MUVIS AV*D*atabase v1.8 (A/V Database Creator)
Quick Reference

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AVDatabase is a real-time Audio/Video database generator, which captures from a peripheral video device attached to a PC, encodes and records audio/video sequences into several file formats in real-time. This document is a simple user manual to use it efficiently and in a way it is designed. Check especially for the Q & A sections.

1 Installation

You need to have a TV card or a PC camera installed on your PC. Make sure that the device(s) have WDM or DShow drivers installed. Run Setup *AVDatabase* v1.8.exe file to **install**. Once installed, you can run the same file to **uninstall** the program.

Q: Which capturing formats are supported by *AVDatabase* ?
A: The following methods are currently supported:

- YUV 4:2:0 (default and recommended)
- YUY2
- UYVY
- RGB 24 and RGB 32

Recommendation: Upon installing, change your capturing format to YUV 4:2:0. Since this is the input frame format for MUVIS encoders, this will free the CPU time for converting into this format if another format is chosen instead.

Q: Which operating systems *AVDatabase* can be installed?
A: Like the other MUVIS applications, it is developed and tested for the following OSs:
- Windows 9x
- Windows ME
- Windows 2000
- Windows XP

Q: Are there any pre-requisite programs that should be installed before *AVDatabase* installation?
A: Yes. It is recommended to install MPEG-4 SP codecs such as DivX and XviD from http://www.xvid.org/ & http://www.divx.com/ .

2 *AVDatabase* in Run Time

When you run, *AVDatabase* UI appears on the screen with no current action. User should initiate the actions.

Q: What are the actions that *AVDatabase* can perform?
A: The following actions can be realized:
  I. Dummy MUVIS audio/video database creation (with vdbs extension).
  II. Manual (Real-time) audio/video recording (appending) into a MUVIS database.
  III. Manual (Real-time) audio/video recording into an external file.
  IV. Automatic MUVIS database generation with manual database settings.
  V. Timer facility for automatic (remote) initiation and finishing of tasks II and III

Q: How a dummy database can be created?
A: First create a folder for the database file (recommended) and then from the Menu <Create a… > → <Dummy video database>. Write a name for the database and save it into the folder.

Q: What is a dummy database used for?
A: It is the natural first step to make MUVIS (video) databases and then one can append video clips, audio clips or audio/video clips (and images) into them. If you already have MUVIS databases, you do not have to create a dummy one, use it for appending.

Q: How can I start audio-video recording?
A: You need to start capturing, pressing Capture button. In the left side of *AVDatabase* UI, there are 2 check boxes, to enable video & audio capturing. If you do not need audio or video recording, just disable them by un-checking the specific box.

Q: How can I change the audio capturing parameters (samp. frequencies, no of channels, etc.)?
A: Before capturing you may change audio capturing parameters from <Settings> → <Capturing Parameters…> → <Audio Capturing Parameters…>. Default values are 16 KHz, Mono.

Q: How can I change the video capturing system (WDM or DirectShow)?
A: Before starting the preview you may change video capturing system from <Settings> → <Capturing Parameters…> → <Via…>. The default system is DirectShow capturing. In case you are encountered problems with DirectShow video capturing, change the system to WDM before you start Preview (You cannot change the system during preview or capture stage).

Warning: After capturing started unless you do not record "video with audio" clips, you can disable audio or video recording (the one that you will not use during recording) by un-checking the

suitable check box. For instance, if you would like to record MP3 clips in MP3 files, it is obvious that you may disable "video" check box. In case you forget un-checking it, you can still record MP3 files but some CPU power is spent for video encoding that is not used for recording anyway.

Q: It is easy to understand if video preview is OK or not but how can I understand if audio is captured?
A: There is a status bar, which become active as soon as you press Capture button. You can see the captured audio volume level and it should be more than 1000 dB to have a reasonable audio sound level.

Q: Once Previewing is started, what else should I do to start recording?
A: Basically you need to do the following steps:
 I. Choose WHERE you want to record from the <File> menu.
   - <Record To…> : It records to an external clip
   - <Append in…>: It records into a database with 2 modes:
     1) Manual Mode: One clip is appended where recording is manually initiated and stopped.
     2) Automatic Mode: One or more number of clips are appended where the duration and number will be set using <Settings>→ <Database…> menu. Set number of clips, clip duration (fixed or random within a range), clip trailer name and option for saving captured original Key-Frames into YUV files.
 II. Choose HOW you want to start/end recording: **Manually** (Just pressing Record and Stop buttons (default)) OR by using the **Timer**. If you want use timer, go to <Settings> → <Timer…> to set start and end time of recording. Do not forget to check "Enable Timer" check box to confirm timer usage.
 III. Choose video preview/capture parameters (if video is enabled for capturing and recording) from <Settings> → <Capture…> → <Video Capture…> menu. There you can set the following parameters:
   - **Video Format**: Video capturing format and frame size. You can change the capturing frame size here to set a recording video frame size. Default is QCIF (176x144).
   - **Video Preferences**: Frame Rate (also used for recording frame rate) and Capturing Device (There is a list of available video cap. devices connected to your PC).
   - **Video Source**: The available video source options, i.e. you can get TV channels from cable connection or Air.
 IV. Choose recording parameters. From <Settings> → <Record…> menu, there are 3 sets of parameters that you may set:
   - **Video Encoder Parameters**: You can choose a suitable video encoder type and encoding parameters (bit rate, forced INTRA rate, etc.). If VCM codecs are chosen, then a new window will let you need to choose MPEG4 based encoders such as DivX and XviD.
   - **Audio Encoder Parameters**: You can choose a suitable audio encoder type and encoding parameters (bit-rate, etc.).
   - **File Format Type**: A suitable file format type such as AVI, MP4 can be chosen to record video, audio and video with audio. There are 3 audio only formats such as AMR(new!), MP3 and AAC. If you choose any of them, then the audio codec type should also be chosen same one with the file format (i.e. MP3 audio in MP3 file) and since video will not be recorded (audio only case), you should disable video recording from the main UI window in order not to waste CPU time for video encoding.

V. If you want to start recording/appending immediately, press Record button to initiate the recording. You can set the timer to start (and stop) recording. You can press Stop button any time to finish recording. If you enable a timer for starting and/or stopping, do not press Record button to start (unless you change your mind to start immediately!) and do not press stop button to end (again unless you want to finish it at once) and thus timer can start and stop automatically.

Q: When I start recording the video capturing size is changed, why?

A: Essentially *AVDatabase* was capturing in the size that is specified in the video format even though it shows (previews) in full window for the best possible view. The default frame size is QCIF and if you did not change it, the video size will reduce to QCIF size during the recording phase –or to any size you have set. This is because VFW drivers usually are not capable of capturing frames in certain size and displaying in other size. So it is normal that during the recording phase it turns to the actual capturing size and re-size itself to UI window again when the recording is over.

Q: If I use timer, do I loose control to start and to end recording of video/audio ?

A: No. Even though you set the timer, you can manually start recording and you can finish it before its due time. Timer will work only if you do not touch **Record** and **Stop** buttons.

Q: When can I use timer?

A: You should first start **Preview**. Timer will not start preview operation for you (because it is not feasible to choose a capturing device and hence a driver if there are more than one). So start **Preview** first, then set all the video capturing & encoding parameters (codec, file formats, etc.). Set the database you want append with the appending mode (and parameters if exists) OR the filename if you want to record to an external file. Than set the timer and let application take care of recording. When the time comes it will press **Record** (to start recording) and **Stop** buttons automatically.

Q: Is the order of parameter settings important?

A: No. You can set any parameter (if enabled) anytime you like. The only order you have to be careful about audio capture parameters settings, which should be done **before** preview is started. The video capture parameters should be set **after** the preview is started.

Q: Some of the status bars are not functioning during recording, anything wrong?

A: No. Only the responsible status bars will be working. All of them will only be active when you make automatic "video with audio" clip appending into a MUVIS database.

Generic Way of Usage for AVDatabase:

1-   Run AVDatabase application.
2-   Enable/Disable audio OR video capturing (default: Both enabled).
3-   Set audio capturing parameters (def: 16KHz, Mono)
4-   Press **Preview** to start audio/video capturing.
5-   Set Timer if you want to.
6-   Set the name of the file OR append to the name of the MUVIS database.
7-   Set capturing/encoding parameters of video and encoding parameters of audio.
8-   Enable/disable audio OR video recording (def: Both enabled).
9-   Press **Record** to start recording OR leave it if timer is set beforehand.
10-   Check if the progress bars are functioning.
11-   Change the encoding parameters of video and audio for the next clip –if required.
12-   Press **Stop** if you want to stop recording whenever you wish.
13-   Press **End Preview** to kill capturing and Exit.