

OSAC RESEARCH NEEDS ASSESSMENT FORM



Title of research need:

Describe the need:

Accredited digital evidence laboratories (DELs) are required to validate software used for any purpose, including multimedia enhancement, processing, and analysis. Due to this requirement, DELs spend significant amounts of time testing and validating software used in analysis, however, to date no effort has been made to standardize the process used for testing and validation. Further, no (or few) DELs share lists of previously validated software or information related to their testing procedures, which propagates this problem. VITAL requests a study be done on commonly used software within DELs, and a repository be created that includes what the software is, testing done to validate the software, and limitations suggested for tested software.

Keyword(s):

Submitting subcommittee(s): **Date Approved:**

(If SAC review identifies additional subcommittees, add them to the box above.)

Background Information:

1. Does this research need address a gap(s) in a current or planned standard? (ex.: Field identification system for on scene opioid detection and confirmation)

Yes, affected existing standards include the following: Standard Guide for Forensic Digital Image Processing ; Standard Guide for Forensic Digital Video Analysis (Draft) ; Standard Guide for Forensic Photogrammetry ; SWGDE Minimum Requirements for Testing Tools used in Digital and Multimedia Forensics, Version: 1.0, 2018-11-20

2. Are you aware of any ongoing research that may address this research need that has not yet been published (e.g., research presented in conference proceedings, studies that you or a colleague have participated in but have yet to be published)?

NIST’s Computer Forensics Tool Testing Program (CFTT). NIST has made available testing software that can be used by forensic labs and vendors to test products and will be hosting shared test reports, mainly for the Digital Evidence Sub discipline, which includes computer and mobile forensics. This program can provide a foundation to incorporate all tools related to the Digital and Multimedia Evidence Discipline – especially those related to Video and Image Analysis.

3. Key bibliographic references relating to this research need: (ex.: Toll, L., Standifer, K. M., Massotte, D., eds. (2019). Current Topics in Opioid Research. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-88963-180-3)

National Institute of Standards and Technology. (2018, February) Computer Forensics Tool Testing Program. [Online]. <https://www.nist.gov/itl/ssd/software-quality-group/computer-forensics-tool-testing-program-cftt>; IEEE Standard for System, Software, and Hardware Verification and Validation, IEEE Standard 1012-2016.

4. Review the annual operational/research needs published by the National Institute of Justice (NIJ) at <https://nij.ojp.gov/topics/articles/forensic-science-research-and-development-technology-working-group-operational#latest>? Is your research need identified by NIJ?

No.

5. In what ways would the research results improve current laboratory capabilities?

The research would improve current laboratory capabilities and conceivably reduce backlogs by eliminating the need for accredited laboratories to independently test and validate commonly used software.

6. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)?

Testing and validating software would improve understanding of the limitations of each software application, which should help improve results of DEL examiners.

7. In what ways would the research results improve services to the criminal justice system?

Due to the decreased administrative workload for examiners, additional time could be spent conducting examinations. This should allow for a reduction in backlogs, a swifter return of examinations, and a quicker implementation of novel software in scientific procedures. This would also allow for reduced challenges of software in a courtroom environment.

8. Status assessment (I, II, III, or IV):

III

	Major gap in current knowledge	Minor gap in current knowledge
No or limited current research is being conducted	I	III
Existing current research is being conducted	II	IV

This research need has been identified by one or more subcommittees of OSAC and is being provided as an informational resource to the community.