J9 Forensic Document Examination by a Multispectral Mobile Forensic Imaging System

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After attending this presentation, attendees will have a greater understanding of a multispectral mobile forensic imaging system for detecting originality, alterations and distortions, or any modifications on questioned documents as a basic screening test.

This presentation will impact the forensic science community by illustrating the efficiency of using different polarized or non-polarized imaging on questioned documents.

Forensic document examination is one of the most important fields of forensic sciences. Questioned documents can be examined for evidence of alteration, obliteration, erasure, and page substitution. The examiner can use various methods, materials, or machines that created the documents, providing key information that can identify or narrow the possible sources of the document. The ink, paper, writing tools, ribbons, stamps, and seals used in production of the document may all reveal important clues. The examiner may even detect valuable evidence in a document's invisible impressions.1 Special techniques such as photography, microscopy, lighting, electrostatic detection apparatus, and chromatography are used in different qualifications in forensic document examination.2 This study tests the usefulness and efficiency of a multispectral mobile forensic imaging system, ForenScope®, on detection of originality, alterations and distortions, or any modifications of the questioned documents.

ForenScope® is a system that turns a smartphone, a mobile device with a camera, or a tablet into a mobile multispectral imaging system with a 200nm-1,000nm imaging band coupled with the ability of recording and transferring. **ForenScope®** provides polarized/non-polarized imaging at the same time with a very different method using soft white Surface-Mounted-Device Light-Emitting Diodes (SMD LEDs) integrated to the standard system.3 ForenScope® was tested on questioned documents that contained evidence of false identities, counterfeit money, false checks, falsification of documents, chemical process, adding extraction, and consecutive overlay. Polarized and non-polarized macro and micro lenses were tested with different light sources (from 365nm Ultraviole to Dark Red) for imaging to determine the best combination setting for each document. Results of the study reveal the advantages and limitations of ForenScope®.3

During the study, it was condluded that ForenScope® is portable, easy to use, consistent with smart phones and tablets, and displays the features of fast imaging, sharing and archiving, and high-quality distant or macro imaging that result in successful polarized imaging features. In addition to these advantages, dependency on the technical capabilities of the smart phone's or tablet's camera is a major limitation.

As a result, a multispectral mobile forensic imaging system such as ForenScope® is a portable device that can be used as a basic screening test for detecting originality, alterations, distortions, or any modifications to a questioned document.

Reference(s):

1. A Simplified Guide To Forensic Document Examination. http://www.crime-scene-investigator.net/SimplifiedGuideQuestionedDocuments.pdf Access date: 07.28.2015.
2. Guide for the development of forensic document examination capacity. United Nations New York, 2010.
3. Meet with a New Concept It's the First Multispectral Mobile Imaging and Archiving System in the World. http://www.forenscope.com/icerik/products_forensic.html Access date: 07.28.2015.

Forensic Document, Forenscope, Multispectral Mobile Imaging

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