

Vela Frame Detect Application

# Frame Detect

# User Manual

Version 10.0.12.x



# Vela Frame Detect Application

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## About the Frame Detect Application

The Frame Detect Application is a file based tool useful for the QC and/or the determination of where black frames exist within a media file, which can be used to determine the most opportune entry/exit points for dynamic ad insertion. The results will also include information for I Frames located within the black regions.

The Frame Detect Application will provide Mark In and Mark Out points for black and/or static images and I Frame information, faster than real time, using the following logical operators set by the user:

1. Less Than: Flags all occurrences of consecutive frames less than this value (in Frames).
2. Greater Than: Flags all occurrences of consecutive frames greater than this value (in Frames).
3. Black Level: Allows the user to adjust for various levels of black to include/exclude areas of fade in/out.
4. Exclusion Window: Allows the user to eliminate areas (in pixel coordinates) from the black search. This is used to eliminate areas that may contain network logos or banners, etc.

## Media File Types Supported

For black and static image detection only the Frame Detect Application supports:

Wrappers:

MPEG2 TS/PS/ES  
MXF  
Quicktime .mov  
MP4

Video Codecs:

MPEG-2  
H.264  
XDCAM

For black and static image detection WITH I Frame detection the Frame Detect Application supports:

Wrappers:

MPEG2 TS/PS/ES

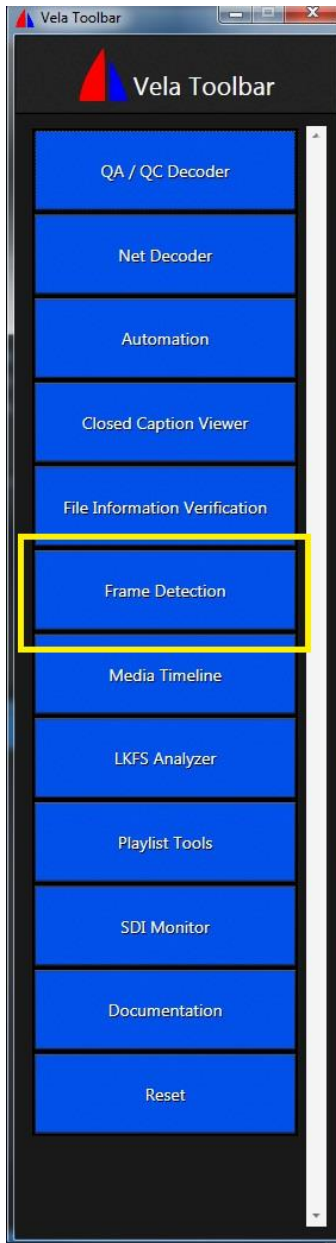
Video Codecs:


MPEG-2

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## Launching the Application

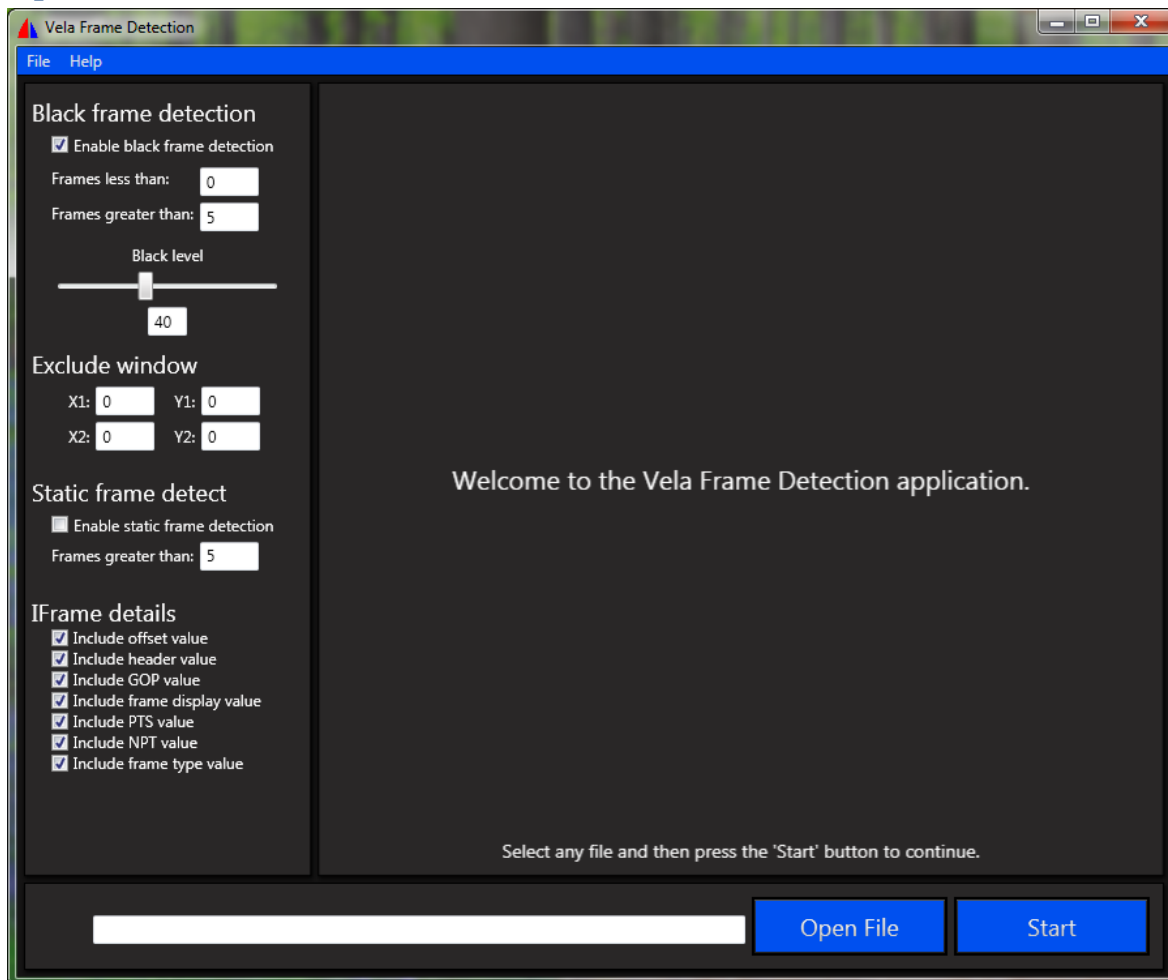
The application can be launched from the Vela Toolbar (shown below) which will launch automatically at startup and be positioned on the right hand side of the desktop.



Or the application can be launched from the Windows Start menu by selecting the start icon , then select 'All Programs', 'Vela Research', 'Utilities'.

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## Operations



## Basic Operation

1. Load a file using the 'Open File' button.
2. Enter any options such as Less Than, Greater Than, Black Level, etc.
3. Use the 'Exclude Window' parameters to exclude areas within a frame from the black or static image search. Use this to exclude areas where a network logo or banner may reside, etc.
4. Select the IFrame Details to include in the results.
5. Select 'Start'.
6. Black and Static frame timecodes will be displayed in their respective windows.
7. The Mark In, Mark Out, and number of consecutive frames will be returned for each instance that meets the optional settings criteria.
8. All 'I/IDR' Frames within the 'Black' region will be displayed with the Timecode and Frame Number and IFrame Details.

\*Note: For static image detection, the consecutive images must be EXACTLY the same to trigger a result. It is therefore unlikely that sequences such as Color Bars or Title Images that have been encoded from baseband video will trigger a static image result.

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## Options

### Less Than

Limits the results to only those that fit the logical criteria.

For example:

Less Than: 2

All instances less than two consecutive frames will be returned. This setting is useful for finding random black frames.

### Greater Than

Limits the results to only those that fit the logical criteria.

For example:

Greater Than: 30

All instances greater than 30 consecutive frames will be returned. This setting is useful for finding convenient points for digital program insertion.

### Black Level

Determines the level of black to use when searching for black. Range is 0 to 100. 0 is more black, 100 is less black. 30 is the default.

### Exclude Window

The 'Exclude Window' allows you to define areas within the video frame to not include in the black/static image search. If you have a network logo embedded in the lower right hand corner of the video then black frames will not be detected due to that logo. You can exclude the area containing the logo using the x and y pixel coordinates.

For Example:

If you have a logo in the lower right hand corner of the frame that is 1920x1080i/p you might enter

X1: 1500      Y1: 750

X2: 1920      Y2: 1080

Rule 1: X1 and Y1 cannot be less than 0.

Rule 2: X2 and Y2 cannot be greater than the maximum resolution of the file being checked. For example:

1920x1080i      X1<sub>max</sub>:1920      Y1<sub>max</sub>:1080

1280x720P      X1<sub>max</sub>:1280      Y1<sub>max</sub>:720

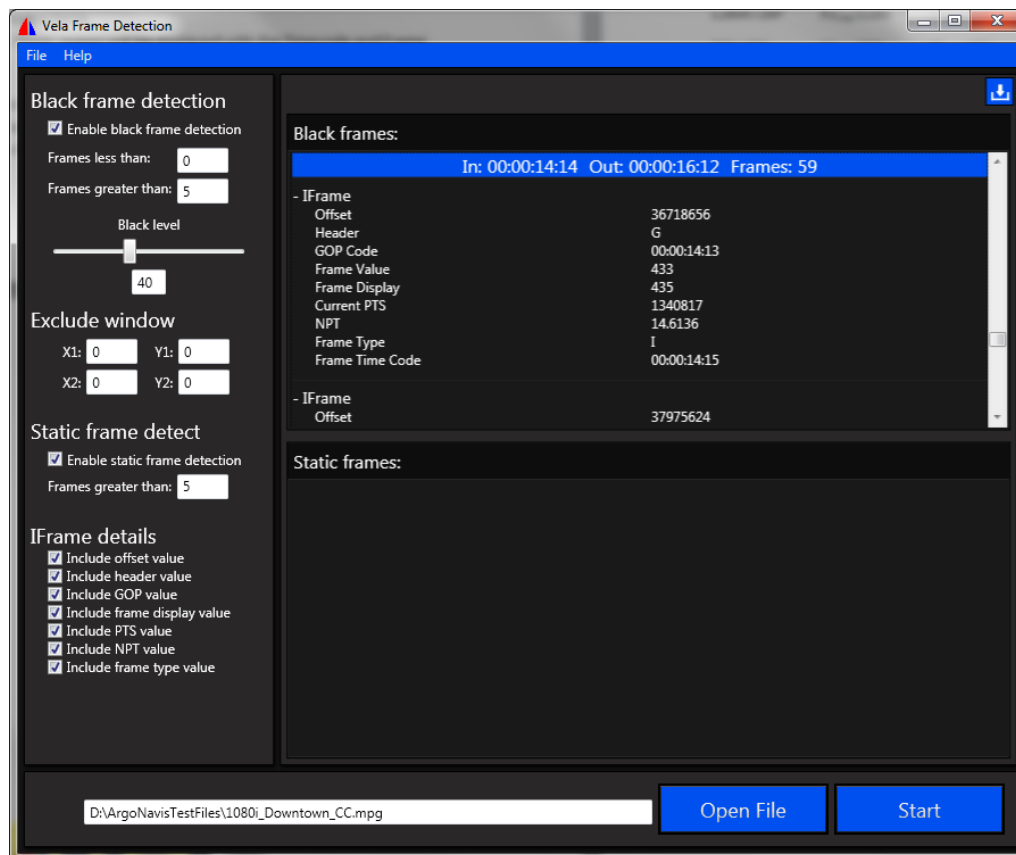
720x480i      X1<sub>max</sub>:720      Y1<sub>max</sub>:480

544x480i      X1<sub>max</sub>:544      Y1<sub>max</sub>:480

If a value is entered that exceeds the maximum or minimum values then the exclude window parameters are not used at all.

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## Results



## Black Frame

The results of the Black Frame analysis will include the Mark In and Mark Out of black regions and the IFrame Details within each region. The IFrame Details are as follows:

Offset:	Number of bytes into the media file where the I Frame exists
Header:	The Type of Header: G for GOP Header or F for Frame Header
GOP Code:	The time code at the GOP Header. Depending on GOP structure this may or may not be the time code of the frame in question which is given as the Frame Time Code.
Frame Value:	The Frame Number in Encode/Stream order.
Frame Display:	The Frame Number in Display order.
Current PTS:	The Video PTS for the I Frame.
Frame Type:	The type of frame (I, B, P, IDR, etc.)
Frame Time Code:	The time code of the frame.

## Static Frame

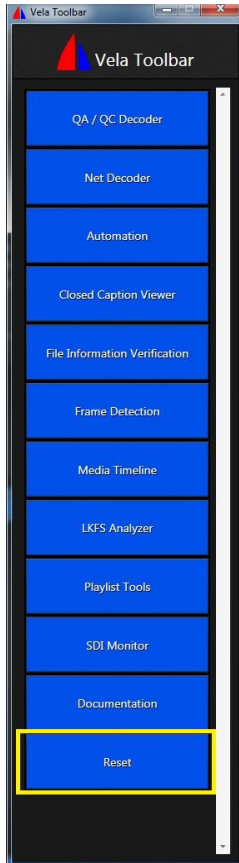
The results of the Static Frame analysis will include the Mark In and Mark Out of any regions containing static images.

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## Exiting the Application

Under normal conditions, shutdown the application using the windows x button.

Under abnormal conditions, select the Soft Reset option on the Vela Toolbar. This will forcibly shutdown all Vela applications and threads and clear the programs from memory.





## Vela Frame Detect Application



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