

MSU Logo Remover User Guide

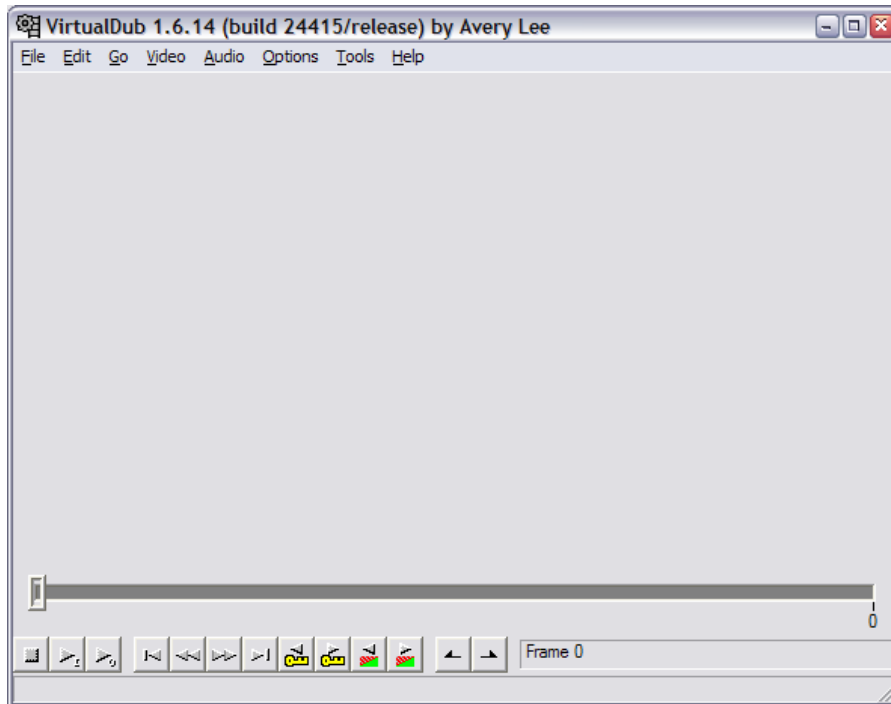
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Graphics&Media Lab**

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Beginning

1. First of all download and install last version of VirtualDub
<http://virtualdub.org>
2. Copy MSU_LogoRemover.vdf from msu_logo_remover.zip into folder "plugins" in VirtualDub folder.
3. Run VirtualDub

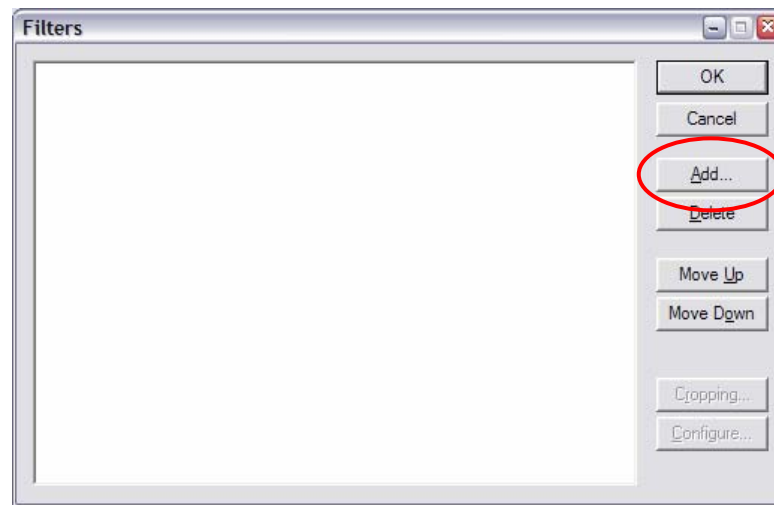


Picture 1. VirtualDub window

4. Open your video (by pressing CTRL+O or choosing from menu "File" → "Open video file")

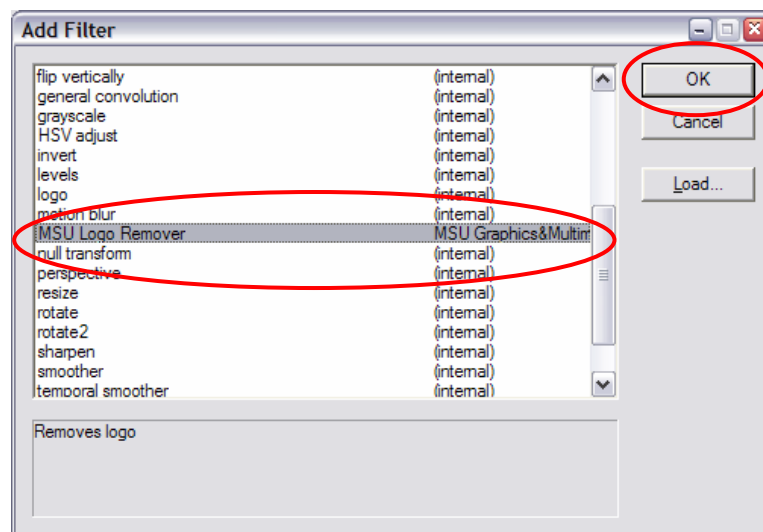
Filter Choosing

5. Open filter window (by pressing CTRL+A or choosing from menu "Video" -> "Filters")

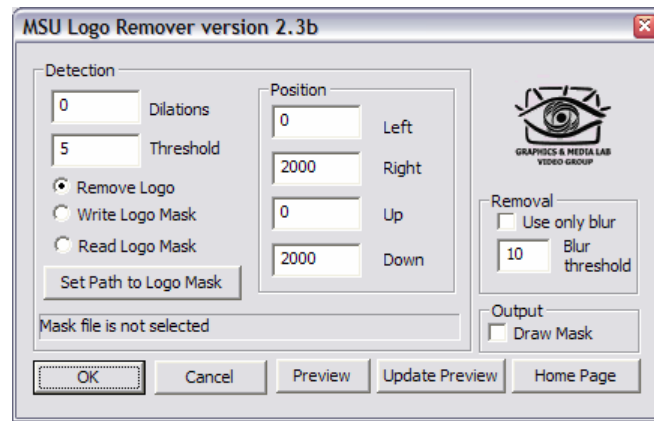


Picture 2. Filters window

6. Add "MSU Logo Remover" filter by choosing "Add..." and choosing "MSU..." And pressing OK. You will see configuration window



Picture 3. Choosing MSU Logo Remover filter



Picture 4. MSU Logo Remover configuration window

Filter Configuring

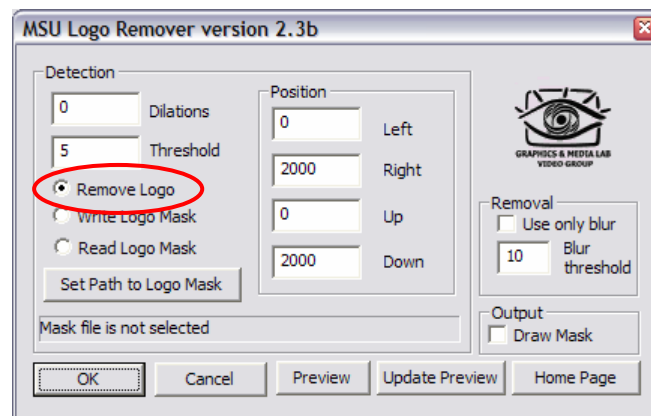
In the configuration window choose type of work

- One-pass mode (“Remove Logo”)**
 This mode is for “quick” logo removing. The filter detects and removes logo in one pass. The main drawback of this mode is that the logo is detected well only after some frames (number of frames depends on the type of motion in the video). And main advantage of this mode is good speed of processing (if the detection area is chosen precisely)
- First pass of two-pass mode (“Write Logo Mask”)**
 This mode is for logo detection. After it works the mask file for logo removing is created. The file is have to be chosen by pressing “Set path to Logo Mask”
- Second pass of two-pass mode (“Read Logo Mask”)**
 This mode is for logo removal. Before it runs user has to choose logo mask file by pressing “Set path to Logo Mask”. This file could be created by first pass of two-pass mode or can be created manually.

Note: Full two-pass mode works longer than one-pass mode, but it provides more precise logo detection. Also if user has mask for logo he can choose second-pass from two-pass mode for only removing logotype without its detection.

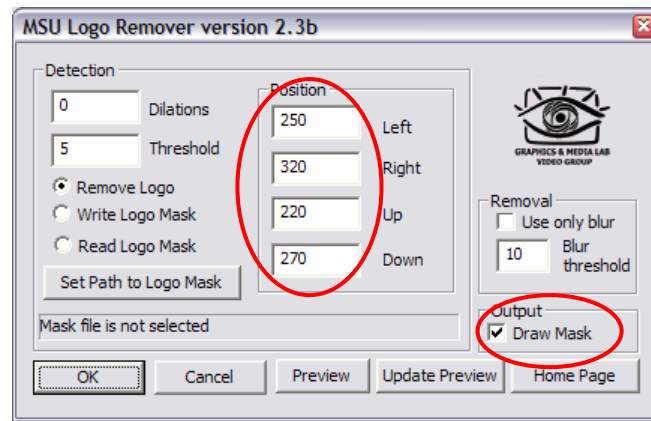
One-pass mode (detection and removal)

Detection



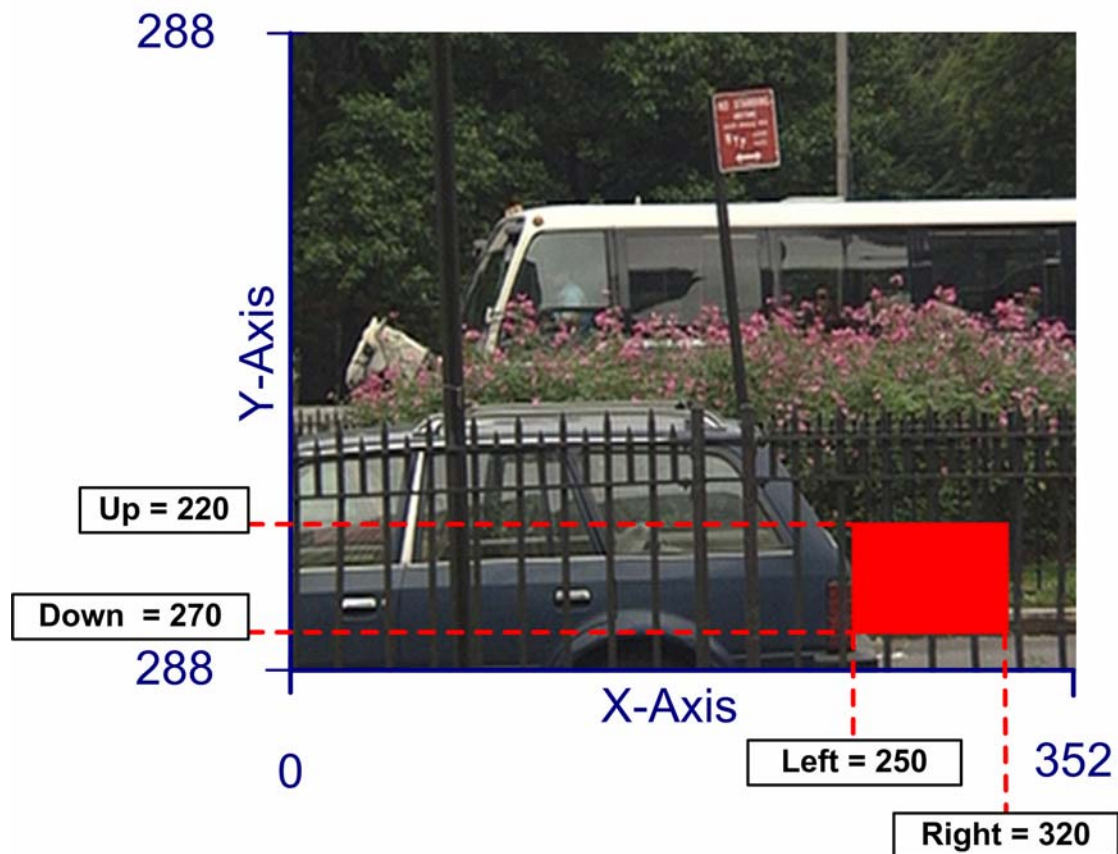
Picture 5. One-pass mode choosing

For selecting this mode user chooses “Remove Logo”. Then he has to set detection area – area where logo is has to be detected.



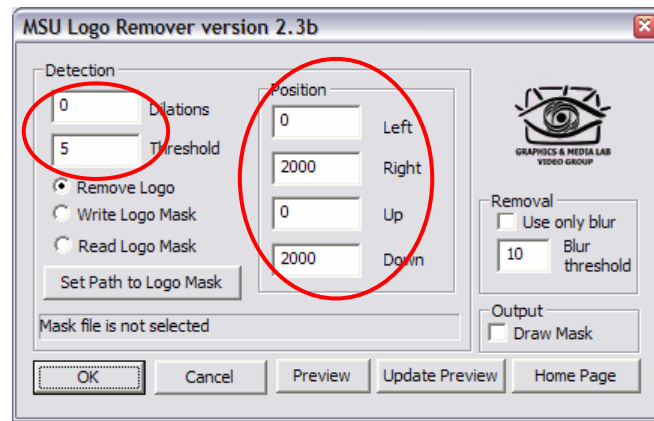
Picture 6. Choosing the detection area for logo

For selecting that area check-box “Draw Mask” is very useful because with this flag user can see how correctly he choose the detection area.



Picture 7. Original frame. Detection area

After setting the detection area and marking check-box “Draw Mask” user presses “OK”, “OK” and then he can press cursor keys → and ← to see how the mask is found. If mask is not correctly detected user can change some detection parameters: Dilations, Detection Threshold or Detection Area.

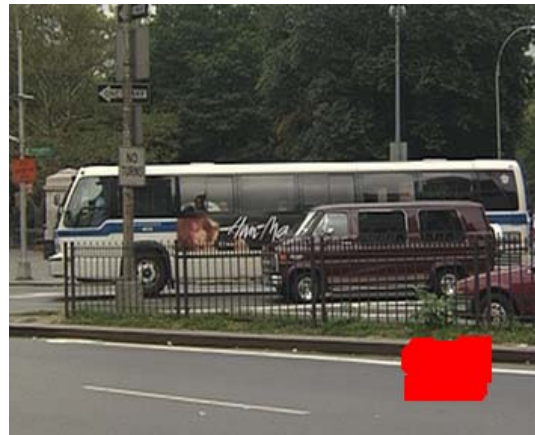


Picture 8. Detection parameters

- **Dilations** – is for morphological operation done on mask called dilation. It is very useful when opaque logo has half-transparent borders that couldn't be detected easily by this filter – user can increase *Dilations* and mask will dilate.



Picture 9. Mask without dilations



Picture 10. Mask with *Dilations* = 5

- **Threshold** – is for detection precision. The bigger value is for more pixels are marked as logo. This parameters depends on motion in the video, if the motion is strong this parameter value can be increased and if there is weak motion or no motion* the parameter can be decreased. User has to change this parameter ONLY in case of not quality detection.



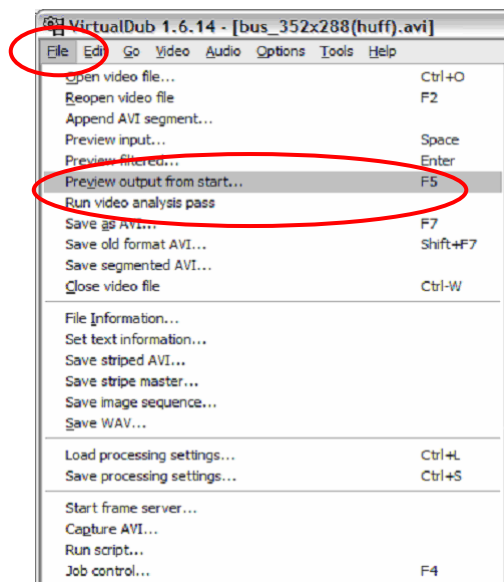
Picture 11. Resulting mask with
Threshold = 5



Picture 12. Resulting mask with
Threshold = 15

Removal

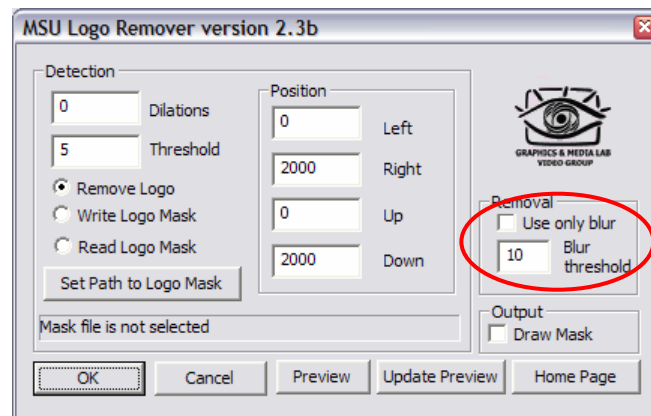
If mask is correctly detected then user can switch off “Draw Mask” and try to run filter on detection and removal by pressing F5 (“File” → “Preview output from start”).



Picture 13. Preview the result

* In this case we do not guarantee quality detection of logotype
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If logo is removed not very clear user can change some removal parameters: “Use only blur”, “Blur threshold”.



Picture 14. Removal parameters

- **Use only blur** is for scenes with complex motion and filter can not remove logo with good quality.
- **Blur threshold** is for changing when blur will be used. Lower value means that blur will be used more often. It is useful when video has scene changes that couldn't be found with this filter – then user decreases the *Blur threshold* and after scene changes logo will be blurred.

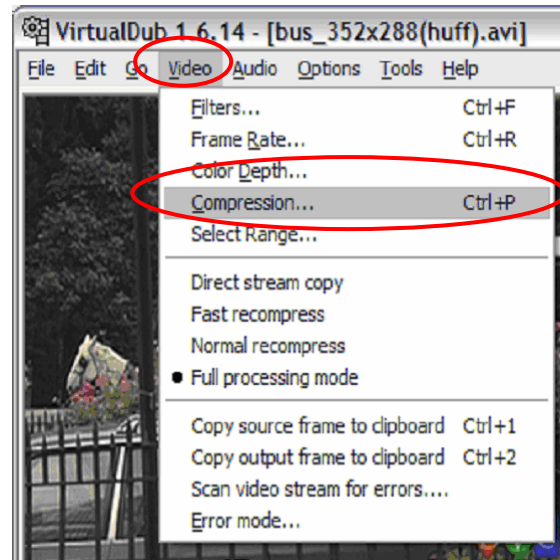


Picture 15. Result without “Use only blur”

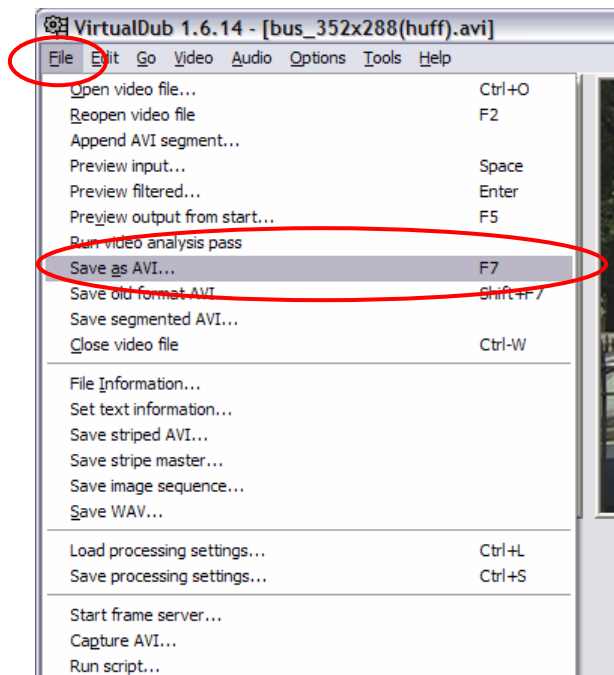


Picture 16. Result with “Use only blur”

Now user can save resulting video by pressing Ctrl+P (“Video” -> “Compression”) to choose desired codec and then save avi file by pressing F7 (“File” -> “Save as AVI...”)



Picture 17. Choosing video codec



Picture 18. Saving a video

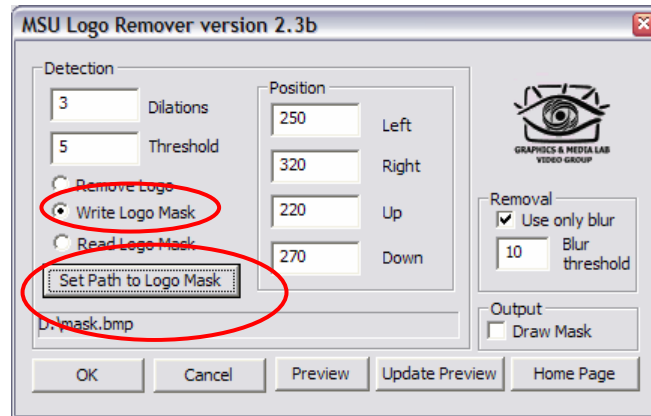
Now user has a processed video.

Two-pass mode

Automatic logo detection

Important!

First of all user has to choose “Write Logo Mask” and press “Set Path to Logo Mask” and choose new or existed file where program will write mask file.



Picture 19. First pass of two-pass mode choosing

All other options for logo detection are similar to logo detection in one-pass mode. There is one main difference – that the resulting mask is the mask from last frame. This mask is writing to the mask file that was chosen by pressing “Set Path to Logo Mask”.

All other parameters and features are the same as in **Detection (One-pass mode (detection and removal))** except checkbox “Remove Logo” – user has to choose Write Logo Mask.

Then user runs the filter under Virtual Dub by pressing F5 (“File” → “Preview output from start”) – see Picture 13.

Manual logo detection

Also user has an opportunity to create mask file himself. The structure of mask file is very simple.

- Black color is not logo
- Red color is logo



Picture 20. Original frame



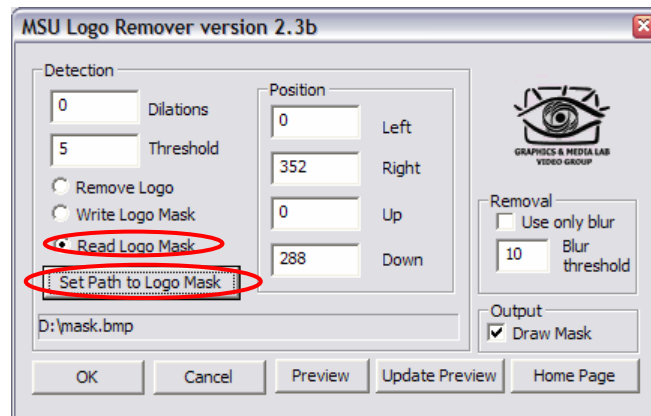
Picture 21. Logo Mask

So user can create the desired mask in any graphical editor and then load the mask and remove logo.

Logo removal

Important!

First of all user has to choose “Read Logo Mask” and press “Set Path to Logo Mask” and choose existed file with logo mask.



Picture 22. Second pass of two-pass mode choosing

User can load mask that was created automatically on previous step or mask that was created by himself. All other options of removal are similar to **Removal(One-pass mode (detection and removal))**.

Note: When using two-pass mode user has to open video, add filter, choose first run, run it (i.e. F5), then change configuration of the filter and run it again (i.e. F7) for saving the video.

Results



Picture 23. Original frame from video sequence Schumacher



Picture 24. Processed frame from video sequence Schumacher



Picture 25. Original frame from video sequence bus



Picture 26. Processed frame from video sequence bus



Picture 27. Original frame from video sequence carousel



Picture 28. Processed frame from video sequence carousel

Additional information

Home page

Home page of this filter is

http://compression.ru/video/logo_removal/index_en.html

There are some examples of filter's work, comparison with competitors, filter itself and this document.

License and PRO version

- Program license for non-commercial usage can be found at <http://compression.ru/video/license.txt>
- Program license for usage in companies (include command line PRO version) can be found at <http://secure.emetrix.com/order/product.asp?PID=9411225&DID=92287129&ID=&Q=1&DC=&CUR=>

Contact

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