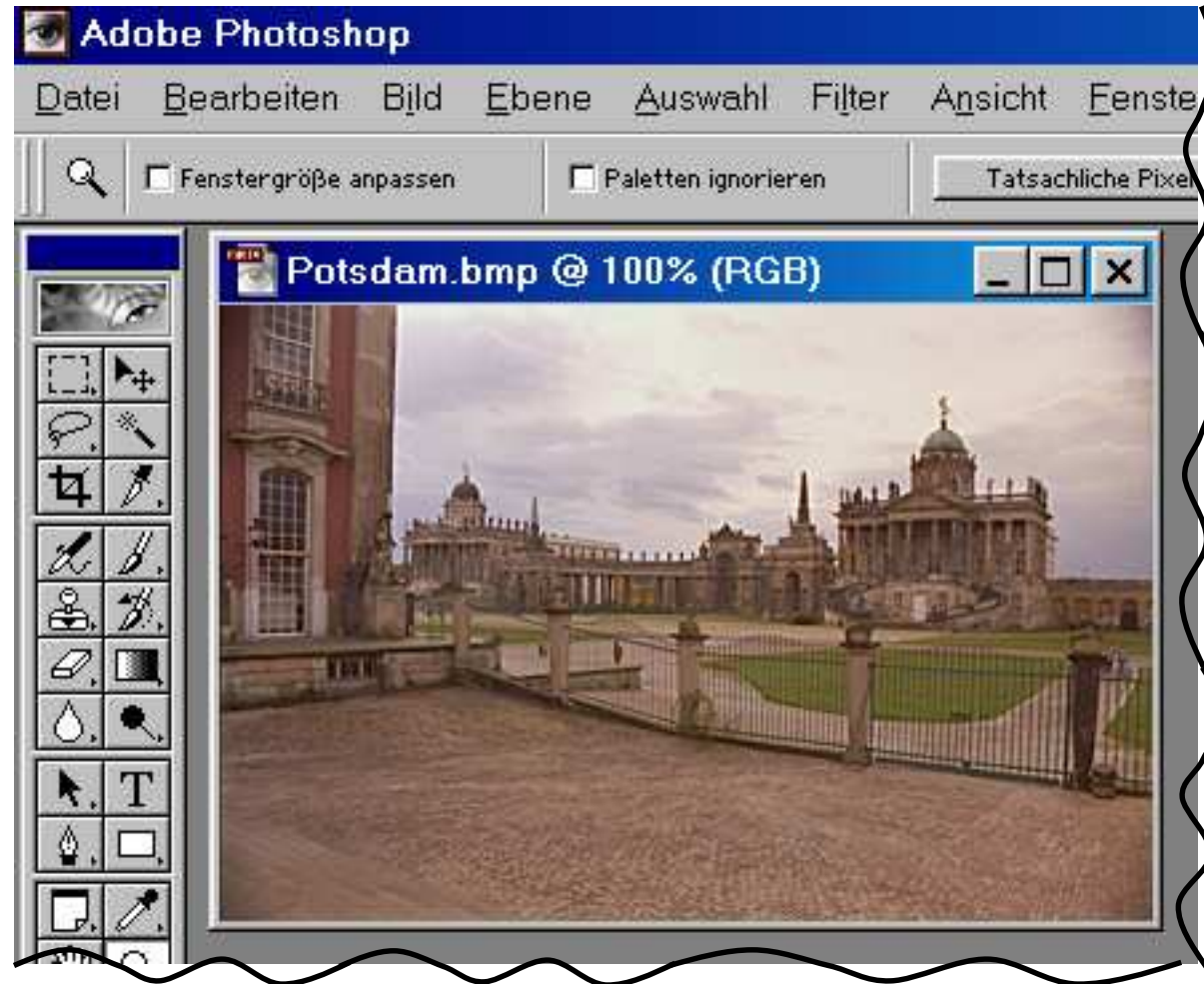
- **JPG (5) 17.9 KB**

## Visual Aids with Vector based Graphic

Format	Resolution	Loss -free	File Size	Download Time*	
				1 Image	20 Images
<b>GIF</b>	<b>255x308</b>	<b>Yes</b>	<b>2.7 KB</b>	<b>0.7 s</b>	<b>14 s</b>
<b>PNG</b>	<b>255x308</b>	<b>Yes</b>	<b>5.1 KB</b>	<b>1.2 s</b>	<b>24 s</b>
<b>JPEG (0)</b>	<b>255x308</b>	<b>No</b>	<b>14.8 KB</b>	<b>3.4 s</b>	<b>1 min 8s</b>
<b>JPEG (5)</b>	<b>255x308</b>	<b>No</b>	<b>17.9 KB</b>	<b>4.1 s</b>	<b>1 min 22s</b>

\*Download Time is calculated for 56K Modem  
with 35K effective Connection Speed

## Visual Aids including True-Color raster Graphic



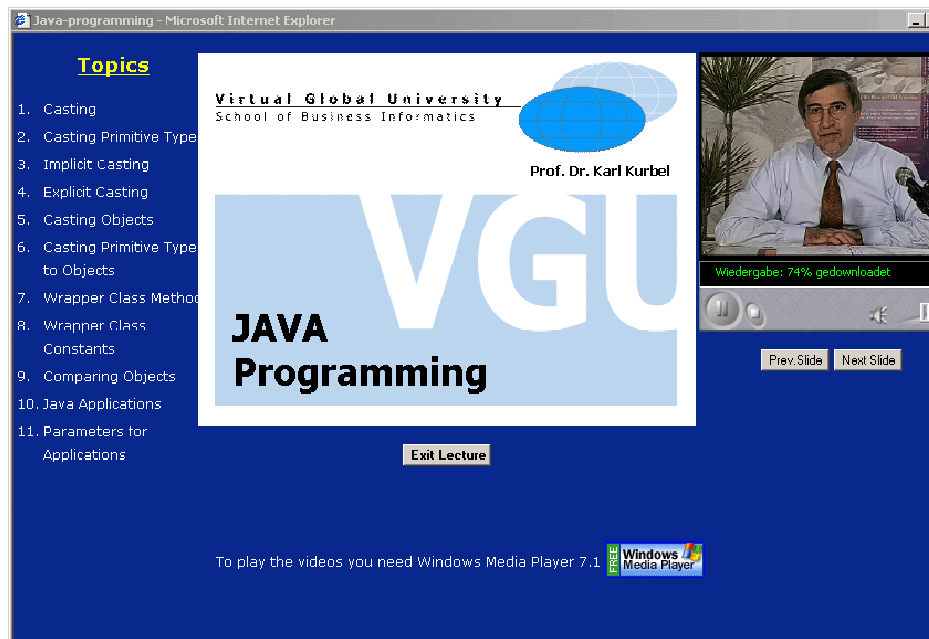
**800x600x16M**

## Visual Aids including True-Color raster Graphic

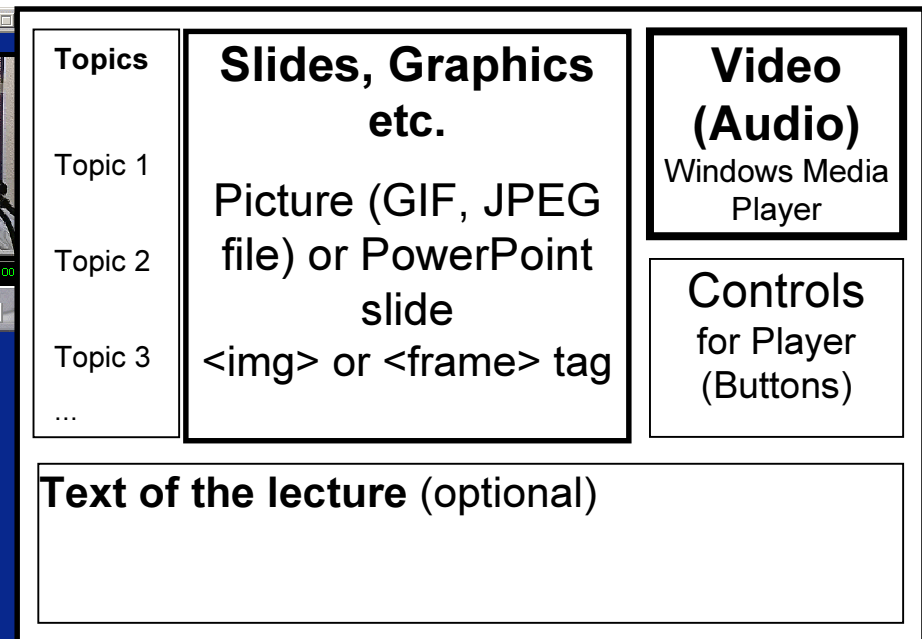
Format	Resolution	Loss-free	File Size	Download Time*	
				1 Image	20 Images
<b>GIF</b>	<b>800x600</b>	<b>Yes</b>	<b>84.6 KB</b>	<b>19.3 s</b>	<b>6 min 26s</b>
<b>PNG</b>	<b>800x600</b>	<b>Yes</b>	<b>197 KB</b>	<b>45.0 s</b>	<b>15 min</b>
<b>JPEG (0)</b>	<b>800x600</b>	<b>No</b>	<b>32.1 KB</b>	<b>7.3 s</b>	<b>2 min 26s</b>
<b>JPEG (5)</b>	<b>800x600</b>	<b>No</b>	<b>56.2 KB</b>	<b>12.9 s</b>	<b>4 min 18s</b>

\*Download Time is calculated for 56K Modem  
with 35K effective Connection Speed

# User interface of a video based course-page



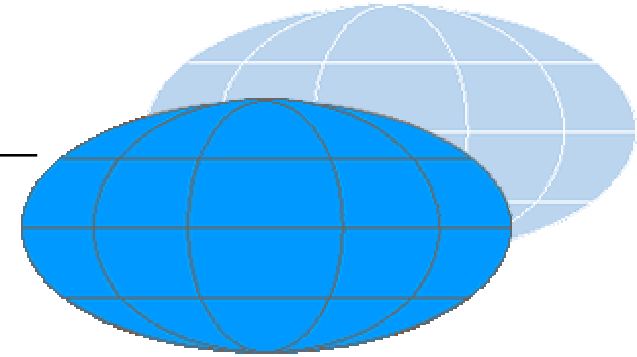
**User interface appearance**



**Functional diagram of the page**

**Virtual Global University**

School of Business Informatics



Prof. Dr. Karl Kurbel

Dipl.-Kfm. Alexei Pakhomov

# **Production and Delivery of Multimedia Courses for Internet Based Virtual Education**