Title of research need: Human Factors in Facial Image Comparison

Keywords: **Training, Competency, Testing, Validation, Bias**

Submitting subcommittee(s):   Facial Identification   **Date Approved:**   1/29/16

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

Background information:

1. Description of research need:

Human examiners are typically required to make the final decision in facial comparison tasks (e.g. one-to-one facial image comparison, border control and verifying one-to-many searches using an algorithm). Research has demonstrated that untrained humans have a wide range in innate ability when comparing faces. Further research is required to determine effective strategies for training in facial comparison and to develop testing materials. Research is also required to validate the methods used by trained examiners to compare faces (e.g. the feature-by-feature morphological approach) and establish effective case management and bias mitigation strategies.

2. Key bibliographic references relating to this research need:

White et al. 2014. Passport Officers' Errors in Face Matching. PloS ONE 9(8): e103510.

David White, P. Jonathon Phillips, Carina A. Hahn, Matthew Hill, and Alice J. O'Toole (2015). Perceptual expertise in forensic facial image comparison. *Proceedings from the Royal Society, 282*.

3a. In what ways would the research results improve current laboratory capabilities?

Ensure laboratories employ effective testing and training of examiners and that facial examinations are conducted using validated methods. This would likely improve efficiency and accuracy among facial image examiners.
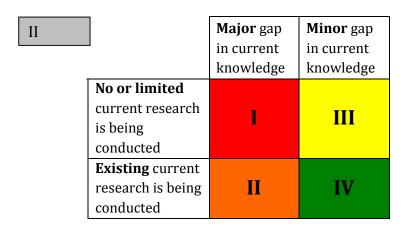
3b. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)?

Identify effective strategies for training in facial comparison and establish methods for the creation of proficiency tests. Facilitate the creation of standards and best practice in human facial image comparison. This has the potential means for improving our scientific method and strengthening the application of ACE-V to facial comparison.

3c. In what ways would the research results improve services to the criminal justice system?

Ensure facial examiners provide informed and objective opinions in court, mitigate bias and ensure that expert conclusions are justified

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

	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.

Subcommittee	Approval date:	29Jan2016

(Approval is by majority vote of subcommittee. Once approved, forward to SAC.)

SAC

1. Does the SAC agree with the research need?   Yes ☒   No ◯

2. Does the SAC agree with the status assessment?   Yes ☒   No ◯

   If no, what is the status assessment of the SAC: [　　]

Approval date: 6/15/16

(Approval is by majority vote of SAC. Once approved, forward to NIST for posting.)