



## Tenprint Examination Test No. 17-514 Summary Report

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This test was sent to 36 participants. Each sample pack contained twelve single print pairs and eight tenprint card pairs. Participants were asked to compare the two prints within each pair to determine whether or not they originated from the same finger (single print pairs) or same individual (tenprint pairs). Data were returned from 29 participants (81% response rate) and are compiled into the following tables:

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This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

## Manufacturer's Information

Each digital sample pack consisted of twenty pairs of collected fingerprints for comparison. Items Q1-Q12 contained single print pairs, and Items Q13-Q20 contained tenprint card pairs. Participants were asked to compare the two prints or sets of prints within each pair to determine if both originated from a single source.

**SAMPLE PREPARATION-**

Utilizing several anonymized databases containing a limited number of fingerprints, both visual comparison and AFIX comparison software were used to find prints with similar first and second-level details. These prints were then paired together as a single questioned item and the process repeated for all test items. Different sets of prints from the same individual were paired together for the matching items. All prints were digitally resized to scale. The test items were then uploaded to the CTS Portal for download by test participants.

Single Print Pair	Same Source?	Tenprint Pair	Same Source?
Q1	No	Q13	Yes
Q2	Yes	Q14	No
Q3	No	Q15	No
Q4	No	Q16	No
Q5	Yes	Q17	No
Q6	No	Q18	No
Q7	No	Q19	Yes
Q8	Yes	Q20	No
Q9	Yes		
Q10	No		
Q11	Yes		
Q12	No		

## **Summary Comments**

Each digital sample pack contained twenty pairs of collected fingerprints for comparison. Each pair contained either two single prints or two tenprint cards. Participants were asked to determine if the two collected prints within each pair originated from a single source.

Of the twenty-nine responding participants, twenty-eight (97%) reported the expected responses for all twelve single-print pairs and eight tenprint pairs. One participant reported that both tenprint cards originated from a single source in Items Q16 and Q20; the expected response was different sources.

Additional comments on the test centered on better image functionality for comparison. Participants have expressed an interest in having the individual print pairs placed in separate images for better maneuverability. This change will be instituted for both the TIF and JPG files in future tests. Additionally, a new format for the tenprint card comparison section will be introduced to create a more casework-like setup than this test currently offers.

## Comparisons - Single Prints

Does each pair of the following collected fingerprints originate from the same source?

TABLE 1a - Item Q1

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LL8YHF	No		
2HTU3V	No	LNW73C	No		
2WBK2X	No	NA7FV6	No		
3HB4QQ	No	NCA9P4	No		
4DAGCT	No	NWHDDD	No		
4ZP29T	No	NY8KXA	No		
82AR9N	No	Q8D7Y9	No		
8MQ3AL	No	W89WAV	No		
A4MAGJ	No	XJ47TX	No		
AEPP3H	No	Z9BWWZ	No		
ALKBWH	No	ZQRZHR	No		
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				

<b>Response Summary - Q1</b>	<b>Total Participants: 29</b>
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Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1a - Item Q2

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	Yes	LNW73C	Yes		
2HTU3V	Yes	NA7FV6	Yes		
2WBK2X	Yes	NCA9P4	Yes		
3HB4QQ	Yes	NWHDDD	Yes		
4DAGCT	Yes	NY8KXA	Yes		
4ZP29T	Yes	Q8D7Y9	Yes		
82AR9N	Yes	W89WAV	Yes		
8MQ3AL	Yes	XJ47TX	Yes		
A4MAGJ	Yes	Z9BWWZ	Yes		
AEPP3H	Yes	ZQRZHR	Yes		
ALKBWH	Yes				
BPKZBP	Yes				
E98PYE	Yes				
F92Z8L	Yes				
FMWE8F	Yes				
HDMUWH	Yes				
HZZMZH	Yes				
L2GNVF	Yes				
LL8YHF	Yes				

**Response Summary - Q2**

Total Participants: 29

Match	Total
Yes	29
No	0
Unable To Determine	0

TABLE 1a - Item Q3

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				



**Response Summary - Q3**

Total Participants: 29

Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1a - Item Q4

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				

<b>Response Summary - Q4</b>	<b>Total Participants: 29</b>
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Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1a - Item Q5

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	Yes	LNW73C	Yes		
2HTU3V	Yes	NA7FV6	Yes		
2WBK2X	Yes	NCA9P4	Yes		
3HB4QQ	Yes	NWHDDD	Yes		
4DAGCT	Yes	NY8KXA	Yes		
4ZP29T	Yes	Q8D7Y9	Yes		
82AR9N	Yes	W89WAV	Yes		
8MQ3AL	Yes	XJ47TX	Yes		
A4MAGJ	Yes	Z9BWWZ	Yes		
AEPP3H	Yes	ZQRZHR	Yes		
ALKBWH	Yes				
BPKZBP	Yes				
E98PYE	Yes				
F92Z8L	Yes				
FMWE8F	Yes				
HDMUWH	Yes				
HZZMZH	Yes				
L2GNVF	Yes				
LL8YHF	Yes				

**Response Summary - Q5**

Total Participants: 29

Match	Total
Yes	29
No	0
Unable To Determine	0

TABLE 1a - Item Q6

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				

**Response Summary - Q6**

Total Participants: 29

Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1a - Item Q7

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				



**Response Summary - Q7**

Total Participants: 29

Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1a - Item Q8

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	Yes	LNW73C	Yes		
2HTU3V	Yes	NA7FV6	Yes		
2WBK2X	Yes	NCA9P4	Yes		
3HB4QQ	Yes	NWHDDD	Yes		
4DAGCT	Yes	NY8KXA	Yes		
4ZP29T	Yes	Q8D7Y9	Yes		
82AR9N	Yes	W89WAV	Yes		
8MQ3AL	Yes	XJ47TX	Yes		
A4MAGJ	Yes	Z9BWWZ	Yes		
AEPP3H	Yes	ZQRZHR	Yes		
ALKBWH	Yes				
BPKZBP	Yes				
E98PYE	Yes				
F92Z8L	Yes				
FMWE8F	Yes				
HDMUWH	Yes				
HZZMZH	Yes				
L2GNVF	Yes				
LL8YHF	Yes				

<b>Response Summary - Q8</b>	<b>Total Participants: 29</b>
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Match	Total
Yes	29
No	0
Unable To Determine	0

TABLE 1a - Item Q9

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	Yes	LNW73C	Yes		
2HTU3V	Yes	NA7FV6	Yes		
2WBK2X	Yes	NCA9P4	Yes		
3HB4QQ	Yes	NWHDDD	Yes		
4DAGCT	Yes	NY8KXA	Yes		
4ZP29T	Yes	Q8D7Y9	Yes		
82AR9N	Yes	W89WAV	Yes		
8MQ3AL	Yes	XJ47TX	Yes		
A4MAGJ	Yes	Z9BWWZ	Yes		
AEPP3H	Yes	ZQRZHR	Yes		
ALKBWH	Yes				
BPKZBP	Yes				
E98PYE	Yes				
F92Z8L	Yes				
FMWE8F	Yes				
HDMUWH	Yes				
HZZMZH	Yes				
L2GNVF	Yes				
LL8YHF	Yes				

**Response Summary - Q9**

Total Participants: 29

Match	Total
Yes	29
No	0
Unable To Determine	0

TABLE 1a - Item Q10

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				

<b>Response Summary - Q10</b>	<b>Total Participants: 29</b>
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Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1a - Item Q11

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	Yes	LNW73C	Yes		
2HTU3V	Yes	NA7FV6	Yes		
2WBK2X	Yes	NCA9P4	Yes		
3HB4QQ	Yes	NWHDDD	Yes		
4DAGCT	Yes	NY8KXA	Yes		
4ZP29T	Yes	Q8D7Y9	Yes		
82AR9N	Yes	W89WAV	Yes		
8MQ3AL	Yes	XJ47TX	Yes		
A4MAGJ	Yes	Z9BWWZ	Yes		
AEPP3H	Yes	ZQRZHR	Yes		
ALKBWH	Yes				
BPKZBP	Yes				
E98PYE	Yes				
F92Z8L	Yes				
FMWE8F	Yes				
HDMUWH	Yes				
HZZMZH	Yes				
L2GNVF	Yes				
LL8YHF	Yes				



**Response Summary - Q11** Total Participants: 29

Match	Total
Yes	29
No	0
Unable To Determine	0

TABLE 1a - Item Q12

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				

**Response Summary - Q12** Total Participants: 29

Match	Total
Yes	0
No	29
Unable To Determine	0

# Comparisons - Tenprints

Does each pair of the following collected tenprint cards originate from the same source?

TABLE 1b - Item Q13

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	Yes	LL8YHF	Yes		
2HTU3V	Yes	LNW73C	Yes		
2WBK2X	Yes	NA7FV6	Yes		
3HB4QQ	Yes	NCA9P4	Yes		
4DAGCT	Yes	NWHDDD	Yes		
4ZP29T	Yes	NY8KXA	Yes		
82AR9N	Yes	Q8D7Y9	Yes		
8MQ3AL	Yes	W89WAV	Yes		
A4MAGJ	Yes	XJ47TX	Yes		
AEPP3H	Yes	Z9BWWZ	Yes		
ALKBWH	Yes	ZQRZHR	Yes		
BPKZBP	Yes				
E98PYE	Yes				
F92Z8L	Yes				
FMWE8F	Yes				
HDMUWH	Yes				
HZZMZH	Yes				
L2GNVF	Yes				

**Response Summary - Q13** Total Participants: 29

Match	Total
Yes	29
No	0
Unable To Determine	0

TABLE 1b - Item Q14

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				

**Response Summary - Q14** Total Participants: 29

Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1b - Item Q15

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				



**Response Summary - Q15** Total Participants: 29

Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1b - Item Q16

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	Yes		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				

**Response Summary - Q16** Total Participants: 29

Match	Total
Yes	1
No	28
Unable To Determine	0

TABLE 1b - Item Q17

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				

**Response Summary - Q17** Total Participants: 29

Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1b - Item Q18

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	No		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				

**Response Summary - Q18** Total Participants: 29

Match	Total
Yes	0
No	29
Unable To Determine	0

TABLE 1b - Item Q19

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	Yes	LNW73C	Yes		
2HTU3V	Yes	NA7FV6	Yes		
2WBK2X	Yes	NCA9P4	Yes		
3HB4QQ	Yes	NWHDDD	Yes		
4DAGCT	Yes	NY8KXA	Yes		
4ZP29T	Yes	Q8D7Y9	Yes		
82AR9N	Yes	W89WAV	Yes		
8MQ3AL	Yes	XJ47TX	Yes		
A4MAGJ	Yes	Z9BWWZ	Yes		
AEPP3H	Yes	ZQRZHR	Yes		
ALKBWH	Yes				
BPKZBP	Yes				
E98PYE	Yes				
F92Z8L	Yes				
FMWE8F	Yes				
HDMUWH	Yes				
HZZMZH	Yes				
L2GNVF	Yes				
LL8YHF	Yes				



**Response Summary - Q19**

Total Participants: 29

Match	Total
Yes	29
No	0
Unable To Determine	0

TABLE 1b - Item Q20

WebCode	Match	WebCode	Match	WebCode	Match
24TWEY	No	LNW73C	No		
2HTU3V	No	NA7FV6	No		
2WBK2X	No	NCA9P4	No		
3HB4QQ	No	NWHDDD	No		
4DAGCT	No	NY8KXA	No		
4ZP29T	No	Q8D7Y9	No		
82AR9N	No	W89WAV	No		
8MQ3AL	No	XJ47TX	Yes		
A4MAGJ	No	Z9BWWZ	No		
AEPP3H	No	ZQRZHR	No		
ALKBWH	No				
BPKZBP	No				
E98PYE	No				
F92Z8L	No				
FMWE8F	No				
HDMUWH	No				
HZZMZH	No				
L2GNVF	No				
LL8YHF	No				

**Response Summary - Q20** Total Participants: 29

Match	Total
Yes	1
No	28
Unable To Determine	0

# Additional Comments

TABLE 2

WebCode	Additional Comments
2HTU3V	When examining the 1 to 1 questions, I found it very difficult to maneuver the prints individually. They should be side by side but in a way that you will be able to make bigger without it going off the page.
2WBK2X	On the pre-test and in previous years, I suggested putting the one-to-one images in separate windows, like the ten print images. No way to zoom and compare. If that cannot be done, at least put the images closer together, so that when they are zoomed you can still see both images. Also, the print function does not function from the test window. Neither does pressing "Control P". The only way to print the zoomed images so I could compare was using the "Print Screen" button on the computer.
3HB4QQ	Q13: same fingerprinting processing
4ZP29T	I wish we had the capability to lighten the prints and plot the way it is in AFIS makes for a difficult comparison.
F92Z8L	The second test was too hard to view. A side by side view of the images would be better. Preferably with only an inch to half inch space between the two images. When the images were enlarged they covered each other. It was hard to see if I had the correct images displayed. Toggling between the two images was hard. Had to print the images out individually to do the comparison. ( Still printed the wrong prints.) This test was not user friendly. Very stressful
FMWE8F	Thought the level of difficulty was good for a tenprint examiner test.