



2023-2639

Officer Involved Critical Incident - 7498 Van Ness Avenue, Hubbard, Ohio 44425, Trumbull County

Investigative Activity: Body-Worn Camera Video Review; Amped Five Used

Involves: Vienna Township Police Department (O)

**Activity Date**: 03/28/2024

Activity Location: BCI - 4055 Highlander Parkway, Richfield, Ohio 44286

**Authoring Agent:** SAS Charles Moran #67

#### Narrative:

On March 28, 2024, Ohio Bureau of Criminal Investigation (BCI) Special Agent Supervisor (SAS) Chuck Moran (Moran) reviewed a video file that was received from the Vienna Township Police Department (VTPD). The video file was initially received on October 5, 2023, when SAS Moran obtained a USB flash drive from the VTPD.

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### Video Review Process

SAS Moran copied the video file on the USB flash drive to the BCI Special Investigations Unit (SIU) shared drive. SAS Moran copied the video file to a working copy folder to perform the review. The USB flash drive was placed in the BCU SIU case file as Reference Item C.

SAS Moran used Amped Five software to assist with the video review. SAS Moran placed the one video file into Amped Five. SAS Moran bookmarked images for demonstrative purposes. The bookmarked images were selected based upon the best available visual and audio cues. SAS Moran also created a derivatives folder for any items that were generated by Amped Five.





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# Additional Factors to Consider When Evaluating Digital Multimedia Evidence (DME)

Based upon SA Moran's training and experience, the following factors should be considered when evaluating the available video evidence:

- The speed of this incident is remarkable.
- The speed and complexity of rapidly evolving situation(s) that occur during useof-force encounters are difficult concepts to comprehend by only watching the video.
- Video and audio recording devices record more information about a particular scene or incident than the person(s) involved in the event can process during the critical incident.
- Video and audio recording devices rarely record an event from the same perspective of the officer(s) or subject(s) involved.
- It captures the action but not the perception, decision-making, focus nor intent of the officer(s).
- Video recordings often miss tactile cues or other actions of a subject.
- Video and audio recording devices record within the video and sound capabilities available, and they record objectively.
- Video and audio recordings lack the history, perspective and interest of the people involved.
- The movements, positions, angles, obstacles, lighting, and distance from the incident are also factors that need serious consideration.
- Video recordings are for storage and review.
- Video recordings capture light and create a digital representation of reality (two-dimensional video compared to three-dimensional reality).
- Video and audio recordings are only components of an investigation and should not be the only evidence relied upon.
- All available evidence, statements and other information must be evaluated alongside the video recordings available.



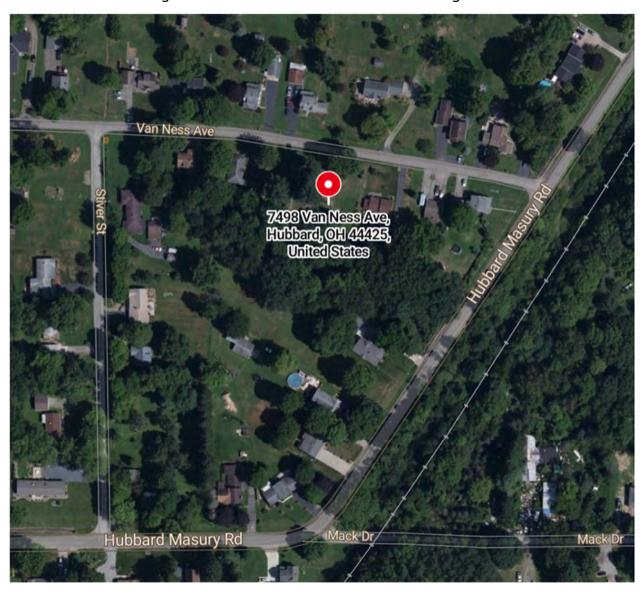


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### Overhead Map Image for Reference

Below is a snipping tool capture of an overhead map from Bing Maps. This showed the area of the immediate scene. This was included to provide the reviewer of this report with an understanding of the area near the scene. See the image below:







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## Review of VTPD Officer services as BWC Video

• File Name: BodyCam\_H106927\_2023

This video file was a body-worn camera (BWC) video. The BWC was worn by VTPD Officer . It was about 30 minutes long (00:29:59:966). There were 54000 frames in the video file. Amped Five identified the frames-per-second (fps) as 30.00 fps and the audio sampling rate as 32.0 kHz. The timestamp on the first frame of the video was, "H106921/000000 N41/11/10 W80/32/47 20KM/H 2023/10/03 22:23:51."

Timestamp	H106921/000000 N41/11/10 W80/32/47 20KM/H 2023/10/03 22:23:51
Frames (Amped Five)	0
Notes	This was the first frame of the video. Officer was at the scene. He was speaking with another person, likely an officer, about the area. It was extremely dark.

There was radio traffic heard that other officers had contact with the subject, Shawn Thomas. Officer moved along a street (likely near Van Ness Avenue). A dog, likely a police K-9, was heard barking at some distance away.

Timestamp	H106921/000000 N41/11/10 W80/32/48 0KM/H 2023/10/03 22:26:17
Frames (Amped Five)	4387
Notes	An officer radioed, "Behind the tree, he's got a shotgun in his left hand."

Timestamp	H106921/000000 N41/11/10 W80/32/48 0KM/H 2023/10/03 22:26:26
Frames (Amped Five)	4669
Notes	Officer said, "I think I see movement coming our way." The video was very dark.





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Timestamp	H106921/000000 N41/11/09 W80/32/47 0KM/H 2023/10/03 22:27:37
Frames (Amped Five)	6807
Notes	An officer radioed, "He has two slung. He's headed up towards the road now. Two shotguns slung. Unit on the road, he's up there coming to you." In the previous frames, Officer said he was going to move to a tree and he completed the movement. A K-9 was also heard barking some distance away.

Timestamp	H106921/000000 N41/11/09 W80/32/47 3KM/H
	2023/10/03 22:28:34
Frames (Amped Five)	8493
Notes	Officer said (likely to Ohio State Highway Patrol Trooper, "See that red one right there? He's somewhere behind there." Officer had his flashlight activated. Shawn Thomas was not in view of the BWC. Shortly after this moment, another officer (likely Trooper that they were going to move and they began moving.

Timestamp	H106921/000000 N41/11/08 W80/32/46 4KM/H
	2023/10/03 22:28;55
Frames (Amped Five)	9130
Notes	Officer said, "Right side. Right side. Right side. Right side. Drop the gun!" He activated his flashlight and Shawn Thomas was observed in this frame. He was standing in the grass on the west side of the residence located at 7524 Van Ness Avenue. He was some distance away.





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Timestamp	H106921/000000 N41/11/08 W80/32/46 10KM/H 2023/10/03 22:29:01
France (Area et Fige)	9316
Frames (Amped Five)	9316
Notes	Officer was behind Trooper as they moved
	near the northwest corner of the residence at 7524 Van Ness
	Avenue. It was possible that Shawn Thomas was observed in
	the grass on the west side of the residence.

Timestamp	H106921/000000 N41/11/08 W80/32/46 4KM/H
	2023/10/03 22:29:05
Frames (Amped Five)	9441
Notes	Trooper said, "Drop the gun." Officer radioed, "Hey, we got contact up here on Stiver." It was possible that Shawn Thomas upper body was observed above the ravine ridge. There was a straight-line object (likely a shotgun) observed on the right side (as BWC was facing him).
	SAS Moran used Amped Five to select this frame, crop it, and resize it. The frame was rendered as a Bitmap image with file name: BodyCam_H106921_2023-240330103629





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H106921/000000 N41/11/08 W80/32/47 2KM/H
2023/10/03 22:29:09
9562
Officer yelled, "Drop the firearm!" Trooper was in front of him and to his right. He possibly said, "Drop the gun." Shawn Thomas' upper body was observed above the ravine ridge. He appeared to be facing the officers. There was a line on his chest (possibly shotgun sling) and his left arm/elbow appeared to be bent near the left side of his head/shoulder (possibly on phone or moving shotgun sling).
SAS Moran used Amped Five to select this frame, crop it, and resize it. The frame was rendered as a Bitmap image with file name: BodyCam_H106921_2023-240330104735
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Timestamp	H106921/000/000 N41/11/08 W80/32/47 0KM/H 2023/10/03 22:29:18
Frames (Amped Five)	9835
Notes	Officer yelled, "Drop thethere you go. Drop the other one!" In previous frames, Shawn Thomas said, "Hey." Shawn Thomas was not in view of the BWC.

Timestamp	H106921/000000 N41/11/08 W80/32/47 1KM/H 2023/10/03 22:29:24
Frames (Amped Five)	10012
Notes	Trooper said, "Drop the gun." Shawn Thomas possibly said, "No. Fuck you [unintelligible]." Shawn Thomas was not in view of the BWC.

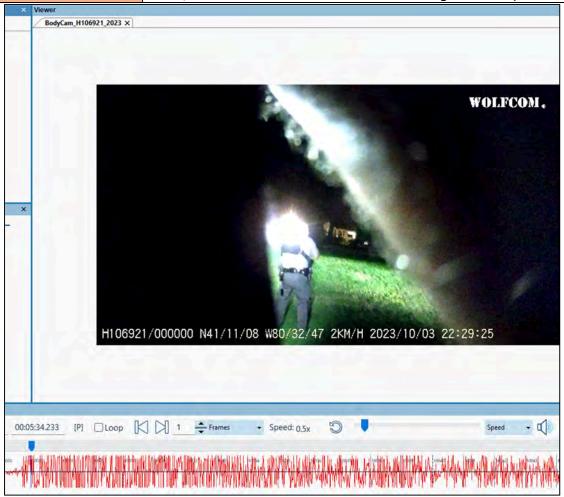




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Timestamp	H106921/000000 N41/11/08 W80/32/47 2KM/H	
	2023/10/03 22:29:25	
Frames (Amped Five)	10027	
Notes	This was the approximate frame when the first gunshot was	
	fired, likely by Trooper Shawn Thomas was not in view	
	of the BWC.	
	An audio waveform spike was observed and the	
	echo/reverberation of the sounds of the gunshot by a rifle.	



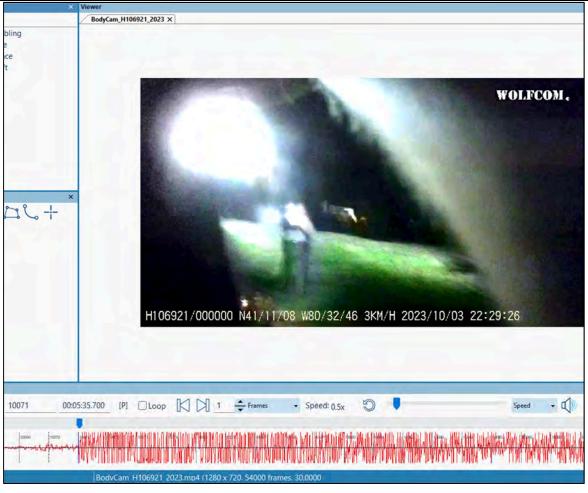




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Timestamp	H106921/000000 N41/11/08 W80/32/47 3KM/H	
	2023/10/03 22:29:26	
Frames (Amped Five)	10070 and 10071	
Notes	These were the approximate frames when the second gunshot	
	was fired, likely by Officer Shawn Thomas was not	
	in view of the BWC. 10070 - possible opaque cloud	
	(gunpowder) observed from end of rifle. 10071 - audio	
	waveform spike observed on this frame.	
	An audio waveform spike was observed and the	
	echo/reverberation of the sounds of the gunshot by a rifle.	







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Timestamp	H016921/000000 N41/11/08		
Frames (Amped Five)	10237		
Notes	Officer radioed, "shots fired. shots fired."		
	Shawn Thomas was not in view of the BWC.		

The following was noted, but there were no relevant images to include:

The officers communicated about where Shawn Thomas was, and they were not immediately certain of he was on the ground.

They radioed the location and requested EMS to stage nearby.

They formulated a plan to approach Shawn Thomas.

Officers began to approach Shawn Thomas in the ravine.

An officer placed a shield on Shawn Thomas and another officer moved his arm.

An officer was heard telling Shawn Thomas to pull his other hand out.

Trooper Brown said, "If he doesn't have another gun on him do first aid on him.

An ambulance arrived at the scene and paramedics approached and began to render medical aid. Shawn Thomas was heard moaning. An officer announced to watch his [Shawn Thomas'] weapons.

An officer approached Officer	and he said he fired and a trooper fired.
Officer provided his rifle to an	other officer.
Another officer told Officer no the incident to his chief.	t to say anything to anyone else and to report
Another officer asked Officer his supervisor was Lee Padula and the conot believe his round struck Shawn Tho	hief was notified. Officer said he did
· · · · · · · · · · · · · · · · · · ·	and asked about his BWC. Officer
said, "Yeah."	
	and that another officer needed to be a rifle one time and that he already gave his





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Sergeant Padula obtained Officer s BWC and placed it in a cruiser.

There was nothing else relevant on the recording.

### Amped Five Reports and Derivatives

SAS Moran used Amped Five to generate an Amped Five report documenting all of the bookmarked images and workflow processes applied (single frame selector, crop, and resize). The interactive Amped Five report and derivatives were copied to a USB flash drive and the USB flash drive was submitted to the BCI physical case file as part of Reference Item G.

A non-interactive copy of the Amped Five report was placed in the BCI Matrix case file section. It is attached to this report.

Reference Item G included the following:

- Amped Five Derivatives VTPD BWC
  - Included Amped Five interactive report, non-interactive report, bookmarked images, cropped and resized images
- VTPD BWC (working copy of video)
- Amped Five Project 2023-VTPD BWC
- Snipping Tool 1st Gunshot Waveform Spike (image for Matrix report)
- Snipping Tool 2<sup>nd</sup> Gunshot Waveform Spike (image for Matrix report)
- Snipping Tool Overhead Map 7498 Van Ness Ave Bing Maps (image for Matrix report)

#### References:

REF ITEM C - USB Flash Drive - Vienna Twp BWC Video

REF ITEM G – USB Flash Drive - Video Review - VTPD and HTPD - Amped Five Projects and Derivatives

#### Attachments:

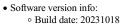
1. Amped Five Project Report - 2023-2639 VTPD BWC - Non-Interactive

### **Amped FIVE Report**

Report Generation: 2024-03-30 11:08:04

Project Name: 2023-2693 Author: SAS C. Moran #67

Description: Review of VTPD Officer s BWC video.



o Revision: 31095

• Platform:

o Operating System: Microsoft Windows, 64 bit

∘ CPU Model: 13th Gen Intel(R) Core(TM) i7-13700HX

Project File: Amped Five Project - 2023-2639 VTPD BWC.afp

- Input File Details:
  - o Filename: ../VTPD BWC/BodyCam\_H106921\_2023.mp4
    - MD5 Hash Code: d6e1cf9a4e058b222e632011b2e4c8a2
    - File Size (bytes): 1571920326
    - Format: mov,mp4,m4a,3gp,3g2,mj2
    - Codec: h264
    - Width (pixels): 1280
    - Height (pixels): 720
    - Fps: 30
    - Length (frames): 54000
    - Duration (time): 00:30:00.000
- Output File Details:
  - Filename: ../Amped Five Derivatives VTPD BWC/BodyCam\_H106921\_2023-240330103629.bmp
    - MD5 Hash Code: 41a4f6e39f834bb0d231ba7c549b2c77
    - File Size (bytes): 1851966
    - Format: bmp
    - Width (pixels): 1155
    - Height (pixels): 534
  - Filename: ../Amped Five Derivatives VTPD BWC/BodyCam\_H106921\_2023-240330104735.bmp
    - MD5 Hash Code: 570ac948c253098891766f60f02c982c
    - File Size (bytes): 1162458
    - Format: bmp
    - Width (pixels): 915
    - Height (pixels): 423

#### **Bookmarks:**

BodyCam\_H106921\_2023 - VTPD -

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 0



This was the first frame of the video. Officer was at the scene. He was speaking with another person, likely an officer, about the area. It was extremely



Chain: BodyCam H106921 2023, Filter: Video Loader, Position: 0

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 4387



An officer radioed, "Behind the tree, he's got a shotgun in his left hand."

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 4387

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 4669



Officer said, "I think I see movement coming our way." The video was very dark.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 4669

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 6807



An officer radioed, "He has two slung. He's headed up towards the road now. Two shotguns slung. Unit on the road, he's up there coming to you." In the previous frames, Officer said he was going to move to a tree and he completed the movement. A K-9 was also heard barking some distance away.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 6807

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 8493



Officer said (likely to Ohio State Highway Patrol Trooper , "See that red one right there? He's somewhere behind there." Officer had his flashlight activated. Shawn Thomas was not in view of the BWC.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 8493

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 9130



Officer said, "Right side. Right side. Right side. Drop the gun!" He activated his flashlight and Shawn Thomas was observed in this frame. He was standing in the grass on the west side of the residence located at 7524 Van Ness Avenue. He was some distance away.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 9130

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 9316



Officer was behind Trooper as they moved near the northwest corner of the residence at 7524 Van Ness Avenue. It was possible that Shawn Thomas was observed in the grass on the west side of the residence.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 9316

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 9441



Trooper said, "Drop the gun." Officer radioed, "Hey, we got contact up here on Stiver." It was possible that Shawn Thomas upper body was observed above the ravine ridge. There was a straight-line object (likely a shotgun) observed on the right side (as BWC was facing him).

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 9441

BodyCam\_H106921\_2023 - VTPD - / Image Writer, frame 9441 - Crop and Resize



Chain: BodyCam\_H106921\_2023, Filter: Image Writer, Position: 0

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 9562



Officer yelled, "Drop the gun!" Trooper was in front of him and to his right. Shawn Thomas' upper body was observed above the ravine ridge. He appeared to be facing the officers. There was a line on his chest (possibly shotgun sling) and his left arm/elbow appeared to be bent near the left side of his head/shoulder (possibly on phone or moving shotgun sling).

 $Chain: Body Cam\_H106921\_2023, Filter: Video \ Loader, Position: 9562$ 

BodyCam\_H106921\_2023 - VTPD - / Image Writer, frame 9562 - Crop and Resize



Chain: BodyCam\_H106921\_2023, Filter: Image Writer, Position: 0

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 9835



Officer yelled, "Drop the...there you go. Drop the other one!" In previous frames, Shawn Thomas said, "Hey." Shawn Thomas was not in view of the BWC.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 9835

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 10012



Trooper said, "Drop the gun." Shawn Thomas possibly said "No. Fuck you [unintelligible]." Shawn Thomas was not in view of the BWC.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 10012

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 10027



This was the approximate frame when the first gunshot was fired, likely by Trooper Shawn Thomas was not in view of the BWC.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 10027

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 10070



These were the approximate frames when the second gunshot was fired, likely by Officer Shawn Thomas was not in view of the BWC. 10070 – possible opaque cloud (gunpowder) observed from end of rifle. 10071 – audio waveform spike observed on this frame. An audio waveform spike was observed and the echo/reverberation of the sounds of the gunshot by a rifle.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 10070

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 10071



These were the approximate frames when the second gunshot was fired, likely by Officer Shawn Thomas was not in view of the BWC. 10070 – possible opaque cloud (gunpowder) observed from end of rifle. 10071 – audio waveform spike observed on this frame. An audio waveform spike was observed and the echo/reverberation of the sounds of the gunshot by a rifle.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 10071

BodyCam\_H106921\_2023 - VTPD - / Video Loader, frame 10237



Officer radioed, 's shots fired. shots fired." Shawn Thomas was not in view of the BWC.

Chain: BodyCam\_H106921\_2023, Filter: Video Loader, Position: 10237

#### **Summary:**

#### BodyCam\_H106921\_2023

<u>Video Loader</u>: Loads a video from file.

Single Selector: Selects a single frame of the video.

Crop: Crops a region of interest of the image.

Resize: Resizes the image.

<u>Image Writer</u>: Writes the current image to a new file.

#### BodyCam\_H106921\_2023

Video Loader: Loads a video from file.

Single Selector: Selects a single frame of the video.

Crop: Crops a region of interest of the image.

Resize: Resizes the image.

Image Writer: Writes the current image to a new file.

#### BodyCam\_H106921\_2023

#### Video Loader

Loads a video from file.

#### **Details:**

The Video Loader decodes a standard-format video file into a sequence of frames that can be displayed and processed.

#### Parameters:

• File: VTPD BWC/BodyCam\_H106921\_2023.mp4

Path of the video to load.

• Video Engine: FFMS with Audio

Video decoder to use.

• Color Range: From File

Uses the color range specified in the video file or force it to full or limited (16-235). Works only with the FFMS Video Engine.

• Chroma Upsampling: Accurate Rounding (Slower)

Selects the chroma upsampling method. Applies only to FFMS-based video engines.

• Audio Stream: 1

Audio Stream selection, useful when multiple streams are available.

• Original File:

Original video file that has been converted from a proprietary DVR format or otherwise imported.

• Concatenate File List:

List of files that were concatenated as part of the conversion process

#### **Additional Information:**

• Video Streams: 1

Number of video streams in the video

• Audio Streams: 1

Number of audio streams in the video

• Subtitle Streams: 0

Number of subtitle streams in the video

#### Single Selector

Selects a single frame of the video.

#### **Details:**

The Single Selector tool outputs only the selected frame of the current clip.

#### Parameters:

• Frame: 9441

Frame number to be selected.

#### **Additional Information:**

This filter has no additional information.

#### Crop

Crops a region of interest of the image.

#### **Details:**

The Crop tool produces an output image which is only the selected square or rectangular region of the input image.

#### Parameters:

• Selection: x: 391, y: 320, w: 385, h: 178

The selection where the filter is applied to. It may be the whole image, a static region, or a region containing a tracked object of interest.

#### **Additional Information:**

This filter has no additional information.

#### Resize

Resizes the image.

#### **Details:**

The Resize tool interpolates the input image by generating an output image of the desired size.

The available interpolation algorithms are:

- Nearest: simply copies the value of the closest pixel in the position to be interpolated;
- Bilinear: uses a bilinear interpolation to resample pixel data;
- Bicubic: uses a bicubic interpolation to resample pixel data.
- Area resamples using pixel area relation.

- Lanczos uses a Lanczos interpolation to resample pixel data.

#### Parameters:

• Size: 1155, 534

Size of output image in pixels.

• Interpolation: Bicubic

Interpolation algorithm used when the image is resized.

#### **Additional Information:**

This filter has no additional information.

#### References:

- Anil. K. Jain, "Fundamentals of Digital Image Processing", Prentice Hall, pp. 253–255, 1989. ISBN: 0-13-336165-9.
  Anil. K. Jain, "Fundamentals of Digital Image Processing", Prentice Hall, pp. 320–322, 1989. ISBN: 0-13-336165-9.
- R. Keys, "Cubic convolution interpolation for digital image processing", in IEEE Transactions on Acoustics, Speech, and Signal Processing, Vol. 29, No. 6, pp. 1153-1160, December 1981. https://doi.org/10.1109/TASSP.1981.1163711
- · Hsieh Hou and H. Andrews, "Cubic splines for image interpolation and digital filtering", in IEEE Transactions on Acoustics, Speech, and Signal Processing, Vol. 26, No. 6, pp. 508–517, December 1978. https://doi.org/10.1109/TASSP.1978.1163154

#### Image Writer

Writes the current image to a new file.

#### **Details:**

The Image Writer encodes the current frame to the specified file in the chosen format.

#### Parameters:

- File: Amped Five Derivatives VTPD BWC/BodyCam\_H106921\_2023-240330103629.bmp Path of the image to save.
- Format: Bitmap

Format used to encode the image file.

• Quality: 90

Quality of the image to save (the higher the value, the better the quality). Applicable only when saving in Jpeg format.

#### **Additional Information:**

• Frame Position: 0

Position of the saved frame in the input video.

#### BodyCam\_H106921\_2023

#### Video Loader

Loads a video from file.

#### **Details:**

The Video Loader decodes a standard-format video file into a sequence of frames that can be displayed and processed.

#### Parameters:

• File: VTPD BWC/BodyCam\_H106921\_2023.mp4

Path of the video to load.

• Video Engine: FFMS with Audio

Video decoder to use.

• Color Range: From File

Uses the color range specified in the video file or force it to full or limited (16-235). Works only with the FFMS Video Engine.

• Chroma Upsampling: Accurate Rounding (Slower)

Selects the chroma upsampling method. Applies only to FFMS-based video engines.

• Audio Stream: 1

Audio Stream selection, useful when multiple streams are available.

• Original File:

Original video file that has been converted from a proprietary DVR format or otherwise imported.

• Concatenate File List:

List of files that were concatenated as part of the conversion process

#### **Additional Information:**

• Video Streams: 1

Number of video streams in the video

• Audio Streams: 1

Number of audio streams in the video

• Subtitle Streams: 0

Number of subtitle streams in the video

#### Single Selector

Selects a single frame of the video.

#### **Details:**

The Single Selector tool outputs only the selected frame of the current clip.

#### Parameters:

• Frame: 9562

Frame number to be selected.

#### **Additional Information:**

This filter has no additional information.

#### Crop

Crops a region of interest of the image.

#### **Details:**

The Crop tool produces an output image which is only the selected square or rectangular region of the input image.

#### Parameters:

• Selection: x: 338, y: 342, w: 305, h: 141

The selection where the filter is applied to. It may be the whole image, a static region, or a region containing a tracked object of interest.

#### **Additional Information:**

This filter has no additional information.

#### Resize

Resizes the image.

#### **Details:**

The Resize tool interpolates the input image by generating an output image of the desired size.

The available interpolation algorithms are:

- Nearest: simply copies the value of the closest pixel in the position to be interpolated;
- Bilinear: uses a bilinear interpolation to resample pixel data;
- Bicubic: uses a bicubic interpolation to resample pixel data.
- Area resamples using pixel area relation.

- Lanczos uses a Lanczos interpolation to resample pixel data.

#### Parameters:

• Size: 915, 423

Size of output image in pixels.

• Interpolation: Bicubic

Interpolation algorithm used when the image is resized.

#### **Additional Information:**

This filter has no additional information.

#### References:

- Anil. K. Jain, "Fundamentals of Digital Image Processing", Prentice Hall, pp. 253–255, 1989. ISBN: 0-13-336165-9.
  Anil. K. Jain, "Fundamentals of Digital Image Processing", Prentice Hall, pp. 320–322, 1989. ISBN: 0-13-336165-9.
- R. Keys, "Cubic convolution interpolation for digital image processing", in IEEE Transactions on Acoustics, Speech, and Signal Processing, Vol. 29, No. 6, pp. 1153-1160, December 1981. https://doi.org/10.1109/TASSP.1981.1163711
- · Hsieh Hou and H. Andrews, "Cubic splines for image interpolation and digital filtering", in IEEE Transactions on Acoustics, Speech, and Signal Processing, Vol. 26, No. 6, pp. 508–517, December 1978. https://doi.org/10.1109/TASSP.1978.1163154

#### Image Writer

Writes the current image to a new file.

#### **Details:**

The Image Writer encodes the current frame to the specified file in the chosen format.

#### Parameters:

- File: Amped Five Derivatives VTPD BWC/BodyCam\_H106921\_2023-240330104735.bmp Path of the image to save.
- Format: Bitmap

Format used to encode the image file.

• Quality: 90

Quality of the image to save (the higher the value, the better the quality). Applicable only when saving in Jpeg format.

#### Additional Information:

• Frame Position: 0

Position of the saved frame in the input video.