



### F29 Mideo System CASEWORKSeis™: The Use of New Technology in Bite Mark Analysis and Forensic Identification

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After attending this presentation, attendees will understand and appreciate the nuances and workflow barriers that forensic dentists and other forensic specialists encounter when employing digital photography and radiography technology as components of their forensic comparison and evaluation protocols. Additionally, the presentation will provide attendees with information concerning a new device and computer software program that facilitates secure image workflow and addresses the problems previously encountered by forensic experts using this technology. This session will present the practical uses of this system, which is new to forensic dentistry and the coroner/medical examiner laboratory environment.

This presentation will impact the forensic community by presenting information which will facilitate the comparison of dental records in mass fatality incident situations, and cases requiring bite mark evidence, histological tissue and/or digital radiographic comparison.

The introduction of digital radiographic and photographic technology has introduced new comparison media into the forensic laboratory, making these procedures more difficult for the forensic scientist unfamiliar with the operational techniques required for their use. Currently, forensic practitioners are storing more information in digital formats. Thus, tracking, networking, and securing this stored data have become issues of high priority for the forensic community.

Comparing digital images and radiographs with conventional film based images and printed radiographs is more difficult than comparison of these components of forensic evidence within the same medium. The computer software program CASEWORKSeis™ developed by Mideo Systems, Inc. permits these operations and increases accuracy and efficiency in forensic identification and bite mark analysis. Additionally, CASEWORKSeis™ provides security, tracking, and storage and output solutions for management of forensic evidence.

The CASEWORKSeis™ program permits the user to capture non-digital radiographic formats and import digital radiographs. Once the capture sequence is complete, CASEWORKSeis™ offers the user tools to manipulate the radiographic images. Various filters are included for measurement, image enhancement, and comparison. The program also interfaces to various LIMS and/or coroner's case management software. Multi-level security provides the ability to attach case details to objects stored in the database of the program.

The ability to scan or photograph a dental cast into the software and bring it immediately to a 1:1 relationship with digital photographs of a bite mark pattern is unique to this program. This feature can greatly reduce the time required for bite mark comparison. A variety of image types, including radiographic or photographic projections, can be viewed in a single workspace. This feature permits the analyst to more accurately compare the data.

CASEWORKSeis™ stores each version of an image in a SQL/Oracle database, attaching it to the image. The unaltered original image/data can be accessed at any time during the analysis process. The program tracks and records all manipulation of the data. Image history and chain of custody information is documented to insure the authenticity of this evidence should questions arise. Data and evidence stored in the CASEWORKSeis™ program is readily available for court exhibits through quick, straightforward interfaces.

The capabilities of the CASEWORKSeis™ program will be demonstrated through review of several recent cases involving comparison of dental records and radiographs for identification and comparison of bite mark evidence. Beta testing of this software system has occurred at the Clark County, Nevada Coroners' Office and the Los Angeles Sheriffs' Crime Laboratory.

#### Computer Software, Evidence Comparison, Bite Mark Analysis