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Guide for Facial Comparison Training of Reviewers to Competency

1. Scope

1.1 This guide is intended to provide minimum criteria for training personnel who will conduct facial comparisons at the reviewer level.

2. Referenced Documents

2.1 ASTM Documents¹:

E2916 Standard Terminology for Digital and Multimedia Evidence Examination

E3149 Standard Guide for Facial Image Comparison Feature List for Morphological Analysis

2.2 FISWG Documents²:

FISWG Glossary

¹ For referenced ASTM standards, visit www.nist.gov/osac/astm-launch-code, or the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org for Annual Book of ASTM.

² Available from Facial Identification Scientific Working Group (FISWG), <http://www.fiswg.org/documents>.

11 FISWG Guide for Mentorship of Facial Comparison Trainees in Role-Based Facial
12 Comparison

13 FISWG Guide for Role-Based Training in Facial Comparison

14 FISWG Minimum Training Criteria When Using Facial Recognition Systems

15 FISWG Physical Stability of Facial Features of Adults

16 FISWG Minimum Guidelines for Facial Image Comparison Documentation

17 FISWG Facial Comparison Overview and Methodology Guidelines

18 *2.3 Other Standards:*

19 OSAC 2022-S-001 Standard Guide for Image Comparison Opinions³

20 **3. Significance and Use**

21 3.1 The intended audience of this document includes organizations and individuals
22 involved in facial comparison at the reviewer level.

23 3.2 The task of facial review includes, but is not limited to, the use of a Facial
24 Recognition System (FRS) to review one-to-many galleries. This task may also include
25 the review of outputs from environments involving high volume throughput that require
26 escalation from a facial assessment.

³ Available from the NIST Organization of Scientific Area Committees for Forensic Science (OSAC) at <https://www.nist.gov/organization-scientific-area-committees-forensic-science/osac-registry>

27 3.3 A facial reviewer performs a comparison generally resulting from the
28 adjudication of a candidate list generated by an FRS. The comparison results are often
29 used in either investigative and operational leads or intelligence gathering applications.

30 3.4 A facial reviewer requires training to acquire general knowledge and
31 comprehension of the technology, major elements of the facial comparison discipline,
32 and use of available tools (e.g., FRS, editing software).

33 **4. Procedure**

34 4.1 This guide provides the minimum criteria for training of facial reviewers and
35 should be read in conjunction with the FISWG Minimum Training Criteria When using
36 Facial Recognition Systems document.

37 4.2 Organizations should include competency testing and a mentoring program as a
38 component of training. Competency testing may help identify needs for continuing
39 education and training. Quality assurance programs should also be a component of
40 training as they are a reliable means of measuring the quality of each trainee's ability to
41 perform their tasks.

42 4.3 Minimum training requirements for facial reviewers include the following:

43 4.3.1 Familiarity with the history of facial comparisons in forensic science to include
44 past methods and their shortcomings.

45 4.3.2 An understanding of common terminology used in the discipline and ability to
46 explain the following (including differences and limitations):

47 4.3.2.1 Human face recognition (familiar/eyewitness).

48 4.3.2.2 Facial Recognition Systems.

49 4.3.2.3 Holistic face processing.

50 4.3.2.4 Unfamiliar face matching.

51 4.3.3 An understanding of the basics of image science including, but not limited to:

52 4.3.3.1 Human vision (e.g., color, perception).

53 4.3.3.2 Photography (e.g., sensors, distortion, subject to camera angle,
54 illumination).

55 4.3.3.3 Components of digital images (e.g., pixels, resolution, compression).

56 4.3.3.4 Detection of alterations within images.

57 4.3.3.5 Properties of video (e.g., limitations, formats, extraction of still images).

58 4.3.3.6 Image distortion (e.g., compression, scanning, printing, intentional
59 alterations).

60 4.3.3.7 Proper handling of digital media, write protection of that media, and
61 generating working copies.

62 4.3.4 An understanding of the principles of comparison including, but not limited to:

63 4.3.4.1 Process of Analysis, Comparison, Evaluation, and Verification (ACE-V)

64 4.3.4.2 Assessment of facial image quality to determine the value for comparison
65 based on the visibility of facial features.

66 4.3.4.3 The difference between class and individual characteristics, as well as those
67 of transient and stable characteristics.

68 4.3.4.4 Methods of comparisons. See FISWG Facial Comparison Overview and
69 Methodology Guidelines.

70 4.3.4.5 Comparison results and the levels of support relevant to facial review (e.g.,
71 exclusion, investigative lead).

72 4.3.5 Familiarity with scientific research related to the validity of facial comparison
73 methods, including their strengths and limitations.

74 4.3.6 Understanding the complexity in comparing faces and the variability in
75 individual aptitude to perform facial comparison.

76 4.3.7 Understanding of the practical application and operational uses of facial
77 images.

78 4.3.8 Overview and effects of bias (e.g., cognitive, confirmation, contextual).

79 4.3.9 Ability to distinguish between relevant and irrelevant task information.

80 4.3.10 Knowledge of FRS, to include, but not limited to:

81 4.3.10.1 Understanding the practical use of FRS generated investigative leads for
82 investigative purposes and possessing the ability to convey their associated limitations.

83 4.3.10.2 User input and operation.

84 4.3.10.3 System operation and output.

85 4.3.10.4 Facial recognition algorithm limitations.

86 4.3.10.5 Demographics performance variations.

87 4.3.10.6 Imaging conditions (e.g., image quality, subject to camera angle)

88 4.3.10.7 Accessories (e.g., eyeglasses, jewelry)

89 4.3.10.8 Obstructions (e.g., masks, scarves, head coverings)

90 4.3.11 Familiarity in applying basic image processing operations (e.g., brightness
91 adjustments, rotations, cropping) and an understanding of the impact of these
92 operations on facial appearance.

93 4.3.12 Familiarity with the bones that comprise the skull and the overlaying
94 musculature.

95 4.3.13 Knowledge of the ASTM E3149 Standard Guide for Facial Image
96 Comparison Feature List for Morphological Analysis.

97 4.3.14 Knowledge of and ability to explain the physical stability of facial features in
98 relation to aging, expression, weight changes, health changes; and knowledge of
99 intentional alterations and how they can affect facial features.

100 4.3.15 Knowledge of temporary (e.g., cosmetics, wounds, and abrasions) and
101 permanent (e.g., scars, surgical alterations, tattoos, piercings) changes to the facial
102 features.

103 4.3.16 Minimum training requirements for facial reviewers that are routinely required
104 to testify in court include competency in the following:

105 4.3.16.1 Court testimony.

106 4.3.16.2 Their Agency authorities and policies regarding acceptable use and
107 dissemination.

108 4.3.16.3 Relevant judicial decisions including the law governing admissibility of
109 scientific evidence in court.

110 4.3.17 Standards, guidelines, and best practices including, but not limited to:

111 4.3.17.1 Rules of evidence.

112 4.3.17.2 Chain of custody.

113 4.3.17.3 Documentation of notes.

114 4.3.17.4 Reporting of results.

115 4.3.17.5 Technical review.

116 4.3.17.6 Mitigating or exculpatory disclosures.

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125 FISWG documents can be found at: www.fiswg.org

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