**I³ IDEAL INNOVATIONS INCORPORATED**

**ANAB**
**ANSI National Accreditation Board**
ACCREDITED
ISO/IEC 17043
PROFICIENCY TESTING PROVIDER

# Facial Identification

## Proficiency Test No. 02-2021 Summary Report

Each digital test package contained the following: Twenty (20) pairs of digital facial images and instructions. Participants were asked to compare each set of paired images, articulate their analysis and report their findings based on a level of confidence in their answers based on a five-point scale (Strong Support for Common Source, Support for Common Source, Inconclusive, Support for Exclusion, Exclusion). Data was returned from forty-two (42) participants and are compiled into the follow tables and graphs:

4401 Wilson Blvd, Suite 210
`Arlington, VA 22203
Email: face@idealinnovations.com
Telephone: +1-571-480-5000
Website: www.i3face.com

# Manufacturer's Information

Each test packet contained digital facial images that were paired for the expressed purpose of side-by-side comparison.  There was no predetermined number of same source/different source pairs.  Photographs were obtained from known, living persons who signed a release allowing permission for use in proficiency testing or training  purposes or of deceased persons (image use approved and released by authorizing family members).

COMPARISON SET PREPARATION:  Images were provided utilizing various media (cell phone cameras, SLR camera, scanned prints and other image recording devices).  Image quality and resoluiton vaiered from set to set to establish consistenecy with "real world" comparison circumstances.

VERIFICATION:  The expected Common Source and Exclusion responses were reported by the predistribution examiners.

TEST PACKET DEVELOPMENT/DEPLOYMENT:  Once verification was complete and comparison set preparation was finsihed, the test pairs were loaded on a web-based test site that was available only to the test participants and the Proficiency Test Providers.  **Table 1** (below) lists the image pairs (a probe and an unknown) by sex/race (M=Male, F=Female, W=White or European Descent, B=Black or African Descent) and the true value of each pair.

| Image Pair Description | Result (Common Source/Exclusion) |
|---|---|
| 1 (M/W) | Common Source |
| 2 (F/W) | Exclusion |
| 3 (M/W) | Exclusion |
| 4 (F/W) | Common Source |
| 5 (F/W) | Exclusion |
| 6 (F/B) | Exclusion |
| 7 (M/W) | Exclusion |
| 8 (M/W) | Common Source |
| 9 (M/W) | Exclusion |
| 10 (F/W) | Common Source |
| 11 (F/W) | Common Source |
| 12 (F/W) | Exclusion |
| 13 (M/W) | Common Source |
| 14 (F/W) | Exclusion |
| 15 (F/W) | Exclusion |
| 16 (F/W) | Common Source |
| 17 (M/W) | Common Source |
| 18 (M/W) | Exclusion |
| 19 (M/W) | Exclusion |
| 20 (M/W) | Common Source |

**Table 1**

4401 Wilson Blvd, Suite 210
`Arlington, VA 22203
Email: face@idealinnovations.com
Telephone: +1-571-480-5000
Website: www.i3face.com

IDEAL
INNOVATIONS
INCORPORATED

# Summary Comments

This test was designed to allow participants to assess their proficiency in the analysis of paired facial images to determine whether they represented the same source or a different source. The images were obtained from individuals with the expressed purposes of proficiency testing or training (see Manufacturer's Information for additional details). Of the twenty pairs, eleven (11) pairs were Exclusions (not the same source) and nine (9) pairs were Same Source. Forty-two (42) participants took part in the testing. Inconclusive reponses were not counted against or toward the total comparison results. Only erroneous assessments were included as part of the overall accuracy assessment.

Of the 42 responding participants, the following results were recorded in **Table 2** below:

| Number of Participants | Percentage of Correct Responses |
|---|---|
| 12 | 100% |
| 6 | 95.00% |
| 4 | 94.73% |
| 5 | 94.11% |
| 1 | 92.31% |
| 3 | 90.00% |
| 1 | 89.47% |
| 2 | 88.89% |
| 1 | 88.23% |
| 1 | 81.25% |
| 2 | 80.00% |
| 2 | 75.00% |
| 1 | 70.58% |
| 1 | 64.71% |
| Total – 42 | Total overall % - 91.15% |

**Table 2**

4401 Wilson Blvd, Suite 210
`Arlington, VA 22203
Email: face@idealinnovations.com
Telephone: +1-571-480-5000
Website: www.i3face.com

The number of Correct, Inconclusive and Erroneous decisions by the 42 participants for each paired set are shown in **Table 3** and the **Figure 1** below:

| Paired Set # | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 | S13 | S14 | S15 | S16 | S17 | S18 | S19 | S20 | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Erroneous** | 2 | 3 | 5 | 0 | 5 | 0 | 1 | 2 | 5 | 1 | 3 | 2 | 0 | 1 | 10 | 2 | 12 | 0 | 8 | 0 | 62 |
| **Inconclusive** | 0 | 1 | 4 | 1 | 4 | 0 | 0 | 17 | 1 | 1 | 2 | 3 | 1 | 0 | 6 | 0 | 4 | 3 | 15 | 0 | 63 |
| **Correct** | 40 | 38 | 33 | 41 | 33 | 42 | 41 | 23 | 36 | 40 | 37 | 37 | 41 | 41 | 26 | 40 | 26 | 39 | 19 | 42 | 715 |
| | | | | | | | | | | | | | | | | | | | | | 840 |

**Table 3**



| | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 | S13 | S14 | S15 | S16 | S17 | S18 | S19 | S20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ■ Erroneous | 2 | 3 | 5 | 0 | 5 | 0 | 1 | 2 | 5 | 1 | 3 | 2 | 0 | 1 | 10 | 2 | 12 | 0 | 8 | 0 |
| ■ Inconclusive | 0 | 1 | 4 | 1 | 4 | 0 | 0 | 17 | 1 | 1 | 2 | 3 | 1 | 0 | 6 | 0 | 4 | 3 | 15 | 0 |
| ■ Correct | 40 | 38 | 33 | 41 | 33 | 42 | 41 | 23 | 36 | 40 | 37 | 37 | 41 | 41 | 26 | 40 | 26 | 39 | 19 | 42 |

**Figure 1**

4401 Wilson Blvd, Suite 210
`Arlington, VA 22203
Email: face@idealinnovations.com
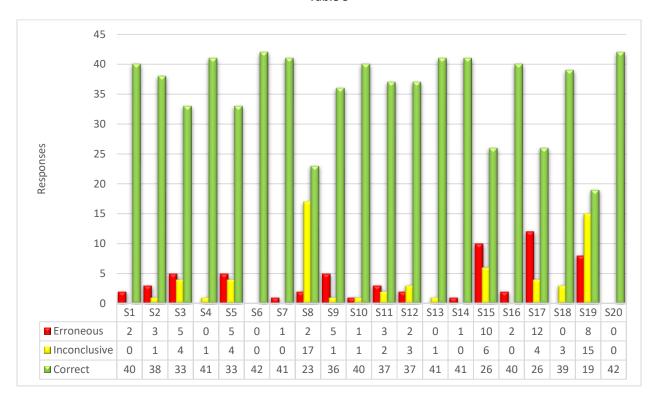Telephone: +1-571-480-5000
Website: www.i3face.com

The number of conclusions by pair and actual analysis offered by participants (Exclusion, Support for Exclusion, Inconclusive, Support for Common Source, Strong Support for Common Source) are listed in **Table 4** below:

| Comparison # | Exclusion | Support for Exclusion | Inconclusive | Support for Common Source | Strong Support for Common Support | total |
|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 0 | 24 | 16 | 42 |
| 2 | 27 | 11 | 1 | 3 | 0 | 42 |
| 3 | 17 | 16 | 4 | 4 | 1 | 42 |
| 4 | 0 | 0 | 1 | 10 | 31 | 42 |
| 5 | 18 | 15 | 4 | 5 | 0 | 42 |
| 6 | 30 | 12 | 0 | 0 | 0 | 42 |
| 7 | 37 | 4 | 0 | 0 | 1 | 42 |
| 8 | 1 | 1 | 17 | 22 | 1 | 42 |
| 9 | 18 | 18 | 1 | 5 | 0 | 42 |
| 10 | 0 | 1 | 1 | 17 | 23 | 42 |
| 11 | 1 | 2 | 2 | 17 | 20 | 42 |
| 12 | 22 | 15 | 3 | 2 | 0 | 42 |
| 13 | 0 | 0 | 1 | 11 | 30 | 42 |
| 14 | 30 | 11 | 0 | 1 | 0 | 42 |
| 15 | 10 | 16 | 6 | 9 | 1 | 42 |
| 16 | 0 | 2 | 0 | 20 | 20 | 42 |
| 17 | 4 | 8 | 4 | 21 | 5 | 42 |
| 18 | 24 | 15 | 3 | 0 | 0 | 42 |
| 19 | 5 | 14 | 15 | 6 | 2 | 42 |
| 20 | 0 | 1 | 0 | 8 | 33 | 42 |

**Table 4**
**Numbers in red are incorrect answers**

4401 Wilson Blvd, Suite 210
`Arlington, VA 22203
Email: face@idealinnovations.com
Telephone: +1-571-480-5000
Website: www.i3face.com

The Response Summary is shown in **Table 5** below.  It should be noted that "Inconclusive" responses are not counted against the total of responses (e.g. in Comparison Set 2 below, there were three (3) Erroneous Responses, 38 Correct Responses and one (1) Inconclusive Response – the percentage correct would be 38 out of 41 or 92.68%)

| Comparison Set | Erroneous Response | Correct Response | Inconclusive | total respondents | percentage correct |
|---|---|---|---|---|---|
| 1 | 2 | 40 | 0 | 42 | 95.23% |
| 2 | 3 | 38 | 1 | 42 | 92.68% |
| 3 | 5 | 33 | 4 | 42 | 86.84% |
| 4 | 0 | 41 | 1 | 42 | 100.00% |
| 5 | 5 | 33 | 4 | 42 | 86.84% |
| 6 | 0 | 42 | 0 | 42 | 100.00% |
| 7 | 1 | 41 | 0 | 42 | 97.61% |
| 8 | 2 | 23 | 17 | 42 | 92.00% |
| 9 | 5 | 36 | 1 | 42 | 87.80% |
| 10 | 1 | 40 | 1 | 42 | 95.23% |
| 11 | 3 | 37 | 2 | 42 | 92.50% |
| 12 | 2 | 37 | 3 | 42 | 94.87% |
| 13 | 0 | 41 | 1 | 42 | 97.61% |
| 14 | 1 | 41 | 0 | 42 | 97.61% |
| 15 | 10 | 26 | 6 | 42 | 72.22% |
| 16 | 2 | 40 | 0 | 42 | 95.23% |
| 17 | 12 | 26 | 4 | 42 | 68.42% |
| 18 | 0 | 39 | 3 | 42 | 100.00% |
| 19 | 8 | 19 | 15 | 42 | 70.37% |
| 20 | 0 | 42 | 0 | 42 | 100.00% |
| **Totals** | **62** | **715** | **63** | **840** | **91.15%** |

**Table 5**

4401 Wilson Blvd, Suite 210
`Arlington, VA 22203
Email: face@idealinnovations.com
Telephone: +1-571-480-5000
Website: www.i3face.com

# Additional Comments

Of the twenty paired sets, four (4) appeared to be the most challenging for many of the participants.  Those paired sets and the results of the analysis is shown in **Table 6** below:

| Paired Set Number | Number Correct | Number Inconclusive | Number Erroneous |
|---|---|---|---|
| 8 | 23 | 17 | 2 |
| 15 | 26 | 6 | 10 |
| 17 | 26 | 4 | 12 |
| 19 | 19 | 15 | 8 |

**Table 6**

4401 Wilson Blvd, Suite 210
`Arlington, VA 22203
Email: face@idealinnovations.com
Telephone: +1-571-480-5000
Website: www.i3face.com

The facial features that were used by all participants were documented by the PT reviewer(s) in the **Tables 7 and 8** below. The number in each cell represents an instance when a feature was cited.

| Comparison # | Skin | Face/Head Outline | Face/Head Composition | Hair | Forehead | Eyebrows | Eyes | Cheeks | Nose |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 17 | 17 | 7 | 16 | 38 | 37 | 14 | 39 |
| 2 | 17 | 18 | 13 | 13 | 17 | 38 | 38 | 19 | 36 |
| 3 | 11 | 24 | 11 | 20 | 30 | 28 | 35 | 18 | 37 |
| 4 | 16 | 17 | 14 | 25 | 26 | 22 | 31 | 12 | 35 |
| 5 | 24 | 21 | 11 | 14 | 18 | 29 | 36 | 14 | 33 |
| 6 | 18 | 18 | 12 | 14 | 29 | 30 | 39 | 15 | 32 |
| 7 | 16 | 18 | 12 | 17 | 20 | 30 | 37 | 12 | 39 |
| 8 | 13 | 19 | 15 | 20 | 17 | 38 | 30 | 14 | 35 |
| 9 | 17 | 17 | 14 | 26 | 29 | 37 | 36 | 11 | 29 |
| 10 | 17 | 21 | 16 | 27 | 26 | 36 | 32 | 22 | 40 |
| 11 | 15 | 18 | 18 | 18 | 19 | 28 | 39 | 17 | 39 |
| 12 | 20 | 23 | 17 | 17 | 13 | 23 | 31 | 17 | 42 |
| 13 | 20 | 18 | 16 | 20 | 25 | 37 | 31 | 24 | 29 |
| 14 | 20 | 14 | 11 | 25 | 25 | 36 | 35 | 12 | 37 |
| 15 | 13 | 25 | 14 | 22 | 24 | 35 | 38 | 21 | 31 |
| 16 | 14 | 23 | 15 | 21 | 25 | 37 | 38 | 23 | 35 |
| 17 | 14 | 21 | 11 | 23 | 22 | 13 | 16 | 15 | 39 |
| 18 | 13 | 19 | 11 | 12 | 19 | 39 | 38 | 17 | 31 |
| 19 | 12 | 27 | 14 | 17 | 25 | 21 | 30 | 14 | 35 |
| 20 | 17 | 32 | 16 | 19 | 24 | 30 | 38 | 16 | 36 |

Table 7

| Comparison # | Ears | Mouth | Chin/Jawline | Neck | Facial Hair | Facial Lines | Scars | Facial Marks | Alterations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 29 | 39 | 17 | 7 | 24 | 32 | 5 | 9 | 6 |
| 2 | 9 | 40 | 21 | 8 | 6 | 26 | 5 | 11 | 5 |
| 3 | 27 | 28 | 23 | 10 | 7 | 34 | 5 | 10 | 5 |
| 4 | 40 | 28 | 25 | 10 | 5 | 40 | 5 | 26 | 6 |
| 5 | 14 | 38 | 22 | 15 | 5 | 35 | 5 | 18 | 11 |
| 6 | 20 | 41 | 27 | 12 | 5 | 34 | 5 | 20 | 7 |
| 7 | 38 | 30 | 15 | 22 | 17 | 32 | 7 | 14 | 4 |
| 8 | 36 | 28 | 30 | 9 | 7 | 33 | 7 | 9 | 4 |
| 9 | 29 | 37 | 23 | 10 | 11 | 27 | 8 | 18 | 5 |
| 10 | 15 | 38 | 35 | 9 | 6 | 36 | 7 | 8 | 7 |
| 11 | 11 | 40 | 24 | 20 | 6 | 34 | 8 | 34 | 6 |
| 12 | 12 | 37 | 28 | 17 | 5 | 37 | 7 | 31 | 5 |
| 13 | 39 | 24 | 19 | 11 | 23 | 28 | 8 | 39 | 6 |
| 14 | 23 | 29 | 36 | 16 | 9 | 27 | 6 | 31 | 6 |
| 15 | 16 | 38 | 29 | 6 | 6 | 33 | 6 | 12 | 5 |
| 16 | 21 | 37 | 29 | 12 | 6 | 38 | 7 | 8 | 7 |
| 17 | 40 | 38 | 18 | 13 | 25 | 32 | 6 | 20 | 5 |
| 18 | 12 | 32 | 26 | 23 | 9 | 31 | 7 | 33 | 5 |
| 19 | 40 | 31 | 26 | 13 | 13 | 30 | 9 | 16 | 5 |
| 20 | 38 | 31 | 12 | 9 | 33 | 35 | 6 | 26 | 5 |

Table 8

In **Table 9**, "**Score (C/I/E)**" indicates number **Correct**, **Inconclusive** and **Erroneous**. The numbers in the "**Inconclusive**" and "**Erroneous**" columns are the Image Pair numbers. Accuracy is defined as the number of correct vs. erroneous (inconclusive responses are not counted against the total).

| Respondent | Score (C/I/E) | Inconclusive | Erroneous | Accuracy |
|---|---|---|---|---|
| 001 | 15/0/5 | | 1,7,15,16,17 | 75.00% |
| 002 | 19/0/1 | | 19 | 95.00% |
| 003 | 18/0/2 | | 10,17 | 90.00% |
| 004 | 15/3/2 | 4,8,15 | 1,3 | 88.23% |
| 005 | 14/6/0 | 5,8,10,15,18,19 | | 100.00% |
| 006 | 20/0/0 | | | 100.00% |
| 007 | 17/3/0 | 3,8,19 | | 100.00% |
| 008 | 17/2/1 | 8,15 | 19 | 94.11% |
| 009 | 17/3/0 | 3,15,19 | | 100.00% |
| 010 | 15/0/5 | | 3,9,14,15,19 | 75.00% |
| 011 | 17/2/1 | 8,19 | 15 | 94.11% |
| 012 | 16/0/4 | | 8,9,11,17 | 80.00% |
| 013 | 17/2/1 | 5,8 | 17 | 94.11% |
| 014 | 18/0/2 | | 17,19 | 90.00% |
| 015 | 18/2/0 | 8,19 | | 100.00% |
| 016 | 18/2/0 | 8,19 | | 100.00% |
| 017 | 17/1/2 | 19 | 5,16 | 89.47% |
| 018 | 12/3/5 | 8,18,19 | 2,3,5,12,15 | 70.58% |
| 019 | 18/1/1 | 3 | 17 | 94.73% |
| 020 | 16/2/2 | 8,18 | 2,17 | 88.89% |
| 021 | 19/0/1 | | 19 | 95.00% |
| 022 | 19/0/1 | | 8 | 95.00% |
| 023 | 20/0/0 | | | 100.00% |
| 024 | 18/2/0 | 5,19 | | 100.00% |
| 025 | 18/0/2 | | 5,17 | 90.00% |
| 026 | 16/3/1 | 12,17,19 | 15 | 94.11% |
| 027 | 18/1/1 | 8 | 19 | 94.73% |
| 028 | 16/0/4 | | 5,11,15,19 | 80.00% |
| 029 | 19/1/0 | 19 | | 100.00% |
| 030 | 18/1/1 | 12 | 17 | 94.73% |
| 031 | 18/1/1 | 8 | 15 | 94.73% |
| 032 | 19/0/1 | | 11 | 95.00% |
| 033 | 20/0/0 | | | 100.00% |
| 034 | 16/3/1 | 8,9,15 | 17 | 94.11% |
| 035 | 17/3/0 | 8,17,19 | | 100.00% |
| 036 | 13/4/3 | 8,11,12,19 | 9,15,17 | 81.25% |
| 037 | 19/0/1 | | 19 | 95.00% |
| 038 | 19/0/1 | | 3 | 95.00% |
| 039 | 12/7/1 | 3,5,8,13,15,17,19 | 9 | 92.31% |
| 040 | 20/0/0 | | | 100.00% |
| 041 | 11/3/6 | 8,17,19 | 2,3,5,9,12,15 | 64.71% |
| 042 | 16/2/2 | 2,11 | 15,17 | 88.89% |
| | | | Overall accuracy | 91.15% |

**Table 9**