OSAC RESEARCH NEEDS ASSESSMENT FORM

Title of research need:	Blind Verifications in Friction Ridge Examinations [FKA Technical Review and Verification]
Keywords:	Blind Verification, Verification, Open Verification, Quality Assurance

R&D Need Rank: Low, Medium, High	Medium	**SAC Approved Date:**	9/3/2025

Submitting subcommittee(s): Friction Ridge

Research Need Summary:

The purpose of these research needs is to build a stronger scientific foundation for forensic science standards. The information provided herein will help to evaluate and strengthen existing standards, and/or fill any standards related gaps. In the space below, please provide a brief narrative of the need to be addressed. This should include:

- The identity of any specific standards that would be affected/improved/evaluated
- A discussion on gaps that exist within the standards or standards related gaps that need to be filled
- How this work would fill those gaps
- An overview of any current or past research efforts that may be relevant to this effort
- A discussion regarding how this research might improve current laboratory capabilities and/or forensic services within the criminal justice system
- Any relevant references

Peer review (e.g., verification) is an essential part of the scientific method that allows a subsequent competent practitioner to question and challenge the initial practitioner's work product. However, it is unclear whether blind verification (i.e. verification in which the verifying examiner is unaware of the decision made by the initial examiner and has no access to their notes and annotations) produces more accurate outcomes than open verification (in which the verifier is aware of the initial examiner's decision and may have access to their notes and annotations). Blind verification is an operationally costly endeavor, so it is desirable to both quantify the advantage (if any) that it offers as well as to evaluate the additional operational cost it entails.

Once these factors are known, an informed cost-benefit analysis can be done by individual agencies to determine their willingness to incorporate blind verification policies into their SOPs. This research will also help to guide current OSAC FRS documents that currently recommend blind verification in several circumstances, but without data to support these recommendations. If blind verification is shown to be worth the additional operational cost, it may also prompt the FRS to update these documents to use stronger 'shall' language where currently only recommended 'should' language is used. This research could also help to define parameters of which situations most benefit from blind verification and how and when its use is most strongly recommended.

There is currently no complete, well-designed, and published research into the relative costs and benefits of blind versus open verification in friction ridge comparisons. One effort (N. Grilli, R. Heinrich, J. Black (2021). "Evaluating the Effectiveness of Blind and Non-Blind Verification in Latent
Print Examination") has been undertaken but not yet published and does not answer all the questions this research need seeks to investigate.

Research in this area will provide foundational support for existing OSAC documents and may provide justification for updates and strengthening of requirements.

Informative References:

OSAC - Best Practice Recommendations for the Verification Component in Friction Ridge Examination

AAAS, Forensic Science Assessments: A Quality and Gap Analysis- Latent Fingerprint Examination, (Report prepared by William Thompson, John Black, Anil Jain, and Joseph Kadane), September 2017. DOI:10.1126/srhrl.aag2874

T.A. Busey, I.E. Dror, Special Abilities and Vulnerabilities in Forensic Expertise, in: Scientific Working Group on Friction Ridge Analysis Study and Technology (SWGFAST) et al. (Ed.) The Fingerprint Sourcebook, National Institute of Justice, Washington, D.C., 2011, pp. 15-11--15-23.

S.M. Kassin, I.E. Dror, J. Kukucka, The Forensic Confirmation Bias: Problems, Perspectives, and Proposed Solutions, Journal of Applied Research in Memory and Cognition, 2 (2013) 42-52.

Black, J.P. "Is There a Need for 100% Verification (Review) of Latent Print Examination Conclusions?" Journal of Forensic Identification, 2012, 62 (1), 80 – 100.

Black, J.P. "Friction Ridge Examination (Fingerprints): Evaluating the Extent and Scope of "Verification" in Analysis Comparison Evaluation and Verification (ACE-V)." December 2010. In: WILEY ENCYCLOPEDIA OF FORENSIC SCIENCE. John Wiley & Sons Ltd, Chichester.
http://onlinelibrary.wiley.com/book/10.1002/9780470061589.fsa1017

Glenn Langenburg, Christophe Champod and Pat Wertheim, "Testing for Potential Contextual Bias Effects During the Verification Stage of the ACE-V Methodology when Conducting Fingerprint Comparisons." J Forensic Sci, May 2009, Vol. 54, No. 3 doi: 10.1111/j.1556-4029.2009.01025.x

Glenn Langenburg. "A Performance Study of the ACE-V Process: A Pilot Study to Measure the Accuracy, Precision, Reproducibility, Repeatability, and Biasability of Conclusions Resulting from the ACE-V Process." Journal of Forensic Identification; 59 (2), 2009 \ 219

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