



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

**Disclaimer:**

As a condition to the use of this document and the information contained herein, the Facial Identification Scientific Working Group (FISWG) requests notification by e-mail before or contemporaneously to the introduction of this document, or any portion thereof, as a marked exhibit offered for or moved into evidence in any judicial, administrative, legislative, or adjudicatory hearing or other proceeding (including discovery proceedings) in the United States or any foreign country. Such notification shall include: 1) the formal name of the proceeding, including docket number or similar identifier; 2) the name and location of the body conducting the hearing or proceeding; and 3) the name, mailing address (if available) and contact information of the party offering or moving the document into evidence. Subsequent to the use of this document in a formal proceeding, it is requested that FISWG be notified as to its use and the outcome of the proceeding. Notifications should be sent to: [chair@fiswg.org](mailto:chair@fiswg.org)

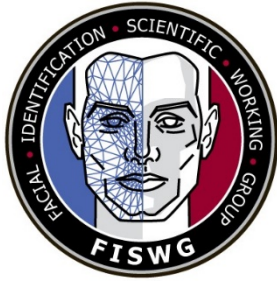
**Redistribution Policy:**

FISWG grants permission for redistribution and use of all publicly posted documents created by FISWG, provided that the following conditions are met:

Redistributions of documents, or parts of documents, must retain the FISWG cover page containing the disclaimer.

Neither the name of FISWG, nor the names of its contributors, may be used to endorse or promote products derived from its documents.

Any reference or quote from a FISWG document must include the version number (or creation date) of the document and mention if the document is in a draft status.



## Minimum Training Criteria for Usage of Facial Recognition Systems

25

### 26 Purpose

27 This document is intended to provide a minimum set of criteria for training of personnel  
 28 who will use a facial recognition (FR) system for the development of investigative and  
 29 operational leads only.

### 30 Introduction

31 There are three broad categories of facial comparison: assessment, review, and  
 32 examination. Assessment is a quick comparison of image-to-image or image-to-person.  
 33 Review is a comparison conducted between an image to sets of images. Examination  
 34 involves a more time-consuming rigorous process performed between sets of images  
 35 (still, video capture, 3-D scan).

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

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

### 44 Agency Considerations Related to Training

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

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

50 The material provided below represents the minimum criteria to be introduced in a  
 51 single 8-hour block of training which may be tailored to meet the individual agency's

52 operational needs. FISWG strongly encourages user training exceed a single 8-hour  
53 period and discourages the use of a facial recognition system by users who have not  
54 successfully completed the minimum training. Resources for additional training  
55 information include, but are not limited to, *FISWG Guidelines for Recommendations for*  
56 *Facial Comparison Training to Competency* and *FISWG Recommendations for a*  
57 *Training Program in Facial Comparison*.

## 58 **Training Requirements**

- 59 (1) The user should be familiar with the history of facial comparisons in forensic  
60 science to include past methods, such as the Bertillon method, and their  
61 shortcomings.
- 62 (2) The user must understand common terminology and should be able to define  
63 facial comparison and automated facial recognition as well as explain the  
64 differences between those two processes and their distinction from innate human  
65 (or “eyewitness”) ability (holistic) recognition/identification.
- 66 (3) The user must demonstrate an understanding of the basics of image science  
67 including, but not limited to:
  - 68 a. Vision (e.g., Color, Illumination, Perception)
  - 69 b. Photography (e.g., Distortions, Pose, Expression, Perspective)
  - 70 c. Components of digital images and compression (e.g., knowledge of  
71 sensors, pixels, resolution)
  - 72 d. Detection of alteration within images (e.g., excessive compression,  
73 manipulation)
  - 74 e. Properties of video (e.g., Limitations, Formats, Extraction of Stills)
- 75 (4) The user should be familiar with the proper handling of media, write protection of  
76 that media, and generating working copies.
- 77 (5) The user must have an understanding of the principles of comparison. These  
78 principles include:
  - 79 a. Process of Analysis, Comparison, Evaluation and Verification (ACE-V)
  - 80 b. Individuality and Permanence.
  - 81 c. The differences between class and individual characteristics, as well as  
82 those of transient and stable characteristics.
  - 83 d. Assessment of facial image quality to determine the value for comparison  
84 based on visibility of facial features.

- 85 e. Methods of comparisons
- 86 i. Morphological Analysis (the FISWG-recommended technique)
- 87 ii. Superimposition (a technique which is only recommended by FISWG
- 88 when used in conjunction with morphological analysis)
- 89 iii. Photo-anthropometry (a technique which is not recommended by
- 90 FISWG for facial review)
- 91 f. Conclusion Levels/Scale
- 92 g. Validation of Facial Comparison (i.e., Ability to render proper conclusions)
- 93 h. Overview and effects of cognitive bias, to include confirmation bias
- 94 i. Understanding of the necessity for verification by a second trained reviewer
- 95 (6) The user should have a general knowledge of automated facial recognition
- 96 systems, to include, but not limited to:
- 97 a. User input and operation
- 98 b. System operation and output
- 99 c. Facial recognition algorithm limitations including, but not limited to:
- 100 i. Imaging conditions (e.g., image quality, pose)
- 101 ii. Obstructions (e.g., eyeglasses, jewelry, masks, scarves, head
- 102 coverings)
- 103 (7) The user should be familiar with basic image processing operations (e.g.,
- 104 brightness and contrast adjustments, rotations, cropping)
- 105 (8) The user should be familiar with the bones that comprise the skull and the
- 106 overlying musculature.
- 107 (9) The user must have a basic knowledge of the FISWG Facial Image Comparison
- 108 Feature List for Morphological Analysis (see also, ASTM E3149-18 Standard
- 109 Guide for Facial Image Comparison Feature List for Morphological Analysis), to
- 110 include, but not limited to:
- 111 a. Hair (e.g., hairline, baldness)
- 112 b. Eyes and Eyebrows
- 113 c. Nose
- 114 d. Mouth

- 115 e. Ears
- 116 f. Facial lines, marks and scars
- 117 (10) The user should be aware of the variable nature of the human face over time,  
118 the level of permanence of individual features, and understand the results of  
119 aging.
- 120 (11) The user should be aware of alterations of the face, both temporary and  
121 permanent.
  - 122 a. Examples of temporary changes are: cosmetics, weight changes, hair  
123 color changes, wounds, and abrasions.
  - 124 b. Examples of permanent changes are: scars, surgical alterations, tattoos,  
125 and piercings.
- 126 (12) Users of facial recognition systems should be prepared to testify, regardless of  
127 their specific job duties. Basic training for court testimony, including knowledge  
128 of individual agency policies and procedures is beyond the scope of this  
129 document and is the responsibility of the user's agency. However, users of facial  
130 recognition systems should be aware of the following:
  - 131 a. Their agency's authorities and policies regarding acceptable use and  
132 dissemination.
  - 133 b. Relevant judicial decisions that govern admittance of scientific evidence  
134 in court (e.g. Daubert).
  - 135 c. The perception of facial recognition in the legal community.
  - 136 d. Proper chain of custody, documentation and notes, reporting of results,  
137 and technical review.
  - 138 e. The possibility of digital manipulation or alteration of the image(s).
  - 139 f. Common misconceptions created by popular media to include fictional  
140 television shows, novels, and movies, cumulatively known as 'The CSI  
141 Effect'.