

**Purpose:**

The methods and procedures presented in this outline address the areas which should be focused upon to assist the examiner in the proper examination and processing of video, digital and multimedia related evidence. The examination pathway followed by the examiner to achieve proper evidentiary results is further augmented and directed by the General Laboratory Standard Operating Procedures and the appropriate technical references maintained within the Multimedia and Image Enhancement Section.

**Responsibility:**

Forensic Science Examiners assigned to the Section

**Procedure:**

The following outline (documented on MMIE-SOP-26 Appendix 1) should be used for all persons newly assigned to the Multimedia and Image Enhancement section:

1. Overview of Laboratory
  - A. General Laboratory Tour
  - B. Safety Tour
  - C. General Laboratory SOPs
  - D. Introduction to LIMS
  - E. Introduction to Evidence Receiving
  - F. Read all Section SOPs
2. Forensic Photography (Refer to MMIE SOP-18, 19, 20, 21 and 22)
  - A. Background of Forensic Photography and Law Enforcement Photography
  - B. Overview of analog photography (negatives, etc.)
  - C. Evidentiary Photography
  - D. File formats (JPEG, TIFF, RAW)
  - E. Use of scales

- F. Lighting Methods and enhancement via lighting
  - G. Producing a 1:1 image
  - H. Image processing
  - I. Storage
3. Analog Video Analysis (Refer to MMIE SOP-02, 03, 04, 05 and 07)
- A. Overview of analog video
  - B. Types of analog video/audio
  - C. Introduction to equipment used for analog video
  - D. Repairing analog video/audio
  - E. Types of analysis of analog video
  - F. Introduction to worksheet and wording used for analog video
  - G. Sub-items and derivatives for analog video/audio
4. Digital Image Analysis (Refer to MMIE SOP-02, 03, 04, 05, 06, 08, 09, 12, 13, 14 and 28)
- A. Overview of still images and image analysis
  - B. Different ways of acquiring/extracting still images
  - C. Methods of analysis of still images
  - D. Introduction to software programs used in analysis
  - E. Introduction to printing of images
  - F. Sub-items and derivatives for image analysis
  - G. Worksheets and reports for image analysis
5. Digital Video Analysis (Refer to MMIE SOP-02, 03, 04, 06, 08, 09, 12, 14, 16, and 28)
- A. Overview of digital video, compression and codecs
  - B. Software programs used for analysis
  - C. Proper methods for video analysis

- D. Acquiring still images and other types of analysis
  - E. Converting video to different formats
  - F. Redactions
  - G. Sub-items and derivatives for video analysis
  - H. Worksheets and reports for video analysis
6. Audio Analysis (Refer to SOP-02, 03, 04, 07, 08, 10 and 11)
- A. Overview of audio
  - B. Introduction to software programs used for analysis
  - C. Proper methods for analysis
  - D. Converting audio formats
  - E. Types of audio analysis
  - F. Redactions
  - G. Sub-items and derivatives for audio analysis
  - H. Worksheets and reports for audio analysis
7. DVR Analysis (Refer to MMIE SOP-02, 03, 04, 09 and 16)
- A. Overview of DVRs
  - B. Types of DVRs (including manufacturers, etc.)
  - C. Important considerations of DVRs (overwriting, date/time, etc.)
  - D. Proper methods of DVR analysis (including seizing)
  - E. Photographing DVRs
  - F. Navigating a DVR
  - G. Export methods of DVRs (CD/DVD, USB, analog, etc.)
  - H. Sub-items and derivatives for DVRs
  - I. Worksheets and reports for DVRs

8. Video Retrievals (Refer to MMIE SOP-16)
  - A. Taking calls/emails pertaining to retrievals
  - B. Information needed from agencies
  - C. Considerations of DVRs and scheduling for agencies
  - D. Equipment needed
  - E. Arrival at scene
  - F. Documenting retrieval process while at scene
  - G. DVR retrieval process
  - H. Submitting to Lab as a case
  - I. Sub-items and derivatives for video retrievals
  - J. Worksheets and reports for video retrievals
9. Comparative Analysis (Refer to MMIE SOP-02, 03, 04, 06, 12 and 13)
  - A. Overview of types of comparisons
  - B. Review of image analysis
  - C. Setting up a comparison
  - D. Software used in comparisons
  - E. Charting – Digital and Hard Copy/Poster
  - F. Sub-items and derivatives for comparisons
  - F. Worksheets and reports
10. Court (Refer to SOP-GL-17)
  - A. Qualifications and ethical responsibilities
  - B. Technical Testimony
  - C. Dress and Demeanor
  - D. Court Monitoring Procedures
  - E. Moot Court

## 11. Retraining

In the event it is identified that an examiner has failed a proficiency or technical and administrative reviews have identified an issue in the casework, the employee shall complete a retraining and competency period as detailed in SOP-GL-14 and SOP-GL-1.

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Damjanovski, Vlado, CCTV, Boston: Butterworth Heinemann, 2000.

Davies, Adrian and Fennessy, Phil, Digital Imaging for Photographers, Woburn MA, Focal Press, 2001.

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Douchette, Martin, Digital Video for Dummies 2<sup>nd</sup> Edition, IDG Books Worldwide Inc. 2001.

Galer, M. & Horvat, L. (2001). *Digital Imaging*. Oxford: Butterworth-Heinemann.

Johnson. S. (2006). *On Digital Photography*. Cambridge: O'Reilly Media Inc.

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Nakamura, Junichi, *Image Sensors and Signal Processing for Digital Still Cameras*, Toyko: Micron Japan, Ltd., 2005.

Pohlmann, K. C. (2005). *Principles of Digital Audio* (5<sup>th</sup> ed.). New York: McGraw-Hill.

Russ, John C., Forensic Uses of Digital Imaging, Boca Raton Florida, CRC Press, 2001.

Russ, John C., The Image Processing Handbook, 3<sup>rd</sup> Edition, Boca Raton Florida, CRC Press & IEEE Press, 1999.

Salient Stills Corporation. (2006). *Video Focus Version 2.0 Windows User Guide*. Cambridge: Salient Stills Inc.

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SWGIT Guidelines. (2007). Special Working Group of Imaging Technology

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