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 Unit.

Responsibility:

Forensic Science Examiners assigned to the Unit

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 Unit. In general, the trainee should observe between two to five cases for each section of the training. Mock cases will include a written report and use of Justice Trax unless not required by SOPs.

1.   Overview of Laboratory

Overview of Laboratory	Date Completed	Initials of Trainee	Trainer's initials
GL 2.1 Laboratory Safety Checklist			
GL 14.1 General Laboratory Training Checklist			
Introduction to LIMS			
Introduction to Evidence Receiving			
Statement of Qualification completed			
CV and Transcripts provided to Quality Manager			

2.   Analog Video Analysis

In this section of the training, the trainee will learn about analog video and how these recordings are made and the analysis involved with this type of video. The trainee should complete three mock cases.

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Analog Video Analysis	Date Completed	Initials of Trainee	Trainer's initials
Overview of analog video and assigned readings			
Types of analog video/audio			
Introduction to equipment used for analog video casework			
Repairing an analog tape (video/audio)			
Types of analysis for analog video			
Introduction to worksheets and wording used for analog video			
Introduction to sub-itemization and derivatives created for analog video/audio			
Reading of MMIE SOPs 02, 03, 04, 05 and 07			
Review of video duplications – analog evidence			
Review of audio duplications – analog evidence			
Cases Observed:	Dates of Observation:		

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Mock Cases duplications with analog evidence both video/audio:	Comments by Trainer on Cases:
Competency Test Administered:	Comments of Trainer on Competency Test:

3.   Digital Image Analysis (Refer to MMIE SOP-02, 03, 04, 05, 06, 08, 09, 12, 13, 14 and 28)

In this section of the training, the analyst will learn about different image formats and how to acquire images from video. The analyst will practice on three (3) mock cases of acquiring an image and then doing adjustments such as brightening or layering/frame averaging.

Digital Image Analysis	Date Completed	Initials of Trainee	Trainer's initials
Overview of still images and image analysis			
Review of SOPS: 02, 03, 04, 05, 06, 08, 09, 12, 13, 14, 14 and 28			
Protecting digital media using write blockers			
Hash value review			
Metadata associated with digital media			
Digital File Formats: JPEG, TIFF, RAW, BMP, MPEG, etc			

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Different ways of acquiring/extracting still images			
Methods and software used for the analysis and enhancement of still images			
Sub-itemization of generated still images			
Worksheets and reports for image analysis;			
Cases Observed:	Dates of Observation:		
Mock Cases still images captured/acquired with report:	Comments by Trainer on Cases:		
Competency Test Administered:	Comments by Trainer on Competency Test:		

4.   Digital Video Analysis (Refer to MMIE SOP-02, 03, 04, 06, 08, 09, 12, 14, 16, and 28)

In this section of the training, the analyst will learn about different video formats and how to acquire video and audio from a file. The analyst will practice on three (3) mock cases of acquiring a video and doing adjustments such as levels adjustments.

Digital Video Analysis	Date Completed	Initials of Trainee	Trainer's initials
Overview of digital video, compression and codecs			

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Software programs used for analysis			
Proper methods for video analysis			
Acquiring segments of video and audio from a video file			
Converting video to different formats			
Creating a picture – in – picture of two videos			
Creating sub-items of video analysis cases			
Worksheets used for video analysis			

Cases Observed:	Dates of Observation:
Mock cases completed with report:	Comments on Cases by Trainer:
Competency Test Administered:	Comments on Trainer on Competency Test:

5.   Redactions

The analyst will understand the use of redactions and when it is used. The analyst will practice redactions on three (3) cases with the following types of scenarios: video redaction only, audio redaction only and combination of both.

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Digital Video Redaction	**Date Completed**	**Initials of Trainee**	**Trainer's initials**
Overview of digital video, compression and codecs			
Use of Media Info			
Software programs used for redaction			
Proper methods for conducting a redaction			
Acquiring still images and audio from video from Arbitrator			
Converting video to different formats			
Understanding of Body Cam Policy from A&O manual 13.15.11			
Creating sub-items of redacted video cases			
Worksheets used for redactions			
Mock cases completed with report:	Comments on Cases by Trainer:		
Competency Test Administered:	Comments on Trainer on Competency Test:		

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6.   Audio Analysis (Refer to SOP-02, 03, 04, 07, 08, 10 and 11)

In this section of the training, the analyst will learn about different audio formats and how to acquire audio from a file or analog media. The analyst will practice on five (5) mock cases of acquiring audio and doing adjustments such as equalization of volume, removal of noise, and clarification of speech.

Audio Analysis	Date Completed	Initials of Trainee	Trainer's initials
Overview of audio files, bit rates and types of codecs			
Introduction to software programs used of audio analysis			
Proper methods of audio analysis			
Converting audio to different formats			
Redacting audio files			
Sub-itemization of audio files			
Cases Observed:	Dates of Observation:		
Mock cases completed with report:	Comments on Cases by Trainer:		
Competency Test Administered:	Comments on Trainer on Competency Test:		

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7.   DVR Analysis (Refer to MMIE SOP-02, 03, 04, 09 and 16)

In this section of the training, the analyst will learn about digital video recorders (DVR) and how to extract surveillance video from these recorders. The analyst will practice on five mock cases in total. Two (2) mock cases will consist of acquiring an video using the Unit's DVR. As part of the this section's training, the trainee will be evaluating video information from previously worked cases in which an archive disk is on file. The analyst will practice on three (3) such cases in which there is a time difference in the recording to real time.

DVR Analysis	Date Completed	Initials of Trainee	Trainer's initials
Overview of DVRs			
Types of DVRs (including manufacturers)			
Important considerations with DVRs: overwriting, date/time			
Proper methods of DVR analysis			
Photographing a DVR			
Exporting video from a DVR			
Other types of video capture			
Use of DVR Examiner			
Worksheets used for DVR analysis			
Cases Observed:	Dates of Observation:		
Mock cases completed with report:	Comments on Cases by Trainer:		
Competency Test Administered:	Comments on Trainer on Competency Test:		

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8.   Video Retrievals (Refer to MMIE SOP-16)

Video Retrievals	Date Completed	Initials of Trainee	Trainer's initials
Initial call/email for a video retrieval and information needed from requestor			
Considerations of DVRs when scheduling with agency			
Equipment needed for retrieval			
Documentation needed on-scene			
Submission of case to lab and forms needed completed			
How to document video retrieved at scene on worksheet			
Crime Scene Assistance Form			
Observation of five (5) retrievals:	Dates of Observation along with DVR model:		
Three (3) video retrievals with senior analyst observation:	Comments on Cases by Trainer:		

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9. Comparative Analysis (Refer to MMIE SOP-02, 03, 04, 06, 12 and 13)

Comparative Analysis	Date Completed	Initials of Trainee	Trainer's initials
Overview of comparisons			
How to set up a comparison			
Software used in comparisons			
Creating a comparison chart - Vehicle - Human subject - Clothing			
Limitations in comparisons			
Three (3) mock cases using a vehicle, human subject and clothing including report written.	Comments by Trainer on Mock Cases:		
Competency Test Administered:	Comments by Trainer on Competency Test:		

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10.   Court (Refer to SOP-GL-17)

Court Testimony	Date Completed	Initials of Trainee	Trainer's initials
Review of qualification and ethical responsibilities			
Dress and Demeanor			
Court Monitoring Procedures			
Technical Testimony (includes reading of Swinton ruling)			
Observations of Court Testimony:	Dates of Observations and brief synopsis:		
Mock Court:	Comments from Trainer:		

11.   Competency and Approval for Casework and Technical Reviews

At the end of each section of training, the binder may be forwarded to the Quality Manager for review for a competency test to be completed for that area of training. After the successful completion of the competency test, the analyst will be given an oral or written examination. The passing grade for this examination is 80%. Once the competency and examination are successfully completed, a memo/email shall be written to the Deputy Director stating   that the analyst has successfully completed their training for that area and is recommended to be authorized for casework.

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The Deputy Director may review the training files or simply endorse this memo/email and a Qualtrax workflow will be initiated for the authorization of the analyst in the areas they are deemed competent to conduct casework. The workflow may include the following in which the analyst is being authorized to participate in:

   a. Handle evidence,
   b. Perform examination and/or analytical methods,
   c. Utilize all applicable equipment in methods described in SOPs,
   d. Report, review and authorization of results
   e. Perform administrative reviews
   f. Perform validations in the discipline
   g. Development of new methods
   h. Modification of methods
   i. Verification of methods

The analyst will perform casework and after gaining experience in conducting analysis and reporting findings in a variety of evidence type/conclusions in the discipline, their experience will be evaluated for the ability to conduct technical reviews. This evaluation period may include technical review ghosting with an experienced examiner. Once the analyst has completed the evaluation period, a memo/email shall be written to the Deputy Director stating that the analyst has successfully completed their evaluation period and has been deemed competent to conduct technical reviews in that discipline.

The Deputy Director, after review, may endorse this memo/email and generate Qualtrax workflow that this analyst be authorized to perform technical reviews based upon the analyst's casework experience in that discipline.

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.

References:
See MMIE SOP-24 Multimedia and Image Enhancement References

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