Technical Procedure for Image Enhancement

1.0 Purpose - The purpose of this procedure is to enhance image files of possible interest during video analysis.

2.0 Scope - This procedure describes the steps to be taken by personnel of the State Crime Laboratory in enhancing image files during video analysis.

3.0 Definitions – N/A

4.0 Equipment, Materials and Reagents

- Enhancement software (e.g., Adobe Photoshop)

5.0 Procedure

5.1 Determine whether the images require further enhancement based on the analyst's training and experience. If further enhancement is needed, continue with this protocol.

5.2 Make a duplicate copy of each image to be enhanced. Name the duplicate image such that it relates to the original image's file name, but can easily be distinguished from it.

5.3 Open the duplicate image and perform enhancements. Below is a list of some of the major processes. **Note**: This list should not be considered all-inclusive.

5.3.1 Sharpen: Used to bring out definition in an image.

5.3.2 Levels Adjustment: Used to adjust the levels of light and dark in an image.

5.3.3 Brightness Adjustment: Used to adjust the brightness levels in an image.

5.3.4 Contrast Adjustment: Used to bring out definition in an image.

5.4 Save the enhanced image.

5.5 Depending on the available enhancement software, layers may be used to enhance an image. Each enhancement process is placed on its own layer and stacked on the original image in a manner such that the Forensic Scientist is easily able to tell the effect each process had on the original image.

5.6 Standards and Controls - A color bar test pattern with test tone obtained from the engineering department at WRAL-TV on the media type submitted.

5.7 Calibrations - The hardware and software used in casework shall be verified before each case to ensure that they are functioning properly (see the Video Performance Verification Procedure).

5.8 Maintenance – N/A

5.9 Sampling - N/A

5.10 Calculations - N/A

5.11 Uncertainty of Measurement - N/A

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6.0 Limitations - Failure to enhance images properly could result in content or context being altered to the extent that the images are no longer a true and accurate representation of the original event.

7.0 Safety - N/A

8.0 References

- Video Performance Verification Procedure
- Adobe Photoshop User Manual

9.0 Records - N/A

10.0 Attachments – N/A

Revision History		
Effective Date	Version Number	Reason
09/17/2012	1	Original Document

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