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# Minimum Training Criteria for Assessors Using Facial Recognition Systems

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## 25 1. Purpose

26 1.1. This document is intended to provide a minimum set of criteria for training of  
27 personnel who conduct facial assessment in a quick throughput environment  
28 using a facial recognition (FR) system to assist them with meeting their  
29 objective.

## 30 2. Introduction

31 2.1. The task of facial assessment is a quick comparison of facial image-to-image or  
32 image-to-person. The task of facial assessment includes, but it not limited to a  
33 quick comparison of image-to-image or image-to-person typically carried out in  
34 screening and access control applications or field operations. Due to time  
35 constraints, assessment is the least rigorous of all facial comparison categories.

36 2.2. Automated facial recognition systems that provide a one-to-many search  
37 candidate list require a user to review and process the results. Assessors using  
38 an FR system should not use results from the system alone, however, results  
39 should be used in conjunction with additional resources.

40 2.3. Facial Assessors are not specialists in facial comparison, but the role requires  
41 an awareness of the major elements and limitations of the facial comparison  
42 discipline and training in the use of available tools.

43 2.4. The intended audience of this document includes agencies and individuals  
44 involved in facial comparison at the assessment level using FR systems.

### 45 **3. Agency Considerations Related to Training**

46 3.1. Agencies must document completion of training and the competency of their  
47 users.

48 3.2. Agencies must include competency testing as a component of training and  
49 quality assurance programs as a reliable means of measuring the quality of  
50 each user's ability to perform work. Competency testing measures individual  
51 performance and may help identify opportunities for continuing education and  
52 training.

53 3.3. The material provided below represents the minimum training criteria which may  
54 be tailored to meet the individual agency's operational needs. FISWG  
55 discourages the use of a facial recognition system by users who have not  
56 successfully completed the minimum training and strongly encourages further  
57 user training beyond the minimum criteria. and. Resources for additional  
58 training information include, but are not limited to, *FISWG Guidelines for*  
59 *Recommendations for Facial Comparison Training to Competency* and *FISWG*  
60 *Recommendations for a Training Program in Facial Comparison.*

### 61 **4. Training Requirements**

62 4.1. The user should be familiar with the history of facial comparisons in forensic  
63 science to include past methods, such as the Bertillon method, and their  
64 shortcomings.

65 4.2. The user must understand common terminology and should be able to define  
66 human face recognition (familiar/eyewitness) and automated facial recognition,  
67 as well as explain the differences and their distinction from holistic face  
68 processing and unfamiliar face matching.

69 4.3. The user must demonstrate an understanding of the basics of image science  
70 including, but not limited to:

71 4.3.1. Vision (e.g., Color, Illumination, Perception)

72 4.3.2. Photography (e.g., Distortions, Pose, Expression, Perspective)

73 4.3.3. Components of digital images and compression (e.g., knowledge of  
74 sensors, pixels, resolution) Possible alteration of images (e.g.,  
75 excessive compression, manipulation)

76 4.3.4. Properties of video (e.g., Limitations, Formats, Extraction of Stills)

77 4.4. The user should be familiar with the proper handling of media, write protection of  
78 that media, and generating working copies.

79 4.5. The user must understand the principles of comparison. These principles  
80 include:

81 4.5.1. Process of Analysis, Comparison, Evaluation and Verification (ACE-V)

82 4.5.2. Assessment of facial image quality to determine the value for  
83 comparison based on visibility of facial features.

84 4.5.3. The differences between class and individual characteristics, as well as  
85 those of transient and stable characteristics.

86 4.5.4. Methods of facial comparisons

87 4.5.4.1. Morphological Analysis (the FISWG-recommended technique)

- 88 4.5.4.2. Superimposition (a technique which is only recommended by  
89 FISWG when used in conjunction with morphological analysis)
- 90 4.5.4.3. Photo-anthropometry (a technique which is not recommended  
91 by FISWG for facial review)
- 92 4.5.5. Conclusion Levels/Scale
- 93 4.5.6. Validation of Facial Comparison (i.e., Ability to render proper  
94 conclusions)
- 95 4.5.7. Overview and effects of cognitive bias, to include confirmation bias
- 96 4.5.8. Understanding of the necessity for verification by a second trained  
97 reviewer
- 98 4.6. The user should have a general knowledge of automated facial recognition  
99 systems, to include, but not limited to:
- 100 4.6.1. User input and operation
- 101 4.6.2. System operation and output
- 102 4.6.3. Facial recognition algorithm limitations including, but not limited to:
- 103 4.6.3.1. Imaging conditions (e.g., image quality, lighting, pose)
- 104 4.6.3.2. Obstructions and Accessories (e.g., eyeglasses, jewelry,  
105 masks, scarves, head coverings)
- 106 4.7. The user should be familiar with basic image processing operations (e.g.,  
107 brightness and contrast adjustments, rotations, cropping)
- 108 4.8. The user should be familiar with the bones that comprise the skull and the  
109 overlying musculature.

- 110 4.9. The user must have a basic knowledge of the FISWG Facial Image  
111 Comparison Feature List for Morphological Analysis (see also, ASTM E3149-  
112 18 Standard Guide for Facial Image Comparison Feature List for  
113 Morphological Analysis), to include, but not limited to:
- 114 4.9.1. Hair (e.g., hairline, baldness)
  - 115 4.9.2. Eyes and Eyebrows
  - 116 4.9.3. Nose
  - 117 4.9.4. Mouth
  - 118 4.9.5. Ears
  - 119 4.9.6. Facial lines, marks and scars
- 120 4.10. The user should be aware of the variable nature of the human face over time,  
121 the level of permanence of individual features, and understand the results of  
122 aging.
- 123 4.11. The user should be aware of alterations of the face, both temporary and  
124 permanent.
- 125 4.11.1. Examples of temporary changes are: cosmetics, weight changes, hair  
126 color changes, wounds, and abrasions.
  - 127 4.11.2. Examples of permanent changes are: scars, surgical alterations,  
128 tattoos, and piercings.
- 129 4.12. Users of facial recognition systems should be prepared to testify, regardless of  
130 their specific job duties. Basic training for court testimony, including knowledge  
131 of individual agency policies and procedures is beyond the scope of this

132 document and is the responsibility of the user's agency. However, users of  
133 facial recognition systems should be aware of the following:

134 4.12.1. Their agency's authorities and policies regarding acceptable use and  
135 dissemination.

136 4.12.2. Relevant judicial decisions that govern admittance of scientific  
137 evidence in court (e.g. Daubert).

138 4.12.3. The perception of facial recognition in the legal community.

139 4.12.4. Proper chain of custody, documentation and notes, reporting of  
140 results, and technical review.

141 4.12.5. The possibility of digital manipulation or alteration of the image(s).

142 4.12.6. Common misconceptions created by popular media to include fictional  
143 television shows, novels, and movies, cumulatively known as 'The CSI  
144 Effect'.

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