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# Minimum Criteria for Training in Facial Review (Users of Facial Recognition Systems)

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## 33 Purpose

34 This document is intended to provide a minimum set of criteria for training of personnel who will use a  
35 facial recognition system.

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## 37 Introduction

38 There are two broad categories identified of facial comparison: facial review and facial examination.  
39 Facial review is a fast, less rigorous process conducted between an image and a subject or between sets  
40 of images. Facial examination involves a more time-consuming rigorous process performed between sets  
41 of images (still, video capture, 3-D scan).

42 This document addresses minimum training criteria for individuals performing facial review for the  
43 development of investigative and operational leads. These comparisons provide information to  
44 operational personnel to assist them with meeting their objective.

45 Automated facial recognition systems that provide a one-to-many search candidate list require a user to  
46 review the results and come to a conclusion.

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## 48 Agency Considerations Related to Training

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50 Agencies must document completion of training and the competency of their users.

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

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57 The material provided below represents the minimum criteria to be introduced in a single 8-hour block of  
58 training which may be tailored to meet the individual agency's operational needs. FISWG strongly

59 encourages user training exceed a single 8-hour period and discourages the use of a facial recognition  
60 system by users who have not successfully completed the minimum training.

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## 62 Training Requirements

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- 64 (1) The user should be familiar with the history of facial comparisons in forensic science to include  
65 past methods, such as the Bertillon method, and their shortcomings.
- 66 (2) The user must understand common terminology and should be able to define facial comparison  
67 and automated facial recognition as well as explain the differences between those two  
68 processes and their distinction from human (or “eyewitness”) recognition/identification.
- 69 (3) The user must demonstrate an understanding of the basics of image science including, but not  
70 limited to:
- 71 a. Vision (e.g., Color, Illumination, Perception)
  - 72 b. Photography (e.g., Distortions, Pose, Expression, Perspective)
  - 73 c. Components of digital images and compression (e.g., knowledge of sensors, pixels,  
74 resolution)
  - 75 d. Detection of alteration within images (e.g., excessive compression, manipulation)
  - 76 e. Properties of video (e.g., Limitations, Formats, Extraction of Stills)
- 77 (4) The user should be familiar with the proper handling of media, write protection of that media, and  
78 generating working copies.
- 79 (5) The user must have an understanding of the principles of comparison. These principles include:
- 80 a. Process of Analysis, Comparison, Evaluation and Verification (ACE-V)
  - 81 b. Individuality and Permanence.
  - 82 c. The differences between class and individual characteristics, as well as those of  
83 transient and stable characteristics.
  - 84 d. Assessment of facial image quality to determine the value for comparison based on  
85 visibility of facial features.
  - 86 e. Methods of comparisons
    - 87 i. Morphological Analysis (the FISWG-recommended technique)
    - 88 ii. Holistic (a technique often used in conjunction with morphological analysis and  
89 as a means to further reduce a candidate list)
    - 90 iii. Photoanthropometry (a technique which is not recommended by FISWG for  
91 facial review)
    - 92 iv. Superimposition (a technique which is only recommended by FISWG when used  
93 in conjunction with morphological analysis)
  - 94 f. Conclusion Levels/Scale
  - 95 g. Validation of Facial Comparison (i.e., Ability to render proper conclusions)

- 96 h. Overview and effects of cognitive bias, to include confirmation bias  
97 i. Understanding of the necessity for verification by a second trained reviewer  
98 (6) The user should have a general knowledge of automated facial recognition systems, to include,  
99 but not limited to:  
100 a. User input and operation  
101 b. System operation and output  
102 c. Facial recognition algorithm limitations including, but not limited to:  
103 i. Imaging conditions (e.g., image quality, pose)  
104 ii. Appliances (e.g., eyeglasses, jewelry)  
105 iii. Obstructions (e.g., masks, scarves, head coverings)  
106 (7) The user should be familiar with basic image processing operations (e.g., brightness and  
107 contrast adjustments, rotations, cropping)  
108 (8) The user should be familiar with the bones that comprise the skull and the overlying  
109 musculature.  
110 (9) The user must have a basic knowledge of the FISWG Facial Image Comparison Feature List for  
111 Morphological Analysis (see also, ASTM E3149-18 Standard Guide for Facial Image  
112 Comparison Feature List for Morphological Analysis), to include, but not limited to:  
113 a. Hair (e.g., hairline, baldness)  
114 b. Eyes and Eyebrows  
115 c. Nose  
116 d. Mouth  
117 e. Ears  
118 f. Facial lines, marks and scars  
119 (10) The user should be aware of the variable nature of the human face over time, the level of  
120 permanence of individual features, and understand the results of aging.  
121 (11) The user should be aware of alterations of the face, both temporary and permanent.  
122 a. Examples of temporary changes are: cosmetics, weight changes, hair color changes,  
123 wounds, and abrasions.  
124 b. Examples of permanent changes are: scars, surgical alterations, tattoos, and piercings.  
125 (12) Users of facial recognition systems should be prepared to testify, regardless of their specific job  
126 duties. Basic training for court testimony, including knowledge of individual agency policies and  
127 procedures is beyond the scope of this document and is the responsibility of the user's agency.  
128 However, users of facial recognition systems should be aware of the following:  
129 a. Their agency's authorities and policies regarding acceptable use and dissemination;  
130 b. Relevant judicial decisions that govern admittance of scientific evidence in court (e.g.  
131 Daubert).  
132 c. The perception of facial recognition in the legal community.

- 133 d. Proper chain of custody, documentation and notes, reporting of results, and technical
- 134 review.
- 135 e. Common misconceptions created by popular media to include fictional television
- 136 shows, novels, and movies, cumulatively known as “The CSI Effect.”
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