

AMENDMENT NUMBER SIX
TO
CONTRACT MA-060-13010457
BETWEEN THE
COUNTY OF ORANGE
AND
IDEMIA IDENTITY & SECURITY USA LLC

This AMENDMENT NUMBER SIX to Contract number MA-060-13010457 (hereinafter "AMENDMENT NUMBER FIVE") between the County of Orange, a political subdivision of the State of California (hereinafter "COUNTY") and Idemia Identity & Security USA LLC (formerly known as MorphoTrak LLC) (hereinafter "CONTRACTOR"), with a place of business at 5515 E. La Palma Ave., Suite 100, Anaheim, CA 92807, is made and entered upon execution of all necessary signatures.

RECITALS:

WHEREAS, COUNTY and CONTRACTOR executed a Contract on December 18, 2012 for an Automated Biometric Identification System (ABIS), Contract Number MA-060-13010457 (hereinafter "ORIGINAL CONTRACT"), for a four (4) year term of December 18, 2012 through and including December 17, 2016, renewable for three (3) additional one-year terms; and

WHEREAS, COUNTY and CONTRACTOR administratively on December 8, 2015 inserted approximately 5,400 file numbers into the ABIS and increased the Contract dollar amount of the initial four (4) year term of December 18, 2012 through and including December 17, 2016 in the amount of \$7,077,184.00 by \$7,200.00 for a new not to exceed amount of \$7,084,384.00 (hereinafter "AMENDMENT NUMBER ONE"); and

WHEREAS, COUNTY and CONTRACTOR renewed the ORIGINAL CONTRACT for one (1) year, forty (40) days for a term of December 18, 2016 through and including January 26, 2018 as Contract Number MA-060-17010297 due to the Sustainment Period under the ORIGINAL CONTRACT beginning with the expiration of the warranty on January 26, 2016, reduced the Contract dollar amount of \$7,084,384 to \$250,000, and modified the Scope of Work Sustainment Sections to include additional services (hereinafter "AMENDMENT NUMBER TWO"); and

WHEREAS, COUNTY and CONTRACTOR renewed the ORIGINAL CONTRACT as Contract Number MA-060-18010022 on October 31, 2017 (hereinafter "AMENDMENT NUMBER THREE"), for a one (1) year term of January 27, 2018 through and including January 26, 2019 in the not to exceed amount of \$250,000;

WHEREAS, CONTRACTOR informed COUNTY that on July 1, 2018, MorphoTrak LLC merged with and into its affiliate, Idemia Identity & Security USA LLC, and that as a result of the merger, CONTRACTOR is the surviving company under the name "Idemia Identity & Security USA LLC"; and

WHEREAS, CONTRACTOR agreed to be bound by all of the terms and conditions of the ORIGINAL CONTRACT, as amended, just as if it had been an original signatory to the Contract, and COUNTY consents to the assignment of the ORIGINAL CONTRACT from MorphoTrak LLC to CONTRACTOR; and

WHEREAS, COUNTY and CONTRACTOR renewed the ORIGINAL CONTRACT as Contract Number MA-060-19010727 on January 14, 2019 (hereinafter "AMENDMENT NUMBER FOUR"), for a one-year term of January 27, 2019 through and including January 26, 2020; added a one-time increase of \$650,000 for an upgrade of the OC ABI System for SAP 40/51 Mugshot images, for an annual not to exceed amount of \$900,000; and amended Paragraph S. Change of Ownership;

WHEREAS, COUNTY and CONTRACTOR amended the ORIGINAL CONTRACT on May 23, 2019 (hereinafter "AMENDMENT NUMBER FIVE") and added Attachment A.2, Scope of Work, to include the specifications of the one-time upgrade of the OC ABI System for SAP 40/51 Mugshot images, which was approved by the Board of Supervisors on January 14, 2019; reduced the cost of the one-time increase for the upgrade of the OC ABI System for SAP 40/50 Mugshot images from \$650,000 to \$595,000, for a revised annual not to exceed amount of \$795,000;

WHEREAS, COUNTY desires to extend Contract Number MA-060-19010727, for a one-year term of January 27, 2020 through and including January 26, 2021, in an annual not to exceed amount of \$795,000 and the CONTRACTOR has agreed to provide these goods/services at the rates set forth in the ORIGINAL CONTRACT, AMENDMENT NUMBER TWO, AMENDMENT NUMBER FOUR and AMENDMENT NUMBER FIVE;

NOW THEREFORE, in consideration of the mutual obligations set forth herein, and in the ORIGINAL CONTRACT, both COUNTY and CONTRACTOR agree as follows:

1. ARTICLES

a. Additional Terms and Conditions, Section 2. Term of Contract, of the ORIGINAL CONTRACT is amended to read in its entirety as follows:

1. Term of Contract:

This Contract shall commence upon execution of all necessary signatures, and continue in effect from 12/18/2012 through and including 1/26/21, unless otherwise terminated by County. The period of 12/18/12 through and including 12/17/16 shall be known as Contract number MA-060- 13010457. The period of 12/18/16 through and including 1/26/18 shall be known as Contract number MA-060-17010297. The period of 1/27/18 through and including 1/26/19 shall be known as Contract number MA- 060-18010022. The period of 1/27/19 through and including 1/26/21 shall be known as Contract number MA-060-19010727. Contract is non- renewable.

2. A true and correct copy of the ORIGINAL CONTRACT (Contract Number MA-060-13010457) is attached hereto as Exhibit A and incorporated by this reference.
3. A true and correct copy of AMENDMENT NUMBER ONE (Contract Number MA-060-13010457) is attached hereto as Exhibit B and incorporated by this reference.
4. A true and correct copy of AMENDMENT NUMBER TWO (Contract Number MA-060-17010297) is attached hereto as Exhibit C and incorporated by this reference.
5. A true and correct copy of AMENDMENT NUMBER THREE (Contract Number MA-060-

18010022) is attached hereto as Exhibit D and incorporated by this reference.

6. A true and correct copy of AMENDMENT NUMBER FOUR (Contract Number MA-060-19010727) is attached hereto as Exhibit E and incorporated by this reference.
7. A true and correct copy of AMENDMENT NUMBER FIVE (Contract Number MA-060-19010727) is attached hereto as Exhibit F and incorporated by this reference.
8. All other provisions of the ORIGINAL CONTRACT and AMENDMENTS NUMBERS' ONE through FIVE, except as amended herein and to the extent are not inconsistent with this AMENDMENT NUMBER SIX, remain in full force and effect.

(Signature page to follow)

IN WITNESS WHEREOF, the Parties have executed AMENDMENT NUMBER SIX to Contract Number MA-060-13010457.

*Contractor: Idemia Identity & Security USA LLC

By: _____ Title: Vice President

Print Name: Michael Kato Date: 12/6/19

*Contractor: Idemia Identity & Security USA LLC

By: James Blue Title: Chief Financial Officer

Print Name: James Blue Date: 12/18/19

**If the contracting party is a corporation, (2) two signatures are required: (1) signature by the Chairman of the Board, the President or any Vice President; and one (1) signature by the Secretary, any Assistant Secretary, the Chief Financial Officer or any Assistant Treasurer. The signature of one person alone is sufficient to bind a corporation, as long as he or she holds corporate offices in each of the two categories described above. For County purposes, proof of such dual office holding will be satisfied by having the individual sign the instrument twice, each time indicating his or her office that qualifies under the above described provision.*

In the alternative, a single corporate signature is acceptable when accompanied by a corporate resolution demonstrating the legal authority of the signature to bind the company.

County Of Orange

A political subdivision of the State of California



Sheriff-Coroner Department

By: _____ Title: _____

Print Name: _____ Date: _____

Approved by the Board of Supervisors: _____

Approved as to Form
Office of the County Counsel
Orange County, California

by [Signature]
Deputy

EXHIBIT A

ORIGINAL CONTRACT (Contract Number MA-060-1301457)

Contract # MA-060-13010457
Automated Biometric Identification System (ABI System)

This Contract # MA-060-13010457 (the "Contract") for the procurement of an **Automated Biometric Identification System**, as further described herein is made and entered into as of the date fully executed by and between the County of Orange, a political subdivision of the State of California, hereinafter referred to as "County" and MorphoTrak Inc., with a place of business at 1250 N. Tustin Avenue, Anaheim CA 92807 hereinafter referred to as ("Contractor"), which are sometimes individually referred to as "Party", or collectively referred to as "Parties."

RECITALS

WHEREAS, Contractor responded to a Request for Proposal (RFP) to provide an **Automated Biometric Identification System**, as further set forth herein; and

WHEREAS, the Contractor responded and represented that its proposed services shall meet or exceed the requirements and specifications of the RFP; and

WHEREAS, the County of Orange Board of Supervisors has authorized the Purchasing Agent or his designee to enter into a Contract for an Automated Biometric Identification System.

NOW, THEREFORE, the Parties mutually agree as follows:

ARTICLES

- A. Governing Law and Venue:** This Contract has been negotiated and executed in the State of California and shall be governed by and construed under the laws of the State of California. In the event of any legal action to enforce or interpret this Contract, the sole and exclusive venue shall be a court of competent jurisdiction located in Orange County, California, and the Parties hereto agree to and do hereby submit to the jurisdiction of such court, notwithstanding Code of Civil Procedure section 394. Furthermore, the Parties specifically agree to waive any and all rights to request that an action be transferred for trial to another County.
- B. Entire Contract:** This Contract, including Attachment A (including Appendices A, B and C, Attachment A.1. (including Appendices A, B, C, D, E, F and G, Attachment B and Attachment C and Exhibits I, II, and III which are attached hereto and incorporated herein by this reference, contains the entire Contract between the Parties with respect to the matters herein and there are no restrictions, promises, warranties or undertakings other than those set forth herein or referred to herein. No exceptions, alternatives, substitutes or revisions are valid or binding on County unless authorized by County in writing. Electronic acceptance of any additional terms, conditions or supplemental Contracts by any County employee or agent, including but not limited to installers of software, shall not be valid or binding on County unless accepted in writing County's Purchasing Agent or his designee.
- C. Amendments:** No alteration or variation of the terms of this Contract shall be valid unless made in writing and signed by the Parties; no oral understanding or agreement not incorporated herein shall be binding on either of the Parties; and no exceptions, alternatives, substitutes or revisions are valid or binding on County unless authorized by County in writing.

- D. **Taxes:** Unless otherwise provided herein or by law, price quoted does not include California state sales or use tax.
- E. **Delivery:** Time of delivery of services is of the essence in this Contract. County reserves the right to refuse any goods or services and to cancel all or any part of the goods not conforming to applicable specifications, drawings, samples or description, or services that do not conform to the prescribed Scope of Work. Delivery shall not be deemed to be complete until all services have actually been received and accepted in writing by County.
- F. **Acceptance/Payment:** Unless otherwise agreed to in writing by County, 1) acceptance shall not be deemed complete unless in writing and until all the goods/services have actually been received, inspected, or tested to the satisfaction of County in accordance with the applicable provisions of this Contract (including all Attachments); 2) during the Development Phase, payment(s) may only be made in accordance with the four Payment Milestones specified in Attachment C; 3) payments during Sustainment (immediately following the end of the Warranty period) during the term of this Contract, including all renewals, shall be made monthly as specified in Attachment C; and 4) all payments shall be made in arrears after and within 30 calendar days upon the Auditor-Controller's receipt of an approved invoice submitted in accordance with the terms set forth herein, unless otherwise stated. The invoice must be verified and approved by the County's Project Manager and is subject to routine processing requirements of the County.

Payments made by the County shall not preclude the right of the County from thereafter disputing any items or services involved or billed under this Contract and shall not be construed as acceptance of any part of the services.

G. REPRESENTATIONS AND WARRANTIES

SYSTEM FUNCTIONALITY

Contractor represents that the OC ABI System will perform in accordance with the System Requirements Specification for the Orange County Automated Biometric Identification System ("Specification") in all material respects. Contractor is not responsible for system performance deficiencies that are caused by ancillary equipment not furnished by Contractor attached to or used in connection with the system or for reasons beyond Contractor's control, such as (i) an earthquake, adverse atmospheric conditions, or other natural causes; (ii) County changes to load usage or configuration outside the Specification; or (iii) any acts of third-parties who are beyond Contractor's control.

EQUIPMENT WARRANTY

System Sales For one (1) year from the date of completion of the System Acceptance Review or beneficial use, defined as when the County first uses the system or subsystem for operational purposes (excluding training or testing), whichever occurs first, Contractor warrants that the equipment under normal use and service will be free from material defects in materials and workmanship and work in accordance with the Specification.

MORPHOTRAK SOFTWARE WARRANTY

System Sales Unless otherwise stated in the Software License Agreement, for one (1) year from the date of completion of the System Acceptance Review or beneficial use, Contractor warrants the MorphoTrak Software will perform in accordance with the

Specification and in accordance with the terms of the Software License Agreement and the provisions of this Section G that are applicable to the MorphoTrak Software.

EXCLUSIONS TO EQUIPMENT AND MORPHOTRAK SOFTWARE WARRANTIES

These warranties do not apply to: (i) defects or damage resulting from use of the equipment or MorphoTrak Software other than as described in this Contract; (ii) defects or damage occurring from misuse, accident, liquids, neglect, or acts of God; (iii) defects or damage occurring from testing, maintenance, disassembly, repair, installation, alteration, modification, or adjustment not provided or authorized in writing by Seller; (iv) breakage of or damage to antennas unless caused directly by defects in material or workmanship; (v) defects or damage caused by County's failure to comply with all applicable OSHA standards; (vi) equipment that has had the serial number removed or made illegible; (vii) batteries (because they carry their own separate limited warranty); (viii); (ix) scratches or other cosmetic damage to equipment surfaces that does not affect the operation of the equipment; and (x) normal or customary wear and tear.

WARRANTY CLAIMS

For County to assert a claim that the equipment or MorphoTrak Software does not conform to these warranties, County must notify Seller in writing of the claim before the expiration of the warranty period. Upon receipt of such notice, Contractor will investigate the warranty claim. If this investigation confirms a valid warranty claim, Contractor will (at its option and at no additional charge to Customer) repair the defective Equipment or MorphoTrak Software, replace it with the same or equivalent product, or refund the price of the defective Equipment or MorphoTrak Software. Such action will be the full extent of Contractor's liability hereunder. If this investigation indicates the warranty claim is not valid, then Seller shall detail such findings in writing to the County. Repaired or replaced product is warranted for the balance of the original applicable warranty period. All replaced products or parts will become the property of Contractor.

ORIGINAL END USER IS COVERED

These express limited warranties are extended by Contractor to the original user purchasing the system or products for commercial, industrial, or governmental use only, and are not assignable or transferable.

DISCLAIMER OF OTHER WARRANTIES

Except as provided otherwise herein, these warranties are the complete warranties for the equipment and MorphoTrak software provided under this Contract and are given in lieu of all other warranties. Seller disclaims all other warranties or conditions, express or implied, including the implied warranties of merchantability and fitness for a particular purpose.

- H. **Patent/Copyright Materials/Proprietary Infringement:** Unless otherwise expressly provided in this Contract, Contractor shall be solely responsible for clearing the right to use any patented or copyrighted materials in the performance of this Contract. Contractor warrants that any software as modified through services provided hereunder will not infringe upon or violate any patent, proprietary right, or trade secret right of any third party. Contractor agrees that, in accordance with the more specific requirement contained in paragraph "P" below, it shall indemnify, defend and hold County and County INDEMNITEES harmless from any and all such claims and be responsible for payment of all costs, damages, penalties and expenses related to or arising from such claim(s), including, but not limited to, attorney's fees, costs and expenses.

- I. **Assignment or Sub-contracting:** The terms, covenants, and conditions contained herein shall apply to and bind the heirs, successors, executors, administrators and assigns of the Parties. Furthermore, neither the performance of this Contract nor any portion thereof may be assigned or sub-contracted by the Contractor without the express written consent of County. Any attempt by Contractor to assign or sub-contract the performance or any portion thereof of this Contract without the express written consent of County shall be invalid and shall constitute a breach of this Contract.
- J. **Non-Discrimination:** In the performance of this Contract, Contractor agrees that it will comply with the requirements of Section 1735 of the California Labor Code and not engage nor permit any subcontractors to engage in discrimination in employment of persons because of the race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, or sex of such persons. Contractor acknowledges that a violation of this provision shall subject Contractor to all the penalties imposed for a violation of Anti-Discrimination Law or regulation, including but not limited to, Section 1720 et seq. of the California Labor Code.
- K. **Termination:** In addition to any other remedies or rights it may have by law, County has the right to terminate this Contract without penalty immediately with cause or after 30 days' written notice without cause, unless otherwise specified. Cause shall be defined as any breach of contract, any misrepresentation or fraud on the part of the Contractor. Exercise by County of its right to terminate the Contract shall relieve County of all further obligation(s).
- L. **Consent to Breach Not Waiver:** No term or provision of this Contract shall be deemed waived and no breach excused, unless such waiver or consent shall be in writing and signed by the Party claimed to have waived or consented. Any consent by any Party to, or waiver of, a breach by the other, whether express or implied, shall not constitute consent to, waiver of, or excuse for any other different or subsequent breach.
- M. **Remedies Not Exclusive:** The remedies for breach set forth in this Contract are cumulative as to one another and as to any other provided by law, rather than exclusive; and the expression of certain remedies in this Contract does not preclude resort by either Party to any other remedies provided by law.
- N. **Independent Contractor:** Contractor shall be considered an independent Contractor and neither the Contractor, employees nor anyone working for Contractor under this Contract shall be considered an agent or an employee of County. Neither the Contractor, employees nor anyone working for the Contractor under this Contract shall qualify for workers' compensation or other fringe benefits of any kind through County.
- O. **Performance:** Contractor shall perform all work under this Contract, taking necessary steps and precautions to perform the work to County's satisfaction. Contractor shall be responsible for the professional quality, technical assurance, timely completion and coordination of all documentation and other goods/services furnished by the Contractor under this Contract. Contractor shall perform all work diligently, carefully, and in a good and workman-like manner; shall furnish all labor, supervision, machinery, equipment, materials, and supplies necessary therefore; shall at its sole expense obtain and maintain all permits and licenses required by public authorities, including those of County required in its governmental capacity, in connection with performance of the work; and, if

permitted to subcontract, shall be fully responsible for all work performed by subcontractors.

- P. **Indemnification:** Contractor agrees to indemnify, defend with counsel approved in writing by County, and hold County, its elected and appointed officials, officers, employees, agents and those special districts and agencies which County's Board of Supervisors acts as the governing Board ("County Indemnitees"), harmless from any claims, demands or liability of any kind or nature, including but not limited to personal injury or property damage, arising from or related to the services, products or other performance provided by Contractor pursuant to this Contract. If judgment is entered against Contractor and County by a court of competent jurisdiction because of the concurrent active negligence of County or County Indemnitees, Contractor and County agree that liability will be apportioned as determined by the court. Neither Party shall request a jury apportionment.

INSURANCE PROVISIONS

Prior to the provision of services under this Contract, the Contractor agrees to purchase all required insurance at Contractor's expense and to deposit with the County Certificates of Insurance, including all endorsements required herein, necessary to satisfy the County that the insurance provisions of this Contract have been complied with and to keep such insurance coverage and the certificates therefore on deposit with the County during the entire term of this Contract. In addition, all subcontractors performing work on behalf of Contractor pursuant to this Contract shall obtain insurance subject to the same terms and conditions as set forth herein for Contractor.

All self-insured retentions (SIRs) and deductibles shall be clearly stated on the Certificate of Insurance. If no SIRs or deductibles apply, indicate this on the Certificate of Insurance with a 0 by the appropriate line of coverage. Any self-insured retention (SIR) or deductible in an amount in excess of \$25,000 (\$5,000 for automobile liability), shall specifically be approved by the County Executive Office (CEO)/Office of Risk Management.

If the Contractor fails to maintain insurance acceptable to the County for the full term of this Contract, the County may terminate this contract.

Qualified Insurer

Minimum insurance company ratings as determined by the most current edition of the **Best's Key Rating Guide/Property-Casualty/United States or ambest.com** shall be A- (Secure A.M. Best's Rating) and VIII (Financial Size Category).

The policy or policies of insurance must be issued by an insurer licensed to do business in the state of California (California Admitted Carrier). If the carrier is a non-admitted carrier in the state of California and does not meet or exceed an A.M. Best rating of A-/VIII, CEO/Office of Risk Management retains the right to approve or reject carrier after a review of the company's performance and financial ratings. If the non-admitted carrier

meets or exceeds the minimum A.M. Best rating of A-/VIII, the agency can accept the insurance.

The policy or policies of insurance maintained by the Contractor shall provide the minimum limits and coverage as set forth below:

| <u>Coverage</u> | <u>Minimum Limits</u> |
|--|---|
| Commercial General Liability | \$1,000,000 per occurrence \$2,000,000 aggregate |
| Automobile Liability including coverage for owned, non-owned and hired vehicles | \$1,000,000 per occurrence |
| Workers' Compensation | Statutory |
| Employers' Liability Insurance | \$1,000,000 per occurrence |
| Professional Liability Insurance | \$3,000,000 per claims made or per occurrence |

Required Coverage Forms

The Commercial General Liability coverage shall be written on Insurance Services Office (ISO) form CG 00 01, or a substitute form providing liability coverage at least as broad.

The Business Auto Liability coverage shall be written on ISO form CA 00 01, CA 00 05, CA 0012, CA 00 20, or a substitute form providing coverage at least as broad.

Required Endorsements

The Commercial General Liability policy shall contain the following endorsements, which shall accompany the Certificate of insurance:

- 1) An Additional Insured endorsement using ISO form CG 2010 or CG 2033 or a form at least as broad naming the County of Orange, its elected and appointed officials, officers, employees, agents as Additional Insureds.
- 2) A primary non-contributing endorsement evidencing that the Contractor's insurance is primary and any insurance or self-insurance maintained by the County of Orange shall be excess and non-contributing.

All insurance policies required by this Contract shall waive all rights of subrogation against the County of Orange and members of the Board of Supervisors, its elected and appointed officials, officers, agents and employees when acting within the scope of their appointment or employment.

The Workers' Compensation policy shall contain a waiver of subrogation endorsement waiving all rights of subrogation against the County of Orange, and members of the Board of Supervisors, its elected and appointed officials, officers, agents and employees.

All insurance policies required by this Contract shall give the County of Orange 30 days notice in the event of cancellation and 10 days for non-payment of premium. This shall be evidenced by policy provisions or an endorsement separate from the Certificate of Insurance.

If Contractor's Professional Liability policy is a "claims made" policy, Contractor shall agree to maintain professional liability coverage for two years following completion of Contract.

The Commercial General Liability policy shall contain a severability of interests clause also known as a "separation of insureds" clause (standard in the ISO CG 0001 policy).

Insurance certificates should be forwarded to the agency/department address listed on the solicitation.

If the Contractor fails to provide the insurance certificates and endorsements within seven days of notification by CEO/Purchasing or the agency/department purchasing division, award may be made to the next qualified Offeror.

County expressly retains the right to require Contractor to increase or decrease insurance of any of the above insurance types throughout the term of this Contract. Any increase or decrease in insurance will be as deemed by County of Orange Risk Manager as appropriate to adequately protect County.

County shall notify Contractor in writing of changes in the insurance requirements. If Contractor does not deposit copies of acceptable certificates of insurance and endorsements with County incorporating such changes within thirty days of receipt of such notice, this Contract may be in breach without further notice to Contractor, and County shall be entitled to all legal remedies.

The procuring of such required policy or policies of insurance shall not be construed to limit Contractor's liability hereunder nor to fulfill the indemnification provisions and requirements of this Contract, nor act in any way to reduce the policy coverage and limits available from the insurer.

- Q. **Bills and Liens:** Contractor shall pay promptly all indebtedness for labor, materials and equipment used in performance of the work. Contractor shall not permit any lien or charge to attach to the work or the premises, but if any does so attach, Contractor shall promptly procure its release and, in accordance with the requirements of paragraph "P" above, indemnify, defend, and hold County harmless and be responsible for payment of all costs, damages, penalties and expenses related to or arising from or related thereto.

- R. **Changes:** Contractor shall make no changes in the work or perform any additional work without the County's specific written approval.
- S. **Change of Ownership:** Contractor agrees that if there is a change or transfer in ownership of Contractor's business prior to completion of this Contract, the new owners shall be required under terms of sale or other transfer to assume Contractor's duties and obligations contained in this Contract and complete them to the satisfaction of County.
- T. **Force Majeure:** Contractor shall not be in breach of this Contract during any delay beyond the time named for the performance of this Contract caused by any act of God, war, civil disorder, employment strike or other cause beyond its reasonable control, provided Contractor gives written notice of the cause of the delay to County within 36 hours of the start of the delay and Contractor avails himself of any available remedies.
- U. **Confidentiality:** Contractor shall
- U.1 Protection of Confidential Information:
- (a) strictly maintain the confidentiality of all Criminal Justice Information;
 - (b) take steps to prevent the use, disclosure, dissemination, or copying of the County Confidential Information other than as necessary for Contractor to perform its obligations under this Contract, including developing, implementing, maintaining, and enforcing appropriate policies and procedures to safeguard the County Confidential Information;
 - (c) use the same care to prevent disclosure of the County Confidential Information to third parties as it employs to avoid disclosure, publication, or dissemination of its own confidential information of a similar nature, but in no event less than a reasonable standard of care;
 - (d) use the County Confidential Information solely as necessary and appropriate for the purpose of performing its obligations under this Contract;
 - (e) not acquire any express or implied right or license to any Intellectual Property Right or other right, or assert any lien against, the County Confidential Information;
 - (f) upon the request of the County, promptly return, or provide a copy of, as the County directs, County Confidential Information (provided that Contractor may retain such Confidential Information as it requires in order to perform the Services for so long as it is required to perform such Services); and
 - (g) inform its employees, agents, and subcontractors who perform duties with respect to this Contract about the restrictions with regard to County Confidential Information.

Notwithstanding anything to the contrary contained elsewhere in this Section and subject to the County Project Manager's prior written consent, Contractor may disclose County Confidential Information to its employees, agents, and subcontractors who have: (1) a bona fide need to know such County Confidential Information in order to perform their assigned duties in fulfillment of obligations under this Contract; (2) limit the amount of such disclosure of County Confidential information to only that necessary for that person, agent or subcontractor to perform their obligations under this Contract and (3) a legal

duty to protect the County Confidential Information that is substantially equivalent to the obligations of confidentiality imposed upon Contractor hereunder. Contractor assumes full responsibility for the acts or omissions of its subcontractors and employees with respect to County Confidential Information.

U.2 Required Disclosure

Contractor agrees to maintain the confidentiality of all County Confidential Information, pursuant to all applicable statutory laws relating to privacy and confidentiality that currently exist or exist at any time during the term of this Contract. All such records and information shall be considered confidential and kept confidential by Contractor and Contractor's subcontractors, staff, agents and employees.

U.3 Notification

Contractor shall notify the County as soon as possible in the event of any disclosure or loss of County Confidential Information other than as permitted by this Contract.

U.4 Injunctive Relief

Contractor acknowledges that any breach of any provision of this Section by Contractor, or by its personnel, agents, or subcontractors, may cause immediate and irreparable injury to the County that cannot be adequately compensated for in damages, and that, in the event of any such breach and in addition to all other remedies available at law or in equity, the County shall be entitled to seek injunctive relief from any court of competent jurisdiction, without bond or other security.

U.5 Return of Confidential Information

Unless expressly authorized by this Contract to retain the County Confidential Information, and upon either termination or expiration of the Term of this Contract or the request of the County, Contractor shall promptly return or destroy, at the County's option, the County Confidential Information and all copies thereof, including, to the extent containing County Confidential Information, materials prepared in whole or in part based on such County Confidential Information, and all copies thereof. Following such return or destruction, an officer of Contractor shall certify to the County that it no longer has in its possession or under its control any of such County Confidential Information in any form whatsoever, or any copy thereof. Notwithstanding anything to the contrary herein, to the extent and for so long as such return or destruction is infeasible (e.g., with regard to County Confidential Information retained in the memories of Contractor's employees), the protections of this Section shall continue to apply to such County Confidential Information.

U.6 Contractor Confidential Information

County shall take reasonable steps to protect the Contractor's Confidential Information to ensure that such Confidential Information is not disclosed, distributed or used in violation of the provisions of this Contract. If disclosure is required under any court order or law including, but not limited to, the California Public Records Act, County shall provide reasonable notice to Contractor in order for Contractor to obtain a protective order. County reserves the right to redact any County Confidential Information.

U.7 Duration

The obligations of the Parties with respect to County Confidential Information and Contractor information under Section U, shall remain in force and effect at all times during the Term and shall survive the termination of this Contract.

For the purposes of this Contract, "County Confidential Information" means:

- (a) technical information, materials, data, reports, programs, documentation, diagrams, ideas, concepts, techniques, processes, inventions, knowledge, know-how, and trade secrets, whether in tangible or intangible form, whether disclosed or conveyed by visits to the County's or any other law enforcement agency related to this Contract, sites or facilities, whether or not marked or otherwise identified as confidential, and whether in any specific form or media, or disclosed orally, that are developed or acquired by such Party;
- (b) information and data relating to the County's or any related law enforcement agency's practices, personnel, customers (and the business practices, habits, needs, trends, and ordering history of such customers), products, services, orders, business, management information services, financials, costs, or margins that is not generally known by others in the same line of business;
- (c) information that the County or any law enforcement agency related to this Contract identifies to Contractor as confidential by a stamp or other similar notice;
- (d) information and data relating to the employees and former employees of the County or any law enforcement agency related to this Contract, and the salaries, severance packages, and other benefits, and performance assessments or appraisals, of or applicable to such employees or former employees;
- (e) other information relating to the County or any law enforcement agency related to this Contract that is treated as confidential by the County or any Eligible Customer and that a reasonably prudent person would expect not to be made available to third parties without restriction or payment; and
- (f) (i) work product and County data; and (ii) records, data, information or materials in the possession or control of the County, or created, developed, collected, processed, handled, stored, transmitted, or received, in any form or media, by Contractor or the systems in connection with this Contract (including individually identifiable health information), that the County is, for any reason, prohibited from publicly disclosing, whether by law, statute, regulation, ordinance, or contract.

V. **Compliance with Laws:** Contractor represents and warrants that services to be provided under this Contract shall fully comply, at Contractor's expense, with all standards, laws, statutes, restrictions, ordinances, requirements, and regulations (collectively "laws"), including, but not limited to those issued by County in its governmental capacity and all other laws applicable to the services at the time services are provided to and accepted by County. Contractor acknowledges that County is relying on Contractor to ensure such compliance, and pursuant to the requirements of paragraph "P" above, Contractor agrees that it shall defend, indemnify and hold County and County INDEMNITEES harmless from all liability, damages, costs and expenses arising from or related to a violation of such laws.

- W. Freight (F.O.B. Destination):** Contractor assumes full responsibility for all transportation, transportation scheduling, packing, handling, insurance, and other services associated with delivery of all products deemed necessary under this Contract.
- X. Pricing:** The Contract price, as more fully set forth in Attachment C, shall include full compensation for providing all required goods in accordance with required specifications, or services as specified herein or when applicable, in the scope of services attached to this Contract, and no additional compensation will be allowed therefore, unless otherwise provided for in this Contract.
- Y. Waiver of Jury Trial:** To the extent enforceable under California law, each Party acknowledges that it is aware of and has had the opportunity to seek advice of counsel of its choice with respect to its rights to trial by jury, and each Party, for itself and its successors, creditors, and assigns, does hereby expressly and knowingly waive and release all such rights to trial by jury in any action, proceeding or counterclaim brought by any Party hereto against the other (and/or against its officers, directors, employees, agents, or subsidiary or affiliated entities) on or with regard to any matters whatsoever arising out of or in any way connected with this Contract and /or any other claim of injury or damage.
- Z. Terms and Conditions:** Contractor acknowledges that it has read and agrees to all terms and conditions included in this Contract.
- AA. Headings:** The various headings and numbers herein, the grouping of provisions of this Contract into separate clauses and paragraphs, and the organization hereof are for the purpose of convenience only and shall not limit or otherwise affect the meaning hereof.
- BB. Severability:** If any term, covenant, condition or provision of this Contract is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired or invalidated thereby.
- CC. Calendar Days:** Any reference to the word "day" or "days" herein shall mean calendar day or calendar days, respectively, unless otherwise expressly provided.
- DD. Attorneys Fees:** In any action or proceeding to enforce or interpret any provision of this Contract, or where any provision hereof is validly asserted as a defense, each Party shall bear its own attorney's fees, costs and expenses.
- EE. Interpretation:** This Contract has been negotiated at arm's length and between persons sophisticated and knowledgeable in the matters dealt with in this Contract. In addition, each Party has been represented by experienced and knowledgeable independent legal counsel of their own choosing, or has knowingly declined to seek such counsel despite being encouraged and given the opportunity to do so. Each Party further acknowledges that they have not been influenced to any extent whatsoever in executing this Contract by any other Party hereto or by any person representing them, or both. Accordingly, any rule of law (including California Civil Code Section 1654) or legal decision that would require interpretation of any ambiguities in this Contract against the Party that has drafted it is not applicable and is waived. The provisions of this Contract shall be interpreted in a reasonable manner to effect the purpose of the Parties and this Contract.

- FF. **Authority:** The Parties to this Contract represent and warrant that this Contract has been duly authorized and executed and constitutes the legally binding obligation of their respective organization or entity, enforceable in accordance with its terms.
- GG. **Employee Eligibility Verification:** The Contractor warrants that it fully complies with all Federal and State statutes and regulations regarding the employment of aliens and others and that all its employees performing work under this Contract meet the citizenship or alien status requirement set forth in Federal statutes and regulations. The Contractor shall obtain, from all employees performing work hereunder, all verification and other documentation of employment eligibility status required by Federal or State statutes and regulations including, but not limited to, the Immigration Reform and Control Act of 1986, 8 U.S.C. §1324 et seq., as they currently exist and as they may be hereafter amended. The Contractor shall retain all such documentation for all covered employees for the period prescribed by the law. The Contractor shall indemnify, defend with counsel approved in writing by County, and hold harmless, the County, its agents, officers, and employees from employer sanctions and any other liability which may be assessed against the Contractor or the County or both in connection with any alleged violation of any Federal or State statutes or regulations pertaining to the eligibility for employment of any persons performing work under this Contract.
1. **Term of Contract:** This Contract shall commence upon approval of the County Board of Supervisors, and shall continue for four (4) years renewable for three (3) additional one (1) year terms from that date, unless otherwise terminated by County.
 2. **Scope of Services:** This Contract, including any Attachments and Exhibits, specifies the contractual terms and conditions by which the Contractor shall provide an Automated Biometric Identification System, as described in Attachments A & A.1 (Scope of Work & System Requirements Specification), under a fixed price contract based upon milestone payments, as set forth herein. Contractor agrees this Contract shall not be adversely impacted by any other projects the Contractor is conducting. Nothing in this Contract shall prohibit the County from acquiring the same type or equivalent type of services from other sources.
 3. **Contingency of Funding:** Contractor acknowledges that funding or portions of funding for this Contract may be contingent upon state budget approval; receipt of funds from, and/or obligation of funds by, the state of California to County; and inclusion of sufficient funding for the services hereunder in the budget approved by County's Board of Supervisors for each fiscal year covered by this Contract. If such approval, funding or appropriations are not forthcoming, or are otherwise limited, County may immediately terminate or modify this Contract without penalty.
 4. **Project Manager:** The County and the Contractor shall each appoint a Project Manager to act as liaison between each Party during the term of this Contract. The County's Project Manager shall coordinate the activities of the County staff assigned to work with the Contractor.

The County's Project Manager shall have the right to require the removal and replacement of the Contractor's Project Manager and key personnel. The County's Project Manager shall notify the Contractor in writing of such action. The Contractor shall accomplish the removal within 14 calendar days after written notice by the County's Project Manager. The County's Project Manager shall review and approve the appointment of the replacement for the

Contractor's Project Manager and key personnel. Said approval shall not be unreasonably withheld.

5. **Precedence** The Contract documents herein consist of this Contract and its attachments. In the event of a conflict between or among the Contract documents, the order of precedence shall be the provisions of the main body of this Contract, i.e., those provisions set forth in the recitals and articles of this Contract, and then the attachments.
6. **Conflict of Interest:** The Contractor shall exercise reasonable care and diligence to prevent any actions or conditions that could result in a conflict with the best interests of the County. This obligation shall apply to the Contractor; the Contractor's employees, agents, and relatives; sub-tier Consultants; and third parties associated with accomplishing work and services hereunder. The Contractor's efforts shall include, but not be limited to establishing precautions to prevent its employees or agents from making, receiving, providing or offering gifts, entertainment, payments, loans or other considerations which could be deemed to appear to influence individuals to act contrary to the best interests of the County.
7. **Child Support Enforcement Requirements:** Contractor is required to comply with the child support enforcement requirements of the County. Failure of the Contractor to comply with all federal, state, and local reporting requirements for child support enforcement or to comply with all lawfully served Wage and Earnings Assignment Orders and Notices of Assignment shall constitute a material breach of the Contract. Failure to cure such breach within 60 calendar days of notice from the County shall constitute grounds for termination of the Contract.
8. **Publication:** No copies of sketches, schedules, written documents, computer based data, photographs, maps or graphs, including graphic art work, resulting from performance or prepared in connection with this Contract, are to be released by Contractor and/or anyone acting under the supervision of Contractor to any person, partnership, company, corporation, or agency, without prior written approval by the County, except as necessary for the performance of the services of this Contract. All press releases, including graphic display information to be published in newspapers, magazines, etc., are to be administered only by the County unless otherwise agreed to by both Parties.
9. **News/Information Release:** The Contractor agrees that it will not issue any news releases in connection with either the award of this Contract or any subsequent amendment of or effort under this Contract without first obtaining review and written approval of said news releases from the County through the County's project manager.
10. **Reports/Meetings:** Upon County's request, the Contractor shall develop reports and any other relevant documents necessary to complete the services and requirements as set forth in this Contract. The County's project manager and the Contractor's project manager will meet on reasonable notice to discuss the Contractor's performance and progress under this Contract. If requested, the Contractor's project manager and other project personnel shall attend all meetings. The Contractor shall provide such information that is requested by the County for the purpose of monitoring progress under this Contract.
11. **Breach of Contract:** The failure of the Contractor to comply with any of the provisions, covenants or conditions of this Contract, shall constitute a material breach of this Contract. In such event the County may, and in addition to any other remedies available at law, in equity, or otherwise specified in this Contract:

- a. Afford the Contractor written notice of the breach and ten calendar days or such shorter time that may be specified in this Contract within which to cure the breach;
- b. Discontinue payment to the Contractor for and during the period in which the Contractor is in breach and offset against any monies billed by the Contractor but yet unpaid by the County those monies disallowed pursuant to the above.
- c. Terminate the Contract immediately without penalty.

12. **Contract Disputes:** The Parties shall deal in good faith and attempt to resolve potential disputes informally. If the dispute concerning a question of fact arising under the terms of this Contract is not disposed of in a reasonable period of time by the Contractor's project manager and the County's project manager, such matter shall be brought to the attention of the County's Purchasing Agent by way of the following process:

- a. The Contractor shall submit to the agency/department deputy purchasing agent a written demand for a final decision regarding the disposition of any dispute between the Parties arising under, related to, or involving this Contract, unless the County, on its own initiative, has already rendered such a final decision.
- b. The Contractor's written demand shall be fully supported by factual information, and, if such demand involves a cost adjustment to the Contract, the Contractor shall include with the demand a written statement signed by a senior official indicating that the demand is made in good faith, that the supporting data are accurate and complete, and that the amount requested accurately reflects the Contract adjustment for which the Contractor believes the County is liable.
- c. Pending the final resolution of any dispute arising under, related to, or involving this Contract, the Contractor agrees to diligently proceed with the performance of this Contract, including the delivery of goods and/or provision of services. The Contractor's failure to diligently proceed shall be considered a material breach of this Contract. Any final decision of the County shall be expressly identified as such, shall be in writing, and shall be signed by the County's Purchasing Agent or his designee. If the County fails to render a decision within 90 days after receipt of the Contractor's demand, it shall be deemed a final decision adverse to the Contractor's contentions. The County's final decision shall be conclusive and binding regarding the dispute unless the Contractor commences action in a court of competent jurisdiction.

13. **Stop Work:** The County may, at any time, by written stop work order to the Contractor, require the Contractor to stop all or any part of the work called for by this Contract for a period of 90 working days after the stop work order is delivered to the Contractor and for any further period to which the Parties may agree. The stop work order shall be specifically identified as such and shall indicate it is issued under this clause. Upon receipt of the stop work order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the stop work order during the period of work stoppage. Within a period of 90 days after a stop work order is delivered to the Contractor or within any extension of that period to which the Parties shall have agreed, the County shall either: 1) Cancel the stop work order or 2) Terminate the Contract in whole or in part in writing as soon as feasible. County is not required to provide

thirty (30) days' notice of the termination of the Contract to Contractor if a stop work has been issued by the County.

14. **Termination ~ Orderly:** Upon termination or other expiration of this Contract, each Party shall promptly return to the other Party all papers, materials, and other properties of the other held by each for purposes of execution of the Contract. In addition, each Party will assist the other Party in orderly termination of this Contract and the transfer of all assets, tangible and intangible, as may be necessary for the orderly, non-disruptive business continuation of each Party.
15. **Errors and Omissions:** All reports, files and other documents prepared and submitted by Contractor shall be complete and shall be carefully checked by the professional(s) identified by Contractor as project manager and key personnel attached hereto, prior to submission to the County. Contractor agrees that County review is discretionary and Contractor shall not assume that the County will discover errors and/or omissions. If the County discovers any errors or omissions prior to approving Contractor's reports, files and other written documents, the reports, files or documents will be returned to Contractor for correction. Should the County or others discover errors or omissions in the reports, files or other written documents submitted by Contractor after County approval thereof, County approval of Contractor's reports, files or documents shall not be used as a defense by Contractor in any action between the County and Contractor, and the reports, files or documents will be returned to Contractor for correction.
16. **Notices:** Any and all notices, requests demands and other communications contemplated, called for, permitted, or required to be given hereunder shall be in writing, except through the course of the Parties' project managers' routine exchange of information and cooperation during the terms of the work and services. Any written communications shall be deemed to have been duly given upon actual in-person delivery, if delivery is by direct hand, or upon delivery on the actual day of receipt or no greater than four calendar days after being mailed by US certified or registered mail, return receipt requested, postage prepaid, whichever occurs first. The date of mailing shall count as the first day. All communications shall be addressed to the appropriate Party at the address stated herein or such other address as the Parties hereto may designate by written notice from time to time in the manner aforesaid.

County: Sheriff-Coroner/Crime Lab Division
320 N. Flower St., 5th Floor
Santa Ana, CA 92703
Attn: Lisa Zinn, Project Manager

cc: Sheriff-Coroner /Purchasing Services Bureau
Attn: Lorena Quirarte
320 N. Flower Street
Santa Ana, CA 92703
Ph: 714-834-4690

Contractor: MorphoTrak, Inc.
1250 N. Tustin Avenue
Anaheim, CA 92807
Attn: Robert Bonkowski, Contract Project Manager

17. **Ownership of Documents:** The County has permanent ownership of all directly connected and derivative materials produced under this Contract by the Contractor. All documents, reports and other incidental or derivative work or materials furnished hereunder shall become, and remain, the sole property of the County and may be used by the County as it may require without additional cost to the County. None of the documents, reports and other incidental or derivative work or furnished materials shall be used by the Contractor without the express written consent of the County.
18. **Title to Data:** All materials, documents, data or information obtained from the County data files or any County medium furnished to the Contractor in the performance of this Contract will at all times remain the property of the County. Such data or information may not be used or copied for direct or indirect use by the Contractor after completion or termination of this Contract without the express written consent of the County. All materials, documents, data or information, including copies, must be returned to the County at the end of this Contract.
19. **Contractor's Records:** Contractor shall keep an accurate record of time expended by Contractor in the performance of this Contract. Such record shall be available for periodic inspection by the County at reasonable times. Such records will be retained for four (4) years after the expiration or termination of this Contract.
20. **Conditions Affecting Work:** The Contractor shall be responsible for taking all steps reasonably necessary to ascertain the nature and location of the work to be performed under this Contract, and to know the general conditions which can affect the work or the cost thereof. Any failure by the Contractor to do so will not relieve Contractor from responsibility for successfully performing the work without additional cost to the County. The County assumes no responsibility for any understanding or representations concerning the nature, location(s) or general conditions made by any of its officers or agents prior to the execution of this Contract, unless such understanding or representations by the County are expressly stated in the Contract.
21. **Gratuities:** The Contractor warrants that no gratuities, in the form of entertainment, gifts or otherwise, were offered or given by the Contractor or any agent or representative of the Contractor to any officer or employee of the County with a view toward securing the Contract or securing favorable treatment with respect to any determinations concerning the performance of the Contract. For breach or violation of this warranty, the County shall have the right to terminate the Contract, either in whole or in part, and any loss or damage sustained by the County in procuring on the open market any goods or services which the Contractor agreed to supply shall be borne and paid for by the Contractor. The rights and remedies of the County provided in the clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract.
22. **Contractor Safety Standards and Work Hours:** The Contractor will ensure compliance with all safety and hourly requirements for employees in accordance with Federal, State, and County safety and health regulations and laws.
23. **Audit:** The County's duly authorized representative shall have access, at reasonable times, to all reports, Contract records, documents, files and personnel necessary to audit and verify the Contractor's charges to the County hereunder. The Contractor agrees to retain reports, records, documents, and files related to charges hereunder for a period of three years following the date of final payment for the Contractor's services hereunder. The County reserves the right to audit and verify the Contractor's records before final payment is made.

The County's representatives shall have the right to reproduce any of the aforesaid documents.

Should the Contractor cease to exist as a legal entity, the Contractor's records pertaining to this Contract shall be forwarded to the surviving entity in a merger or acquisition or, in the event of liquidation, to the County's Project Manager.

24. **Authorization Warranty:** The Contractor represents and warrants that the person executing the Contract on behalf of and for the Contractor is an authorized agent who has actual authority to bind the Contractor to each and every term, condition, and obligation of this Contract and that all requirements of the Contractor have been fulfilled to provide such actual authority.

25. **Security Requirements:**

- A. Contractor shall, with respect to all employees of Contractor performing services hereunder:
1. Perform background checks as to past employment history.
 2. Inquire as to past criminal felony convictions.
 3. Ascertain that those employees who are required to drive in the course of performing services hereunder have valid California driver's licenses and no DUI convictions within two (2) years prior to commencement of services hereunder.
 4. Perform drug screening to determine that such employees are not users of illegal drugs or other substances.
- B. Contractor shall not assign to County property any Contractor personnel as to whom the foregoing procedures indicate:
1. Inability or unwillingness to perform in a competent manner.
 2. Past criminal convictions for theft, burglary or conduct causing property damage or mental or physical harm to persons.
 3. Where such employee's duties include driving a vehicle, absence of a valid California driver's license or a DUI conviction within the prior two (2) years.
 4. Usage of illegal drugs or other substances.
- C. If any of the problems identified with respect to Contractor's employees are discovered after assignment of an employee to County property, or if County otherwise reasonably deems an assigned employee unacceptable, Contractor shall remove and replace such employee at the County property.
- D. Nothing herein shall render any employee of Contractor an employee of County.

THE CONTRACTOR'S PERSONNEL REQUIREMENTS:

All employees must pass the Sheriff-Coroner background check as defined by the County's Project Manager and meet all requirements as set forth below:

1. **Contractor's Personnel-Background Checks:**
2. All personnel to be employed in performance of the work under this Contract shall be subject to background checks. Clearance must be updated and renewed every twelve (12) months from original date of clearance.
3. No person shall be employed on this work that has not received prior clearance from the Sheriff-Coroner Department.
4. Within fifteen (15) days of the effective date of this Contract, Contractor shall prepare and submit a complete and accurate "Contractor Security Clearance" information form for all Contractor's employees who will be working on, or who will need access to, the Sheriff-Coroner's facilities to perform work covered by this Contract. County project manager shall provide form(s) to Contractor's project manager.
5. Contractor Security Clearance information forms for renewal, at specified intervals and for new employees of Contractor, shall be submitted at least ten (10) County working days prior to the expiration of an existing clearance or prior to the use of any person for work occurring on Sheriff-Coroner's Facilities.
6. Contractor Security Clearance information forms must be submitted on the original Sheriff-Coroner's printed form. Facsimile or photocopy forms will not be accepted.
7. Contractor Security Clearance information forms will be provided by County Project Manager upon request and will be screened by the Sheriff-Coroner's Department.
8. Contract Security Clearance information forms shall be thoroughly and accurately completed. Omissions or false statements, regardless of the nature or magnitude, may be grounds for denying clearance.
9. County will not give Contractor the reason an individual's clearance is denied, but will provide explanation to individual affected via U.S. Mail.

E. GENERAL SECURITY REQUIREMENT-AT WORKSITE:

1. All work areas shall be secured prior to the end of each workday.
2. Workmen shall have no contact, either verbal or physical, with inmates in the facility. Specifically:

- a. Do not give names or addresses to inmates.
 - b. Do not receive any names or addresses from inmates.
 - c. Do not disclose the identity of any inmate to anyone outside facility.
 - d. Do not give any materials to inmates.
 - e. Do not receive any materials from inmates (including materials to be passed to another individual or inmate).
3. Contractor's personnel shall not smoke or use profanity or other inappropriate language while on site.
 4. Contractor's personnel shall not enter the facility while under the influence of alcohol, drugs or other intoxicants and shall not have such materials in their possession.
 5. Failure to comply with these requirements is a criminal act and can result in prosecution.
 6. Contractor's personnel shall plan their activities to minimize the number of times they must enter and exit a facility, i.e., transport all tools, equipment, and materials needed for the day at the start of work and restrict all breaks to the absolute minimum.
 7. Contractor's personnel shall follow any special security requirements issued by the onsite contact person or escort. The Contractor must comply with all Crime Laboratory security procedures, keycard procedures, and locked door procedures. Contractor will not be in the Crime Laboratory without escort or prior approval of County Project Manager or designee.
 8. Contractor's personnel shall report either to the on-site contact person when leaving the facility, temporarily or at the end of the workday.
 9. Contractor's personnel shall immediately report all accidents, spills, damage, unusual conditions and/or unusual activities to the onsite contact person or any Sheriff's Deputy.
 10. Contractor's personnel shall securely close and check all gates and doors to ensure that they are tightly closed and locked.
 11. Contractor's personnel shall restrict all activities to the immediate work site and adjacent assigned areas.
 12. Contractor's personnel shall remain with the assigned escort at all times, unless otherwise directed by the onsite contact person.

F. POTENTIAL DELAYS/INTERRUPTIONS:

1. Contractor shall acknowledge that the primary purpose of the detention facilities is the safe and secure operation of those facilities.
2. Contractor's personnel who enter a Sheriff facility but have not passed the security screening, or who have falsified the security screening information, or who have outstanding warrants, the Sheriff may detain warrants.
3. Contractor's personnel shall immediately comply with all directions and orders issued by Sheriff's personnel, other than changes regarding the quality or quantity of work, which will be controlled by County's project manager.
4. Contractor's personnel may be delayed or denied access to the facility due to unforeseen events that may affect the availability of security escorts.
5. Contractor's personnel may be ordered to leave a facility prior to the completion of their work or the end of the workday by unforeseen incidents occurring within secure environments.
6. Contractor's personnel may be detained within a facility until Sheriff's personnel resolve an incident.

26. Bonds Required

a. Performance Bond

The Contractor shall provide the County with a surety bond to guarantee faithful performance. Said bond shall be duly executed by Contractor and a responsible Surety authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California and registered with the County of Orange. The Contractor shall pay all bond premiums, costs, and incidentals.

A faithful performance bond in a value of not less than a fifty percent (50%) of the annual contract price will be required.

The Performance bond shall be furnished within ten (10) calendar days after Notice of Award. The County shall return the Bond to the Contractor upon expiration of this Contract and the fulfillment of the Contractor's obligations under this Contract.

The faithful performance bond must be issued by a Surety company with a minimum insurance rating of A- (Secure Best's Rating) and VIII (Financial Size Category) as determined by the most current edition of the Best's Key Rating Guide/Property-Casualty/United States or ambest.com. The Surety Company must also be authorized to write in California by the United States Department of the Treasury, and must be listed on the most current edition of the Department of Treasury's Listing of Sureties.

A Surety company rated lower by Best's Key Rating Guide may be accepted by the CEO/RM after a review of the company's performance and financial ratings.

The Contractor shall submit the Performance Bond documents to the following Address:

County of Orange
 Sheriff Department/Purchasing Division
 320 N. Flower St., 2nd Floor
 Santa Ana, CA 92703

RE: Performance Bond for Contract # MA-060-13010457

Should any Surety at any time be unsatisfactory to the County, or should any bond become insufficient, the Contractor will be given notice to that effect. No further payment shall be deemed due or will be made under the Contract until a new Surety and/or bond is furnished to the County.

The Bond will be issued for the duration of the initial contract period up to successful completion of the System Acceptance Review.

27. **Debarment Certification:** Contractor certifies to the County that neither Contractor nor Contractor's principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this Agreement by any Federal department or agency.

28. COMPLIANCE WITH COUNTY INFORMATION TECHNOLOGY POLICIES AND PROCEDURES

Policies and Procedures

Contractor, its subcontractors, the Contractor personnel, and all other agents and representatives of Contractor, will at all times comply with and abide by all Information Technology (IT) policies and procedures of the County that are provided or made available to Contractor that reasonably pertain to Contractor (and of which Contractor has been provided with advance notice) in connection with Contractor's performance under this Agreement including, but not limited to <http://egov.ocgov.com/egov/Info%20OC/Departments%20&%20Agencies>. Contractor shall cooperate with the County in ensuring Contractor's compliance with the IT policies and procedures described in this Agreement and as adopted by the County from time-to-time, and any material violations or disregard of such IT policies or procedures shall, in addition to all other available rights and remedies of the County, be cause for termination of this Agreement. In addition to the foregoing, Contractor shall comply with the following:

Security and Policies

All performance under this Agreement, shall be in accordance with the County's security requirements, policies, and procedures as set forth above and as modified, supplemented, or replaced by the County from time to time, in its sole discretion, by providing Contractor with a written copy of such revised requirements, policies, or procedures reasonably in advance of the date that they are to be implemented and effective (collectively, the "Security Policies"). Contractor shall at all times use industry best practices and methods with regard to the prevention, detection, and elimination, by all appropriate means, of fraud, abuse, and other inappropriate or unauthorized access to County systems accessed in the performance of services in this Agreement.

Information Access

The County may require all Contractor personnel performing services under this Agreement to execute a confidentiality and non-disclosure agreement concerning access protection and data security in the form provided by County. The County shall authorize, and Contractor shall issue, any necessary information-access mechanisms, including access IDs and passwords, and in no event shall Contractor permit any such mechanisms to be shared or used by other than the individual Contractor personnel to whom issued. Contractor shall provide each Contractor Person with only such level of access as is required for such individual to perform his or her assigned tasks and functions. All County systems, and all data and software contained therein, including County data, County hardware and County software, used or accessed by Contractor: (a) shall be used and accessed by such Contractor solely and exclusively in the performance of their assigned duties in connection with, and in furtherance of, the performance of Contractor's obligations hereunder; and (b) shall not be used or accessed except as expressly permitted hereunder, or commercially exploited in any manner whatsoever, by Contractor, at any time.

Enhanced Security Procedures

The County may, in its discretion, designate certain areas, facilities, or systems as requiring a higher level of security and access control. The County shall notify Contractor in writing reasonably in advance of any such designation becoming effective. Any such notice shall set forth in reasonable detail the enhanced security or access-control procedures, measures, or requirements that Contractor shall be required to implement and enforce, as well as the date on which such procedures and measures shall take effect. Contractor shall fully comply with and abide by all such enhanced security and access measures and procedures as of such date.

Breach of Security

Any breach or violation by Contractor of any of the foregoing shall be deemed a material breach of a material obligation of Contractor under this Agreement and may be deemed an incurable and material breach of a material obligation of Contractor under this Agreement resulting in termination.

Conduct on County Premises

Contractor shall, at all times, comply with and abide by all reasonable policies and procedures of the County (or that may be established thereby, from time to time) that pertain to conduct on the County's premises, possession or distribution of contraband, or the access to, and security of, the Party's real property or facilities, to the extent that the Contractor has been provided with a copy of each such policy or procedure. Contractor shall exercise due care and diligence to prevent any injury to persons or damage to property while on the other Party's premises. The operation of vehicles by either Party's personnel on the other Party's property shall conform to posted and other applicable regulations and safe-driving practices. Vehicular accidents occurring on a Party's property and involving either Party's personnel shall be reported promptly to the appropriate Party's personnel. Each Party covenants that at all times during the Term, it, and its employees, agents, and Subcontractors shall comply with, and take no action that results in the other Party being in violation of, any applicable federal, state, and local laws, ordinances, regulations, and rules. Each Party's personnel shall clearly identify themselves as the appropriate Party's personnel and not as employees of the

other Party. When on the other Party's premises, each Party's personnel shall wear and clearly display identification badges or tags, as approved by the other Party.

Security Audits

Each Agreement Year, County may perform or have performed security reviews and testing based on an IT infrastructure review plan. Such testing shall ensure all pertinent County security standards as well as any customer agency requirements, such as federal tax requirements or HIPPA.

29. NON-MORPHOTRAK SOFTWARE

Any Non-MorphoTrak Software is licensed to County in accordance with the standard license, terms, and restrictions of the copyright owner on the effective date unless the copyright owner has granted to MorphoTrak the right to sublicense the Non-MorphoTrak Software pursuant to the Software License Agreement, in which case it applies and the copyright owner will have all of Licensor's rights and protections under the Software License Agreement. MorphoTrak makes no representations or warranties of any kind regarding Non-MorphoTrak Software. Non-MorphoTrak Software may include open source Software. All open source Software is licensed to the County in accordance with, and the County agrees to abide by, the provisions of the standard license of the copyright owner and not the Software License Agreement. MorphoTrak will use commercially reasonable efforts to (i) determine whether any open source Software will be provided under this Contract; and if so, (ii) identify the open source Software and provide to Customer a copy of the applicable standard license (or specify where such license may be found); and (iii) provide to Customer a copy of the open source Software source code if it is publicly available without charge (although a distribution fee or a charge for related services may be applicable).

SYSTEM ACCEPTANCE. Site acceptance will occur upon successful completion of the Site Acceptance Tests (SAT) described in the SAT acceptance test plan. Upon site acceptance, the Parties will memorialize this event by promptly executing a site acceptance certificate. Following site acceptance, County will use the system for four weeks during the User Acceptance Test (UAT). If County finds that the system has failed the User Acceptance Tests, County will provide to Contractor a written notice that includes the specific details of such failure by the end of the four week User Acceptance Test (UAT) period. County is to conduct a full System Acceptance Review (SAR) immediately following successful UAT and correction of UAT system failures and provide to Seller such notice of any additional failure details, otherwise full system acceptance will be deemed to have occurred as of the completion of the SAR period. Minor omissions or variances in the System that do not impair the operation of the System as a whole will not postpone system acceptance or subsystem acceptance, but will be corrected according to a mutually agreed schedule.

30. LIMITATION OF LIABILITY

This limitation of liability provision shall apply notwithstanding any contrary provision in this Contract, except for personal injury, death, the application of Contract Section H, shall not exceed the full Contract Price as stated in Attachment C. Although the Parties acknowledge the possibility of such losses or damages, they agree that the Contractor will not be liable for

loss of goodwill, revenues, profits or savings, or special, incidental, indirect or consequential damages. In no instance, shall the limitation of liability impair the County's ability to seek remedy for damages through the Contractor's insurance carrier for the full amount of insurance policy limits and coverage. This limitation of liability will survive the expiration or termination of this CONTRACT. No action for breach of this agreement or otherwise relating to the transactions contemplated by this CONTRACT may be brought more than one (1) year after the accrual of such cause of action, except for money due upon an open account.

SOFTWARE LICENSE AGREEMENT

For the purposes of this section, the term "Licensor" means MorphoTrak, Inc., ("MorphoTrak"); "Licensee," means the County. "Software License" shall mean this Software License Agreement. The Parties agree as follows:

SECTION 1. DEFINITIONS

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1.4 "Open Source Software License" means the terms or conditions under which the Open Source Software is licensed.

1.5 "Security Vulnerability" means a flaw or weakness in system security procedures, design, implementation, or internal controls that could be exercised (accidentally triggered or intentionally exploited) and result in a security breach such that data is compromised, manipulated or stolen or the system damaged.

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SECTION 4. LIMITATIONS ON USE

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4.2. Licensee will not, and will not allow or enable any third party to: (i) reverse engineer, disassemble, peel components, decompile, reprogram or otherwise reduce the Software or any portion to a human perceptible form or otherwise attempt to recreate the source code; (ii) modify, adapt, create derivative works of, or merge the Software; (iii) copy, reproduce, distribute, lend, or lease the Software or Documentation to any third party, grant any sublicense or other rights in the Software or Documentation to any third party, or take any action that would cause the Software or Documentation to be placed in the public domain; (iv) remove, or in any way alter or obscure, any copyright notice or other notice of MorphoTrak's proprietary rights; (v) provide, copy, transmit, disclose, divulge or make the Software or Documentation available to, or permit the use of the Software by any third party or on any machine except as expressly authorized by this Agreement; or (vi) use, or permit the use of, the Software in a manner that would result in the production of a copy of the Software solely by activating a machine containing the Software. Licensee may make one copy of Software to be used solely for archival, back-up, or disaster recovery purposes; provided that Licensee may not operate that copy of the Software at the same time as the original Software is being operated. Licensee may make as many copies of the Documentation as it may reasonably require for the internal use of the Software.

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6.1. If Licensee is not in breach of any of its obligations under this Software, MorphoTrak warrants that the Software, when used properly and in accordance with the Documentation and this Contract, will be free from a reproducible defect that eliminates the functionality or successful operation of a feature critical to the primary functionality or successful operation of the Software. Whether a defect occurs will be determined by MorphoTrak solely with reference to the Documentation. MorphoTrak does not warrant that Licensee's use of the Software or the Designated Products will be uninterrupted, error-free, completely free of Security Vulnerabilities. MorphoTrak makes no representations or warranties with respect to any third party software included in the Software.

6.2 MorphoTrak's sole obligation to Licensee and Licensee's exclusive remedy under this warranty is to use reasonable efforts to remedy any Software defect covered by this warranty. These efforts will involve either replacing the media or attempting to correct demonstrable program or documentation errors or Security Vulnerabilities. If MorphoTrak cannot correct the defect within a reasonable time, then at MorphoTrak's option, MorphoTrak will replace the defective Software with functionally-equivalent Software, license to Licensee substitute Software which will accomplish the same objective, or terminate the license and refund all Licensee's payment under the Contract.

6.3. Warranty claims are described in the Primary Agreement.

6.4. Except for the application of Contract section G, the express warranties set forth in this Section 6 are in lieu of, and MorphoTrak disclaims, any and all other warranties (express or implied, oral or written) with respect to the Software or Documentation, including, without limitation, any and all implied warranties of condition, title, merchantability, or fitness for a particular purpose (whether or not MorphoTrak knows, has reason to know, has been advised, or is otherwise aware of any such purpose or use), whether arising by law, by reason of custom or usage of trade, or by course of dealing. In addition, MorphoTrak disclaims any warranty to any person other than Licensee with respect to the Software or Documentation.

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8.1 Licensee's right to use the Software and Documentation will begin when the Contract is signed by both parties and remain in effect unless Licensee breaches this Software License, in which case this Software License and Licensee's right to use the Software and Documentation may be terminated immediately upon notice by MorphoTrak.

8.2 Within thirty (30) days after termination of this Software License, Licensee must certify in writing to MorphoTrak that all copies of the Software have been removed or deleted from the Designated Products and that all copies of the Software and Documentation have been returned to MorphoTrak or destroyed by Licensee and are no longer in use by Licensee.

8.3 Licensee acknowledges that MorphoTrak made a considerable investment of resources in the development, marketing, and distribution of the Software and Documentation and that Licensee's breach of this Agreement will result in irreparable harm to MorphoTrak for which monetary damages would be inadequate. If Licensee breaches this Agreement, MorphoTrak may terminate this Software License and may seek all available remedies at law or in equity (including immediate injunctive relief and repossession of all non-embedded Software and associated Documentation unless Licensee is a Federal agency of the United States Government).

SECTION 10. CONFIDENTIALITY

Licensee acknowledges that the Software and Documentation contain MorphoTrak's valuable proprietary and Confidential Information and are MorphoTrak's trade secrets, and that the provisions in the Contract concerning Confidential Information apply.

SECTION 11. GENERAL

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11.4. **THIRD PARTY BENEFICIARIES.** This Software License is entered into solely for the benefit of MorphoTrak and Licensee. No third party has the right to make any claim or assert any right under this Software License, and no third party is deemed a beneficiary of this Software License. Notwithstanding the foregoing, any licensor or supplier of third party software included in the Software will be a direct and intended third party beneficiary of this Software License.

11.5. **PREVAILING PARTY.** In the event of any dispute arising out of the subject matter of this Agreement, the prevailing party shall recover, in addition to any other damages assessed, its reasonable attorneys' fees and court costs incurred in arbitrating, litigating, or otherwise settling or resolving such dispute.

11.6 **SURVIVAL.** Sections 4, 5, 6.3, 7, 8, 9, 10, and 11 survive the termination of this Agreement.

The Parties hereto have executed this Contract on the dates shown opposite their respective signatures below

Contractor*: MorphoTrak, Inc.

By: [Signature] Title: President & CEO
Print Name: Daniel Vassy Date: October 16, 2012

Contractor*: MorphoTrak, Inc.

By: _____ Title: _____
Print Name: _____ Date: _____

*If a corporation, the document must be signed by two corporate officers. The first signature must be either the Chairman of the Board, President, or any Vice President. The second signature must be the secretary, an assistant secretary, the Chief Financial Officer, or any assistant treasurers. **In the alternative, a single corporate signature is acceptable when accompanied by a corporate document demonstrating the legal authority of the signature to bind the company.**

County Of Orange

A political subdivision of the State of California



Sheriff-Coroner Department

By: [Signature] Title: Purchasing Manager
Date: 12/18/12

Approved by the Board of Supervisors: 12/18/12

Approved as to Form
Office of the County Counsel

by [Signature]
Deputy

COPY



RESOLUTION

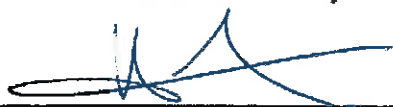
Pursuant to Article II, Section §8 of the By-Laws of Sagem Morpho, Inc., the Board of Directors of Sagem Morpho, Inc., the undersigned, hereby resolve and state the action taken by them in lieu of a meeting of the Board of Directors, is as follows:

WHEREAS, Bernard GAUTIER has served Sagem Morpho honorably as President and CEO and has been appointed to another position in Sagem Sécurité;

WHEREAS, the Board of Directors find it to be in the best interest of Sagem Morpho to appoint Daniel VASSY to that office.

BE IT RESOLVED, that the Board hereby appoints Daniel VASSY to the office of President and CEO of Sagem Morpho, Inc. with all rights, powers, and duties hereto:

IN WITNESS WHEREOF the undersigned, being all of the Directors of Sagem Morpho, Inc., have hereunto set their hands unanimously:



Jean-Paul JAINSKY, Director
Chairman of the Board of Directors
Date 31 MARS 2009



Bernard DIDIER, Director
Date March 31st, 2009



Thierry de MAZANCOURT, Director
Date March 31st, 2009



Francois PERRACHON, Director
Date March 31 st, 2009

Approved see attached

Dr. Khushrow PRESS, Director
Date April 1, 2009

approved see attached

W. Von RAAB, Director
Date March 31, 2009

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "SAGEM MORPHO, INC.", CHANGING ITS NAME FROM "SAGEM MORPHO, INC." TO "MORPHOTRAK, INC.", FILED IN THIS OFFICE ON THE THIRTEENTH DAY OF APRIL, A.D. 2009, AT 8:43 O'CLOCK A.M.

2076100 8100

090402082

You may verify this certificate online
at corp.delaware.gov/authver.shtml




Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 7294447

DATE: 05-11-09

State of Delaware
Secretary of State
Division of Corporations
Delivered 08:43 AM 04/13/2009
FILED 08:43 AM 04/13/2009
SRV 090354243 - 2076100 FILE

**CERTIFICATE OF AMENDMENT
OF CERTIFICATE OF INCORPORATION**

OF

SAGEM MORPHO, INC.

The corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware does hereby certify:

FIRST: That by Unanimous Written Consent to Action of the Board of Directors Without a Meeting of SAGEM MORPHO, INC.

resolutions were duly adopted setting forth a proposed amendment of the Certificate of Incorporation of said corporation, declaring said amendment to be advisable and calling a meeting of the stockholders of said corporation for consideration thereof. The resolution setting forth the proposed amendment is as follows:

RESOLVED: that the Certificate of Incorporation of this corporation be amended by changing the Articles thereof numbered "FIRST" so that, as amended, said Article shall be and read as follows:

FIRST: The name of the corporation be changed to and be known as: **MORPHOTRAK, INC.** or a derivative or approximation there.

SECOND: That thereafter, pursuant to Written Consent to Action of the Sole Shareholder Without a Meeting resolutions were duly adopted in favor of the amendment.

THIRD: That said amendment was duly adopted in accordance with the provision of Section 242 of the General Corporation Law of the State of Delaware.

FIFTH: The effective time of the amendment herein adopted shall be April 13th, 2009.

IN WITNESS WHEREOF, said corporation has caused this certificate to be signed on April 10th, 2009.

By:

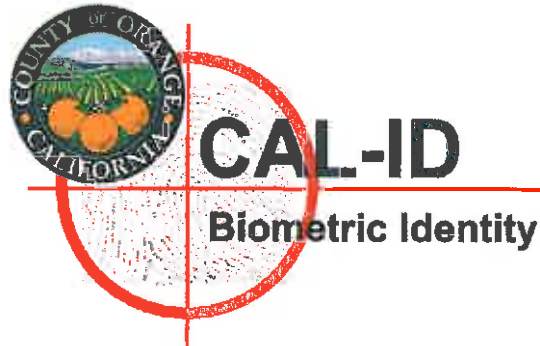
John T. Duncan III

Authorized Officer

Name: John T. Duncan III
Title: General Counsel

Attachment A

Scope Of Work
for the
Orange County
*Automated Biometric Identification
System (OC ABI System)*



*OC ABI System Scope of Work***Table of Contents**

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*OC ABI System Scope of Work***1. Introduction****1.1 SCOPE**

This Scope of Work (SOW) defines the work to be performed by the Contractor responsible for the development and sustainment of the Orange County Automated Biometric Identification (OC ABI) System for the term of the Contract. For this OC ABI Project, the Contractor will be responsible for furnishing all personnel, facilities, equipment, material, supplies, support, and management and will perform all functions necessary to design, develop, document, integrate, test, and deploy the OC ABI System¹ as set forth in this SOW and the OC ABI System Requirements Specification (SRS). All of the requirements in the OC ABI System Requirements Specification, whether specifically referenced or not in this SOW, will apply to the Contractor's deliverable products and services.

1.2 BACKGROUND

The Orange County Crime Laboratory (OCCL) has been operating a legacy AFIS system for more than 11 years providing services to its own members, local police departments within the county, the California Highway Patrol, and others. The services offered include:

- Identification of subjects with prior criminal histories through searches of the fingerprints through the Automated Fingerprint Identification System (AFIS)
 - As part of the booking process for criminals
 - As part of the background investigation of people applying for positions of trust with the county
 - In response to ad hoc requests from investigators
- Assignment of local file number (the Orange County Number or OCN) for new arrestees. These OCNs are used in numerous county business processes.
- Support to the identification of criminals by searching latent fingerprints from crime scenes through the AFIS and analyzing the candidates.
- Connectivity to the California Department of Justice (CalDOJ) AFIS and through it access to the Federal Bureau of Investigation's (FBI) AFIS system, which is currently migrating from their Integrated Automated Fingerprint Identification System (IAFIS) to the Next Generation Identification (NGI) System.
- Support to the Secure Communities program – where arrest records are forwarded through the FBI to the Department of Homeland Security (DHS).

The current system is serving the county well, but over time new functionality and interface standards have been introduced at the State and Federal level that the current system cannot support. In 2009, the Orange County Remote Access Network (RAN) Board voted to replace the aging system and OCCL began the process to competitively replace the current AFIS with a multi-modal automated biometric identification system that can match fingerprint and palmprints as well as support the latest biometric interoperability standards.

¹ Note that the requirements for the OCCL Network have been incorporated in the OC ABI System Requirements Specification and therefore any reference to the OC ABI System or the OC ABI Project by definition includes the OCCL Network.

OC ABI System Scope of Work

The replacement shall system include:

- Receipt, storage, searching using demographic fields and forwarding of other biometric modalities, such as facial, SMT, and iris images, as these and other capabilities become available on the FBI's Next Generation Identification (NGI) system
- Use of the Extended Feature Set (EFS) standard for latent interoperability, as recommended by the US Department of Justice. The EFS approach will be used internally for re-encoding latents for use in cross-jurisdictional searches against systems from other vendors. Searches going to CalDOJ will have to conform to the standard approach being used there
- Palmprint searching – forward and reverse latent matching
- Processing of new CalDOJ and FBI types of transactions (TOTs)
- Support for Mobile/ DNS tactical TOTs
- Receipt, storage, creation, and use of new record types as defined by ANSI/NIST-ITL 1-2011

2. Applicable Documents

The documents below, of the exact issue shown, form a part of this SOW to the extent referenced herein. Referenced documents cited within documents referenced in this SOW ("First Tier" references) *shall* be considered compliance documents to the extent referenced herein. Documents cited ("Second Tier" references) within the "First Tier" references *shall* not be considered for compliance.

The OCCL recognizes that some of the standards and their associated data items, identified below, will change. Throughout this effort, the Contractor or the OCCL may propose following newer standards and their associated data items that replace or supersede those below. To substitute newer standards and their associated data items the Contractor *shall*: 1) identify existing standards and data items to be replaced; 2) identify new standards and associated data items proposed for use; 3) provide a rationale for using the new items including cost, schedule, performance, and supportability impact; 4) receive OCCL approval, and 5) as appropriate, receive County Board of Supervisors approval.

2.1 REFERENCE DOCUMENTS

The following documents are incorporated into this SOW to the extent referenced herein:

- Ref. 1 Orange County Automated Biometric Identification System Requirements Specification (SRS), Version 1.1 as negotiated
- Ref. 2 FBI (CJIS) CJISD-ITS-DOC-08140-5.0, CJIS Security Policy, Version 5.0, dated 09 February 2011

2.2 ORDER OF PRECEDENCE

In the event of conflict between specific technical requirements, the following order of precedence *shall* pertain: 1) the OC ABI System Requirements Specification Attachment A.1, 2) this Scope of Work. In the event of conflict between any items at the same level in the order of precedence, for example between different standards, the Contractor *shall* notify OCCL project management of each conflict, and propose a resolution. The resolution of each conflict *shall* be subject to OCCL approval.

*OC ABI System Scope of Work***3. Requirements**

The Contractor **shall** furnish all personnel, facilities, equipment, supplies, and support; and **shall** perform all functions necessary to design, develop, document, integrate, test, and deploy the OC ABI System as set forth in this SOW and the OC ABI System Requirements Specification Attachment A.1. All of the requirements in the OC ABI System Requirements Specification, whether specifically referenced or not in this SOW, **shall** apply to the Contractor's deliverable products and services.

The Contractor **shall** analyze the requirements; design, develop, and document the OC ABI System; conduct Factory Acceptance Test (FAT), transition (install the system, migrate the databases, and train personnel) to the new OC ABI System; conduct System Acceptance Test; support User Acceptance Test; provide support to the operational OC ABI System; and manage said activities.

The Contractor **shall** provide OCCL with a comprehensive set of user, system, and management documentation. The Contractor **shall** deliver those items identified in the CDRL presented in Appendix A. All CDRL items will be in Contractor format. The Contractor **shall** provide documentation in both electronic and hardcopy media. All CDRL items are subject to OCCL approval and acceptance in order to satisfy the terms and conditions of the Contract.

All work under the OC ABI Contract **shall** be performed within the territory of the United States and **shall** be performed by United States citizens or Lawful Permanent Residents of the United States. Data and information provided by the OCCL **shall** not be communicated to anyone who is not a United States citizen or Lawful Permanent Resident of the United States. The one exception is that the Contractor algorithm development and algorithm maintenance can occur at the Contractor's facilities independent of where they are located.

Contractor staff that perform work at OCCL facilities or who will be authorized to access OCCL records, data processing equipment, or criminal justice related information must pass an OCCL criminal background check to include being fingerprinted.

3.1 MANAGEMENT

The Contractor is responsible for providing appropriate and sufficient project management services to plan, monitor, report, track, and manage the successful execution of the OC ABI Contract.

3.1.1 Project Organization

The Contractor **shall** establish a formal organization responsible for executing the total effort required by the Contract. A clear line of project authority **shall** exist among all organizational elements (including subcontractors). Roles, responsibilities, authority, and reporting requirements **shall** be established for each organizational element.

The Contractor **shall** appoint a Contractor Project Manager (CPM) who is a full time paid employee of the Contractor. The CPM **shall** serve for the duration of the Development Phase of the Contract effort and **shall** have responsibility for the accomplishment of all tasks to be performed under the contract. The CPM **shall** be responsible for the Contractor's technical, cost, and schedule performance. The CPM **shall** have full authority over all Contractor project activities and resources. The CPM **shall** be the principal interface between the project and the Contractor's corporate organization, between the project and its associated contractors, and between the Contractor and OCCL project management for all matters relating to the Contract.

3.1.2 Project Planning

The Contractor **shall** prepare and submit detailed plans governing all activities to be performed under the OC ABI Contract. Planning documents **shall** be delivered in accordance with the provisions of Appendix

OC ABI System Scope of Work

A of this SOW. At a minimum, the following documentation **shall** be delivered: CDRs: OC-01, 02, and 04.

3.1.2.1 Project Management Plan

The Contractor **shall** develop and maintain the Project Management Plan (PMP). The PMP **shall** provide details on activities that will be completed in each phase of the Contract. The PMP will:

- Establish the project organization, structure, authority, roles, responsibilities, and internal reporting relationships;
- Define the interfaces between the Contractor and OCCL project management;
- Establish reporting mechanisms and documentation;
- Identify Contractor resources (requirements and assignment);
- Establish project management procedures and policies;
- Incorporate² the project Integrated Master Schedule;
- Identify any constraints or assumptions.

3.1.2.2 Integrated Master Schedule

The Integrated Master Schedule (IMS) is an integrated and resource loaded schedule containing the detailed tasks necessary to ensure successful program execution, including all dependencies and inter-task relationships. The IMS **shall** contain the contract milestones, accomplishments, and discrete tasks/activities from Contract Award to the completion of the Development Phase of the Contract. The IMS **shall** be an integrated, resource loaded, logically linked schedule that correlates to the SOW and Contractor plans. It **shall** display summary, intermediate, and detailed schedules, and **shall** accommodate periodic analysis of progress to date.

The IMS **shall** include significant external interfaces and critical items from suppliers, teammates, or other detailed schedules that depict significant and/or critical elements and OCCL furnished equipment or information dependencies for the entire contractual effort in a single integrated schedule. The determination of significant and critical **shall** be agreed to by the OCCL and the Contractor.

The IMS **shall** be statused according to the Contractor's management control system and **shall** be submitted no less frequently than monthly. The IMS **shall** be formatted as a Microsoft Office Project™ 2007 schedule. This plan will form the basis for discussions at each status meeting. OCCL will have sole authority to approve / authorize changes to the IMS after contract award – at the cost milestone end-date level.

3.1.3 Project Reporting and Reviews

The Contractor **shall** provide management and technical reports and conduct management and technical reviews and meetings throughout the term of the Contract. Attendees at management and technical reviews and meetings will include OCCL project personnel, OCCL support contractors, the Contractor, and subcontractors as necessary to meet the objectives of the meeting or review.

The Contractor **shall** participate in a project kickoff meeting at the OCCL facility within 10 working days after contract award. The purpose of the meeting is to introduce key OCCL and Contractor personnel, to discuss plans, to discuss the status of any risks or issues, and to address any other issues OCCL project management or the Contractor wish to discuss.

² The Integrated Master Schedule may be incorporated by reference.

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The Contractor **shall** conduct a monthly Project Management Review (PMR). The first PMR **shall** be held within 30 days after contract award. Each PMR **shall** address:

- Schedule status against the IMS,
- Proposed changes to the IMS,
- Technical accomplishments,
- Risks, Issues, and Action Items,
- Planned activities, and
- Quality Assurance findings and plans for corrective action.

The PMRs **shall** also address selected technical and programmatic topics as directed by OCCL project management. To the extent feasible, the Contractor will schedule PMRs concurrent with reviews and Technical Interchange Meetings (TIMs).

When the PMR is held at the Contractor's facility, the Contractor **shall** provide facilities for conducting the PMR and facilities for OCCL-only meetings and side meetings. The Contractor **shall** make available the key personnel necessary to carry out an efficient and effective agenda and **shall** provide presentation materials and supporting data.

With the exception of the User Acceptance Test (UAT), Test Readiness Review (TRR), and System Acceptance Review (SAR), the Contractor **shall** conduct those reviews specified in Table 1 and provide required deliverables CDRL OC 05, 06, and 07. The OCCL will conduct, with Contractor support, the UAT, TRR and the SAR. Table 1 provides a list of locations where management and technical reporting meetings and reviews will be held.

Table 1 Management and Technical Reporting, Meetings and Reviews

| Meeting/Review Type | Location |
|--|---------------------|
| Project Kickoff Meeting | OCCL Facility |
| System Requirements Review | Contractor Facility |
| System Design Review | Contractor Facility |
| FAT Test Readiness Review | Contractor Facility |
| Pre-Ship Review | Contractor Facility |
| System Acceptance Test (SAT) Test Readiness Review | OCCL Facility |
| Operational Readiness Review | OCCL Facility |
| UAT Test Readiness Review | OCCL Facility |
| System Acceptance Review | OCCL Facility |
| Project Management Reviews | Contractor Facility |

The Contractor **shall** propose a format for Monthly Status Reports and the OCCL Project Manager is responsible for approving the format. The Contractor **shall** provide Monthly Status Reports (CDRL OC-08) for review and approval by the OCCL Project Manager. These status reports **shall** include, at a minimum, a report on activities completed during the reporting period, activities planned for the next reporting period, and issues, risks, and action item status. The Monthly Status Report will include as an attachment the IMS (CDRL OC-04) showing completion status for all active tasks and deliverables.

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The Contractor **shall** track all progress against the approved PMP, other approved plans, and the IMS at least monthly and **shall** report status against the IMS at least monthly.

3.1.4 Risk and Issue Management

For the purpose of this SOW, risk is a measure of the potential inability to achieve overall project objectives within defined cost, schedule, and technical constraints and has two components: 1) the probability/likelihood of failing to achieve a particular outcome, and 2) the consequences/impacts of failing to achieve that outcome. Issues are similar to risks except that the probability of failure is 1.0 (or 100 percent) if corrective action is not taken.

The Contractor **shall** prepare a Risk and Issue Management Plan (RIMP, CDRL OC-02) and perform risk and issue management activities in accordance with the (OCCL approved) RIMP. The RIMP **shall** identify the organizations responsible for risk and issue management and the roles and responsibilities of each. It **shall** specify the risk and issue management processes (Identification and Reporting, Analysis, Prioritization, Mitigation Planning, Resolution, and Monitoring) and reports and tools to be used to manage risk.

The Contractor **shall** assess (identify and analyze) risk areas, identify and analyze specific risks, develop risk mitigation options and plans, monitor risks to determine how risks have changed, document the overall risk management program, and report identified risks and the status of risk mitigation efforts to OCCL project management.

3.1.5 Security

The Contractor **shall** implement a security program in compliance with the CJIS Security Policy [Ref. 2]. All Contractor supplied facilities or systems **shall** provide protection and control of all OCCL provided information, equipment, documentation, and network access. The Contractor **shall** document its security program in an In-Plant Security Plan (CDRL OC-09).

3.1.6 Configuration Management

The Contractor **shall** develop a Configuration Management Plan (CMP, CDRL OC-10) and implement a Configuration Management (CM) program in accordance with that plan. The CMP **shall** identify the organization responsible for the CM function. The CMP **shall** establish Configuration Management Responsibilities and Authority, identify Configuration Management Resources and Tools, establish Configuration Management Policies, and define Configuration Management Phasing and Milestones. The CMP **shall** establish procedures for Configuration Identification, Configuration Control, Configuration Status Accounting, and Configuration Audits and Reviews. The CMP **shall** implement controls to ensure that only authorized changes are made to the CMP.

The Contractor **shall** develop and maintain control of CDRL items from Contract award through Contract completion. The Contractor **shall** recommend an integrated set of commercial off the shelf configuration control tools for use by OCCL after Contract completion. Subject to OCCL approval and prior to Contract completion, the Contractor **shall** procure the approved tools and provide them to OCCL (CDRL OC-32). The Contractor **shall** assist the Crime Laboratory in installing the tools on OCCL equipment and loading the appropriate file(s). The Contractor **shall** provide CM tool training for at least 3 OCCL staff members. The Contractor **shall** turn change control of CDRL items over to OCCL at Contract completion.

The Contractor **shall** participate in OC ABI Project configuration control boards. OC ABI Project configuration control boards will approve any changes to CDRL items once those items are approved by OCCL.

*OC ABI System Scope of Work***3.1.7 Quality Assurance**

The Contractor *shall* develop a Quality Assurance Plan (QAP) (CDRL OC-11) and implement a Quality Assurance (QA) program in accordance with the OCCL approved QAP. The Contractor's QA program *shall* provide for an independent Contractor QA organization. The Contractor's QA program *shall* assure that all supplies and services submitted to the OCCL for acceptance conform to contract requirements. The Contractor *shall* ensure product quality by inspection, controlling nonconforming material, controlling subcontractor quality assurance, and by having effective control of calibrated equipment. The Contractor *shall* perform and document inspections prior to requesting acceptance of the work by the OCCL.

OCCL reserves the right to perform audits and inspections of Contractor (and subcontractor) conformance to any or all contractual requirements at any time during the performance of the Contract. Due notice will be provided to the Contractor prior to conducting audits or inspections. Subcontract requirements *shall* permit participation in audits and inspections by OCCL and OCCL support contractors.

3.2 IMPLEMENTATION**3.2.1 System Requirements Analysis**

The Contractor *shall* review the OC ABI System Requirements Specification [Ref. 1] and conduct the analyses and modeling necessary to validate the requirements of the OC ABI System Requirements Specification. The Contractor *shall* identify errors, ambiguities, conflicts, incompletes, and other defects in the OC ABI System Requirements Specification. The Contractor *shall* recommend changes to the OC ABI System Requirements Specification where those changes would correct defects or result in benefit to the OCCL (e.g., enhance the overall functionality, performance, or reliability of the OC ABI System, reduce life cycle costs, increase maintainability, shorten the schedule, or reduce program risk).

The Contractor *shall* conduct the analyses and participate in the TIMs necessary to develop the interface requirements between the OC ABI System and the incumbent live scan system, the Local Arrest Record System (LARS), and the Automated Jail System (AJS). The Contractor *shall* document those requirements in Interface Requirements Specification(s) (CDRL OC-35).

The Contractor *shall* conduct a System Requirements Review (SRR). At SRR, the Contractor *shall* present the results of the verification effort and the supporting data. The Contractor *shall* document recommended changes to the OC ABI System Requirements Specification in Specification Change Requests (CDRL OC-13) and *shall* support these recommendations (e.g., with trade study results and cost benefit analyses).

Upon successful completion of the SRR, the OC ABI Program Manager will authorize the Contractor to proceed with system design. OCCL will incorporate any approved changes (Specification Changes Requests) in a revision to the OC ABI System Requirements Specification [Ref. 1].

3.2.2 Test Planning

The Contractor *shall* develop and execute a comprehensive test program, spanning all phases of development and all levels of assembly of the OC ABI System. The Contractor *shall* develop a Test and Evaluation Master Plan (TEMP, CDRL OC-14).

- The TEMP *shall* govern all levels of testing, from the unit level through the fully assembled and integrated (with external systems) system.
- The TEMP *shall* govern all phases of test, from unit testing through completion of System Acceptance.

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- The TEMP **shall** govern formal (acceptance) and informal testing.

For unmodified Commercial-Off-the-Shelf (COTS) hardware and software, COTS vendor-supplied test results may be used to verify requirements satisfaction below the level of the fully integrated system.

The test program will consist of formal and informal tests. The formal tests are: Factory Acceptance Test (FAT), System Acceptance Test (SAT), and User Acceptance Test (UAT). All other tests are informal. The Contractor **shall** prepare Test Plans, Test Procedures, and Test Reports for FAT and SAT (CDRLs: OC-15 through 20). The Contractor **shall** create and maintain the Requirements Verification Traceability Matrix (RVTM, CDRL OC-03) to map the requirements of the OC ABI System Requirements Specification to the FAT and SAT Test Procedures. In order for testing to be executed multiple times (i.e., dry runs and production), the test procedures for formal tests **shall** be at the keystroke level. FAT and SAT **shall** be preceded by Test Readiness Reviews (TRRs) at which the OC ABI Project Manager must authorize the Contractor to proceed with conducting the test before testing may begin. FAT and SAT **shall** be followed by formal reviews [i.e., PSR and Operational Readiness Review (ORR)]. UAT will be conducted by OCCL and will be preceded by a UAT TRR and followed by SAR.

3.2.3 Design and Development

The Contractor **shall** design, develop, and document the new OC ABI System to satisfy the requirements in the OC ABI System Requirements Specification Attachment A.1. and the requirements of this SOW. The Contractor **shall** design, develop, and fabricate or procure all hardware, software, and data components of the system(s), with the exception of the operational data to be provided by OCCL.

The Contractor **shall**, to the maximum extent feasible, use non-proprietary hardware and software in developing and implementing the OC ABI System. The Contractor **shall** develop the OC ABI System Design Specification and the Bill of Materials (BOM). The Contractor **shall** conduct a System Design Review (SDR) and present their design for OCCL approval. The SDR **shall** be a comprehensive and in-depth review of the design as documented in the OC ABI System Design Specification and the BOM. Deliverables **shall** include CDRLs OC-03, 05, 06, 07, 21, and 22.

The design as depicted in the OC ABI System Design Specification and the SDR presentation materials **shall** represent a partitioning of the OC ABI System into design entities and describe the important properties and relationships among those entities. For purposes of this SOW, a design entity is an element (component) of the system that is structurally and functionally distinct from other elements and that is sold separately by the Contractor, a subcontractor, or a commercial vendor – or is developed specifically and solely for this contract.

For each design entity, the OC ABI System Design Specification and the SDR presentation materials **shall**:

- Identify the entity by name or another unique identifier;
- Provide a mapping of each requirement from the OC ABI System Requirements Specification [Ref. 1] to each design entity, and include a decomposition of the OC ABI System Requirements Specification requirements if a decomposition is necessary to uniquely allocate those requirements to design entities;
- Identify the entity type: Hardware or Software, Commercial Off The Shelf, reused with modification, or developmental (to be developed) and if to be modified or developed whether or not it will be included in future commercial offerings;
- Provide a description of the specific functional, performance, interface, security, or design requirements, and special requirements that must be met by the entity that are not included in the specification(s);

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- Provide a description of the relationships of the entity with other entities – to include the *uses* or *requires the presence of* relationship for an entity.

For each OC ABI System external interface – including user interfaces – the OC ABI System Design Specification and the SDR presentation materials *shall* describe the methods of interaction and the rules governing those interactions. The methods of interaction include the mechanisms for invoking or interrupting system function(s), for communicating through parameters, common data areas or messages, and for direct access to internal data. The rules governing the interaction include the communications protocol, data format, acceptable values, and the meaning of each value. This attribute *shall* provide a description of the input ranges, the meaning of inputs and outputs, the type and format of each input or output, and output error codes. For information systems, it should include inputs, screen formats, and a complete description of the interactive language.

The Contractor *shall* design the interface between the OC ABI System and existing live scan devices, the Local Arrest Record System (LARS), and the Automated Jail System (AJS) and document those designs in Interface Design Document(s) (CDRL OC-36) to include network components, architecture, and any commercial services (e.g. telephone company lines) required.

The OC ABI System Design Specification and the SDR presentation materials *shall* identify and describe all of the resources external to the design that are needed by this OC ABI System to perform its function. The interaction rules and methods for using the resource *shall* be specified. The OC ABI System Design Specification and the SDR presentation materials *shall* provide information about items such as physical devices (printers, disc-partitions, memory banks), software services (math libraries, operating system services), and processing resources (CPU cycles, storage devices, and bandwidth). The design *shall* also specify power and physical space requirements.

At the SDR, the Contractor *shall* present evidence (e.g., results of analyses, computer model and simulation results, benchmark results, mapping of requirements to design entities, and vendor-supplied specifications) to demonstrate that the design satisfies the requirements of the OC ABI System Requirements Specification [Ref. 1].

The Contractor *shall* develop [code, fabricate, and/or procure (some services such as telephone lines can be allocated to the OCSD to procure based on Contractor specifications)] the hardware and software entities that comprise the new OC ABI System and integrate those entities into the complete OC ABI System to conform to the requirements of the OC ABI System Requirements Specification [Ref. 1], the OC ABI System Design Specification (CDRL OC-21) and the BOM (CDRL OC-22). The Contractor *shall* conduct all developmental test and evaluation necessary to demonstrate readiness of the system to undergo FAT.

The Contractor *shall* conduct the analysis and prepare a Technical Report (CDRL OC-12) documenting recommendations for implementing a continuity of operations capability for the operational OC ABI System.

3.2.4 Factory Acceptance Test

The Contractor *shall* conduct Factory Acceptance Test (FAT). The purpose of FAT is to demonstrate that: 1) the OC ABI System satisfies the requirements of the OC ABI System Requirements Specification [Ref. 1], 2) that the migrated Operational Database satisfies the requirements of this Scope of Work, and 3) that the supporting documentation completely and correctly describes user interactions, operational procedures, and the design as implemented.

The Contractor *shall* conduct a Test Readiness Review to demonstrate their and the OC ABI System's readiness to conduct FAT. The Contractor *shall*:

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- Provide an overview/walk-through of the FAT activity, which is to occur.
- Describe the test environment (equipment, software, databases, and interfaces) and how it differs from the operational environment (e.g., the use of simulators to represent external interfaces).
- Identify and discuss the rationale for and implications of any proposed redlines to documents (i.e., test plans, test procedures, user documentation, installation documentation).
- Report on the status of all Action Items, Risks, and Issues that are currently open or have been closed since the previous PMR. Plans and/or options for their resolution will be addressed.
- Identify any test procedures that the Contractor expects will fail or be incomplete during FAT execution, address the implications of those failures/incompletes for operations, and discuss plans/options for correcting the cause(s) of those failures.

At the culmination of the Contractor presentation, the OC ABI Project Manager will authorize – or not authorize – the Contractor to proceed with the conduct of FAT.

If authorized by the OC ABI Project Manager, the Contractor *shall* conduct FAT using the approved test procedures (including any redlines approved by the OC ABI Project Manager at the TRR). Test results and satisfaction of each and every requirement of the OC ABI System Requirements Specification *shall* be noted and witnessed by OCCL personnel or OCCL support contractors. The Contractor *shall* document the test results, requirements satisfaction, and failures or incompletes in the FAT Test Report. The Contractor *shall* conduct FAT on the OC ABI System configured as specified in the OC ABI System Design Specification approved at the System Design Review with any changes to the Design Specification and the BOM approved by OCCL. FAT *shall* be executed using OCCL approved Test Procedures.

At the culmination of FAT, the Contractor *shall* conduct a Pre-Ship Review (PSR). The purpose of the PSR is to demonstrate the readiness of the Contractor and the readiness of the OC ABI System to be deployed to the OCCL. The Contractor *shall*:

- Present the results of FAT
- Review the status of all Action Items, Risks, and Issues that were presented at the FAT TRR and any changes to their status, and review any new Action Items, Risks, or Issues that arose as a result of FAT
- Address the readiness of required deliverables (e.g., equipment, software, databases) to deploy, and personnel to conduct installation
- Address the readiness of the facilities to receive the deliverables
- Address the readiness of training plans, materials, and training personnel to provide training, and the readiness of trainees to receive training
- Provide an overview of plans for conduct of SAT and UAT.

Upon successful completion of PSR, the OC ABI Project Manager will authorize the Contractor to ship the OC ABI System to the operational facility and begin deployment activities. Deliverables include CDRLs OC16, and 17.

3.3 TRANSITION

The Contractor *shall* prepare a comprehensive Transition Plan (CDRL OC-33) that guides the process of migration of OCCL and other users (e.g., police departments) from the legacy AFIS to the new OC ABI System. The plan *shall* address parallel operations, synchronization of the current and new repositories up to the final minutes, timing of training relative to hardware installation, and sequence of switching

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services, migration objectives, activities, required resources, schedule (may be included in the IMS), tools, assumptions, OCCL furnished items (e.g., equipment, information, data, facilities, or personnel), and external dependencies.

3.3.1 Installation

The Contractor *shall* conduct site surveys and analyses to determine the facilities requirements (e.g., heating, air conditioning, lighting, electrical power, structural loading, and physical access) for:

1. The facilities hosting the OC ABI System equipment at the OCCL central site
2. Those locations hosting latent equipment, see OC ABI System Requirements Specification [Ref-1]

The Contractor *shall* review the network configuration at the OCCL central site and at each location hosting latent equipment to ensure that the equipment to be installed is compatible with existing or planned network topologies. The Contractor *shall* document any incompatibilities between the OC ABI System equipment to be installed and the facilities or networks and identify any required facilities or network modifications in an Installation Survey Report (CDRL OC-23).

The Contractor *shall* prepare a Version Description Document with the complete instructions necessary for a third party to install and configure all hardware, software, and data associated with each deployment. The document will include site-specific installation information (CDRL OC-24).

The Contractor *shall* prepare an Installation Plan (CDRL OC-25) to document installation tasks, responsibilities, schedule, resource requirements, equipment layout, cabling, and testing to verify correct installation of equipment and software at OCCL and locations hosting latent equipment. The Contractor *shall* prepare Installation Drawings (CDRL OC-26) to define equipment layout and cabling.

The Contractor *shall* (subject to OCCL approval) deliver and install the equipment and software deliveries at the OCCL central site to include the software identified in Table 2 in accordance with the requirements for dynamic software license allocation at the OCCL central site in OC ABI System Requirements Specification Section 4.7. The Contractor *shall* check the installation and perform the necessary data conversions to prepare the equipment and software to support SAT and operations. The Contractor *shall* install copies of Microsoft Office™. Said copies will be provided and licensed by the OCCL.

Table 1 Maximum Numbers of Licenses in Use Simultaneously at OCCL

| Workstations At OCCL | Vendor TP S/W | Vendor LT S/W | Vendor Admin S/W | MS Office™ Excel & Word | UI-W | Photoshop CS5™ |
|----------------------|---------------|---------------|------------------|-------------------------|------|----------------|
| 12 TP | 5 | 2 | 2 | 2 | 11 | 11 |
| 9 LT | 2 | 9 | 2 | 2 | 9 | 9 |

The Contractor *shall* (subject to OCCL approval) deliver and install the equipment (Table 3) and software (Table 4) deliveries at the OCCL and police department (PD) locations hosting workstation, printer, and scanner equipment. The Contractor *shall* check the installation and perform the necessary data conversions to prepare the equipment and software to support SAT and operations.

Table 2 Equipment Compliment to be Installed by Agency Site

| Location | Number of Workstations | Number of Printers | Number of ADF Scanners |
|---------------|------------------------|--------------------|------------------------|
| OCCL – ID | 10 | 5 | |
| OCCL – Cal-ID | 11 | 5 | 1 |
| Anaheim PD | 1 | 1 | |

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| Location | Number of Workstations | Number of Printers | Number of ADF Scanners |
|---------------------|------------------------|--------------------|------------------------|
| Buena Park PD | 1 | 1 | |
| Costa Mesa PD | 1 | 1 | |
| Fountain Valley PD | 1 | 1 | |
| Fullerton PD | 1 | 1 | |
| Garden Grove PD | 1 | 1 | |
| Huntington Beach PD | 1 | 1 | |
| Irvine PD | 1 | 1 | |
| Newport Beach PD | 1 | 1 | |
| Orange PD | 1 | 1 | |
| Santa Ana PD | 1 | 1 | |
| Westminster PD | 1 | 1 | |
| Totals | 33 | 22 | 1 |

Table 4 Number of Licenses at Remote Agency Sites

| Workstations At Agencies | Vendor LT S/W | UI.W | Photoshop CS5™ |
|--------------------------|---------------|------|----------------|
| 12 | 12 | 12 | 12 |

3.3.2 Data Migration

Following OCSD approval of the design at the System Design Review, the Contractor *shall* convert digital friction ridge images (known and unknown) and some paper forms with inked friction ridge impressions (that the Contractor *shall* scan into image files) into ANSI/NIST-compliant files and load them into the OC ABI System with all appropriate transaction-related information. The unknown (or latent) impressions can be a mix of tracings, lifts, and images. The files *shall* be available in the operational OC ABI System for search, retrieval, record management (e.g., consolidation or deletion), and exporting as ANSI/NIST transactions or as ANSI/NIST Record Types (individually or in batches) based on selectable fields, in accordance with the procedures documented in Appendix C of this SOW.

The Contractor *shall* provide packing containers and materials and *shall* provide transport, for the paper forms to be scanned, from and to (returned) the agency sites identified in Table 5.

*OC ABI System Scope of Work***Table 3 Number of Paper Forms to be Transported To and From Agency Sites**

| Agency Site Location | Approximate Number of Paper Forms at Agency Site |
|----------------------|--|
| Brea | 4,000 |
| Buena Park | 60 |
| Cal-ID | 1,467,000 |
| Costa Mesa | Unknown if any |
| CSU Fullerton | Unknown if any |
| Cypress | 150 |
| Fountain Valley | 25,000 |
| Fullerton | 221,739 |
| Garden Grove | 72,000 |
| Huntington Beach | 320,000 |
| Irvine | 450,000 |
| Juvenile Hall | 35,000 |
| Laguna Beach | Unknown if any |
| La Habra | 25,000 |
| La Palma | 150 |
| Los Alamitos | 1,500 |
| Newport Beach | 90,000 |
| Orange | 36,711 |
| Placentia | 20,000 |
| Probation | Unknown if any |
| Santa Ana | 700,000 |
| Seal Beach | 5,471 |
| Tustin | Unknown if any |
| UC Irvine | 10 |
| Westminster | 11,600 |
| Total | 3,485,391 |

3.3.3 Training

The Contractor *shall* develop User Manuals (CDRL OC-27) addressing all user functions for all user types (i.e., tenprint and latent examiners; and system administrators). User documentation *shall* describe

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the components, functions, and operations of each workstation type. Operations descriptions *shall* include a list and description of all error conditions, as well as the associated error messages displayed and the action required of the operator for each error condition. Each OC ABI System workstation *shall* be provided with online user documentation that is resident on the workstation or accessible via the agency's internal networks.

The Contractor *shall* prepare a Training Plan (CDRL OC-28) and Training Materials (CDRL OC-29) – for example, computer based training, videos, guides, manuals and conduct ad hoc user training to support testing, as well as the courses described below. Training courses *shall* be conducted at the OCCL central site.

The Contractor *shall* conduct three types of courses:

- 1) *Tenprint Operations Training* – This course *shall* cover all OC ABI System tenprint functionality. The course will provide hands-on³ instruction on the tenprint workstation for automated manual and tenprint processing. The course will cover tenprint manual and automated workflows, displays, data entry, quality assessment, and all functionality. The course will cover the basic and administrative user functions of the NIST archive. This course also includes the method by which NIST standard fingerprint transactions can be run against non-OCCL systems. This course will also cover palmprint and slap print entry and quality assessment functions. The number of persons to receive Tenprint Operations Training is 21. The training is to take place in Orange County no earlier than two weeks prior to the start of UAT. The training classes are to be provided at least two times to cover availability of personnel.
- 2) *Latent Operations Training* – This course will cover all OC ABI System latent functionality associated with the new OC ABI System. The course will provide hands-on instruction on the latent workstation. The course will cover use of the LCMS, EFS, latent manual workflows, displays, data entry, quality assessment, and all functionality. The course will cover the basic user functions of the NIST archive. This course includes the method by which NIST standard fingerprint transactions can be run against non-OCCL systems. The course will include instruction in best practices for ensuring optimum accuracy. This course will also cover latent palmprint and slap entry, quality assessment, and matching functions. The persons to receive Latent Operations Training at OCCL are the same 21 people who are to receive the Tenprint Operations Training. After they are trained then there are between 40 and 50 other latent personnel from police departments within the county who are to receive Latent Operations Training.
- 3) *System Administration Training* – This course will cover all OC ABI System, database, and security administration functionality associated with the new OC ABI System. The course will provide hands-on instruction on all OC ABI System equipment, software, and databases. The course will include instruction in best practices for ensuring optimum performance and system security. The persons to receive System Administration Training are all at OCCL and there are 6 of them. The training classes are to be provided at least two times to cover availability of personnel.

3.3.4 System Acceptance Test

The Contractor *shall* conduct System Acceptance Test (SAT). The purpose of SAT is to demonstrate that – in the operational environment: 1) the OC ABI System satisfies the requirements of the OC ABI System Requirements Specification [Ref. 1], 2) that the migrated Operational Database satisfies the requirements

³ "Hands-on" requires that each student have access to a fully functional workstation with OC ABI System functionality and an appropriate training database during the training sessions. This requirement applies to the Tenprint Operations Training, the Latent Operations Training, and the System Administration Training.

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of this Scope of Work, and 3) that the supporting documentation completely and correctly describes user interactions, operational procedures, and the design as implemented.

The Contractor **shall** conduct a TRR to demonstrate their and the OC ABI System's readiness to conduct SAT. The Contractor **shall**:

- Provide an overview/walk-through of the SAT activity that is to occur
- Describe the test configuration and environment (equipment, software, databases, and interfaces). Any differences between the test and operational configuration and environment will be identified⁴
- Describe precautions taken to ensure that operational databases will not be corrupted or cause the users of interfacing systems to take actions based on the belief that test messages are actual operational messages
- Identify and discuss the rationale for and implications of any proposed redlines to documents (i.e., test plans, test procedures, user documentation, installation documentation)
- Report on the status of all Action Items, Risks, and Issues that are currently open or have been closed since the PSR. Plans and/or options for their resolution will be addressed
- Identify any test procedures that the Contractor expects will fail or be incomplete during SAT execution, address the implications of those failures/incompletes for operations, and discuss plans/options for correcting the cause(s) of those failures

At the culmination of the Contractor presentation, the OC ABI Project Manager will authorize – or not authorize – the Contractor to proceed with the conduct of SAT.

If authorized by the OC ABI Project Manager, the Contractor **shall** conduct SAT using the approved test procedures (including any redlines approved by the OC ABI Project Manager at the TRR). The Contractor **shall** conduct SAT on a fully configured and deployed – in the operational environment – OC ABI System, using the operational database, and using operational external interfaces (no simulations of external interfaces). The Contractor **shall** take necessary precautions to ensure that SAT execution does not corrupt the operational databases (including the databases of interfacing systems) or cause the users of interfacing systems to take actions based on the belief that test messages are actual operational messages. Test results and satisfaction of each and every requirement of the OC ABI System Requirements Specification **shall** be noted and witnessed by OCCL personnel or OCCL support contractors. The Contractor **shall** document the test results, requirements satisfaction, and failures or incompletes in the SAT Test Report (CDRL OC-20).

At the culmination of SAT, the Contractor **shall** conduct an Operational Readiness Review (ORR). The purpose of the ORR is to demonstrate the readiness of the deployed OC ABI System, databases, documentation, and user personnel to begin User Acceptance Test. The Contractor **shall**:

- Present the results of SAT;
- Review the results of user training;
- Review the status of all Action Items, Risks, and Issues that were presented at the SAT TRR and any changes to their status, and review any new Action Items, Risks, or Issues that arose as a result of SAT;
- Address the readiness of required deliverables (e.g., equipment, software, databases) to deploy,

⁴ While it is the intention that the test and operational configurations and environments be identical, OCCL acknowledges that this may not be entirely feasible (e.g., it may be necessary to instrument the test configuration to demonstrate requirements satisfaction).

OC ABI System Scope of Work

and personnel to conduct User Acceptance Test; and

- Deliver to OCCL the software (installed executables) and the licenses for all commercial software components of the OC ABI System, and copies of all source code included in the operational OC ABI System that is not part of a commercial product.

Upon successful completion of ORR, the OC ABI Project Manager will authorize the conduct of User Acceptance Test. Deliverables include CDRLs OC-19, 20, and 34.

3.3.5 User Acceptance Test

The OCCL will conduct UAT. The purpose of UAT is to demonstrate that the OC ABI System, Operational Database, the supporting documentation, and the user training are adequate for their intended purpose.

The OCCL will conduct a TRR to assess OCCL's readiness to conduct UAT. If the OC ABI Project Manager determines that OCCL is ready to conduct UAT, she will direct that UAT begin. UAT will be conducted for a period of thirty (30) days. During a period up to the first fifteen (15) days of UAT, OCCL will conduct parallel (tenprint live scan input and matcher output) operations using the OC ABI System and the legacy AFIS. Upon completion of UAT, the OCCL will conduct an SAR to assess whether the OC ABI System, database, documentation and training are adequate to allow OCCL to declare the OC ABI System fully operational.

The Contractor *shall* provide a level of effort support throughout the period of UAT. The support personnel *shall* be able to assist users in the performance of user functions, *shall* analyze anomalous test results, and *shall* document problems encountered in the course of UAT. The level of support *shall* be provided for all shifts.

3.4 SUSTAINMENT

The Contractor *shall* provide all upgrades to their deliverables whenever new Contractor product releases are introduced during the term of the Contract. The Contractor *shall* provide corrective maintenance at no additional cost to OCCL for any error, malfunction, or defect in Contractor supplied equipment, software, or documentation that, when used as delivered, fails to perform in accordance with Contractor's officially announced, written or published, technical specifications through the term of the Contract.

3.4.1 Preventative Maintenance

The Contractor *shall* periodically perform inspection and adjustment of the equipment and replacement of defective parts thereof by dispatching maintenance personnel at the frequency recommended by the manufacturer in order to keep the equipment in good operating condition. The machine time required *shall* be scheduled on a monthly basis during working hours agreed to by OCCL.

Scheduled down time for performing preventative maintenance at the Central Site *shall* not exceed two (2) hours in any month unless agreed to in advance by OCCL.

3.4.2 Troubleshooting

The period of maintenance coverage for the Central Site and for the locations hosting latent equipment *shall* be 24 hours a day, seven days a week, 52 weeks a year.

The Contractor *shall* provide technical support services on-call 24 hours a day 365 days a year. The Contractor *shall* maintain a Help Desk and *shall* accept requests for help telephonically or via email and document them in trouble tickets. The Help Desk personnel *shall* perform triage on the trouble tickets and provide responses on those that are known problems with workarounds or solutions the others are to be forwarded to Contractor support personnel. The Contractor *shall* acknowledge problem reports

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telephonically or by email within five (5) minutes, respond within two (2) hours to begin remote access remediation, and respond on site within four (4) hours for beginning on-site remediation of problems. The Contractor **shall** provide a monthly report of all trouble tickets and their status. Deliverable includes CDRL OC-37.

*OC ABI System Scope of Work***Scope of Work Appendix A: Contract Deliverable Requirements List**

The Contractor *shall* deliver those items identified in the CDRL below. Unless otherwise stipulated herein all CDRL documents *shall* be delivered in softcopy only (one copy). All CDRL items are subject to OCCL approval and acceptance in order to satisfy the terms and conditions of the Contract. The Contractor *shall* clearly track all changes to deliverables so that the changes are visible to OCCL with automated tools or other techniques.

When a CDRL document is due in draft “XX days prior” to a milestone event the “draft” should be complete and – in the judgment of the Contractor – ready for formal acceptance by the OCCL. The OCCL will provide feedback prior to or at the milestone event. The OCCL and the Contractor will resolve OCCL comments at the milestone event and the Contractor will incorporate that resolution in the “Final” submission following the milestone event. To facilitate the review and acceptance process the Contractor may at any time and at their discretion submit informal working drafts to the OCCL for coordination. The OCCL will – time and resources allowing – provide feedback to the Contractor on these informal submissions. In the course of Contract performance it may be necessary to update accepted CDRLs to incorporate changes (e.g., new requirements, revisions to design). In that event, the Contractor *shall* update the CDRL in accordance with their approved Configuration Management Plan and deliver the updated CDRL at SAR.

| Identifier | Deliverable Title | Delivery Dates & Hardcopy Requirements |
|------------|---|--|
| OC-01 | Project Management Plan | Draft within 30 days after Contract Award. Final within 30 days after OCCL comments. |
| OC-02 | Risk and Issue Management Plan | Draft within 30 days after Contract Award. Final within 30 days after OCCL comments. To be updated as risk and issue status changes. |
| OC-03 | Requirements Verification Traceability Matrix | Draft 10 working days prior to SDR, with updates at the meeting, and Final as attachment to SDR meeting OC-07. [One softcopy and ten hardcopies of draft and final] Updates with FAT and SAT Test Procedures. |
| OC-04 | Integrated Master Schedule | Preliminary Draft prior to Contract Award and monthly as an attachment to CDRL OC-08. |
| OC-05 | Meeting Agendas | Draft 5 working days prior to the meeting. |
| OC-06 | Presentation Materials | Draft 5 working days prior to a meeting, with updates at the meeting, and Final as part of OC-07. |
| OC-07 | Meeting Minutes | Draft 2 working days after the meeting, with Final 5 working days after receipt of OCCL comments. |
| OC-08 | Monthly Status Report | Draft 5 working days prior to each monthly PMR, with Final attached to each PMR OC-07. |
| OC-09 | In-Plant Security Plan | Draft within 30 days after Contract Award. Final within 30 days after OCCL comments. To be updated if CJIS Security Plan changes impact the as approved version. |
| OC-10 | Configuration Management Plan | Draft within 30 days after Contract Award. Final within 30 days after OCCL comments. |

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| Identifier | Deliverable Title | Delivery Dates & Hardcopy Requirements |
|------------|--|---|
| OC-11 | Quality Assurance Plan | Draft within 30 days after Contract Award. Final within 30 days after OCCL comments. |
| OC-12 | Technical Report – Continuity of Operations Capability for the Operational OC ABI System | Draft 10 working days prior to SDR, with updates at the meeting, and Final as attachment to SDR meeting OC-07. [One softcopy and ten hardcopies of draft and final] |
| OC-13 | Specification Change Requests | At any time, with an explanation, any cost or schedule impact considerations, and a statement of the driving need. For those submitted for SRR approval, at any time up to 5 working days prior to SRR and Final after written approval by OCCL.[One softcopy and one signed hardcopy] |
| OC-14 | Test and Evaluation Master Plan | Draft within 30 days after Contract Award. Final within 30 days after OCCL comments. |
| OC-15 | Test Plan (FAT) | Draft 10 working days prior to SDR, with updates at the meeting, and Final as attachment to SDR meeting OC-07. |
| OC-16 | Test Procedures (FAT) | Draft 40 working days prior to FAT TRR with the Final 10 days prior to FAT TRR. [One softcopy and ten hardcopies of draft and final] |
| OC-17 | Test Report (FAT) | At PSR [One softcopy and ten hardcopies] |
| OC-18 | Test Plan (SAT) | Draft 5 working days prior to SDR, with updates at the meeting, and Final as attachment to SDR meeting OC-07. Updates 10 days after FAT based on any lessons learned in the execution of FAT. |
| OC-19 | Test Procedures (SAT) | Draft 40 working days prior to SAT TRR with the Final at ORR. [One softcopy and ten hardcopies at PSR] |
| OC-20 | Test Report (SAT) | At ORR [One softcopy and ten hardcopies] |
| OC-21 | OC ABI System Design Specification | Draft 10 working days prior to SDR, with updates at the meeting, and Final as attachment to SDR meeting OC-07. [One softcopy and ten hardcopies of draft and final] |
| OC-22 | Bill of Materials | Preliminary Draft prior to Contract Award. Updates 10 working days prior to SDR and at PSR. Final at SAR. Updates as necessary due to supplier changes in availability, model numbers, etc. |
| OC-23 | Installation Survey Report | Draft 10 working days prior to SDR, with update as an attachment to SDR meeting OC-07, and Final at PSR. |
| OC-24 | Version Description Document | Draft 5 working days prior to FAT, with updates |

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| Identifier | Deliverable Title | Delivery Dates & Hardcopy Requirements |
|------------|---|---|
| | | at the meeting, and Final as attachment to ORR meeting OC-07. |
| OC-25 | Installation Plan | Draft 10 working days prior to SDR, with update as an attachment to SDR meeting OC-07, and Final at PSR. Incremental updates between SDR and PSR as BOM or other relevant documents are updated. |
| OC-26 | Installation Drawings | Draft 10 working days prior to SDR, with update as an attachment to SDR meeting OC-07, and Final at PSR. If network upgrades are required prior to installation, then the Contractor will work with the OCCL to plan such early Installations Drawings and a separate PSR. |
| OC-27 | User Manuals | Draft 45 working days prior to FAT TRR, with update 5 days prior to FAT TRR and again as an attachment to PSR meeting OC-07, and Final at ORR. [One softcopy. One hardcopy for each trainee] |
| OC-28 | Training Plan | Draft 60 working days prior to PSR, with update as an attachment to PSR meeting OC-07, and Final at ORR. |
| OC-29 | Training Materials | Draft 45 working days prior to FAT TRR, with update 5 days prior to FAT TRR and again as an attachment to PSR meeting OC-07, and Final at ORR. [One softcopy. One hardcopy for each trainee] |
| OC-30 | Database Conversion Report | Draft 30 days after start of conversion and monthly updates through ORR. |
| OC-31 | Hardware | At ORR |
| OC-32 | Configuration Control Tools (Software, Documentation, Licenses) | Draft 30 days prior to Contract Completion [One softcopy and five hardcopies of each document] Software and licenses 30 days prior to ORR to permit recipients to be trained. Training – during the 30 day pre-ORR window. |
| OC-33 | Transition Plan | Draft 30 days prior to SDR, with updates at the meeting, and Final 30 days after SDR meeting. Updates as appropriate based on lessons learned during FAT or based on BOM updates. |
| OC-34 | Software | At ORR. Includes executables and licenses for commercial software products, and source code for developed software not part of a commercial software product. |

OC ABI System Scope of Work

| Identifier | Deliverable Title | Delivery Dates & Hardcopy Requirements |
|------------|--------------------------------------|---|
| OC-35 | Interface Requirements Specification | Draft 10 working days prior to SRR, with updates at the meeting, and Final as attachment to SRR meeting OC-07. Updates as appropriate based on lessons learned during FAT or based on BOM updates. |
| OC-36 | Interface Design Documents | Draft 10 working days prior to SDR, with updates at the meeting, and Final as attachment to SDR meeting OC-07. Updates as appropriate based on lessons learned during FAT or based on BOM updates. |
| OC-37 | Trouble Ticket Status Report | Draft of format within 30 days after Contract Award. Final 30 days after OCCL feedback on Draft format. Copy with each OC-08 Monthly Status Report. |

*OC ABI System Scope of Work***Scope of Work Appendix B: Glossary of Terms**

| Term | Definition |
|----------------------|--|
| ABI System | Automated Biometric Identification System |
| AFIS | Automated Fingerprint Identification System |
| ANSI | American National Standards Institute (a governing body for US national stan |
| ANSI Standard | Shorthand for the American National Standard for Information Systems – Data Format for the Standard for the Interchange of Fingerprint Information, Facial Other Biometric Information – Part 1 |
| ANSI/NIST | A standard developed by NIST’s Information Technology Lab (ITL) using the ANSI procedures and registered with ANSI |
| CalDOJ | California Department of Justice |
| CDRL | Contract Deliverable Requirements List |
| CJIS | Criminal Justice Information Services |
| CM | Configuration Management |
| CMP | Configuration Management Plan |
| COTS | Commercial-Off-the-Shelf |
| CPM | Contractor Project Manager |
| CPU | Central Processing Unit |
| DHS | Department of Homeland Security |
| DOA | Date of Arrest |
| DOB | Date of Birth |
| DOE | Date of Entry |
| EBTS | Electronic Biometric Transmission Specification – adopted by a Domain (q.v.) their implementation of the ANSI/NIST Standard |
| EFS | Extended Feature Set – a vendor-neutral set of descriptors used for latent encod and searching across dissimilar AFIS systems |
| EFSG | EFS User Guidelines for Markup |
| EFTS | Electronic Fingerprint Transmission Specification– a term used when only fingerprints were being exchanged – now replaced by the term EBTS for auto biometric systems; a Domain’s implementation of the ANSI/NIST Standard |
| FAT | Factory Acceptance Test |
| FBI | Federal Bureau of Investigation |
| IAFIS | Integrated Automated Fingerprint Identification System – the FBI’s system fo integrating fingerprint comparisons with criminal history record processing |
| ID | Identification |
| IMS | Integrated Master Schedule |

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| Term | Definition |
|----------------|--|
| LAN | Local Area Network |
| LCMS | Latent Case Management System |
| LIMS | Laboratory Information Management System |
| LITS | Latent Interoperability Transmission Specification |
| LT | Latent |
| MTBF | Mean Time Between Failures |
| NCIC | National Crime Information Center – an FBI Data System |
| NGI | Next Generation Identification system – the FBI’s multi-modal replacement for IAFIS |
| NIST | National Institute of Standards and Technology – part of the US Department of Commerce |
| OC | Orange County |
| OCCL | Orange County Crime Laboratory |
| OCN | Orange County Number |
| OCSD | Orange County Sheriff-Coroner Department |
| ORI | Originating Agency Identification |
| ORR | Operational Readiness Review |
| PD | Police Department |
| PMP | Project Management Plan |
| PMR | Project Management Review |
| PSR | Pre-Ship Review |
| QA | Quality Assurance |
| RMA | Reliability, Maintainability, and Availability |
| RMP | Risk Management Plan |
| S&F | Store and Forward |
| SAR | System Acceptance Review |
| SAT | System Acceptance Test |
| SDR | System Design Review |
| SDS | System Design Specification |
| SID | State Identification Number |
| SOW | Scope of Work |
| SRR | System Requirements Review |
| TCN | Transaction Control Number |

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| Term | Definition |
|-------------|--|
| TEMP | Test and Evaluation Master Plan |
| TIM | Technical Interchange Meeting |
| TOT | Type of Transaction |
| TP | Tenprint |
| TRR | Test Readiness Review |
| UAT | User Acceptance Test |
| ULW | Universal Latent Workstation |
| UPS | Uninterruptable Power Supplies |
| USL | Unsolved Latent Repository – a file |
| WSQ | Wavelet Scalar Quantization – a compression method used for Record Type-4 Type-14, and Type-15 friction ridge images collected at 500 ppi. |

*OC ABI System Scope of Work***Scope of Work Appendix C: Data Migration Procedures**

The migration of the data from the existing OCSD criminal justice environment to the OC ABI system and related operational environment will be performed in seven separate but related activities:

1. Capturing of known records from paper and digital material to include both image and text data
2. Conversion of unknown records to include image, minutiae, and text data to the extent possible.
3. Quality assessment of converted records
4. Crosschecking converted records to determine any previously unidentified matches
5. Loading converted records into the OC ABI System archive prior to the Factory Acceptance Test
6. Loading appropriate records into the matchers prior to FAT
7. Preparing and delivering the database conversion report (CDRL OC-30)

The period of performance of the Data Migration tasks *shall* be from the System Design Review approval through the UAT. The tasks will be considered complete when all digital and paper data has been migrated to the OC ABI System. It is anticipated that transactions will be processed on the AFIS-21 system right up through the first two weeks of the User Acceptance Test.

C-1 Conversion of Known Records

The known records will consist of a mixture of tenprint and palmprint data sets. As will be seen below, some are digital electronic transactions, others are paper forms.

For paper cards:

- 1) The Contractor *shall* scan original inked forms at 1,000 ppi and compress the images with JPEG2000 at 10:1 (on average); there are approximately 2.7 million such records and 650 thousand palmprint sets.
- 2) The Contractor *shall* double key enter all attributes for any scanned cards to preclude data entry errors from impacting the integrity of the cards to be scanned.
- 3) The Contractor *shall* put barcodes on the back of Tenprint and Palmprint cards to be scanned. Barcodes will link the scanned image with the appropriate TCN/BKN.
- 4) The Contractor *shall* scan the front and back of all cards at 250 or 300 ppi and save the images as Type-20 records in the newly generated ANSI/NIST transactions.

For electronic forms:

- 1) Electronic live scan and 2002 Tenprint card conversion transactions that are fully ANSI/NIST conformant with Type-1, 2, 4/14, and possibly Type-15 records.
- 2) The transactions may also contain Type-7 and Type-10 records to be retained within the NIST records. There are approximately 3.9 million of these record types from 3 sources: legacy AFIS NIST Archive, CDI/OC NIST Archive and CalDOJ NIST Archive extractions.

For the multiple types of tenprint, identified above, there may be multiple instances of the same arrest event/transaction. Some differences include:

- 1) In those cases the Type-1 and Type-2, image capture ppi and Type-15 may be different.
- 2) Some records will contain 500 rather than 1000 ppi captured images
- 3) Some will and will not contain the Type-2 arrest information
- 4) Some will and will not contain palms for the same booking event

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- 5) Some electronic transactions will contain copies of the original card in the Type-20 or even Type-7, they should be saved as Type-20 records.

The Contractor *shall* perform 1:n TP-TP cross-search of each of the tenprint records against all other loaded tenprint records to determine all transactions that are auto match candidates.

The Contractor *shall* create a report entry for all auto match results that result in disparate OCNs.

The Contractor *shall* perform an OCN based 1:1 fingerprint match on all ingested transactions to verify tenprint records matches the already loaded tenprint cards by matching on all available fingers (up to 20).

When record-to-associated fingerprint record match discrepancies are encountered, the Contractor *shall* provide a list of mismatches for OCCL resolution.

The Contractor *shall* use resulting OCNs. The Contractor *shall* retain all booking numbers in updating the MCI index per SRS BisRule002 updating the OC ABI System tenprint and palmpoint repository per SRS BisRule003 and adding to the ANSI/NIST Archive per SRS BisRule007.

The order of the conversion load is critical to assure consolidated and/or replicated multiple TCNs/BKN/CF for the same or disparate OCN/subject are all stored or cross-referenced to the current active MCI OCN index per SRS BisRule002. The Contractor *shall* comply with the following sequential load "data cleansing" guidelines. This approach will assure the conversion records are assigned to the current "active" OCN, and all available sequentially correct best quality images are considered and stored in the OC ABI System. The conversion files are to be loaded in the following order:

- a) Legacy OC AFIS NIST original 14 image records (500 ppi, 2000- current).
- b) Legacy OC AFIS NIST composite 14 image records (500 ppi, 2000- current).
- c) Tenprint Hard Card Conversion file (1000 ppi) 14 image records
- d) OC Archive 14 image and palms records (1000 ppi 2006-current)
- e) Legacy OC AFIS NIST "best" 2 finger records (500 ppi, 2000- current).
- f) CalDOJ 14 image submission (500 ppi, 2000-2005)
- g) CalDOJ 14 image and Palm submissions (500 ppi, 2005-current),
- h) CalDOJ Card Scanned Submissions (500 ppi 1996-2000)

Note 1: The "correct" Cal-ID OCN and the TCN/BKN will be found in the conversion filenames in all but the CalDOJ files. However, the type 2 OCN (2.112) in the Legacy AFIS and CDI/OC Archive files may be different and should not be used as a reliable source.

Note 2: The CalDOJ conversion files will only contain the OCN and the TCN/BKN in the type 2 and will be the only OCN/BKN that can be relied upon, the CalDOJ extractions filenames will only contain the "current" CalDOJ assigned CII and CalDOJ NATMS generated TCN. The Type 2 may not contain the CII, and it should not be relied upon.

Note 3: Some of the tenprint records will contain palms, therefore the palms are to be loaded into the palm matchers and stored in the ANSI/NIST archive during the tenprint load process.

While the current AFIS-21 cannot search palms, there are digital live scan palm image sets available for the majority of arrest cycles since early 2006. These image sets are stored in the OC Archive at their original 1,000 ppi capture rate and in the CalDOJ extraction files at 500 ppi. All other palm records are on paper forms.

The Contractor *shall* scan the original inked forms at 1,000 ppi and compress them with JPEG2000 at 10:1 (on average) and key enter the fields specified above.

In performing palmpoint conversion, after performing feature extraction on all palm records for use in the matchers, the Contractor *shall* verify the identity of the subject by matching all available fingers from the palm card to the loaded tenprint record of the associated OCN record. The Contractor will perform the palm/tenprint verification process only after the tenprint file has been completely loaded. The Contractor *shall* only load palms that have resulted in a verified tenprint match into the matchers per SRS

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BisRule003. The verified known palm file *shall* be loaded into the matchers for testing and operational use, with pointers to the appropriate MCI OCN, TCN, any CII and FBI numbers, and identities. For cases where multiple palm transactions are present for a subject, the Contractor *shall* select the palm segments for use as a single complete set in the matchers to optimize matching accuracy per SRS BisRule002 and SRS BisRule003. The Contractor *shall* store all verified conversion palm records in the OC ABI ANSI/NIST archive per SRS BisRule007.

C-2 Conversion of Unknown Records

The unknown records consist of both finger and palm latent impressions. There are approximately 38,000 latent records in the AFIS-21 system and the OCCL Laboratory Information Management System (LIMS) and some of them are in ".tiff" files. The number of latents to be converted is subject to change prior to contract award and during the development phase of the project.

The Contractor *shall* process all unsolved finger and palm latent images and generate ANSI/NIST compliant LFFS Transactions with images, where each transactions is to contain the appropriate Type-1, 2, 9, 13 and 20 records.

The Contractor *shall* create the Type-9 feature sets encoded using – at a minimum – EFS Profile-3⁵ (with a goal of also extracting Profiles 10 and 11) either by auto-extracting the features or by converting the corresponding existing feature sets.

The Contractor *shall* reference the related legacy file by including the corresponding case number and lift number in the new LFFS transaction.

C-3 Quality Assessment

The Contractor *shall* perform Quality Control on all palms ingested.

The Contractor *shall* place QC errors in the report for OCCL resolution.

The Contractor *shall* provide ANSI/NIST digital file samples to OCCL of the first 1,000 inked cards converted for OCCL staff review using a Contractor supplied workstation or a Universal Latent Workstation (ULW), and thereafter provide samples of the first 10 and last ten in every 10,000 converted thereafter for quality assurance and audit purposes.

For all ANSI/NIST transactions ingested, the Contractor *shall* use the NIST Fingerprint Image Quality (NFIQ) software to quality rate each finger and save the data for a report at the end of the data conversion. The NFIQ scores *shall* also be added to each Type-14 record as Field 14.022 in the newly created ANSI/NIST transactions for scanned records. per SRS BisRule013. If the Contractor elects to use a proprietary image quality metric in their matching system, the Contractor *shall* calculate that score for each finger and palm and store it in the Type-14 record as Field 14.024 or Type-15 record as Field 15.024 per SRS BisRule013.

For all ANSI/NIST transactions ingested into the OC ABI System, the Contractor *shall* perform at a minimum the following Quality Control (QC) processes and apply SRS BisRule013:

- a. Sequence/duplicate checks (rolls to rolls, rolls to plain, etc).
- b. Image center checks
- c. Empty/missing images without a valid amputation / bandaged annotation

⁵ Complete details for each of the EFS Profile Codes are contained in the Extended Feature Set Profile Specification, which can be downloaded from http://www.nist.gov/itl/iad/ig/ansi_standard.cfm.

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The Contractor **shall** place records that contain QC sequence errors, at a minimum, in a work queue for OCCL review and reconciliation. The Contractor **shall** not use these records to search or update the OC ABI System production matchers until reconciled by OCCL.

For any records where QC results in any image correction, the Contractor **shall** generate an additional modified submission and **shall** store the original and the modified record in the Archive per SRS BisRule007. The Contractor **shall** use the modified record as the “final” record, to load the OC ABI System matchers per SRS BisRule003.

C-4 Crosschecking Records

The Contractor **shall** search the unknown records against the known tenprint and palm files (LT-TP and LT-KP) and against one another (LT-LT); all strong candidates **shall** be documented for OCCL latent examiners to review after the system goes operational.

The Contractor **shall** perform Tenprint to Tenprint 1:1 and 1:n searches (TP-TP) cross-searches against all other loaded tenprints to identify auto-matched records with disparate OCNs. In this TP:TP cross search, the Contractor **shall** utilize a minimum of four settable auto match and auto no-match thresholds.

- When an OCN based 1:1 candidate comparison achieves a certain level of matcher score, [Threshold 1] the System can declare an auto match known as a “lights out” match.
- When the 1:n matcher score is above a settable auto-match score [Threshold 2] the System can declare an “auto match” on one or more OCNs.
- A separate 1:n search no-match threshold [Threshold 3] below which all 1:n scores are indicative of a “no match” will also be used.
- A separate OCN based 1:1 search threshold [Threshold 4] below which all 1:1 scores are indicative of a “no match” will also be used.

The Contractor **shall** perform OCN 1:1 fingerprint match to verify tenprint and palmprints records biometrically belong to the already loaded tenprint cards by matching on all available fingers.

When record-to-associated-fingerprint-record discrepancies are encountered, the Contractor **shall** provide a list of mismatches.

The Contractor **shall** perform Latent-to-Latent cross searches against the Unsolved Latent file (LT-LT).

The Contractor **shall** perform Latent searches against the tenprint and palmprint records to find any previously unmatched records that are strong candidates.

C-5 Loading Archive

As part of the data conversion task, the Contractor **shall** load all successfully processed / converted record and files into the OC ABI Archive following the appropriate System Requirements Specification Business Rules.

The Contractor **shall** create a Conversion Source Flag (CSF) that will differentiate the source files for the multiple occurrences of the same TCN/BKN, where all instances shall be retained in the ANSI/NIST Archive, other than exact duplicates from the same source file.

The Contractor **shall** convert and load the Master Cross Index (MCI) of all known subjects’ attributes:

- TCN – Transaction Control Number, utilized in OC as a duplicate of the Booking Number
- OCN – Orange County Number, the unique subject identifier
- ORI – Originating Agency Identifier
- DOE – Date of Entry, date original electronic record was created (not used for card conversion date)
- DOA – Date of Arrest

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- SEX – subject gender
- DOB – Date of Birth
- NAM – Name: First, Middle, Last, Suffix

C-6 Loading the Matchers

The Contractor *shall* load the unsolved latent file into the matchers in accordance with the Business Rules in the OC ABI System Requirements Specification [Ref. 1].

When loading the converted latents into the matchers it *shall* be done in compliance the OC ABI System Requirements Specification [Ref. 1] BisRule002, BisRule003, and BisRule007.

For cases where multiple transactions are present for a subject in the repository, the Contractor *shall* use the NFIQ image quality scores per SRS BisRule013, to develop a “best image set” as a composite record for each of the current or proposed identities in the OC ABI System matchers per BisRule003.

The known tenprint file and known palmprint file *shall* be loaded into the matchers for testing and operational use, with pointers to the appropriate TCN, OCN, CII, and FBI numbers within the ANSI/NIST Archive and MCI index.

All fingerprints per enrollment record (i.e., up to 20 fingerprints) for the first three transactions per OCN or a composite record and up to the two most recent transactions using the DOAs with disparate TCNs *shall* be loaded into the matchers and be searchable for “forward” latent to tenprint (LT-TP) transactions.

All fingerprints per enrollment record (i.e., up to 20 fingerprints) for an original or a composite *shall* be loaded into the tenprint matchers and be searchable for TP-TP transactions. All palms per enrollment record (up to 8 images each) for an original or a composite *shall* be loaded into the matchers and be searchable for latent to known palms (LT-KP) transactions.

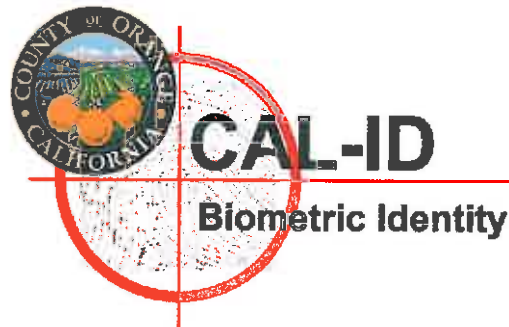
Sealed, deleted, applicant, and tactical records will not be loaded into the matchers.

C-7 Preparation of Database Conversion Report

The Contractor *shall* document all activities during the conversion effort in a Database Conversion Report (CDRL OC-30) to include their status (i.e., performed successfully or with errors).

Attachment A.1

System Requirements Specification
for the
Orange County
*Automated Biometric Identification
System (OC ABI System)*



*OC ABI System Requirements Specification***Table of Contents**

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*OC ABI System Requirements Specification***1 Introduction**

This document specifies the functional and technical requirements for the Orange County (OC) Automated Biometric Identification System (ABI System), which will be the operational and administrative responsibility of the Orange County Crime Laboratory's Cal-ID Bureau.

There are eight workflows that will be utilized on the OC ABI System, as displayed in Table 2. Those workflows that exist today have been translated from the existing County AFIS nomenclature into the non-vendor-specific terminology that is used throughout this document.

Some of the new workflows are not the traditional, one-sequence-that-must-be-followed workflows. These include latent case management where an examiner can start any appropriate subtask and follow it with any other appropriate subtask in a non-deterministic way. For instance, a latent examiner might open a case, mark the region of interest and perform image pre-processing tasks; and then decide to go back and re-mark the region of interest and start image pre-processing again.

The current identification workflows follow very specific paths in the existing AFIS environment; however, the Cal-ID Bureau expects the OC ABI System will provide simplified workflows that will make use of new technologies and new processing techniques in providing increased flexibility for users and Cal-ID Administrators.

1.1 Purpose

This System Requirements Specification (SRS) describes the functional and technical requirements for the provision of a replacement system for OC and establishes a baseline for use during the life of the replacement system. It will be placed under configuration control by the OCCL and maintained as part of the replacement system technical baseline.

1.2 Definitions, Acronyms, and Abbreviations

The terminology used in this SRS to include acronyms, is explained in Appendix G, Glossary of Terms.

1.3 References

The current versions of the following documents are incorporated to the extent that they are explicitly referenced in this document. Externally controlled documents (e.g., the Federal Bureau of Investigation (FBI) Criminal Justice Information System (CJIS) Security Policy) are specified as to the exact version. Note that some of these documents might, in turn, reference other documents.

- California Live Scan Transmission Specifications (May 2011)
- California Latent Transmission Specification (Pending California Department of Justice (CalDOJ) publication)
- American National Standards Institute/National Institute of Standards and Technology (ANSI/NIST) ANSI/NIST-ITL 1-2011 Data Format for the Interchange of Biometric and Forensic Information (dated December 2011).
- CJIS Electronic Biometric Transmission Specification (EBTS), IAFIS-DOC-01078-9.3 (dated December 2011)
- FBI CJIS CJISD-ITS-DOC-08140-5.0, CJIS Security Policy, Version 5.0 (dated 09 February 2011)

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- Proposition 69, DNA Fingerprint, Unsolved Crime and Innocence Protection Act
- Latent Interoperability Transmission Specification, Version 1.0 (dated early 2012)

1.4 Overview of Document

This SRS is organized into the following sections:

Table 1 Organization of this SRS

| Section Title | Scope |
|--|---|
| 1. Introduction | Purpose of OC ABI System and introductory material |
| 2. Overall System Description | Constraints, assumptions, dependencies, and guidelines for System development and use |
| 3. System Functional Requirements: <ol style="list-style-type: none"> 1. Identification 2. Tactical 3. Forensic 4. Image Retrieval 5. Administrative | General high-level descriptions of the functional workflows |
| 3.1 through 3.8 Functional Requirements | Detailed descriptions and requirements |
| 4. Technical Requirements <ol style="list-style-type: none"> 1. Storage Capacity requirements 2. Performance requirements 3. Accuracy requirements 4. Safety requirements 5. Security requirements 6. Environmental requirements 7. Form & Fit requirements 8. Reliability, maintainability, and availability requirements | Detailed technical requirements |
| 5. Network Requirements | Detailed network and communications requirements |
| 6. Qualification Requirements <ol style="list-style-type: none"> 1. Verification Methods 2. Verification Conditions | Criteria for acceptance testing |
| Appendix A: Types of Transactions | List of Types of Transactions supported by the System |
| Appendix B : Table of Processing Parameters | List of processing parameters to be managed by Cal-ID Administrator |

OC ABI System Requirements Specification

| Section Title | Scope |
|--|--|
| Appendix C: Table of Dissemination Fields | List of each Field that can be disseminated or viewed by others than the record owner or by "limited authorization" by OCCL staff. |
| Appendix D: List of Workstation Site Locations | List of each Tenprint and Latent terminal location and associated Printers, Card Scanners, Includes daily and hourly workloads for Network sizing analysis and installation requirements |
| Appendix E: List of Live Scans by Location | List of each Live Scan terminal and location, with daily and hourly workloads for Network sizing analysis and installation requirements |
| Appendix F: List of All Requirements | List of each requirement from the prior sections – the basis for the Requirements Verification Traceability Matrix (RVTM) |
| Appendix G: Glossary of Terms | Terms used in this document |

2 Overall System Description

For a number of years, OCCL has been aiming to modernize their ability to provide improved and additional identification / forensic services to the users in the county. The rationale is briefly discussed in the Concept of Operations (ConOps) document.

The current OCCL Cal-ID capability to store and compare friction ridge data is provided by a legacy AFIS. The desire is to move to a fully compliant ANSI/NIST standards system that not only deals with known and unknown friction ridge material but also supports:

- Receipt, storage, searching using demographic fields and forwarding of other biometric data, such as facial, SMT, and iris images, as matching services for these and other modalities become available on the FBI's Next Generation Identification (NGI) system
- Use of the Extended Feature Set (EFS) for latent interoperability, as recommended by the US Department of Justice. The EFS approach will be used for re-encoding latents for use in cross-jurisdictional searches. Searches going to CalDOJ will have to conform to the standard approach being used there.
- Palmprint searching – forward and reverse latent matching
- Processing of new CalDOJ and FBI Types of Transactions (TOTs)
- Support for Mobile ID/DNS tactical TOTs
- Receipt, storage, selective creation, and use of new Record types as defined by ANSI/NIST-ITL 1-2011

Other than palmprints, there are no requirements that the new system offer the biometric searching of additional modalities; however, the new OC ABI System should be poised to easily add modalities at later date(s). Currently, OC is not prepared to utilize biometric matching capabilities in these additional modalities, however the OC ABI System will support demographic based searches for all of the Type-10 Record's textual fields resulting in lists that link the query to any related images (e.g., search for tattoos of a burning monkey would search the appropriate Type-2 and Type-10 SMT fields).

Additionally, OC desires a system that offers a central site disaster recovery plan to eventually permit OCCL to implement continuity of operations in the event of a natural and/or manmade disaster. Other than normal backup and restore capabilities associated with system availability requirements there are no continuity of operations requirements associated with this SRS.

*OC ABI System Requirements Specification***2.1 System Services**

The overall OC ABI System will support several services. The high-level description of each service is listed below. The workflows associated with each service are detailed in Section 3.

Identification Services (Tenprint Criminal and other Transactions) – provides services to OC local law enforcement agencies to search and link Transactions where the biometric data matches an enrolled identity or establishes a new identity. Identification Services also include Tenprint Maintenance, which includes maintenance capabilities of all known friction ridge repositories (i.e., in the Archive, working files, and the matchers) as well as providing Cal-ID staff capabilities to correct erroneously entered demographic fields, and consolidate, seal and delete records.

Tactical Services (Mobile ID and Rapid Identifications) – provides services to OC local law enforcement agencies and cross-jurisdictional systems to rapidly identify subjects at the county level, and conditionally forwards the Transactions onto the CalDOJ, the national level, and/or cross-jurisdictionally. These services are sometimes included in Identification Services when describing Automated Fingerprint Identification Systems (AFIS).

Forensic Services [Criminal or Disaster Victim Identification (DVI)] – links latent fingerprints and palmprints submitted with manual intervention by examiners or other authorized cross-jurisdictional systems, as appropriate, to known enrollment identities. In the case of deceased persons where only low quality fingerprints are obtainable they are submitted as forensic services. The new system will provide a robust latent case management system (LCMS) to include the ability to handle demographic based photo [mug shot and Scars, Marks and Tattoos (SMT)] search retrieval requests. These services are often described as Investigative Services when describing an AFIS

Image Retrieval Services – provides services to authorized OC local law enforcement agencies and cross-jurisdictional systems to request and retrieve ANSI/NIST image records from the county level as well as at the national level. These requested images can be used for various purposes such as forensic matching and tenprint maintenance.

Administrative Services – supports the Cal-ID Administrators and supervisors with capabilities such as: adding new operators; changing passwords; adding and deleting users; performing demographic-based search and image retrieval requests and managing workflows. It is used for generating reports on overall System use and on specific encounter results.

Communications Services – provides secure connectivity among the OCSD criminal justice elements and provides secure connectivity between the Police Departments in OC that have live scans and/or latent workstations and the OCCL facility, to include the new OC ABI System. These services also support secure links with the CalDOJ criminal justice information systems and through them to the national systems. Some ULW workstations within the county use secure links directly to the national systems. Those ULW devices will not have to be on the OC ABI network when using that direct connectivity to national systems.

2.2 Operating Environment

The OC ABI System central devices (matchers, servers, and storage devices) will be housed in the OCCL building in a computer room with a raised floor and additional air conditioning. The other deployed devices, such as workstations and printers, will have to operate in an office environment, which will limit acceptable noise and thermal characteristics of the equipment.

2.3 Network Interfaces

Currently, the legacy AFIS system operates in a complex set of networks controlled by different organizations and not all are operating at the same security level. One task for the selected vendor will be to analyze the network environment, then propose, develop, install and maintain a new

OC ABI System Requirements Specification

network that meets the technical requirements specified in this SRS as well as the protocol and capacity requirements identified in their network analysis task. Cross-jurisdictional Transmissions also will utilize the communications services.

3 Functional Requirements

This section provides the System functional requirements for the OC ABI environment. As listed above, there are multiple high-level classes of service associated with the new OC ABI System. The classes of services are:

- Identification
- Tactical
- Forensic
- Image Retrieval
- Administrative
- Communications

Table 2 is a summary of all workflows. For each workflow, the appropriate service is identified and some high-level characteristics are documented.

OC ABI System Requirements Specification

Table 2 OC ABI System Workflows Mapped to Service

| Workflow | Service | Characteristics |
|---|-----------------|---|
| Workflow 01 (WF01): Tenprint Criminal & Other | Identification | Includes 1:1 and/or 1:n with optional forward to another AFIS; OC ABI System can include known palmprints in the case of criminal and other Transactions. Mandatory logging of all Transactions. Receipt/retention of multiple NIST responses, and conditional forwarding of responses to the originator. |
| WF02: Rapid Identification | Tactical | Includes 1:n and optional forwarding to another AFIS, and can also be received from other AFIS. Receipt/retention of multiple NIST responses, and conditional forwarding of responses to the originator. Can have less than ten fingerprints in a Transaction. |
| WF03: Tenprint Maintenance | Identification | Includes 1:1, updates, modifications, seals and deletions to known tenprint & palmprint records in the ANS/NIST Archive and the matchers. These changes can optionally be forwarded to CalDOJ and the FBI. Receipt/retention of multiple NIST responses and conditional forwarding of responses to the originator. |
| WF04: NIST Image Retrieval | Image Retrieval | Includes NIST Image Requests from OC Agencies for known images from the ANS/NIST Archive and returning responses to originator. Also supports forwarding OC agencies' requests to other AFIS and processing responses from other AFIS back to the originator. |
| WF05: Reverse and Latent Search Results Response | Forensic | Includes unsolicited notification results from the OC ABI System and other AFIS such as CalDOJ/FBI. These can be results of a reverse latent searches, possible match against a retained latent or a delayed examiner hit/no-match determination notification. Reverse latent notifications require forwarding to the originating OC terminal and/or examiner ID for resolution. |
| WF06: Latent Search-Forward | Forensic | Includes 1:1 and/or 1:n, finger and/or palms latent search, from OC Agencies or other external AFIS, returning NIST responses to originator. Optional update to Unsolved Latent Repository (USL) and ANS/NIST Archive. Optional cascading latent search request to other AFIS systems based on latent examiners direction, conditional cascaded Latent-to-Latent Search. Processing NIST responses from other AFIS and making them available through the Latent Case Management System. |
| LCMS: Latent Case Management | Forensic | Includes Latent Repository and ANS/NIST Archive update and optional cascading of a maintenance Transaction to another AFIS. This is the core of the Forensic services – examiners using OC ABI System latent services will have access to the LCMS tools, logs, and image and case management services. |
| Administrative Management | Administrative | Includes Administrative Functions that support the Cal-ID Administrator and supervisor with the capability to add, modify, and delete new operators, users, live scans, manages workflows defaults, thresholds, etc. for each Type of Transaction (TOT), requesting ORI (Originating Agency Identifier) and LSID (Live Scan ID). The Administrative functions also include report generation, system performance monitoring, troubleshooting, and demographic based image search and retrieval. |



OC ABI System Requirements Specification

System **Requirements Specification Appendix A** lists TOTs mapped to the workflows referenced in Table 2 to include the normal inbound and response Transactions and error Transactions.

3.1 **Business Rules**

There is a set of business rules associated with the OC ABI System and detailed below. These rules reflect the commonalities among the Transaction types and the services offered by Cal-ID. The purpose of establishing and documenting business rules is to identify requirements that would normally be stated in more than one workflow and thus in the pursuit of clarity are only presented once but are referenced in the various workflows and technical requirements, as appropriate.

Table 3 OC Business Rules

| Business Rule ID # | Business Rule |
|---------------------------|--|
| BisRule001 | <p>Record ownership: Internal and external agencies will only be able to view and print the Type-1 and Type-2 Fields and other record types including but not limited to Types 4/14, 7, 9, 10, 13, 15, 17, 18, 19, 20, and 21 as determined by the Cal-ID record dissemination parameters specified for the requesting examiner, ORI, and the requested record's TOT, ORI and LSID.</p> <ul style="list-style-type: none"> • The subset that non-owners and unauthorized OCCL staff can view is limited to the fields as specified in Appendix C. • When the originating ORI is the same as the file records ORI, and/or the OCCL examiner is qualified to view the contents of the records, all fields present in the record will be available for review. |
| BisRule002 | <p>Master Cross Index (MCI): The System will maintain and update the OC ABI System master cross index where: The MCI will only allow one active Orange County Number (OCN) per unique subject as identified by the OC ABI System and/or Cal-ID staff. When an Active OCN/TCN is returned as part of a candidate list, the OC ABI System will allow the examiner to select a candidate(s) and bring it up for a side-by-side review against the search record:</p> <ul style="list-style-type: none"> • to include reviewing all events registered to the selected candidate's OCN without exiting the review screen • to include reviewing the permitted textual attributes <p>All MCI activities (to include assignment and changes due to consolidations and/or record purges) are to be logged and retained indefinitely.</p> |
| BisRule003 | <p>Number of events per subject in matchers:</p> <ul style="list-style-type: none"> • LT-TP: The OC ABI System is to store up to three Complete sets of Final fingerprints for Latent-Tenprint (LT-TP) matching, where all 20 fingers' minutiae are to be loaded into the matchers for each set. (1) The first three available Final fingerprint Image Records per active OCN are to be stored in the LT-TP matchers directly. (2) Upon receipt of a fourth and/or subsequent Final Record to be enrolled, the OC ABI System will generate a composite record with the best 20 fingers based on all "available" Transactions per the individual NIST Fingerprint Image Quality (NFIQ) scores or the vendor selected quality algorithm per BisRule013. The OC ABI System will then store the |

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| Business Rule ID # | Business Rule |
|--------------------|--|
| | <p>composite along with the two most recent available Final Transactions in the matchers.</p> <ul style="list-style-type: none"> • TP-TP Identification If the design includes a separate set of matchers dedicated for tenprint to tenprint searches, then the OC ABI System is to store a Complete set of Final fingerprints for Tenprint-Tenprint (TP-TP) matching against known tenprints, where all 20 fingers are to be loaded into the matchers. The first available Final Transaction per active OCN is to be stored in the TP-TP matchers directly. The second and/or subsequent Final Transaction(s) enrolled will cause the system to generate a composite record with the best 20 fingers using all "available" Transactions based on the individual NFIQ scores or the vendor selected quality algorithm per BisRule013. • TP-TP Tactical If the design includes a separate set of matchers dedicated for tactical searches, then the OC ABI System is to store a Complete set of Final fingerprints for tactical Tenprint-Tenprint (TP-TP) searches against known tenprints. The first Final Transaction per active OCN is stored in the tactical TP-TP matchers directly. The second and subsequent Final Transaction(s) enrolled will cause the system to generate a composite record with the best 20 fingers using all "available" Transactions based on the individual NFIQ scores or the vendor selected quality algorithm per BisRule013. • PLT-KP The OC ABI System is to store at least one Final palmprint set (full palm, upper, lower, and writers, when available) for forward latent searching against known palmprints. The first Final Record is to be stored in the PLT-KP matchers directly. The palm quality algorithm(s) selected by the vendor are to be stored in Field 15.024 of the Final Record along with the generated palm quality score(s) and also logged for each palm image per BisRule013BisRule013. If a second and/or subsequent Final palmprint Record is available and if it contains one-or-more higher quality image(s), then its minutiae will replace the initially enrolled palm minutiae in the matchers. • When there is an Administrative Seal or Deletion of a Transaction and/or any palms/ fingers in that Transaction are actively assigned in a composite in the matchers, the OC ABI System is to remove the sealed/ deleted Transactions from all of the matchers and automatically replace them with other available final Transactions. If any of the Sealed/deleted finger/ palms were used in any of the composites, the OC ABI System is to regenerate a new composite using only available best quality final Transactions fingers/palms for this subject. If there are no other available Transactions, the OCN subject is to be removed from the matchers completely. • When there is a consolidation of multiple OCN subject's folders, the OC ABI System will delete the contents of the matchers from all of the targeted consolidation OCN subjects, and will then regenerate all of the aforementioned matcher contents using all available final Transactions from all of the consolidated subject's folders, applying all of the aforementioned guidelines. <p>Note Well: For each composite fingerprint record in the matchers there will be a pointer to the source Transaction for each image and examiners will be able to use that information to view the entire source Transaction.</p> |

OC ABI System Requirements Specification

| Business Rule ID # | Business Rule |
|---------------------------|---|
| | <p>Definitions:</p> <p>Final Transaction:</p> <p>1) When there are no changes made to the original "tenprint" Transaction images throughout the OC ABI System processing, the original Transaction will be deemed the "final" Transaction.</p> <p>2) When there are any changes made to the original Transaction images, such as in Quality Control, the additional complete modified Transaction will be additionally stored in the ANSI/NIST Archive and will be then deemed the "final" Transaction.</p> <p>Complete Set: a complete set of images associated with a Transaction</p> <p>1) Tenprint – represents all available fingers, including rolled, plains and/or flats (Record Type-4 or 14), up to 20 fingers per Transaction.</p> <p>2) Palm – represents a set of "full palms", upper, lower, and writers when available (3 or 4 possible images per hand).</p> <p>Available: Active Final Transactions, i.e., non Sealed, non deleted.</p> |
| BisRule004 | <p>Verification Packets:</p> <p>Verification packages will include the original images and all candidate images (or pointers to them) and event information. These packages will be prepared for all Transactions, including automated match/no match determinations and all resulting manual and automated determinations to support administrative monitoring purposes.</p> <p>Verification packages will be retained in the work queues for a predefined number of candidates to include the highest matcher scored OCN at the top of the candidate list.</p> <p>Multiple candidates bearing the same OCN will be consolidated into a single OCN "folder" with the highest scored Transaction or master being presented as one of the 10 candidates.</p> <p>Note: It is possible that a latent verification package of 10 candidates can contain up to 3 sets of images (1-20 images per set), per candidate, in the 10 OCN folders, as the candidate list length increases so will number of images.</p> <p>All Auto Matches, Auto No-Matches and Indeterminate(s) are to be flagged accordingly and are subject to being manually changed by an examiner before a final determination is made.</p> <p>Verification packages will be generated for all tenprint and tactical Transactions. The resulting automated and manual determinations will be retained and the candidates' lists will be able to be reviewed by Cal-ID staff for a period, determined by the Cal-ID administrator.</p> |
| BisRule005 | <p>Hierarchical Searches</p> <p>The OC ABI System will send tenprint and palmprint Transactions with the native scanning resolution, except where business partners require transcoding⁶ to 500ppi per the target agency's specifications, in which case:</p> <ul style="list-style-type: none"> • the Transaction will include the transcoded records not the 1000ppi records • the Type-1 will reflect the new Transaction details <p>The OC ABI System will send latent Transactions with the latent image stored as a Type-13 Record, except where business partners require that it be sent in a different Record type, in which case:</p> <ul style="list-style-type: none"> • the Transaction will reflect the target agency's preferred latent image Record type |

⁶ Note well that the FBI and NIST have a study underway regarding the best way to Transcode.

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| Business Rule ID # | Business Rule |
|---------------------------|---|
| | <ul style="list-style-type: none"> the Type-1 will reflect the new Transaction details <p>The OC ABI System will remove any Record types not acceptable by a target system and adjust the Transaction accordingly. If the OC ABI System has modified the original Transaction (e.g., correcting sequence errors), hierarchical Transactions will use the original Transaction without the corrections, but with the final OCN.</p> |
| BisRule006 | <p>Check For Duplicate Transaction Control Number (TCN): The OC ABI System will check the TCN of each received Transactions and compare it to the ANSI/NIST Archive and all work queues for TCNs to determine if the new TCN is a duplicate of TCNs previously accepted by the system or currently in process. All Transactions with duplicate TCNs will be rejected with an error response Transaction (ERRT).</p> <p>Note Well: There will be cases where a Transaction will be rejected and the submitting agency will be asked to correct and to resubmit the Transaction without changing the TCN. In these cases, since there is no previously accepted use of that TCN, the OC ABI System should accept it.</p> <p>Note Well: Criminal Transactions, per DNA Proposition 69, may lead to two Transactions with the same TCN assignment. One will be an early search at CalDOJ of the plain impressions to determine if the subject needs DNA collection and then a normal criminal Transaction will follow with the same TCN.</p> |
| BisRule007 | <p>ANSI/NIST Archive Storage – The OC ABI System is to store the following: A complete copy of each “accepted” and “rejected” inbound Transaction to the OC ABI System will be stored, including all responses from an External AFIS. If any Transaction is modified (e.g. sequence error corrections) during processing, a complete copy of the modified Transaction will be added to the ANSI/NIST Archive. Each Transaction’s TCN (original, modified, Final, DNS, and rejected Transactions), will have an associated entry in the archive index that will identify the status. The conversion source flag (CSF) will have an associated field in the archive index. Note: during conversion, the Contractor will have created a Conversion Source Flag (CSF) that will differentiate the source files for the multiple occurrences of the same TCN/BKN, where all instances shall be retained in the ANSI/NIST Archive, other than exact duplicates from the same source file. A complete copy of all responses generated by the OC ABI System will be added to the ANSI/NIST Archive. A complete copy of all Transactions forwarded by the OC ABI System will be added to the ANSI/NIST Archive. Applicant Transactions and their responses will be deleted from the OC ABI System after successful processing in all interfaced systems (i.e. Cal-DOJ and the FBI) per BisRule011 and purging period criteria. The OC ABI System ANSI/NIST Archive will generate indices using all of the Type-1, Type-2, and Type-10 text data fields present in the Transaction, any forwarded Transactions and any response Transactions in order to support latent and administrative demographic searches of the ANSI/NIST Archive.</p> |
| BisRule008 | <p>Assignment of OCNs: The OC ABI System will automatically assign the next available sequential OCN to new subjects. OCNs will never be reused. OCNs that have been inadvertently pre assigned (either manually and/or via a conversion effort) will be marked as “unavailable” within the sequential new OCN table and skipped over by the sequential OCN assignment process. All instances of skipping over a sequential number will be logged and reported to the system Administrator.</p> |
| BisRule009 | Printing Cards, Facial Images and SMTs: |

OC ABI System Requirements Specification

| Business Rule ID # | Business Rule |
|---------------------------|---|
| | <p>When CalDOJ data fields are present, the OC ABI System will use the standard California fingerprint and palmprint card formats specific to the TOT found in the 1.04 Field (per CalDOJ card format specifications).</p> <p>When only FBI Fields are available, the OC ABI System will use the standard FBI fingerprint and palmprint card formats specific to the TOT found in the 1.04 Field (per FBI card format specifications).</p> <p>When printing cards, the OC ABI System will use an FBI Electronic Biometric Transmission Specification (EBTS) Appendix F certified printer.</p> <p>When printing photos and / or SMTs a color printer is preferred, when available. SMTs should, ideally, be printed at actual size, while faces should be printed at a selectable size and orientation on the paper.</p> |
| BisRule010 | <p>Temporary OC ABI System Storage:</p> <p>The OC ABI System uses temporary storage to buffer a copy of each Transaction received and forwarded. Only after all internal and external responses are finished (i.e., OC ABI System, CalDOJ, FBI, DHS, other, etc.), and the settable period of time (up to 30 days) has elapsed can all temporary files and/or Quality Control (QC) & Verification packets be automatically deleted from temporary storage. If the temporary storage is full, the OC ABI System will overwrite the oldest record and send the administrator a notification.</p> |
| BisRule011 | <p>Dynamic Workflow Assignments and Logging:</p> <p>Each of the processing workflows will be dynamically determined by the "processing parameters" for each Transaction by originating ingested TOT, ORI and LSID (Live Scan Identification number). This will include parameters that control field parsing, record/field entry defaults, QC parameters, 1:1 and 1:n verification match/no-match thresholds, priority defaults, Repository retention, Archive retention, auto-cascaded reverse latent searches or not, auto cascade onto other AFIS such as CalDOJ, FBI or other AFIS, and response dissemination. A complete copy of these processing parameters will be included in the activity logs for each Transaction, linked to the associated Transaction TCN. The design and implementations of these parameters will be left up to the selected vendor. The initial values will be established during the development phase.</p> |
| BisRule012 | <p>Cross-Jurisdictional Searches:</p> <p>The OC ABI System will:</p> <p>Ingest such in-bound Transactions [TP-TP (image based), LT-TP (image based and/or EFS Type-9), and PLT-KP (image based and/or EFS Type-9)], add them to the archive, process them locally, and return identification decisions or candidates to the submitters based on whatever agreement has been negotiated. Retain is always set to N and priority is always set to 9 – unless an agreement has been reached with the external system giving them retention rights for unsolved latents or higher priorities, in which case the system will use the defaults for that business partner's Transactions.</p> <p>Permit users to create and send outbound TP-TP and forward latent searches to other systems and receive and process the responses; selectively using either the Extended Feature Set (EFS) Profiles 0, 1, 2, or 3 or an appropriate Type-9 encoding for forward latent searches.</p> <p>BisRule007, ANSI/NIST Archive Storage, applies to all cross-jurisdictional searches.</p> |
| BisRule013 | <p>Image Quality Assignment:</p> <p>For all Transactions and/or retained records that contain images,</p> <p>(1) The OC ABI System will generate and store the NFIQ scores for each rolled and plain finger into the Field 2.022 field of the original and Final Transaction and log them in a data file for each finger.</p> |

OC ABI System Requirements Specification

| Business Rule ID # | Business Rule |
|--------------------|--|
| | <p>a. If the vendor can improve their internal matching using an approved finger quality methodology, the vendor can elect to use an additional finger quality algorithm(s) /version number. The OC ABI System will store all finger quality algorithm(s) /version number(s) in the 14.024 field of the original and Final Transaction along with the generated score(s) and log these values for each finger image for report generation purposes.</p> <p>(2) The OC ABI System will store all vendor selected palm quality algorithm(s)/version number(s) in the 15.024 field of the original and Final Transaction along with the generated score(s) and log in a data file these values for each palm image for report generation purposes.</p> <p>(3) The OC ABI System will store all vendor selected Photo quality algorithm(s)/version number(s) in the 10.024 field of the original and Final Transaction along with the generated score(s) and log these values for each photo image for report generation purposes.</p> |

3.2 OC ABI System Identification Services

As delineated in Table 2, the Identification Services include three workflows (WF01, WF02, and WF03). Each workflow is defined and its requirements stated in this section. Cal-ID Identification Services use newly collected fingerprint data from subjects to launch searches of prior enrollments to determine if the subject has been previously enrolled in the Cal-ID, CalDOJ, and FBI/National Systems or other cross-jurisdictional systems. The OC ABI system will generate and retain a verification package that contains the candidate list with images (or pointers to images) including all automated and/or manual determinations for subsequent administrative audit and monitoring purposes for a specified period of time.

3.2.1 Functional Requirements – WF01 – Tenprint Normal

This section outlines the functional requirements for the various inputs, processing, and outputs of tenprint identification services. This workflow is the core of the OC ABI System's Identification Services as all criminal Transactions and some others (e.g., deceased known and unknown) are processed here.

3.2.1.1 WF01 Inputs

The tenprint identification Transaction data will be electronically transmitted as CA-EBTS or FBI EBTS files. Inked forms will be converted to appropriate Transaction types and are handled by requirements WF01InputReq001 through WF01InputReq004. These Workflow01 input paper-to-digital capture requirements will also be used to support Workflows 02 and 03.

Table 4 WF01: Identification TOTs Supported for Workflow 1

| TOT | Transaction Name |
|-----|-------------------------------|
| AMN | Amnesia Victim |
| APP | Applicant |
| CRM | Criminal Tenprint Transaction |
| CUS | Custody |
| DCD | Deceased |
| IDN | Identification Only |
| MPR | Missing Person |

OC ABI System Requirements Specification

| TOT | Transaction Name |
|-----|--|
| REG | Violent Offender Registration (Sex, Drug, Arson, etc.) |

The OC ABI System ingested Transactions will be parsed for compliance with the CalDOJ EBTS or external FBI EBTS depending on the originating TOT, ORI, and Destination Agency Identifier (DAI). Per BisRule011, those Transactions that comply with the required fields will then be checked for image quality (including calculating and saving the individual rolled finger and palm quality scores per BisRule013) and sequence checks. The original quality scores will be saved in a data file from which reports can be generated at the ORI and LSID levels.

Where Transactions fail the image quality checks, any encountered problems will be conditionally forwarded to a fingerprint examiner for Quality Control (QC) or automatically returned to the submitting agency with the corresponding NIST error response. The QC operator will be able to select quality control error notices from a pull down list and/or selectively return an automatically generated corresponding NIST error response. If the Transactions are for applicants or other TOTs that indicate in their processing parameters as not being locally searched (e.g., applicants, etc), they will go through all Input steps but then be sent directly to the CalDOJ AFIS, by-passing the OC ABI System processing.

For accepted Transactions, the OC ABI System will evaluate the image quality of Type-10 facial images relative to the ANSI/NIST-ITL 1-2011 Annex E Subject Acquisition Profile (SAP) level 30 per Section 7.7.5.1. The evaluation ratings will be saved within the archived Final Transactions and in a data file from which reports can be generated at the ORI and LSID levels.

Qualified accepted, modified, and rejected Transactions will be preserved indefinitely in ANSI/NIST Archive (repository) of Transactions per BisRule007.

Workflow 01 input requirements WF01InputReq001 through 004 are for the scanning of paper forms (typically fingerprint or palmprint cards).

Table 5 WF01: Identification Services Input Requirements

| Requirement ID # | Requirement |
|------------------|---|
| WF01InputReq001 | <p>For paper forms submitted, the OC ABI System shall support:</p> <p>The ability for the operator to select from a menu of sets of card or paper forms, where the default will be dynamically set to the last processed set of forms.</p> <p>The ability for the operator to select from a menu of TOTs (as identified in Table 4, Table 8 and Table 12), where the default will be set to the last processed TOT.</p> <p>Scanning of the front and back sides (where information is found) of friction ridge forms at 250 or 300 ppi and creating the Type-20 record(s), compressed at 10:1 using JPEG 2000.</p> <p>Create an automated assignment of a unique TCN, which can be optionally overwritten by the Cal-ID operator.</p> <p>For flatbed scanners, display first side of any double sided form to the operator and support active key entering while the other side or additional cards (e.g., a palmprint card) are being scanned.</p> <p>After scanning is complete, allow the operator to view the scanned card images and initiate a re-scan if appropriate.</p> |
| WF01InputReq002 | <p>For paper forms submitted, the OC ABI System shall provide the user with:</p> <p>The capability of automatically scanning the image portions of the fingerprint and/or palmprint forms at 1,000 ppi using FBI certified EBTS Appendix-F scanner systems and FBI compression guidelines</p> |

OC ABI System Requirements Specification

| Requirement ID # | Requirement |
|------------------|--|
| | Automatically assigning the image(s) to Type-14/15 records, as appropriate. |
| WF01InputReq003 | <p>For paper forms submitted, the OC ABI System shall provide the user with: The capability of entering Type-1 and Type-2 Field specific texts to an operator selected TOT and Destination Agency Identifier (DAI), per the corresponding CA/FBI EBTS. Linking the text Fields (Types 1 and 2) with the appropriate scanned images [WF01InputReq001 and WF01Input002]. The OC ABI System will perform data validations as the operator is entering data, such as date tests, etc. and notify operator at the time of any deficiency and support corrective actions. The OC ABI System will perform completed package checks to confirm all of the "required" fields and multiple field relationships have been properly populated. Double Key entry Verifications will be required based on the default processing parameters associated with the TOT selected. The fields requiring double key entry will be defined in the processing parameters for each TOT and DAI.</p> |
| WF01InputReq004 | For paper forms submitted, after scanning and text entry are complete the OC ABI System shall automatically create an ANSI/NIST Transaction with the Record Types-1, 2, 14, 15 (when palms are present), and 20 and put them in the processing queue for ingesting into the appropriate Workflows 01, 02, or 03. |
| WF01InputReq005 | <p>The OC ABI System shall be able to:</p> <ol style="list-style-type: none"> 1. Ingest EBTS Transactions as listed in Table 4, both electronically submitted Transactions and Transactions created in WF01InputReq004 2. Parse for compliance with the selected EBTS Transaction definitions per the processing parameters for the submitted TOT, ORI and LSID, then log the results per BisRule011 3. Check for adherence to annotations for missing images (e.g., AMP) 4. Check for duplicate TCN/BKN per BisRule006. 5. The OC ABI System will return the appropriate NIST error response specified in Appendix A with detailed error descriptions per CA/FBI guidelines for those that fail step 2 or 3 above. The results are to be returned, as appropriate, logged, and the Transaction removed from this Workflow. |
| WF01InputReq006 | The OC ABI System shall generate and store NFIQ scores for each finger (rolled and/or flats) and any other vendor utilized image quality assignment algorithm(s) and generate and store any Palm image quality assignment algorithm(s) and the generated score for each palm image – all per BisRule013. |
| WF01InputReq007 | The OC ABI System shall automatically assign pattern classification(s) to each finger image (whorl, right loop, left loop, arch and/or unknown). |
| WF01InputReq008 | The OC ABI System shall perform quality checks using the ingested friction ridge images against quality threshold processing parameters per BisRule011. |
| WF01InputReq009 | The OC ABI System shall conditionally forward the Transactions that fail the automated quality checks [WF01InputReq008] to appropriate examiner work queues for examiner-assisted QC or conditionally reject the Transaction per processing parameters based on the ingested TOT, ORI and LSID. All rejected are to be removed from this Workflow after sending |

OC ABI System Requirements Specification

| Requirement ID # | Requirement |
|------------------|--|
| | the appropriate ANSI/NIST response Transaction. |
| WF01InputReq010 | The OC ABI System shall permit examiners to select a Transaction from the QC queue and present the first image from the selected Transaction within 4 seconds and all images within 30 seconds. |
| WF01InputReq011 | <p>The OC ABI System shall provide support to examiners in performing QC activities:</p> <ol style="list-style-type: none"> 1. Adjust sequence: <ul style="list-style-type: none"> ▪ From Plain to Rolled ▪ From Rolled to Rolled ▪ Whole hand swap 2. Correct or establish the pattern 3. Center images 4. Correct annotations 5. Provide an ability to reject a Transaction by: <ul style="list-style-type: none"> ▪ Supporting the operator with the ability to select a table of reasons from a list or enter a reason via the keyboard ▪ Automatically generate the appropriate NIST error response back to the originator |
| WF01InputReq012 | <p>The OC ABI System shall record in a system log all quality checks (automated and manual) results and make them available for review. The results to be logged include all Type-1 and Type-2 record Fields, as well as:</p> <ol style="list-style-type: none"> 1. Automated QC <ul style="list-style-type: none"> ▪ Fingerprint quality score per NFIQ and the NFIQ algorithm version for each rolled and plain finger per BisRule013 ▪ Any additional vendor selected Quality algorithm and generated score for each rolled and plain finger per BisRule013 ▪ The vendor selected Quality algorithm and generated score for each palm image per BisRule013 ▪ Rolled sequence results against the plains ▪ Presence of spurious fingers and palms ▪ Presence of AMP or Bandaged annotations when no images are present or any other annotations ▪ Automated pattern call(s) ▪ Rejected Transaction(s) 2. Manual QC <ul style="list-style-type: none"> ▪ Pattern classifications after manual QC ▪ Manual sequence adjustments ▪ Manual image adjustments ▪ Annotations after manual QC ▪ Rejected Transaction(s) |

OC ABI System Requirements Specification

| Requirement ID # | Requirement |
|------------------|--|
| WF01InputReq013 | The OC ABI System shall be able to respond to rejected Transactions via an EBTS error Transaction (corresponding response error TOT for the ingested TOT, ORI and LSID, per Appendix A). |
| WF01InputReq014 | The OC ABI System shall create and store Transactions per BisRule007 and BisRule013. |
| WF01InputReq015 | The OC ABI System shall rate any Type-10 frontal facial images in the accepted "final" Transactions per the ANSI/NIST 1-2011 Annex E SAP 30 in terms of pass or fail and record the results in a searchable data file. The "fail" determination will not cause a rejection of the Transaction and an error describing the image error shall be added as a determination in the message field in the response to the originator. The photo(s) evaluation algorithm(s)/version(s) ratings score for each image are to be stored in Field 10.024 of the Final Transaction. |
| WF01InputReq016 | The OC ABI System shall forward the acceptable Transactions: <ul style="list-style-type: none"> • An applicant Transaction (other than those with processing parameters indicating a local search) will go directly to the CalDOJ AFIS, bypassing the Cal-ID OC ABI System matching process per processing parameters • All others will go onto the OC ABI System for processing. |

3.2.1.2 WF01 Processing

The OC ABI System will process identification Transactions received from internal and external interfaces. The various biometric modality data (fingerprint and palmprints) will be sent to the appropriate matchers for searching. Successful Transactions (i.e., that pass the parser and image quality checks) will be conditionally sent to the Local Arrest Record System (LARS) for a name search inquiry and the resulting possible-match OCN will be sent to the matchers for a name-based 1:1 search. The logs and ANSI/NIST Archive will be updated for each exchange with LARS.

When a name-based 1:1 candidate comparison achieves a certain level of matcher score, [Threshold 1] the System can declare a match known as a "lights out" match; likewise, when the 1:n matcher score is above a settable auto-match score [Threshold 2] the System can declare a "match". A separate name based 1:1 search no-match threshold [Threshold 4] below which all 1:1 scores are indicative of a "no match" will also be settable. A separate 1:n search threshold [Threshold 3] below which all 1:n scores are indicative of a "no match" will also be settable. Independent of any "lights out" decisions or need for manual verification, the system will always create and save a verification package for potential review and use in investigations that records all resulting auto and/or manual match/no-match results.

Based on a match/no-match decision, the OC ABI System will update the matchers and directories per BisRule003, update the demographic search index including all demographic fields from all record types found in the final Transaction (record Types-1, 2, and 10) and make the results available to the originator. Based on the Transaction data, the Transaction may or may not be forwarded to CalDOJ, other cross-jurisdictional systems, the FBI and other national systems or via the FBI to international systems for further searching. In the case of new enrollees, the OCN will be established by the OC ABI System per BisRule008.

Table 6 WF01: Tenprint Identification Services Processing Requirements

| Requirement ID # | Requirement |
|------------------|---|
| WF01ProcReq001 | The OC ABI System shall "feature extract" all friction ridge images. |

OC ABI System Requirements Specification

| Requirement ID # | Requirement |
|-------------------------|--|
| WF01ProcReq002 | The OC ABI System shall : <ol style="list-style-type: none"> 1. Create appropriate internal TP-TP searches per BisRule011. 2. Automatically cascade TP-LT and KP-PLT internal reverse latent searches based on BisRule011 after an existing or new OCN has been assigned to the search record. |
| WF01ProcReq003 | The OC ABI System shall automatically execute all searches created in WF01ProcReq002. |
| WF01ProcReq004 | The OC ABI System shall be able to conditionally forward the TP-TP Transactions to the LARS System to solicit any possible name-based candidates via an EBTS Transaction using the appropriate Type-1 and Type-2 records in an ANSI/NIST Transaction. |
| WF01ProcReq005 | The OC ABI System shall be able to ingest LARS name search responses from the LARS system using the appropriate ANSI/NIST Transaction. |
| WF01ProcReq006 | Reserved |
| WF01ProcReq007 | The OC ABI System shall update the log entry and ANSI/NIST Archive for each LARS Transaction with the Type-1 and Type-2 information (WF01ProcReq004 through WF01ProcReq005). |
| WF01ProcReq008 | The OC ABI System shall automatically execute all 1:1 matches using the possible match OCN(s) returned from LARS. |
| WF01ProcReq009 | The OC ABI System shall create a verification package containing 1:n and 1:1 candidates' results and move it to a work queue for all Transactions independent of Auto No-Match, No-Match, or Indeterminate(s) per BisRule004. Only those Transactions that require manual verifications will be queued for operator intervention per processing parameters. |
| WF01ProcReq010 | If the TP-TP matcher score for a name-based searched 1:1 candidate is above a settable threshold [Threshold 1], the OC ABI System shall automatically declare a match on that Transaction. |
| WF01ProcReq011 | If the TP-TP matcher score for a 1:n candidate is above a settable threshold [Threshold 2], the OC ABI System shall automatically declare a match for that candidate OCN. |
| WF01ProcReq012 | If the matcher scores for all 1:n candidates are below a settable threshold [Threshold 3] and the matcher scores for all 1:1 candidates are below a settable threshold [Threshold 4], the OC ABI System shall automatically declare a no-match result for the Transaction. |
| WF01ProcReq013 | If there is more than one automatic match for disparate OCNs then the OC ABI System shall mark the Transactions indicator in the appropriate examiner work queues for conditional examiner-assisted verification. |
| WF01ProcReq014 | If there are any 1:n candidates with scores between Thresholds 2 and 3 or if there are any 1:1 candidates with scores between Thresholds 1 and 4, the OC ABI System shall mark a Transactions indicator in the appropriate examiner work queues for conditional examiner-assisted verification. |
| WF01ProcReq015 | The OC ABI System shall allow examiners to selectively pick a Transaction from the Verification queue and present the first images from the selected Transaction within 4 seconds of the selection and all images within 30 seconds, for both search prints and candidates. |
| WF01ProcReq016 | The OC ABI System shall provide support for examiners to verify candidates for searches selected from the queue and to selectively image process the original image and the candidate image separately or in synchrony (i.e., zoom, magnify, and rotate; and adjust contrast, brightness, and sharpness) as well as allow the examiner to select and view the candidate per BisRule004. |
| WF01ProcReq017 | The OC ABI System shall permit examiners to print any search or candidate |

OC ABI System Requirements Specification

| Requirement ID # | Requirement |
|------------------|---|
| | fingerprint set with Type-1 and Type-2 data per BisRule001 and BisRule009. |
| WF01ProcReq018 | The OC ABI System shall permit an examiner to change any automated determinations to a manual decision (i.e. Auto-Match to Manual No-match, Auto No-Match to a Manual Match) when the verification candidate list has been presented to the examiner for verification purposes. |
| WF01ProcReq019 | The OC ABI System shall permit examiners to determine when more than one match determination will result in a consolidation process. The examiner can select the "target" OCN that one or more OCN and folder contents will be automatically merged with. |
| WF01ProcReq020 | The OC ABI System shall permit examiners to reverse a previously performed consolidation process. The examiner can selectively restore the information to the original OCN folders. |
| WF01ProcReq021 | In the case of a completely automatic and/or manual No-Match decision, and the processing parameters indicate a new OCN should be established, the OC ABI System shall establish a new OCN per BisRule008. |
| WF01ProcReq022 | The OC ABI System shall conditionally forward the relevant records (Types 1 & 2) in the Transactions automatically onto LARS, Automated Jail System (AJS), CalDOJ, the FBI and/or other cross-jurisdictional systems per BisRule005 and BisRule011: <ol style="list-style-type: none"> 1. The LARS will be sent the completed package including the resulting OCN placed in the OCN field for all criminal related Transactions. 2. The AJS will be sent the completed package including the resulting OCN placed in the OCN field for all criminal related Transactions originating from the OC Sheriffs Jail. 3. The Transactions are forwarded onto CalDOJ with the resulting OCN. CalDOJ will then conditionally forward them onto the FBI or other cross-jurisdictional systems. |
| WF01ProcReq023 | The OC ABI System shall ingest all ANSI/NIST formatted response Transactions from CalDOJ, FBI, DHS, and any other authorized systems where an OC search was forwarded. |
| WF01ProcReq024 | The OC ABI System shall store an original copy of all Transactions forwarded in the ANSI/NIST Archive per BisRule007. |
| WF01ProcReq025 | The OC ABI System shall update the MCI for each subject enrolled to include links to all successfully processed Transaction TCNs, prepared and received responses, consolidated OCNs, and all OC ABI System matcher identity tables per BisRule002 and BisRule008. |
| WF01ProcReq026 | The OC ABI System shall update the matchers with the "final" Transactions per BisRule003 and BisRule011. |
| WF01ProcReq027 | The OC ABI System shall automatically log all search Transactions results to include the original Type-1 and Type-2 fields, time received, time at end of processing, and identity decision. |
| WF01ProcReq028 | The OC ABI System shall update the Archive searchable indices using all of the text data fields contained in the Transaction for forensic/administrative demographic searches per BisRule007 and BisRule011. |
| WF01ProcReq029 | The OC ABI System shall log an error condition with explanation(s) when external system(s) returns error responses, rejects the Transaction or does not return expected response(s) within a specified period per BisRule011. |
| WF01ProcReq030 | The OC ABI System shall provide support for examiners to review candidates for searches selected from the queue for up to 30 days after the results have been returned to the submitter. |

OC ABI System Requirements Specification

| Requirement ID # | Requirement |
|------------------|---|
| WF01ProcReq031 | The OC ABI System shall allow examiners to selectively pick a Transaction from the Verification queue per BisRule004 and return the first candidate image within 4 seconds and all images within 30 seconds. |

3.2.1.3 WF01 Outputs

The OC ABI System will prepare and send ANSI/NIST compliant responses for all appropriate Transactions received at the OC ABI Systems (i.e., from live scans, card scans, LARS, etc.). If the Transaction failed to pass the various checks above then the OC ABI System will have produced an error message in the stages above. This section deals with requirements for Transactions processed at the OC ABI System without errors and the OC ABI System processing of all responses received from CalDOJ, the FBI or other external systems – with or without errors. **Note well:** OCCL will not retain applicant Transactions in the archive beyond the time required for successful end-to-end processing at local, State, and Federal levels.

Table 7 WF01: Cal-ID Identification Services Output Requirements

| Requirement ID # | Requirement |
|------------------|---|
| WF01OutReq001 | The OC ABI System shall automatically generate and return the appropriate response for the ingested TOTs per the processing parameters back to the originating agency address as specified in the OC ORI table. The responses will contain the originating TCN in the Transaction Control Reference (TCR) and the response TCN will contain the originating TCN followed by a unique incident number. Where the subject was successfully searched the responses will contain the results (for Match and No-match) and the resulting OCN. |
| WF01OutReq002 | The OC ABI System shall automatically forward authorized external system responses onto LARS and the originating agency per BisRule011 by adjusting the ORI and DAL of the Transaction. |
| WF01OutReq003 | Upon receipt of a successful search (i.e., non error) response from all systems searched, the OC ABI System shall automatically delete applicant Transactions from the archive, temporary storage and queues while retaining the logs and the responses received per BisRule011. |
| WF01OutReq004 | The OC ABI System shall automatically log all Transactions and responses per BisRule007 and BisRule011. |

3.2.2 Functional Requirements –WF02– Tactical Services

This section outlines the functional requirements for the various inputs, processing, and outputs of tactical services. Given the tactical nature of these electronic Transactions and the criticality of receiving a rapid response, this workflow selectively bypasses manual verifications and relies on automated identification decisions.

For most of the tactical TOTs in this workflow, the OC ABI System will return one of the following, as appropriate:

- A match response when there is only one subject/OCN automatically matched and conditionally the subject's most recent facial images
- A response with up to the top 5 candidates and, if available, each of the candidates' most recent facial image(s)
- A no match response

OC ABI System Requirements Specification

These Transactions will be processed as quick turnaround Transactions. The default priority will be set by the OC ABI System processing parameters per TOT, ORI and LSID per BisRule011. For example, a TPIS from an outside AFIS ORI such as Western Identification Network (WIN) or another California county will generally be defaulted to the lowest priority of nine, but when an OC Mobile ID device is submitting a TPIS or a DNA pre-booking Transaction, these will generally be set to the highest priority of one.

Those Transactions that comply with the parsing criteria will be conditionally stored in the ANSI/NIST Archive and forwarded onto the match process.

Table 9 WF02: Tactical Services Input Requirements

| Requirement ID # | Requirement |
|------------------|--|
| WF02InputReq001 | <p>The OC ABI System shall be able to:</p> <ol style="list-style-type: none"> 1. Ingest EBTS Tactical Transactions initially listed in Table 8 using BisRule011 2. Parse for compliance with the selected EBTS Transaction definitions per the processing parameters for the submitted TOT, ORI and LSID, then log the results and the processing parameters 3. Check for adherence to annotations for missing images <p>The OC ABI System will return the appropriate NIST error response with detailed error descriptions per CA/FBI guidelines for those that fail step 2 or 3 above.</p> |
| WF02InputReq002 | The OC ABI System shall forward the acceptable Transactions onto the OC ABI System for Processing. |
| WF02InputReq003 | The OC ABI System shall generate and store in the Transaction the NFIQ scores, if not already present, for each finger (rolled and/or flats) and any other vendor utilized Image Quality Assignment algorithm(s) per BisRule013. |
| WF02InputReq004 | The OC ABI System shall selectively store all successfully ingested Transactions in the ANSI/NIST Archive per BisRule007 and BisRule011. |

3.2.2.2 WF02 Processing

The OC ABI System will process Tactical Transactions received from internal and external interfaces. The fingerprint images will be feature extracted and searched “without add” to the repository, but will be conditionally retained in the ANSI/NIST Archive per the processing parameters. Matcher result candidates will be made available to the originator via EBTS responses. The logs and ANSI/NIST Archive will be updated for each exchange.

The DNS pre-booking search will follow the CalDOJ guidelines described in the introduction to Section 3.2.2.

For TOTs other than DNS, when a 1:n matcher score is above a settable auto-match score [Threshold 2] the System can declare a “match”. A separate 1:n search threshold [Threshold 3] below which all 1:n scores are indicative of a “no match” will also be settable. Independent of any “lights out” decisions, the system will always create and save a verification package for potential review and use in investigations.

Table 10 WF02: Tactical Services Processing Requirements

| Requirement ID | Requirement |
|----------------|--|
| WF02ProcReq001 | The OC ABI System shall “feature extract” the fingerprint images. |
| WF02ProcReq002 | The OC ABI System shall create appropriate internal TP-TP searches for the matchers per BisRule011. |

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| | |
|----------------|--|
| WF02ProcReq003 | The OC ABI System shall automatically execute all searches created in [WF02ProcReq002]. |
| WF02ProcReq004 | The OC ABI System shall create a verification package and move it to a verification queue per BisRule004. |
| WF02ProcReq005 | The OC ABI System shall provide support for examiners to review candidates for searches selected from the queue for up to an adjustable period of time after the results have been returned to the submitter. For audit and problem resolution, the OC ABI System shall allow examiners to selectively pick a Transaction from the completed Verification queue and then present the first images from the selected Transaction within 4 seconds and all images within 30 seconds of the selection, for both the search prints and the candidates, per BisRule004. |
| WF02ProcReq006 | The OC ABI System shall conditionally forward the Transactions onto CalDOJ, the FBI or other cross-jurisdictional systems per the processing parameters for the ingested TOT, ORI and LSID and match results per BisRule005 and BisRule011, as well as the following: <ul style="list-style-type: none"> • When the TOT is DNS and there is confirmed match on OCN that also contains a CII the OC ABI System will forward the DNS TOT onto CalDOJ. • When the Transactions are conditionally forwarded onto CalDOJ, CalDOJ will conditionally forward them onto the FBI or other cross-jurisdictional systems. |
| WF02ProcReq007 | The OC ABI System shall store an original copy of Transactions forwarded in the ANSI/NIST Archive per BisRule007 and BisRule011. |
| WF02ProcReq008 | The OC ABI System shall ingest all NIST response Transactions from CalDOJ, FBI, DHS, and any other authorized systems where an OC tactical search was forwarded. |
| WF02ProcReq009 | The OC ABI System shall automatically log all search Transactions results to include the original Type-1 and Type-2 Fields, time received, time at end of processing, and the response message. |
| WF02ProcReq010 | The OC ABI System shall log an error condition with explanation(s) when external system(s) returns any error responses, rejects the Transaction, or does not return expected response(s) within a specified period per BisRule011. |

3.2.2.3 WF02 Outputs

The OC ABI System will prepare and send NIST compliant responses for all appropriate Transactions received at the OC ABI System. If the Transaction failed to pass the various checks above, then the OC ABI System will have produced an error message in the stages above. This section deals with requirements for Transactions processed at the OC ABI System with and without errors and the OC ABI System processing of all responses received from CalDOJ, the FBI or other external Systems.

*OC ABI System Requirements Specification***Table 11 WF02: Tactical Services Output Requirements**

| Requirement ID | Requirement |
|----------------|--|
| WF02OutReq001 | <p>The OC ABI System shall automatically generate and return the appropriate response for the ingested TOTs per BisRule011 back to the originating agency address as specified in the OC ORI table, and conditionally forward them on to CalDOJ and/or the FBI per BisRule005:</p> <ol style="list-style-type: none"> 1. For all TOT's other than DNS, <ol style="list-style-type: none"> a. For successfully searched Transactions, responses are to include the top five candidates above Threshold 3 with one facial image for each candidate, if available. b. If there are no candidates above Threshold 3 then return a no-candidate response and notification in the message field if the Transaction is being forwarded onto CalDOJ and/or the FBI, if appropriate. 2. For DNS TOT <ol style="list-style-type: none"> a. For successfully searched Transactions with a single OCN candidate result above Threshold 2, a match response is to be returned with the CII from the MCI, if available, and a notification in the message field that the Transaction is or is not being forwarded to CalDOJ and/or the FBI. b. For successfully searched Transactions with more than one candidate result above Threshold 2, then return a no-candidate response and notification in the message field if the Transaction is being forwarded onto CalDOJ and/or the FBI. c. If there are no candidates above Threshold 2 then return a no-candidate response and notification in the message field if the Transaction is being forwarded onto CalDOJ and/or the FBI. |
| WF02OutReq002 | <p>The OC ABI System shall automatically forward authorized external system responses (candidates or errors) onto the originating agency per processing parameters by adjusting the DAI of the Transaction and logging them per BisRule007 and BisRule011.</p> |

3.2.3 Functional Requirements –WF03– Tenprint Maintenance

This section outlines the functional requirements for the various inputs, processing, and outputs of tenprint maintenance services. Tenprint maintenance covers a myriad of services and the workflow is not a traditional one with a start point, decisions-based branches, and a well-defined end point. Rather, administrators and supervisors can enter the maintenance function to perform one or more of the following activities:

- Image updates
- Delete or seal records
- Add subsequent updates to an already enrolled Transaction

3.2.3.1 WF03 Inputs

Delete or Seal Records: This tenprint maintenance Transaction can be created dynamically by the tenprint supervisor using the OC ABI System's internal commands. The Transactions will be logged and auditable.

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Subsequent Updates: This tenprint maintenance Transaction will be electronically submitted as a CA-EBTS Transaction when the submitting agency determines that a factual error was made in the original Transaction (e.g., the wrong sex was marked for a subject). The Transactions will be logged and added to the archive.

Note well: The baseline system requirements do not include any requirements for a formal facial image biometric search capability – beyond supporting photo and SMT retrieval requests based on OCN, or biographic and demographic attributes.

Table 12 lists the TOTs associated with Workflow 03.

Note well: “Delete and Seal” Transactions start from a control screen and do not have their own TOTs.

Table 12 WF03: Tenprint Maintenance Services TOTs Supported

| TOT | Transaction Name |
|-----|-------------------|
| SUP | Subsequent Update |

The OC ABI System ingested Transactions will be parsed for compliance with the CalDOJ EBTS or external FBI EBTS depending on the originating TOT, ORI and LSID. Transactions that fail the parsing test will be logged and returned to the originating agency with a corresponding NIST error response.

Those Transactions that comply with the parsing and contain friction ridge images will be checked for image quality (including calculating and saving the individual rolled finger NFIQ scores and performing sequence checks, if appropriate to the number and nature of images in the Transaction).

Then the Transactions will be conditionally preserved indefinitely in ANSI/NIST Archive (repository) of Transactions per BisRule007.

Table 13 WF03: Tenprint Maintenance Services Input Requirements

| Requirement ID # | Requirement |
|------------------|--|
| WF03InputReq001 | The OC ABI System shall be able to: <ol style="list-style-type: none"> Ingest EBTS Transactions as listed in Table 12 Parse for compliance with the selected EBTS Transaction definitions per the processing parameters for the submitted TOT, ORI and LSID, then log the results and the processing parameters per BisRule011 Check for adherence to annotations for missing images The OC ABI System will return the appropriate NIST response with detailed error descriptions per CA/FBI guidelines for those that fail step 2 or 3 |
| WF03InputReq002 | The OC ABI System shall generate and store NFIQ scores for each finger (rolled and/or flats) and any other vendor utilized image quality assignment algorithm(s) and generate and store any Palm image quality assignment algorithm(s) and the generated score for each palm image – all per BisRule013. |
| WF03InputReq003 | The OC ABI System shall automatically assign pattern classification(s) to each finger image (whorl, right loop, left loop, arch and/or unknown) image to be updated. |
| WF03InputReq004 | The OC ABI System shall reject any Transaction that fails the image quality checks, per processing parameters based on the ingested TOT, ORI and LSID, all others will continue through maintenance processing. |

OC ABI System Requirements Specification

| Requirement ID # | Requirement |
|------------------|---|
| WF03InputReq005 | The OC ABI System shall be able to respond to rejected Transactions via an EBTS error Transaction (corresponding response error TOT for the ingested TOT, ORI and LSID), see Appendix A. |
| WF03InputReq006 | The OC ABI System shall forward the acceptable Transactions onto the OC ABI System Processing. |

3.2.3.2 WF03 Processing

The OC ABI System will process maintenance Transactions received from internal and external interfaces.

Delete or Seal Records: The OC ABI System will support the tenprint supervisor in selecting Transactions to be deleted or sealed using a workstation command screen. The OC ABI System will perform the requested action and mark the records as sealed or deleted.

- In the case of sealed records, the record will remain in the Archive but not be accessible through any search mechanism (e.g., TCN or OCN search) other than by the supervisors and the records will be removed from the matchers to include removal from any composite, best image set.
- In the case of deleted records, the records will be removed from the Archive and the matchers to include removal from any composite, best image set seven days after the request is submitted. The log will be updated to reflect the action taken, the reason for it, and the name of the person who took the action.
- It is understood that copies of sealed and deleted records will exist for a period of time in backup files. Over time, as routine full system backups are created these records will reflect the current system status of sealed or deleted.

Subsequent Updates: The OC ABI System will permit these updates to change a record only after fingerprint based verification of the subject's identity per BisRule007 the Final Transaction will be archived and linked to the appropriate OCN. If the original Transaction was forwarded to CalDOJ then these Transactions will be forwarded to CalDOJ.

Table 14 WF03: Tenprint Maintenance Services Processing Requirements

| Requirement ID | Requirement |
|----------------|---|
| WF03ProcReq001 | The OC ABI System shall "feature extract" all friction ridge images. |
| WF03ProcReq002 | The OC ABI System shall : <ol style="list-style-type: none"> 1. Create appropriate internal 1:1 TP-TP search requests per BisRule011 2. Automatically cascade TP-LT and KP-PLT internal reverse latent searches based on BisRule011. |
| WF03ProcReq003 | The OC ABI System shall automatically execute all searches created in WF03ProcReq002. |
| WF03ProcReq004 | If the TP-TP matcher score for a searched 1:1 candidate is above a settable threshold [Threshold 1] then the OC ABI System shall automatically declare a match on that Transaction and submit it for further maintenance processing. |
| WF03ProcReq005 | If the matcher score for a 1:1 search is below a settable threshold [Threshold 1], the OC ABI System shall automatically queue the results for verification. |
| WF03ProcReq006 | If the result of the verification is not a match, the OC ABI System shall so mark the Transaction. |
| WF03ProcReq007 | The OC ABI System shall provide the tenprint supervisor with a command |

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| Requirement ID | Requirement |
|----------------|---|
| | <p>screen that permits records to be selected by OCN and TCN and seal them at the OCN or TCN level by:</p> <ol style="list-style-type: none"> 1. Marking all copies in the Archive inaccessible to anyone through any search mechanism (e.g., TCN or OCN search) other than authorized supervisors. 2. Removing all feature sets associated with the sealed Transaction from the matchers to include from any composite, best image sets. 3. Conditionally forward a Biometric Delete (BDEL) Transaction to CalDOJ if the Transaction had previously been submitted there. |
| WF03ProcReq008 | <p>The OC ABI System shall provide the tenprint supervisor with a command screen that permits records to be selected by OCN and TCN and delete them at the OCN or TCN level an adjustable number of days (settable via a system configuration value) after the command is selected, by:</p> <ol style="list-style-type: none"> 1. Deleting all copies in the Archive or any other files on the system. 2. Removing all feature sets associated with the deleted Transaction from the matchers to include from any composite, best image sets. 3. Conditionally forward the BDEL Transaction to CalDOJ if the Transaction had previously been submitted there. |
| WF03ProcReq009 | <p>If the search results in a match [WF03ProcReq004] and the TOT = SUP, the OC ABI System shall automatically:</p> <ol style="list-style-type: none"> 1. Update the record's information in all system locations to include the ANSI/NIST Archive per BisRule007 all copies in the Archive inaccessible to anyone other than authorized supervisors. 2. Forward the Transaction to CalDOJ, if the original Transaction was submitted to CalDOJ per BisRule005. |
| WF03ProcReq010 | <p>The OC ABI System shall store an original copy of all Transactions forwarded in the ANSI/NIST Archive per BisRule007 and BisRule011.</p> |
| WF03ProcReq011 | <p>The OC ABI System shall store an original copy of all responses received in the ANSI/NIST Archive per BisRule007 and BisRule011.</p> |
| WF03ProcReq012 | <p>The OC ABI System shall update the MCI for each subject enrolled to include links to all successfully processed Transaction TCNs, prepared and received responses, consolidated OCNs, and all ABI System matcher identity tables per BisRule002 and BisRule008.</p> |
| WF03ProcReq013 | <p>The OC ABI System shall automatically log all maintenance Transaction results to include the original Type-1 and Type-2 Fields, time received, time at end of processing per BisRule007 and BisRule011.</p> |
| WF03ProcReq014 | <p>The OC ABI System shall permit the supervisor(s) to select and review all Transactions marked for deletion that have not yet been deleted and selectively remove them from the delete queue.</p> |
| WF03ProcReq015 | <p>If the TOT = SUP, the OC ABI System shall update the ANSI/NIST Archive searchable indices using all of the text data fields contained in the Transaction for forensic/administrative demographic searches per BisRule011.</p> |
| WF03ProcReq016 | <p>If the TOT = SUP, the OC ABI System shall log an error condition with explanation(s) when external system(s) returns error responses, manual or automatically rejects the Transaction and/or does not return expected response(s) within a specified period per BisRule011.</p> |
| WF03ProcReq017 | <p>If the TOT = SUP, the OC ABI System shall provide support for examiners to review candidates for searches selected from the queue for a period of</p> |

OC ABI System Requirements Specification

| Requirement ID | Requirement |
|----------------|--|
| | time after the results have been returned to the submitter. The OC ABI System shall allow examiners to selectively pick a Transaction from the completed Verification queue and present the first image within 4 seconds and all images within 30 seconds of the selected Transaction, for both the search prints and the candidates, per BisRule004. |

3.2.3.3 WF03 Outputs

The maintenance requests produce output when they are parsed and quality checked upon ingesting and when problems are encountered during processing. There are no other outputs from the workflow.

Table 15 WF03: Tenprint Maintenance Services Output Requirements

| Requirement ID | Requirement |
|----------------|---|
| WF03OutReq001 | The OC ABI System shall automatically generate and return the appropriate response for the ingested TOT(s), per the processing parameters, back to the originating agency address as specified in the OC ORI table: <ol style="list-style-type: none"> For successfully matched Transactions, responses include the successfully matched OCN. If there is no matching candidate, return an Error response. |
| WF03OutReq002 | The OC ABI System shall automatically forward authorized external system responses onto the originating agency per processing parameters by adjusting the ORI and DAI of the Transaction. |
| WF03OutReq003 | The OC ABI System shall automatically log all Transactions and responses per BisRule007 and BisRule011. |

3.3 OC ABI System NIST Image Services

Cal-ID NIST Image Services supports authorized internal and external requests for tenprint and/or latent records and images from the OC ABI System ANSI/NIST Archive. This includes another sub workflow that:

- 1) Manages OC agencies' requests for ANSI/NIST records and images from other AFIS such as CalDOJ, FBI, and WIN
- 2) Accepts the external system responses and forwards those responses back to the originator

3.3.1 Functional Requirements –WF04– NIST Image Retrieval

This section outlines the functional requirements for the various inputs, processing, and outputs of NIST image retrieval services.

3.3.1.1 WF04 Inputs

This workflow permits authorized OC ABI System examiners and other authorized external AFIS examiners to retrieve NIST conformant image sets and archived NIST responses (e.g., in support of audit trail investigations) from the OC ABI System as well as from the CalDOJ AFIS system and the FBI.

For a known subject record/image request from the OC ABI System, the originator will send the OCN, TCN/BKN (booking number), CII and/or FBI number associated with the subject and/or for a specific event. For latent record/image requests from the OC ABI System the submitter will

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send the Latent Case Number and lift number, and/or TCN associated with the latent and/or for a specific event.

Additionally, this workflow also permits authorized OC examiners to forward Image Retrieval requests to other AFIS using the local agency ID, LCMS, CII and/or FBI number associated with the record from the other AFIS. The Transaction can be launched for the following reasons:

1. To determine whether a better fingerprint image can be obtained for use in 3.2.3 Functional Requirements –WF03– Tenprint Maintenance
2. To launch a search with the returned image using 3.2.1 Functional Requirements –WF01 – Tenprint Normal
3. To determine whether a fingerprint, palmprint or latent image is available to use in a latent case analysis using 3.4.2 Functional Requirements –WF06– Forward Latent Services
4. To determine whether a mug shot is available for use in a digital lineup (please note creating the digital lineups is a process entirely outside of the OC ABI System scope)

Table 16 WF04: Image Retrieval TOTs Supported

| Type of Transaction | Transaction Name |
|---------------------|---|
| CPR | Photo Request Note Well: biometric photo matching is not implemented in the baseline OC ABI System. |
| IRQ | NIST Image Request |

Image retrieval and audit trail Transactions are submitted by tenprint examiners, latent examiners, and system administrators. All image retrieval and audit trail Transactions will be parsed for compliance with the corresponding CA/FBI EBTS. Transactions that fail the parsing test will be logged and returned to the submitted agency with the appropriate error response. Successful Transactions (i.e., those that pass the parser checks) will be stored in the ANSI/NIST Archive.

Table 17 WF04: NIST Image Retrieval Services Input

| Requirement ID # | Requirement |
|------------------|---|
| WF04InputReq001 | The OC ABI System shall provide the ability to create Transactions as listed in Table 16 using pull-down menus or manually entering the Type-1 & 2 Fields. |
| WF04InputReq002 | The OC ABI System shall be able to: <ol style="list-style-type: none"> 1. Ingest EBTS Transactions as listed in WF04InputReq001 or directly from internal and external cross-jurisdictional systems 2. Parse for compliance with the selected EBTS Transaction definitions for the submitted TOT, ORI and LSID per processing parameters 3. The OC ABI System will return the appropriate NIST response with detailed error descriptions per CA/FBI guidelines for those that fail step 2 above |
| WF04InputReq003 | The OC ABI System shall record in a log the results of each EBTS Transaction ingested, including processing parameters. |
| WF04InputReq004 | The OC ABI System shall record a copy of each ingested Transaction in the ANSI/NIST Archive in the fully EBTS compliant form in which it was received pursuant to BisRule007. |
| WF04InputReq005 | The OC ABI System shall forward the acceptable Transactions onto the OC ABI System Processing. |

*OC ABI System Requirements Specification***3.3.1.2 WF04 Processing**

The OC ABI System will process image retrieval Transactions received from the internal and cross-jurisdictional systems when authorized. The Transaction will be processed locally and then conditionally forwarded to CalDOJ, the FBI, or other systems as appropriate.

Table 18 WF04: NIST Image Retrieval Services Processing Requirements

| Requirement ID # | Requirement |
|------------------|---|
| WF04ProcReq001 | The OC ABI System shall process the EBTS Transactions from WF04InputReq005 and determine whether the requested image information is available on the OC ABI System. |
| WF04ProcReq002 | If the image is not available, the OC ABI System shall conditionally forward image retrieval request Transactions onto CalDOJ, the FBI's NGI system or other repositories. |
| WF04ProcReq003 | The OC ABI System shall be able to ingest the corresponding responses from CALDOJ, the FBI and other cross-jurisdictional systems. |
| WF04ProcReq004 | The OC ABI System shall use the response information from the OC ABI System and other systems interfaced to update the Transaction log. |

3.3.1.3 WF04 Output

The OC ABI System will prepare responses to all Transactions received.

Table 19 WF04: NIST Image Retrieval Services Output Requirements

| Requirement ID # | Requirement |
|------------------|---|
| WF04OutReq001 | The OC ABI System shall automatically generate and return the appropriate response for the ingested TOTs, per the processing parameters, back to the originating agency address as specified in the OC ORI table. The responses will contain the originating TCN in the TCR and the Response TCN will contain the originating TCN followed by a unique incident number. Where the subject was successfully found the responses will contain the results. |
| WF04OutReq002 | The OC ABI System shall automatically forward authorized external system responses onto the originating agency per processing parameters by adjusting the ORI and DAI of the Transaction. |
| WF04OutReq003 | The OC ABI System shall automatically log all Transactions and responses per BisRule007 and BisRule011. |

3.4 OC ABI System Forensic Services

As delineated in Table 2 the Forensic Services includes two workflows and the Latent Case Management System functionality (LCMS). Each workflow is defined and the requirements are stated in this section:

- WF05 Reverse Latent Search Responses
- WF06 Forward Latent Services
- LCMS Latent Case Management System

3.4.1 Functional Requirements –WF05–Reverse Latent Search Responses

This section outlines the functional requirements for the various inputs, processing, and unsolicited outputs of Reverse Latent Searches. Identification Transactions containing fingerprint or palmprint records are conditionally reverse-searched against the OC unsolved latent files –

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known as a cascaded search. This conditionally happens for all Tenprint Identification and Tenprint Maintenance Transactions from any source. The cascading conditionally occurs in Tenprint WF01 and WF03.

3.4.1.1 WF05 Inputs

The Reverse Latent Search results will be electronically transmitted as CA-EBTS or FBI EBTS files. The input TOTs associated with Workflow 05 are listed below. They can originate at the OC ABI System, CalDOJ, or the FBI's NGI system. If they start at OC, they are sent to the appropriate Originator system address. If they originate at the CalDOJ or the FBI, they are forwarded onto the Originator system address where the latent was enrolled in the unsolved latent file.

Table 20 WF05: Reverse Latent Search Input TOTs Supported

| TOT | Transaction Name |
|-----|--------------------------------|
| ULM | Unsolved Latent Match Response |

Table 21 WF05: Reverse Latent Services Input Requirements

| Requirement ID | Requirement |
|-----------------|--|
| WF05InputReq001 | The OC ABI System shall be able to ingest, EBTS Transactions as listed in Table 20 as responses from searches made in response to WF01ProcReq002 and WF03ProcReq002. |
| WF05InputReq002 | The OC ABI System shall be able to ingest EBTS Transactions as listed in Table 20 as responses from CalDOJ or the FBI/NGI from OC latent's registered in those system(s). |
| WF05InputReq003 | The OC ABI System shall record in a log the results of each Transaction ingested. |

3.4.1.2 WF05 Processing

When an unsolved latent match response is received from the OC ABI System, CalDOJ or the FBI, the Transaction is logged, added to the ANSI/NIST Archive, and forwarded to the appropriate originating examiner system address via the LCMS. It is anticipated that only one candidate will be returned per ULM Transaction.

Table 22 WF05: Reverse Latent Services Processing Requirements

| Requirement ID | Requirement |
|----------------|--|
| WF05ProcReq001 | The OC ABI System shall record a copy of each ingested Transaction in the ANSI/NIST Archive in the fully EBTS compliant form in which it was received. |
| WF05ProcReq002 | The OC ABI System shall create an LCMS entry in the appropriate verification work queue for each Transaction listed in Table 20 that is received. |
| WF05ProcReq003 | The OC ABI System shall support examiners in selectively picking a Transaction from the Verification queue. |
| WF05ProcReq004 | The OC ABI System shall support the examiners in the verification of candidates for searches selected from the queue by providing the associated friction ridge images of the verification Transaction selection (reverse search print and original latent image) within 4 seconds for central site workstations and within 35 seconds for remote workstations. |
| WF05ProcReq005 | The OC ABI System shall support the examiners in the verification of candidates for searches selected from the queue and to selectively image |

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| Requirement ID | Requirement |
|----------------|---|
| | process the original image and the candidate image separately or in synchrony (i.e., zoom, magnify, rotate, contrast adjust, brightness adjust, reverse black and white, apply gamma correction, mirror (horizontal or vertical), sharpen/un-sharpen, mark points of similarity, apply false color encoding based on image density, and generate histograms). |
| WF05ProcReq006 | The OC ABI System shall permit the examiners to print (1) any candidate latent image with case number and image number as well as time and date printed and/or (2) the search fingerprint/palmprint set with Type-1 and Type-2 data pursuant to BisRule009. |
| WF05ProcReq007 | The OC ABI System shall support the forensic examiner selectively declaring a match, returning the Transaction to the work queue, or queuing the Transaction for another OC examiner for consultation. |
| WF05ProcReq008 | The OC ABI System shall automatically log all reverse friction ridge search Transactions and the steps taken, the examiners involved, and the search results in the LCMS. |
| WF05ProcReq009 | The OC ABI System shall selectively support the preparation of court presentations when a match is found in any reverse latent search. |
| WF05ProcReq010 | The OC ABI System shall automatically log all reverse latent search Transactions and the examiners' results in the system log and LCMS. |
| WF05ProcReq011 | The OC ABI System shall support the forensic examiner in selectively marking the match results to be sent back to the originating agency. |
| WF05ProcReq012 | The OC ABI System shall create a Work Queue that displays for operator review the resulting responses from CalDOJ, FBI, DHS and any other interfaced AFIS. |

3.4.1.3 WF05 Outputs

The OC ABI System will permit the examiner to document the results of the examination of the ULM and associated friction ridge material.

Table 23 WF05: Reverse Latent Searches Services Output Requirements

| Requirement ID | Requirement |
|----------------|--|
| WF05OutReq001 | The OC ABI System shall automatically prepare a LCMS report for all reverse latent searches. |
| WF05OutReq002 | The OC ABI System shall support the examiner in selecting to (1) mark the case as closed, (2) mark the latent image as matched, or (3) simply save and exit the LCMS file. |
| WF05OutReq003 | The OC ABI System shall maintain a searchable log of all reverse latent searches submitted to the OC ABI System by external systems from the OC ABI System |
| WF05OutReq004 | The OC ABI System shall automatically generate and return a BDEC per the processing parameters and examiners direction back to the originating agency address as specified in the OC ORI table. The responses will contain the originating TCN in the TGR and the Response TCN will contain the originating TCN followed by a unique incident number. Where the subject was reviewed by an examiner the responses will contain the results. |
| WF05OutReq005 | The OC ABI System shall be able to ingest external BDEC system responses from CalDOJ, the FBI (BDEC and ERRA TOTs). |
| WF05OutReq006 | The OC ABI System shall automatically log all Transactions and responses per BisRule007 and BisRule011. |

*OC ABI System Requirements Specification***3.4.2 Functional Requirements –WF06– Forward Latent Services**

Forward latent searches use latent fingerprint and palmprint samples collected at crime scenes and disaster victim fingerprints, as well as fingerprints from deceased subjects collected by morgues or from the ANSI/NIST Archive, to determine whether the subject has been previously encountered and enrolled in the OC ABI System. External systems, both Universal Latent Workstations (ULW) and cross-jurisdictional agencies having an agreement with OCCL Cal-ID, can also submit forward latent searches.

3.4.2.1 WF06 Inputs

Table 24 lists the input TOTs for Workflow 06

Table 24 WF06: Forward Latent Search TOTs Supported

| TOT | Transaction Name |
|------|------------------------------------|
| LFFS | Latent Fingerprint Features Search |
| LFIS | Latent Fingerprint Image Search |

Collection will typically start with:

1. A crime scene technician or investigator collecting images or other friction ridge samples at a crime scene
2. A forensic specialist examining an item of evidence (e.g., a handgun) and imaging a latent fingerprint or palmprint
3. A Coroner investigator or forensic technician collecting friction ridge samples from a deceased person
4. A disaster response team providing DVI services where fingerprints are typically harvested from whatever portions of a hand that can be found and used – this is different from an Identification Service search of good quality tenprints collected at the morgue post mortem using the Deceased (DCD) TOT for a TP-TP Identification search.

For each case, along with an image, other case-related information will be supplied, such as date collected, unique identification number of the image or sample, the point of contact where results should be reported, collection location, crime type or morgue case type, etc. The original latent sample will be entered into an OCCL controlled library (currently part of the LIMS system) and then the images (to include scanned lifts) and information will be entered through an OC ABI System workstation or transmitted from the LIMS to the LCMS, via ANSI/NIST compliant packages.

The LCMS will provide tracking of the processing of the latent through all searches to include maintaining a log of searches, image processing, candidates, etc. The LCMS will provide the ability for examiners to query status and other attributes of latent Transactions and cases as well as to return to open cases as often and whenever they see fit. Transactions entered through any Universal Latent Workstations (ULW) and external systems will be entered through the LCMS for tracking and reporting purposes.

Through an OC ABI System search, the OC ABI System will be able to support the determination of whether the subject who left latent friction ridge detail is a “known” person (i.e., a subject that has an ABI System Identity assigned to it at OC, CalDOJ or other external system). The ability to perform successful searches, of course, depends in large part on the quality and size of the latent sample submitted for searching as well as on the skill of the latent examiner.

*OC ABI System Requirements Specification***Table 25 WF06: Forward Latent Services Input Requirements**

| Requirement ID # | Requirement |
|------------------|---|
| WF06InputReq001 | The OC ABI System shall support the examiners in creation of a new case in the appropriate LCMS to include entering data in the case information fields [LCMSReq001] as well as the following image fields per image: <ol style="list-style-type: none"> 1. Latent collection location. 2. "Method of Processing" using a pull-down menu. |
| WF06InputReq002 | The OC ABI System shall support the ingesting of digital images from LIMS, network servers, or portable digital storage devices such as flash memory and CD-ROMs with latent fingerprints or palmprints captured at various scales as Type-13 records, with an option to save a copy as a Type-20 record, into a specific case using a pull-down menu or other means to select from cases associated with the examiner's agency. |
| WF06InputReq003 | The OC ABI System shall support the scanning and saving of latent friction ridge material into a specific case using a pull-down menu or other means to select from cases associated with the examiner's agency as follows: <ul style="list-style-type: none"> • as a Type-20 (optionally) record • at 1:1 scale • at 1,000 ppi • in 8-bit gray scale • using a capture box that can be adjusted up to 3 inches by 3 inches to select and save region(s) of interest into Type-13 record(s) |
| WF06InputReq004 | The OC ABI System shall support the ingesting of crime scene and object reference images captured by digital cameras for use in the LCMS into a specific case using a pull-down menu or other means to select from cases associated with the examiner's agency and save them as Type-21 and Type-20 record(s) respectively. |
| WF06InputReq005 | The OC ABI System shall support the ingesting of latent case textual information linked to a latent image as Type-1 and 2 fields from a NIST file or the keyboard into a specific case using a pull-down menu or other means to select from cases associated with the examiner's agency. |
| WF06InputReq006 | The OC ABI System shall support the scanning of inked fingerprints into Type-13 images at 1,000 ppi, 8-bit gray scale for searches using the latent matcher algorithms. |
| WF06InputReq007 | Reserved |
| WF06InputReq008 | The OC ABI System shall ingest LFFSs submitted from ULW software executing on a latent workstation, or by cross-jurisdictional submitters and after logging them into the LCMS, setting them for auto run. |
| WF06InputReq009 | The OC ABI System shall update the LCMS and ABI System logs with the results of each step in the forensic services input process. |

3.4.2.2 WF06 Processing

The OC ABI System will forward the latent Transactions with the impression and tracking information to the LCMS for forensic processing as an LFFS Transaction type. The OC ABI System/LCMS will queue the latent Transaction for a latent examiner to select and process. The examiner will perform pre-search steps (rotate, crop, mark and edit minutiae, etc.) before submitting a search. This will be performed using latent editing software integrated into the OC ABI System software, to include Photoshop™ - for details see Form and Fit Requirements in Section 4.

The examiner will be able to limit the search by crime type, finger or palm position, geographical region where the crime was committed, and other traditional parameters or elect to use no search

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limitations. The OC ABI System will search the record against known records as well as against unsolved latent records.

If the Transaction originated from a ULW or cross-jurisdictional partner, it will be auto-launched without any examiner action – as a lights-out remote search. Since the OC ABI System will not know whether the remote submitter made an identification, these Transactions will not be automatically forwarded to the FBI – but rather the agency will have to resubmit them for forwarding. Cross-jurisdictional partners will not use the OC ABI System to forward searches to the FBI or other systems, as they have their own hierarchical paths to that service.

The known record files for latent searches to run against, sometimes referred to as the “latent cognizant files,” will contain up to three instances of known fingerprints and one set of best palmprint images enrolled in the system.

In cases where latent to latent searches lead to possible association(s), the examiner will be able to mark the candidate(s) as being of “investigatory value”, meaning that no definitive forensic conclusion(s) will be made; however, the marked candidate(s) may provide investigative leads for law enforcement investigative units.

Table 26 WF06: Forward Latent Services Processing Requirements

| Requirement ID # | Requirement |
|------------------|--|
| WF06ProcReq001 | The OC ABI System shall automatically queue the latent Transaction within the LCMS. |
| WF06ProcReq002 | The OC ABI System shall permit a forensic examiner to select a Transaction for preprocessing from the work queue or from unsolved Latent files (LT or PLT). |
| WF06ProcReq003 | The OC ABI System shall support the preprocessing of Type-13 latent images to include Photoshop-based image processing (such as, calculate and adjust scale and resolution using any ruler in the image or a ruler-type tool in the software, zoom, magnify, rotate, contrast adjust, brightness adjust, reverse black and white, apply gamma correction, apply a Fast Fourier Transform (FFT), mirror (horizontal or vertical), sharpen/unsharpen, mark features, apply false color encoding based on image density, generate histograms, and select a region of interest) and save the results to LCMS. |
| WF06ProcReq004 | The OC ABI System shall selectively export from the LCMS the Type-13 for preprocessing on another system. |
| WF06ProcReq005 | The OC ABI System shall import to the LCMS Type-13 images that were preprocessed on other systems (e.g., ULW workstations). |
| WF06ProcReq006 | The OC ABI System shall support examiners in selectively saving and exiting the latent file or submitting it for extraction. |
| WF06ProcReq007 | The OC ABI System shall support the auto-extraction of features from LCMS Transactions and save the results to the LCMS. |
| WF06ProcReq008 | The OC ABI System shall support the manual review and editing of features [WF06ProcReq007] by an examiner and save the results to the LCMS. |
| WF06ProcReq009 | The OC ABI System shall support the creation/editing of search parameters such as selective geographic location (state, multiple states, or county), crime type(s), a specific subject (e.g., a suspect in the case), pattern type, hand, or finger position, to include candidate list length (up to 250 candidates) using pull-down menus. |
| WF06ProcReq010 | The OC ABI System shall support the Transaction of forward latent searches selectively against any combination of known fingerprints, palmprints, and unsolved latents on the OC ABI System where the known fingerprints include all enrolled exemplars – both rolled and plain impressions. |

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| Requirement ID # | Requirement |
|------------------|--|
| WF06ProcReq011 | The OC ABI System shall automatically search the submitted forward latent searches from [WF06ProcReq010]. |
| WF06ProcReq012 | The OC ABI System shall automatically search the submitted forward latent searches from [WF06ProcReq010] against the appropriate unsolved latent repository (LT-LT/PLT-PLT) per BisRule011. |
| WF06ProcReq013 | The OC ABI System shall build candidate lists of possible matches to forward searches and queue them for forensic examiners to select for verification; candidate Type-2 information will include sex, DOB, and complete pattern type list in conformance to BisRule001. |
| WF06ProcReq014 | If the latent case was a remote, lights-out search, the OC ABI System shall automatically forward the candidate list to the submitting agency with the images of the top candidate(s) (a selectable number up to 10). |
| WF06ProcReq015 | The OC ABI System shall support examiners in selectively picking a Transaction from the Verification queue. |
| WF06ProcReq016 | The OC ABI System shall support the examiners in the verification of candidates for searches selected from the queue by providing the associated friction ridge images, features (search print and first candidate), and a list of Type-2 and record processing history within 4 seconds of the selection for central site workstations and within 35 seconds for remote workstations. |
| WF06ProcReq017 | The OC ABI System shall support the examiners in the verification of candidates for searches selected from the queue and allow them to selectively image process the original image and the candidate image separately or in synchrony (i.e., zoom, magnify, rotate, contrast adjust, brightness adjust, reverse black and white, apply gamma correction, apply FFT, mirror [horizontal or vertical], sharpen/un-sharpen, mark points of similarity, apply false color encoding based on image density, generate histograms, turn on and turn off all minutiae, and display matching minutiae). |
| WF06ProcReq018 | The OC ABI System shall support the forensic examiner in selectively declaring a tentative match, declaring of investigatory value, returning the Transaction to the queue, queuing the Transaction to another examiner for confirmation or advice, or editing and resubmitting the search to include manually editing the feature set. |
| WF06ProcReq019 | The OC ABI System shall support a second forensic examiner selectively selecting a confirmation-verification package independent from the initial examiners determination and using the tools [WF06ProcReq016 and WF06ProcReq017] declaring a match, non-match, or elimination match/non-match; or editing and resubmitting the search to include manually editing the feature set. When the results from the first and second examiner do not match, the Transaction will be automatically queued for a supervisor's review. |
| WF06ProcReq020 | The OC ABI System shall automatically log all forward friction ridge search Transactions and the steps taken, the examiners involved, and the search results in the LCMS. |
| WF06ProcReq021 | The OC ABI System shall support the preparation of court presentations when a match is found in any forensic friction ridge search. |
| WF06ProcReq022 | The OC ABI System shall automatically log all forward latent search Transactions and the examiners' results in the system log and LCMS. |
| WF06ProcReq023 | The OC ABI System shall permit the examiners to print (1) any search latent image (with or without minutiae marked, selectively) with case number and image number as well as time and date printed and/or (2) search latent and any associated candidate fingerprint/palmprint set with Type-1 and Type-2 data pursuant to BisRule009. |

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| Requirement ID # | Requirement |
|------------------|---|
| WF06ProcReq024 | The OC ABI System shall support a supervisor forensic examiner selectively selecting a confirmation-verification package and using the tools [WF06ProcReq016 and WF06ProcReq017] declaring a match, non-match, or elimination match/non-match; or editing and resubmitting the search to include manually editing the feature set. |
| WF06ProcReq025 | The OC ABI System shall support the examiner in selectively creating an LFFS package for any latent image(s) in a case, with the appropriate Type-1, Type-2, Type-9, Type-13 records, and store it in the OC ABI System as an LFFS that can be accessed through the LCMS. |

3.4.2.3 WF06 Outputs

The OC ABI System will prepare responses to all forward latent Transactions received. The examiners will be given the opportunity to forward unsolved latents to CalDOJ and/or the FBI, to add them to the OC unsolved latent file, to edit and resubmit them, or to save them for future work. If there is a match, then the identity of the subject is returned to the submitting agency. If there is no match and the latent sample is selectively added to the unsolved latent file, it will be reverse searched against all subsequent Transactions that include fingerprint and palmprint data. Match reports and status information can be selectively returned to other OCCL systems used by the crime scene technicians and laboratory management. This will permit laboratory managers to integrate the information into status reports, case files, and other databases.

Table 27 WF06: Forward Latent Services Output Requirements

| Requirement ID # | Requirement |
|------------------|---|
| WF06OutReq001 | The OC ABI System shall automatically prepare a LCMS report for all forensic searches that lead to an identification. |
| WF06OutReq002 | The OC ABI System shall support the examiner in selecting to (1) add new unsolved latent to the OC unsolved latent file with a link to the appropriate LCMS record(s), (2) delete the record, or (3) simply save and close the LCMS file. |
| WF06OutReq003 | The OC ABI System shall support the selective forwarding of LFFS Transactions to CalDOJ or the FBI, first using an LPNQ Transaction, if appropriate, or to other systems (e.g., cross-jurisdictional partners) using the EFS or ULW to generate a more appropriate Type-9 record pursuant to BisRule012. |
| WF06OutReq004 | The OC ABI System shall support the ingesting of any response to an LPNQ Transaction (an LPNR TOT) automatically forwarding it to the appropriate LCMS case. |
| WF06OutReq005 | The OC ABI System shall support the ingesting of any response to an LFFS Transaction (SRL or ERRL TOTs) automatically forwarding it to the appropriate LCMS case pursuant to BisRule012. |
| WF06OutReq006 | The OC ABI System shall maintain a searchable log of all forensic Transactions submitted (along with the responses) to the OC ABI System and to external systems in the system log and LCMS. |
| WF06OutReq007 | The OC ABI System shall support the selective forwarding of FBI and other external responses (SRL TOTs) to latent Transactions to the appropriate Verification queue [WF06OutReq006]. |
| WF06OutReq008 | The OC ABI System shall support the selective forwarding of latent case status and results to other OCCL systems such as the Laboratory Information Management System (LIMS) in a NIST formatted Transaction. |

*OC ABI System Requirements Specification***3.4.3 Functional Requirements –LCMS– Latent Case Management System**

The LCMS will be used to ingest and launch searches as described and specified in:

- 3.4.1 Functional Requirements –WF05–Reverse Latent
- 3.4.2 Functional Requirements –WF06– Forward Latent Services

The LCMS will support the latent examiners and system administrators in maintaining the OC ABI System latent files and the LCMS records to include the maintenance of latent cases, images, and reports at the local, CalDOJ and CJIS/NGI levels. Maintenance of latent Transactions submitted to the CalDOJ and the FBI will be via the TOTs in Table 28, and they will be generated by the LCMS.

The OCSD LCMS is a utility to store all search latents, whether enrolled in the OC ABI System unsolved database or not. An OCCL program maintains the original evidence. The OC ABI System LCMS system needs to maintain all searched latents by case number for recall or subsequent searching in the OC ABI System, the CalDOJ AFIS, the NGI system, or any cross-jurisdictional AFIS system.

The LCMS is also meant to be a module where examiners can use Photoshop CS5 to size, calibrate, facilitate printing and documentation, and provide enhancements independent of any COTS OC ABI System image processing tools. That is not to say that COTS image processing tools should be unavailable to the OC ABI System LCMS user community.

The OC ABI System will process latent management Transactions received from the internal systems. They can be of two types: (1) internal non-NIST maintenance Transactions (e.g., add to ABI System unsolved latent file) and (2) external NIST Transactions for forwarding to the CalDOJ, FBI or external systems (e.g., cross-jurisdictional partners). The original NIST Transactions will be preserved indefinitely in the ANSI/NIST Archive (repository) of Transactions.

Latent examiners and supervisors will use the LCMS to manage the latent case files via latent workstation functionality. Table 29 lists the LCMS requirements. There are no workflows in the sense that the user interface is restricted to specific sequences of actions. On the other hand, there are some Transactions where the system will automatically ask whether a cascaded ANSI/NIST Transaction should be generated and submitted to the FBI (e.g., deletion of an unsolved latent from ABI System which the LCMS knows was added to the unsolved files at CJIS).

The Transactions listed in Table 28 are the TOTs that can be created by the LCMS system and forwarded onto CalDOJ or the FBI or other cross-jurisdictional AFIS.

Latent examiners will also be able to scan in major case prints, to include known exemplars of proximal, medial, distal, side and tip friction ridge, as Type-14 records with Field 14.014 descriptors and Type-15 records for palms and use them in forward latent searches. This will permit the OCCL to capture major case prints from victims, first responders, as well as witnesses for elimination purposes. When a suspect has been identified major case prints can also be captured for investigative purposes. These prints will be stored in the LCMS and dynamically loaded into matchers for specific searches rather than being an active, searchable file. These records are to be considered neither applicant nor criminal files.

Table 28 LCMS: Latent Case Management Maintenance TOTs Supported

| TOT | Transaction Name |
|------|---|
| LSMQ | Latent Search Status and Modification Query |
| ULAC | Unsolved Latent Add Confirm Request |
| ULD | Unsolved Latent Delete Request |

*OC ABI System Requirements Specification***Table 29 LCMS: LCMS Services Processing Requirements**

| Requirement ID # | Requirement |
|------------------|---|
| LCMSReq001 | <p>The OC ABI System shall support latent examiners and system administrators in the creation of latent cases, independent of actually loading any images, to include entering and saving information in the following data Fields:</p> <ol style="list-style-type: none"> 1. Case name 2. Case number 3. Owning agency 4. Date of crime 5. Date case opened in LCMS 6. Primary Examiner the case is assigned to 7. Secondary Examiner the case is assigned to 8. Supervisor Examiner the case is assigned to 9. Crime Lab reference number/lift number 10. 4-digit NCIC Uniform Offense Code 11. State Crime Code(s) – a pull down menu based on the 4-digit Uniform Crime code entered 12. Local Crime Code(s) – a pull down menu based on the 4-digit Uniform Crime code entered 13. Auto delete flag at statute of limitations date (Y/N) 14. Up to 10 additional free form Fields |
| LCMSReq002 | <p>The OC ABI System shall support latent examiners and system administrators in populating and updating a “method of collection” table used in an LCMS pull-down menu of types of collection/processing to include lifts; digital imagery; Alternate Light Source (ALS); ninhydrin, DFO, or other chemical process; deposition processes; and up to 10 others.</p> |
| LCMSReq003 | <p>The OC ABI System shall permit Cal-ID System administrators in populating and updating a table of statutes of limitations based on state crime codes.</p> |
| LCMSReq004 | <p>The OC ABI System shall permit Cal-ID system administrators in selective maintenance of the LCMS files, unsolved latent file, and matcher files to include correcting incorrectly entered information, moving images between cases, associating cases, and updating the table of statutes of limitations based on state crime codes.</p> |
| LCMSReq005 | <p>The OC ABI System shall automatically track all latents submitted to external agencies for retention.</p> |
| LCMSReq006 | <p>The OC ABI System shall automatically track for reporting purposes all latents submitted by external and internal agencies including all vendor workstations and ULW applications.</p> |
| LCMSReq007 | <p>The OC ABI System shall automatically identify situations where searches against different latents from the same case have identical candidates anywhere in the top 100 positions and alert the examiner(s) assigned to the case with a message in their work queue. The OC ABI System examiner community refers to this as a latent candidate merge.</p> |
| LCMSReq008 | <p>The OC ABI System shall offer latent examiners and system administrators the ability to remove latent images from the OC ABI System and/or an external unsolved latent file(s).</p> |
| LCMSReq009 | <p>If latent examiners and system administrators elect [LCMSReq007] to</p> |

OC ABI System Requirements Specification

| Requirement ID # | Requirement |
|------------------|--|
| | remove a latent image from any external system's unsolved latent file, the OC ABI System shall automatically generate the appropriate TOT from Table 28. |
| LCMSReq010 | The OC ABI System shall automatically alert the system administrator via a message in an administrative queue when a case reaches the following windows: 90, 60, and 30 days from the expiration of the statute of limitations for any and all cases. |
| LCMSReq011 | The OC ABI System shall support the latent examiners and system administrators in selectively opening and dealing with administrative message in their work queue and in re-launching or closing cases where the statute of limitations expired notice has been sent to them. |
| LCMSReq012 | The OC ABI System shall automatically delete unsolved cases from the LCMS when the statute of limitations expires if the Auto-Delete flag was set to "Y" in LCMS when the case was opened or at any later point. |
| LCMSReq013 | If the LCMS automatically closes a latent case that has any images in an external system's unsolved latent file, the OC ABI System shall automatically generate the appropriate TOT from Table 28. |
| LCMSReq014 | The OC ABI System shall forward latent management Transactions to CalDOJ and/or the FBI's NGI system. |
| LCMSReq015 | The OC ABI System shall be able to ingest external system responses from CalDOJ, the FBI (ULAR, ULDR, LSMR, ERRL and ERRA TOTs). |
| LCMSReq016 | The OC ABI System shall use the response information from CalDOJ or the FBI to update the Transaction log. |
| LCMSReq017 | The OC ABI System shall automatically forward any external system response Transactions to the appropriate LCMS. |
| LCMSReq018 | The OC ABI System shall automatically log all latent management Transactions and activities to include date, time, person performing the activity, activity type, status (successful or problem encountered), and any changes to the OC ABI System or external system matcher files of unsolved latents. |
| LCMSReq019 | The OC ABI System shall record a copy of each ingested Transaction in the ANSI/NIST Archive in the fully CA/FBI EBTS compliant form in which it was received. |
| LCMSReq020 | The OC ABI System shall support latent examiners in the scanning of major case prints, to include known exemplars of palm and finger proximal, medial, distal, side and tip friction ridge, at 1000 ppi to include storing them in appropriate Type-14 or Type-15 records, assigned to a specific Latent case. |
| LCMSReq021 | The OC ABI System shall support latent examiners in searching latents against the major case prints associated with a case. |
| LCMSReq022 | The OC ABI System shall support latent examiners and system administrators in the linking of major case prints to additional cases. |
| LCMSReq023 | The OC ABI System shall support latent examiners and system administrators in the deletion of major case prints. |
| LCMSReq024 | The OC ABI System shall support latent examiners by providing demographic search capability against facial photos and SMTs as follows: <ul style="list-style-type: none"> • Ingest search parameters selected from a pull down list of Field types • Search and produce a candidate list of OCN and TCNs that contain the matched demographics with thumbnails of the photo/SMT |

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| Requirement ID # | Requirement |
|------------------|---|
| | <ul style="list-style-type: none"> Permit the examiner to select an OCN and/or TCN from the candidate list and bring up the associated Photo or SMT from the Master ID cross-reference file or to a specific archived Transaction within the constraints of BisRule001. The list will be presented/sorted by the preponderance of the matching demographics. Selectively print the candidate list and/or the selected subject |
| LCMSReq025 | The LCMS will provide tracking of the processing of latents through all searches to include maintaining a log of searches, image processing, candidates, etc for all vendor workstations or a ULW application. |
| LCMSReq026 | The OC ABI System shall support latent examiners and system administrators in the relaunching LT-TP from file major case prints. |

3.5 OC ABI System Admin Services

The Cal-ID Administrator will be responsible for the integrity of information in the System: creating and maintaining user accounts; backing up and restoring files; exporting files in response to ad-hoc requests; generating reports; and adding, deleting and modifying workflow processing parameters specific to TOTs and ORIs on an as needed basis. The default setting for the administrative fields will be developed during the implementation of the system through Cal-ID – vendor collaboration.

3.5.1 Functional Requirements –ADMIN– System Administration Management

Administrative tasks will start with the Cal-ID Administrator or Cal-ID Supervisor level logging into a workstation connected to the OC ABI System. They will deal with System error messages, assist in recovering from problems, and generate problem reports via e-mail, 24 X 7 help desk calls or other means. Additionally, the Cal-ID Administrator will be qualified to add, modify and delete workflow Processing Parameters mentioned throughout the workflows specific to TOTs and ORIs.

3.5.1.1 Admin Reports

The administrators will be able to generate reports using a robust report generation tool that permits ad hoc selection of fields, data ranges within fields, and Boolean operators against the repository, system logs, and system performance and capacity metrics. The report generation tool will support mathematical analysis (e.g., averaging, maximums and minimums) dynamic ordering of information within the reports. The tool will further support exporting report content to Word™, Excel™, PDF™ as appropriate.

Table 30 Cal-ID Administrator Functional Requirements

| Requirement ID # | Requirement |
|------------------|---|
| AdminFuncReq001 | The OC ABI System shall support the Cal-ID Administrator to selectively set up and manage at least 10 classes of users (e.g., latent supervisor) with configurable permissions per class. |
| AdminFuncReq002 | The OC ABI System shall support the Cal-ID Administrator in assigning a default modular system workflow and default processing parameters (PP) for each TOT, ORI, and LSID/AFIS combination. |
| AdminFuncReq003 | The OC ABI System shall support the Cal-ID Administrator or Cal-ID Supervisor in editing the default PP [AdminFuncReq002], as minimally |



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| Requirement ID # | Requirement |
|------------------|--|
| | specified in Appendix B. |
| AdminFuncReq004 | Reserved |
| AdminFuncReq005 | Reserved |
| AdminFuncReq006 | The OC ABI System shall support the Cal-ID Administrator in assigning, editing, and managing the fields and record types that may be disseminated and viewed (BisRule001) to non-owner and/or to OCCL examiners with limited file access authorization. The list of all fields is provided in Appendix C Dissemination List. |
| AdminFuncReq007 | The OC ABI System shall support the Cal-ID Administrator in assigning, editing, and managing workflow priorities PPs as defined in AdminFuncReq003, with up to 9 priorities to conform to the ANSI/NIST Standard for Field 1.006: "The values will range from "1" to "9", with "1" denoting the highest priority. The default value will be defined by the agency receiving the Transaction." |
| AdminFuncReq008 | The OC ABI System shall support the Cal-ID Administrator in assigning, editing, and managing all matching Thresholds specific to each TOT, ORI and LSID group as defined in AdminFuncReq003. |
| AdminFuncReq009 | Reserved |
| AdminFuncReq010 | The OC ABI System shall enable the Cal-ID Administrator to selectively back up the OC ABI System, biographic, ANSI/NIST Archive, and/or forensic files at all System levels. |
| AdminFuncReq011 | The OC ABI System shall support the Cal-ID Administrator in selectively restoring the OC ABI System, biographic, ANSI/NIST Archive, and forensic files. |
| AdminFuncReq012 | The OC ABI System shall allow the Cal-ID Administrator to selectively ingest any supported Transaction(s), individually or in bulk, and process them as appropriate to the TOT to include dynamically modifying the ingested Transactions; TOT into another TOT individually or in bulk. |
| AdminFuncReq013 | The OC ABI System shall permit the Cal-ID Administrator to selectively cancel programs that are not responding and restart any program or computer. |
| AdminFuncReq014 | The OC ABI System shall support the Cal-ID Administrator in selectively exporting, in bulk or individually, ANSI/NIST conformant Transactions along with any control files or indices such as the MCI. |
| AdminFuncReq015 | The OC ABI System shall support the Cal-ID Administrator in selectively exporting "unknown" (latent) files in bulk or individually to include images, EFS features, and case / image information. |
| AdminFuncReq016 | Reserved |
| AdminFuncReq017 | The OC ABI System shall support automated logging of the following information: <ol style="list-style-type: none"> 1. Use by time, person, functionality, etc. 2. Viruses encountered – at the device level. 3. All events associated with unsuccessful login attempts, at the device level. |



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| Requirement ID # | Requirement |
|------------------|---|
| AdminFuncReq018 | The OC ABI System shall support automated logging of the following information for the date / time of the request: <ol style="list-style-type: none"> 1. Disk memory used, free, and totals by System and component: <ul style="list-style-type: none"> ▪ ANSI/NIST Archive ▪ Temporary files (e.g. Transaction temp files) ▪ LCMS 2. Peak and average matcher memory use on an hourly and daily basis, used and free, and totals by System and component 3. Matcher utilization/saturation at the device level on an hourly and daily basis |
| AdminFuncReq019 | The OC ABI System shall support automated logging of the following information for a definable date / time range: <ol style="list-style-type: none"> 1. A record of all abnormal shutdown(s) of any computer along with any available diagnostics. 2. Number and percentage of Transactions by class and TOT that failed/passed parser and image quality checks. 3. Number and percentage of Transactions by class and TOT that were manually reviewed by OCCL staff for QC. 4. Number and percentage of Transactions by class and TOT that were manually reviewed by OCCL staff for Verification. 5. Number and percentage of Transactions by class and TOT that were "errored out" in any workflow processing or output step. |
| AdminFuncReq020 | The OC ABI System shall support automated logging of individual finger and average by hand NFIQ scores sorted by TOT, submitting ORI, or date/time range. |
| AdminFuncReq021 | The OC ABI System shall support automated logging of vendor selected quality assessment score of individual fingers and averages by hand to include for each log entry the respective TOT, submitting ORI, and date/time. |
| AdminFuncReq022 | The OC ABI System shall support automated logging of vendor selected quality assessment score of individual palm images and averages by hand to include for each log entry the respective TOT, submitting ORI, and date/time. |
| AdminFuncReq023 | The OC ABI System shall support the administrators in generating reports using a robust report generation tool that permits ad hoc selection of fields, data ranges within fields, and Boolean operators against the repository, system logs, and system performance and capacity metrics. |
| AdminFuncReq024 | The OC ABI System shall support mathematical analysis and dynamic ordering of information within the reports [AdminFuncReq023]. |
| AdminFuncReq025 | The OC ABI System shall support exporting report content [AdminFuncReq024] to Word™, Excel™, or PDF™ as requested. |
| AdminFuncReq026 | The OC ABI System shall support system administrators and supervisor(s) by providing demographic search capability against facial photos and SMTs as follows: <ul style="list-style-type: none"> • Ingest search parameters selected from a pull down list of Field types • Search and produce a candidate list of OCN and TCNs that contain the matched demographics with thumbnails of the |



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| Requirement ID # | Requirement |
|------------------|---|
| | <p>photo/SMT</p> <ul style="list-style-type: none"> Permit the examiner to select an OCN and/or TCN from the candidate list and bring up the associated Photo or SMT from the MCI file or to a specific archived Transaction within the constraints of BisRule001. The list will be presented/sorted by the preponderance of the matching demographics. Selectively print the candidate list and/or the selected subject |
| AdminFuncReq027 | The OC ABI System shall support the Cal-ID Administrator in assigning PPs to workflows as defined in AdminFuncReq003 to establish, define, modify and delete authorized access and functionalities (TOT) for each cross-jurisdictional ORI, including but not limited to establishing the default matching priority processing parameters, threshold parameters, and per AdminFuncReq006 the Fields and records that can be exchanged. |
| AdminFuncReq028 | The OC ABI System shall support the Cal-ID Administrator with the ability to set the auto assign OCN number to any group of numbers by selecting a beginning and end OCN. |
| AdminFuncReq029 | The OC ABI System shall support the Cal-ID Administrator in assigning a default set of forms, key entry and data validations for each TOT and DAI. The validation can vary for each TOT depending on the destination agency. |
| AdminFuncReq030 | The OC ABI System shall support the Cal-ID Administrator or Cal-ID Supervisor in selecting a specific TOT set of data entry and data validation guidelines to include at the TOT and DAI level: <ol style="list-style-type: none"> Tables and field definitions will be initially defined using Appendix A and will be periodically updated by the OC ABI System Cal-ID Administrator. All default values will be identified Fields can be defined to be automatically populated with a default and/or cascading value into other fields to best minimize key entry The OC ABI System will provide drop down menus for data fields Tables can be defined to accept new values as identified by the operator |
| AdminFuncReq031 | Reserved. |
| AdminFuncReq032 | The OC ABI System shall notify the Cal-ID Administrator when: <ol style="list-style-type: none"> The temporary buffer (StorageReq001 or StorageReq002) is 90% full; every 24 hours until it falls below 90% The temporary buffer (StorageReq001 or StorageReq002) is 98% full; every hour until it falls below 98% If either temporary buffer (StorageReq001 or StorageReq002) reaches 100% full. Note: the OC ABI System will notify the Cal-ID Administrator and the Cal-ID Administrator or the system supervisor who will have the ability to manually delete Transactions per AdminFuncReq033. |
| AdminFuncReq033 | The OC ABI System shall provide the Cal-ID Administrator with the ability to manually delete Transactions from the temporary queues on a one by one basis or by selecting groups based on TOT, ORIs and/or completion or initial dates. |



OC ABI System Requirements Specification

| Requirement ID # | Requirement |
|------------------|---|
| AdminFuncReq034 | The OC ABI System shall provide the Cal-ID Administrator with the ability to monitor the OC ABI System network by producing network access summary reports, workload and peak load reports. |
| AdminFuncReq035 | The OC ABI System shall provide the Cal-ID Administrator with immediate notifications of any and all attempted and actual security breaches and unauthorized OC ABI System Network system accesses, by providing a detailed report of the access or breach of the network. |
| AdminFuncReq036 | The OC ABI System shall notify the Cal-ID Administrator when the Archive (StorageReq004) is 80% full, 85% full, and 90% full. |

3.5.1.2 Admin Processing

The OC ABI System **shall** process all requests from the Cal-ID Administrator, as enumerated above.

3.5.1.3 Admin Outputs

The OC ABI System **shall** support the output types identified in the input functions for Cal-ID Administrator, as enumerated above.

4 Technical Requirements

This section provides the System technical requirements for the new OC ABI System environment. The Technical Requirements are organized as follows:

- Capacity Requirements – capability to store some number of a class of items such as:
 - Enrolled Transactions
 - Searchable feature-based data sets on-line in matcher.
- Performance requirements – number of events and units of time such as:
 - Throughput as expressed in Transactions turned around in a period of time
 - Average Transaction response time
- Accuracy requirements – matcher capability
 - Tenprint to tenprint accuracy
 - Other-ID slaps to tenprint accuracy
 - Tenprint to latent accuracy
 - Latent to tenprint accuracy
 - Palm latent to known palm accuracy
 - Criminal known palm to latent accuracy
- Safety Requirements
- Security Requirements
- Environmental Requirements – such as uninterrupted power supplies and office environment noise levels.
- Form and Fit Requirements for workstations and printers
- Reliability, Maintainability, and Availability requirements
- Network requirements

*OC ABI System Requirements Specification***4.1 Storage Capacity Requirements**

Storage capacities are relevant to multiple areas of the OC ABI System architecture to include:

- Storage of image files to be used in verifications
- ANSI/NIST Archive storage
- The templates / features loaded in the matchers
- Temporary Storage of Transactions

The following subsections delineate these requirements and will refer to the tables provided below. The capacity will grow over the life of the system. Table 31 Storage Capacities by Image Type by Year projects the growth of annual cumulative Transactions through 2019.

Assumptions:

- The percentage of criminal Transactions that match within Cal-ID is approximately 70%
- Average criminal Transactions are 90,000-100,000 per year
- Approximately 40% of the legacy electronic repository load of tenprint records will be at 500 ppi. All other records to be stored should be sized at 1000 ppi.

Table 31 lists the current and projected subject and ANSI/NIST Archive sizes for Cal-ID:

Table 31 Storage Capacities by Image Type by Year

| Cumulative Events | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|
| Tenprint (K ⁷) (500 & 1000 ppi) | 1,330 | 1,391 | 1,488 | 1,593 | 1,704 | 1,823 | 1,951 | 2,088 |
| Tenprint Subject Folders | 1,313 | 1,354 | 1,391 | 1,429 | 1,469 | 1,511 | 1,555 | 1,601 |
| Palms (K) (500 & 1000 ppi) | 600 | 642 | 687 | 735 | 786 | 842 | 900 | 963 |
| Tenprint Subjects with Palm(s) | 400 | 455 | 503 | 545 | 584 | 626 | 670 | 718 |
| Tactical (K) | | 95 | 230 | 405 | 599 | 807 | 1,033 | 1,282 |
| Tenprint Conversion from paper records (K) | 2700 | 2700 | 2700 | 2700 | 2700 | 2700 | 2700 | 2700 |
| Tenprint Conversion from electronic records (K) | 3900 | 3900 | 3900 | 3900 | 3900 | 3900 | 3900 | 3900 |
| Palm Print Conversion from paper records (K) (1000 ppi) | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 |

⁷ K is short for thousands of records

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| Cumulative Events | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--|------|-------|-------|-------|-------|--------|--------|--------|
| Palm Conversion from electronic records (K) (CalDOJ extraction, CDI archive) | 3900 | 3900 | 3900 | 3900 | 3900 | 3900 | 3900 | 3900 |
| Original New Live Scan Transactions | 100 | 205 | 310 | 420 | 530 | 645 | 770 | 900 |
| Modified Transactions (includes images) | 570 | 600 | 630 | 660 | 690 | 720 | 750 | 780 |
| Unsolved latent (LT) FP (K) | 35 | 39 | 42 | 47 | 51 | 56 | 62 | 68 |
| Unsolved latent (PLT) PP(K) | | 5 | 8 | 11 | 15 | 18 | 22 | 26 |
| NIST Responses and forwards (K) | | 1,742 | 3,678 | 5,811 | 8,105 | 10,590 | 13,252 | 16,116 |

The number of NIST Responses and forwards were estimated as follows:

- One OC ABI response for every new original Transaction; tactical and unsolved latent searches
- Three external responses for every original and tactical Transaction that is forwarded to CalDOJ (1: Transaction sent to CalDOJ, Response from CALDOJ and CalDOJ response sent to originator)
- One to five responses for every original Transaction that submits a DNS request and two for an estimated 70% of these Transactions that are forwarded to CalDOJ.

Table 32 Temporary Storage Capacity Requirements

| Requirement ID | Requirement |
|-----------------|---|
| StorageReqTM001 | The OC ABI System shall have the disk storage capacity of at least 500 GB for storing Transactions in a temporary file. |
| StorageReqTM002 | The OC ABI System shall have the disk storage capacity of at least 500 GB for use in workflow 1, 2, 3, 5, and LCMS's work queues for quality control, tenprint verification, and palmprint verification. |

The OC ABI System will be designed to accommodate an ANSI/NIST Archive of all input and output Transactions through the life of the contract, including a conversion effort. The addition of response TOTs will make the capacity requirements larger than the storage of input Transactions only, however most response Transactions generated by the OC ABI System are smaller than the corresponding input Transactions. The vendor will have to perform the appropriate design analysis to determine the design requirements in Gigabytes as a function of Transaction type using the data specified in this document.

OC ABI System Requirements Specification

At the initial operating point of the OC ABI System, all existing records will have been loaded into the OC ABI System to include loading them into the ANSI/NIST Archive, the matchers, any verification repositories, and the MCI.

Table 33 OC ABI System Storage Capacity Requirements

| Requirement ID | Requirement |
|-----------------------|--|
| StorageReq001 | The OC ABI System shall have the capacity to store in the ANSI/NIST Archive at the initial delivery, at least the number of EBTS Transactions listed per year in Table 31 for the year 2019; where 100% of the new known friction ridges are captured at 1,000 ppi and all unknown friction ridges (i.e., latents) are captured at 1,000 ppi. |
| StorageReq002 | The OC ABI System shall have the capacity to store in the matchers the templates for enrolled fingerprints using BisRule003, up to the year 2019 capacity. |
| StorageReq003 | The OC ABI System shall have the capacity at the initial delivery to store in the matchers the templates for enrolled, unsolved fingerprints and palmprints at the levels shown in Table 31 for the year 2019. |
| StorageReq004 | The OC ABI System shall have the capacity to store a backup copy on portable digital media of all ANSI/NIST Transactions that are in the ANSI/NIST Archive and the feature sets in the matchers, in any given year at the 2019 capacity, as a backup for the ANSI/NIST Archive and Matchers. |
| StorageReq005 | The OC ABI System shall have the capacity and ability to create and store a backup copy of all LCMS, Verification image sets, and other critical files that reside on any workstations, at the year 2019 capacity. |

4.2 Performance Requirements

The OC ABI System will meet performance (throughput and response time) requirements as specified in this section. DVI Transactions will not be timed nor is it known how many will be submitted in any given day; therefore they are not specified as having specific throughput or timing requirements.

4.2.1 Throughput Requirements

The OC ABI System throughput requirements cover all three classes of workflows:

- Identification (Tenprint) Services
- Forensic (Latent) Services
- Tactical (Mobile ID and other rapid searches) Services

The OC ABI System daily throughput rates will grow over the life of the System. Refer to Table 34 for the values.

Table 34 Average Daily Transaction Rates per Calendar Year

| Type of Transaction | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Known Submittal Identification Services</i> | | | | | | | | |
| Criminal TP-TP | 300 | 321 | 343 | 368 | 393 | 421 | 450 | 482 |
| Other TP-TP | 20 | 21 | 23 | 25 | 26 | 28 | 30 | 32 |
| ID Slaps-TP | 10 | 11 | 11 | 12 | 13 | 14 | 15 | 16 |
| <i>Forensic Services</i> | | | | | | | | |



OC ABI System Requirements Specification

| Type of Transaction | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|-------------------------------------|------|------|------|------|------|------|------|------|
| TP-LT | 300 | 321 | 343 | 368 | 393 | 421 | 450 | 482 |
| KP-PLT | 240 | 257 | 275 | 294 | 315 | 337 | 360 | 385 |
| LT-TP | 50 | 55 | 61 | 65 | 70 | 85 | 90 | 97 |
| PLT-KP | 20 | 22 | 24 | 26 | 28 | 34 | 36 | 39 |
| LT-LT | 50 | 55 | 61 | 65 | 70 | 85 | 90 | 97 |
| PLT-PLT | 20 | 22 | 24 | 26 | 28 | 34 | 36 | 39 |
| Tactical Services | | | | | | | | |
| Tactical TP-TP (2+ Fingers) | | 260 | 370 | 480 | 530 | 570 | 620 | 680 |
| Tactical DNS TP-TP (5+flat fingers) | 300 | 321 | 343 | 368 | 393 | 421 | 450 | 482 |

The Throughput requirements are for concurrent ingest and processing of identification, forensic, and tactical Transactions. The average and peak rates are shown in Table 34 and Table 35 Peak Rates for Throughput Requirements, respectively. The Peak rates are expressed as a percentage of the year 2019 average daily rates. The Peak Hour will be made up of these peak periods and the rest of that Peak Hour will consist of average loads – for instance the Peak Hour will have a load of a peak 30 minutes worth of Criminal TP-TP and 30 minutes of the average Criminal TP-TP.

Table 35 Peak Rates for Throughput Requirements

| Transaction Type | Duration of Peak Period | % of 2019 Average Daily Rate |
|----------------------------|-------------------------|------------------------------|
| Criminal TP-TP | 30 minutes | 10% |
| Other TP-TP | 1 hour | 20% |
| ID Slaps-TP | 30 minutes | 10% |
| Tactical TP-TP | 5 minutes | 2% |
| TP-LT | 30 minutes | 20% |
| KP-PLT | 1 hour | 20% |
| LT-TP (100% penetration) | 30 minutes | 10% |
| LT-LT (100% penetration) | 30 minutes | 10% |
| PLT-KP (100% penetration) | 30 minutes | 10% |
| PLT-PLT (100% penetration) | 30 minutes | 10% |

Table 36 Throughput Requirements

| Requirement ID # | Requirement |
|------------------|--|
| ThruPutReq001 | The OC ABI System shall be able to ingest, process, and respond in the peak period to at least the percentage of the daily average Tenprint Identification Transactions (TP-TP) as stated in Table 34 and Table 35, while Forensic and Tactical Transactions are being ingested, processed, and responded to. [This requirement is independent of any time for examiners to perform QC on the input stream or to review candidate lists / perform verification.] |
| ThruPutReq002 | The OC ABI System shall be able to ingest, process, and respond in the peak period to at least the percentage of the daily average Forensic forward latent |



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| Requirement ID # | Requirement |
|------------------|---|
| | Transactions as stated in Table 34 and Table 35 while identification and Tactical Transactions are being ingested, processed, and responded to. [This requirement is independent of any time for examiners to perform QC on the input stream or to review candidate lists / perform verification.] |
| ThruPutReq003 | The OC ABI System shall be able to ingest, process, and respond in the peak period to at least the percentage of the daily average Tactical Transactions as stated in Table 34 and Table 35 while identification and Forensic latent Transactions are being ingested, processed, and responded to. |
| ThruPutReq004 | If in any day the OC ABI System is presented with more Transactions in a peak hour than the design capacity, the OC ABI System shall queue the additional work up and process it as soon as capacity is available with that processing to be based on the priority of the Transactions. |

4.2.2 Response Time Requirements

The response time for OC ABI System Transactions is a function of the Transaction type (identification, forensic, and tactical). The response times do not include any staff interaction times for QC, verification, or any other review.

Table 37 provides the response times per class of Transaction while Table 38 defines the requirements for providing these response times.

Table 37 Response Times per Class of Transaction Type

| Transaction Types | Response Time Requirements During Peak Periods |
|-------------------|--|
| Criminal TP-TP | 5 minutes |
| Other TP-TP | 60 minutes |
| ID Slaps-TP | 10 minutes |
| TP-LT | 30 minutes |
| LT-TP | 30 minutes |
| PLT-KP | 30 minutes |
| KP-LT | 30 minutes |
| LT-LT | 30 minutes |
| PLT-PLT | 30 minutes |
| Tactical ID TP-TP | 2 minutes |

The response time requirements stated below are for 95% of the Transactions in any period as there are always some outliers caught up in processing and they will not be considered in the performance testing. Testing will be done against the initial repository load using a test set with a mixture of all Transaction types at the peak rates calculated using Table 37.



*OC ABI System Requirements Specification***Table 38 Response Time Requirements**

| Requirement ID | Requirement |
|--------------------|--|
| ResponseTimeReq001 | For the base contract, the OC ABI System shall provide responses for 95% of submitted Transactions per the values in Table 37. Response time to be measured from the beginning of the Transaction's ingest through the final response and the Transmission of a response back to the submitting site, with no error-burdened Transactions in the mix. The end-to-end measurement will exclude all human intervention times. |

4.3 Accuracy Requirements

The matcher accuracy will vary as a function of the class of service (identification, forensic, and tactical) and the quality of the input images. Identification service accuracy requirements are typically higher than those for forensic services as the input images are typically of better quality for live scan enrollments than for latent lifts.

Accuracy terms-of-art have been undergoing an evolutionary change for the past few years. While reliability, true accept rate, false reject rate, and other terms are often used for access control systems and other biometric modalities (such as facial recognition), a consensus has developed in the international standards community around the terms *true match rate* and *failure to match rate* when discussing friction ridge matching on a large-scale.

For this project, accuracy will have four accuracy terms:

True Match Rate – (TMR) the probability that a true match will be found when it is in the background reference file (also known as a repository). This term replaces older terminology such as matcher reliability or true accept rate.

Failure to Match Rate – (FTMR) the probability that a search will not return a true mate when the true mate is in the reference file. The failure to match rate is 100% minus the True Match rate. While not explicitly stated in the requirements, it will be calculated during testing and reported on.

Selectivity – the number of candidates that will be examined to determine the true match rate. While the Cal-ID Administrator will be able to selectively change the length of candidate lists by Transaction class and by threshold scores, during testing, system accuracy will be measured using the selectivity numbers in Table 39.

False Match Rate – (FMR) the probability that an incorrect false mate can be identified as an automated true mate regardless if the true mate is or is not in the background reference file.

Table 39 Accuracy Rates by Transaction Type

| Transaction Types | Selectivity | True Match Rate | Minimum # of Congruent Minutiae |
|--|-------------|-----------------|---------------------------------|
| TP-TP | 1 | 99.9% | N/A |
| ID Slaps-TP | 1 | 99.8% | N/A |
| TP-LT | 1/5 | 70% / 80% | 12 |
| LT-TP | 1/5 | 70% / 80% | 12 |
| PLT-KP | 1/5 | 70% / 80% | 14 |
| KP-PLT | 1/5 | 70% / 80% | 14 |
| Tactical TP-TP (with at least 2 prints, and fewer than 10 prints, search records will be Fingerprint Acquisition Profile (FAP)-30 or better) | 1 | 99.5% | 16 |

*OC ABI System Requirements Specification***Table 40 Accuracy Requirements**

| Requirement ID # | Requirement |
|------------------|---|
| AccuracyReq001 | The OC ABI System shall provide accuracy for submitted Transactions per the values in Table 39 while conforming to the response times in Table 38. The accuracy will be measured with a mutually agreed upon test set consisting of search and reference file images of NIST Fingerprint Image Quality (NFIQ) level 3 or better and with vendor Best Practices being used. |

4.4 Safety Requirements

There are two requirements for the electrical safety of the OC ABI System. They are specified in Table 41. The intent is to ensure that safe equipment is used and that it is installed properly in terms of grounding (e.g., any power strips used at the OC ABI System workstations must be certified and be installed and used correctly).

Table 41 Safety Requirements

| Requirement ID | Requirement |
|----------------|---|
| SafetyReq001 | All hardware configuration items delivered as part of the OC ABI System shall conform to the appropriate US Underwriters Lab standards for electronic devices and be so certified. |
| SafetyReq002 | All required grounding shall conform to the manufacturer's specifications and recommendations. |

4.5 Security Requirements

All configuration items that process, transmit, or store digital information delivered as part of the OC ABI System will require some level of Information Security (InfoSec), as the System is connected to the FBI's criminal justice network. The CJIS security requirements must be complied with, including user and administrator log in rules, audit trail requirements, and reporting capabilities.

InfoSec includes ensuring data Confidentiality, Integrity, and Availability of the data and thus anti-virus protection is to be included in the Systems to the extent that there are commercial anti-virus packages available for the operating Systems selected by the Vendor.

Table 42 InfoSec Requirements

| Requirement ID | Requirement |
|----------------|--|
| InfoSecReq001 | The OC ABI System design shall conform to the CJIS Security Policy v 5.0 or later. |
| InfoSecReq002 | Anti-virus software shall be loaded on all processors that run Operating Systems where there are commercial anti-virus packages available. |
| InfoSecReq003 | The anti-virus software shall automatically virus scan all files on portable data storage devices (i.e., CDs, DVDs, USB devices with memory, and floppy disk media) presented to a System [InfoSecReq002] and report alerts and other problems. |
| InfoSecReq004 | The anti-virus software shall automatically log all virus alerts and action taken. |
| InfoSecReq005 | The OC ABI System shall support the updating of anti-virus software repositories of virus information without compromising the security of the System. |
| InfoSecReq006 | Confirm Viability of NIST Package. The OC ABI System shall : Only accept Transactions from pre-authorized systems, as defined and maintained by the Cal-ID Administrator. |



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| Requirement ID | Requirement |
|----------------|---|
| | The OC ABI System shall return a reject notice back to unauthorized systems and log all failed attempts. |
| InfoSecReq007 | The OC ABI System shall Process Transactions from Internal and External Systems: Only when Transactions InfoSecRq001-006 has been met Only when the ingested TOT, ORI and LSID has been identified as "current" in the authorized Cal-ID Administrators Processing parameters (i.e. the request is within the activation and termination dates for same TOT, ORI and LSID). The OC ABI System shall retain a copy of the Processing Parameters used for each Transaction in the ANSI/NIST Archive and in the system logs. |
| InfoSecReq008 | The OC ABI System shall keeps its internal clocks synchronized at least once per month automatically with an approved external clock and facilitate synchronizing all system clocks within the OC ABI Network. |

4.6 Environmental Requirements

There are OCCL Cal-ID imposed environmental requirements on all workstations (workstation / peripherals such as printers).

The System design will include the capability to meet the following power / voltage conditioning and related availability requirements as well as noise level requirements in Table 43. These requirements address sustainment of power during blackouts and brownouts and noise levels in an office environment.

Table 43 Power Requirements

| Requirement ID # | Requirement |
|------------------|---|
| EnvrnReq001 | Each workstation shall have an Uninterruptable Power Supply (UPS) that can support the workstation for up to 20 continuous minutes in the event of a loss of building power. |
| EnvrnReq002 | Each workstation UPS shall provide the user with a signal in cases where the UPS has been the only source of power to the device for 10 continuous minutes. |
| EnvrnReq003 | Each workstation shall automatically shut down properly based upon the receipt of a ten-minute warning if the operator does not initiate a shutdown within 15 minutes of the signal if the UPS has continuously remained the only source of power to the device for that time. |
| EnvrnReq004 | Each workstation shall be able to operate in an office environment, without any requirement for supplemental air conditioning or noise suppression: 68° to 72° temperature with a relative humidity between 40% and 60%. Noise below 70 decibels (dBA) measured at the workstation site. |

4.7 Form & Fit Requirements

This section provides the form and fit requirements for the OC ABI System in Table 45. OCCL anticipates having fewer personnel on duty at any given time than they have workstations. To control software license costs the system requirement includes functionality to permit dynamic allocation of licenses within two groups of workstations:

1. OCCL Tenprint workstations
2. OCCL and Remote Agency Latent workstations



*OC ABI System Requirements Specification***Table 44 Dynamic Allocations of Software Licenses**

| Requirement ID | Requirement |
|----------------|---|
| DASLReq001 | The OC ABI System shall be able to dynamically allocate software licenses within each of the two groups of OCCL workstations listed above. |

The requirements in Table 45 are for the workstations and card printers to be delivered to OCCL Cal-ID sites.

Table 45 Form and Fit Requirements for Workstations

| Requirement ID | Requirement |
|----------------|---|
| F&FReq001 | Each tenprint workstation shall have: <ol style="list-style-type: none"> 1. A microprocessor with at least 2.8 GHz clock speed and at least 4 cores 2. Built in graphics or a graphics board with at least 512 MB of on board memory and a Digital Visual Interface (DVI) output port 3. 8 GB of internal RAM 4. One 27-inch or larger LED flat panel display with WQXGA or better using a DVI connection to the PC 5. 1 Gigabit Network Interface Card 6. At least one 500 GB hard disk drive 7. Wireless, silent, and backlit keyboard and wireless mouse 8. FBI EBTS Appendix F certified flatbed scanner at 1000 ppi (can be shared with adjacent tenprint workstation), to include the operating system and application software used in the certification. 9. At least 4 USB 2.0 Ports 10. CD/DVD read/write drive |
| F&FReq002 | Each latent workstation shall have: <ol style="list-style-type: none"> 1. A microprocessor with at least 3.2 GHz clock speed and at least 4 cores 2. Built in graphics or a graphics board with at least 1 GB of on board memory and a DVI output port 3. 8 GB of internal RAM 4. One 27-inch or larger LED flat panel display with WQXGA or better using a DVI connection to the PC 5. 1 Gigabit Network Interface Card 6. At least one 750 GB hard disk drive 7. Wireless, silent, and backlit keyboard and wireless mouse 8. FBI EBTS Appendix F certified flatbed scanner at 1000 ppi (can be shared with an adjacent latent workstation), to include the operating system and application software used in the certification. 9. At least 4 USB 2.0 Ports 10. CD/DVD read/write drive |
| F&FReq003 | Photoshop™ CS5 shall be fully accessible from the QC and verification screens, and the LCMS on each workstation to permit examiners to exercise all capabilities and options of the software's capabilities. |

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| Requirement ID | Requirement |
|----------------|---|
| F&FReq004 | Each card printer shall have: <ol style="list-style-type: none"> At least three drawers /trays to support fingerprint and palmprint card stock, and plain office paper (8.5 by 11 inch) simultaneously without having to physically change trays FBI EBTS Appendix F Certified at 1000 ppi Two sided print capability Performance metric of 3 cards/min when operating in a one-sided mode 1 Gigabit Network Interface Card At least 256 MB of memory Color and grey scale capability |
| F&FReq005 | The Automatic Document Feed (ADF), two sided scanner shall have: <ol style="list-style-type: none"> Double sided scan capabilities FBI EBTS Appendix F Certified at 1000 ppi Performance metric of 4 minutes or less for a 1000 ppi fingerprint card scan of one side – measured to the availability of the scanned image for workstation viewing |

4.8 Reliability, Maintainability, and Availability Requirements

This section provides the Reliability, Maintainability, and Availability (RMA) requirements for the OC ABI System and the OC ABI System Network. To support RMA, there are requirements for the ability to backup and restore the System or any of the major data and network components of it. This is considered necessary, for instance, for availability considerations at the OC ABI System level.

There are two sets of requirements:

- Backup and recovery
- Availability and restoration

4.8.1 Backup and Recovery

The OC ABI System will need to be backed up (data and System configurations) routinely for Continuity of Operations considerations. Copies of the backup media will be stored off-site from the central site to increase the likelihood of their availability in case of a natural or man-made disaster.

Table 46 Backup & Recovery Requirements

| Requirement ID | Requirement |
|----------------|---|
| BackupReq001 | The OC ABI System shall permit the Cal-ID Administrator to selectively create full and incremental backups of any or all files on its workstations to include administrative files, temporary ANSI/NIST Archive files, master identity indexes, Transaction results, and logs without impacting functionality of the System. |
| BackupReq002 | The OC ABI System shall permit the Cal-ID Administrator to selectively support the recovery of any or all files from the backups [BackupReq001] to the appropriate locations. |
| BackupReq003 | The OC ABI System shall permit the Cal-ID Administrator to selectively create full and incremental backups of any or all files on the OC ABI System to include administrative files, ANSI/NIST Archive files, Transaction files, |



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| Requirement ID | Requirement |
|----------------|--|
| | master identity indexes, Transaction results, and the back-end matcher files to include feature sets and matcher identity indexes without impacting functionality of the System. |
| BackupReq004 | The OC ABI System shall permit the Cal-ID Administrator to selectively support the recovery of any or all files from the backups [BackupReq003] to the appropriate locations. |

4.8.2 Service Availability and Restoration Requirements

The availability of all OC ABI System services is set at one and a half (1.5) hours of unscheduled down time per month. An additional four (4) hours per month are permitted for backups, upgrades and preventive maintenance without impacting the measurement of availability.

Table 47 ABI System Availability Requirements

| Requirement ID # | Requirement |
|------------------|--|
| RMAReq001 | During the life of this contract, the OC ABI System shall provide functional support 24 hours a day, seven (7) days a week, with no more than a cumulative four (4) hours of scheduled outage time per any calendar month for routine maintenance, diagnostic tests, and upgrades. |
| RMAReq002 | During the life of this contract the OC ABI System shall provide functional support 24 hours a day, seven (7) days a week, with no more than 1.5 hours unscheduled outage of OC ABI System services – measured monthly, but not to include as unavailable time: <ol style="list-style-type: none"> 1) Up to four (4) cumulative hours of scheduled outages per month [RMAReq001] 2) Any facility-wide power outages |
| RMAReq003 | During the life of this contract the portions of the OC ABI System Network supplied by the selected vendor shall provide functional support 24 hours a day, seven (7) days a week, with no more than a cumulative four (4) hours of scheduled outage time per any calendar month for routine maintenance, diagnostic tests, and upgrades. |

5 Network requirements

This section provides the Network requirements for the OC ABI System environment. The section also provides a description of the then current (May 2011) OCSJ digital communications infrastructure associated with criminal justice information processing and a general description of the new network environment.

The current descriptions includes lines to and from client sites (i.e., local police department (PD) live scans and remote latent workstations), the Cal-ID AFIS and its workstations in the OCCL, CalDOJ interfaces, the current local Store and Forward (S&F) device, the county criminal records system, etc.

The new communications infrastructure will provide a full suite of communications services and infrastructure for the new OC ABI System.

The new OC ABI System network will meet the security requirements specified in the FBI Criminal Justice Information Services (CJIS) CJISD-ITS-DOC-08140-5.0, CJIS Security Policy. The network will be able to support the protocols used by the non-OC ABI System components (e.g., live scans). The new network will be designed to support the communications capacities, as calculated by the selected vendor during the requirements and analysis Milestone of the implementation contract.

OC ABI System Requirements Specification

5.1 **Current Communications Infrastructure**

The following chart represents a global view of the “current” AFIS and AFIS interfaced systems and services.

Figure 1 OCCL Current AFIS System Environment

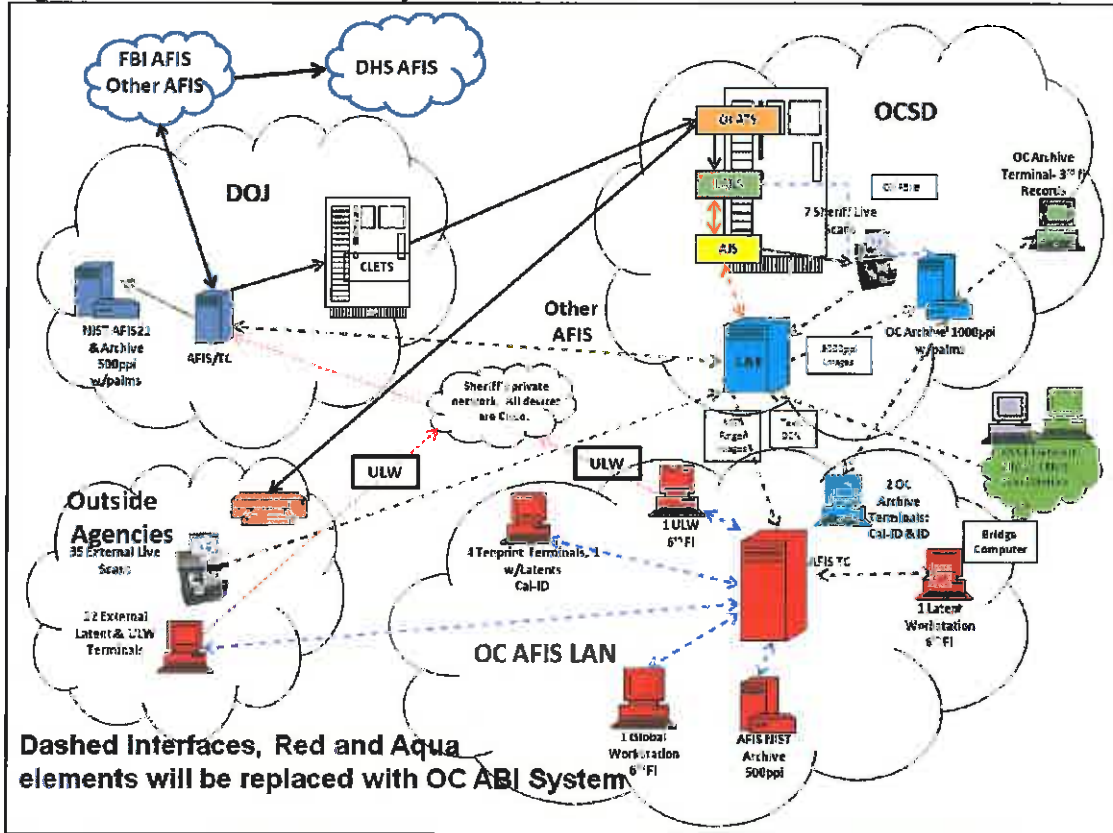


Table 48 provides a list of the networks known to Cal-ID and used in the OCSD criminal justice environment as of September 2011. The table is intended to provide a snapshot in time for use in network analysis.

Table 48 List of Current OC Cal-ID Interfaces and Networks Utilized

| System A | System B | Network utilized | Bandwidth capacity |
|---|---------------------------------------|---------------------------------------|--------------------|
| AJS | S&F | Sheriff's Network | 1Gbps |
| AJS | OCSD LIVE SCANS | Sheriff's Network via OCSD WAN Server | 45Mbps |
| Cal-ID AFIS | AFIS Latent Terminals in PDs | Sheriff's Network | 1.5Mbps |
| Cal-ID AFIS | Cal-ID AFIS Tenprint Terminals @ OCCL | AFIS LAN | 100 Mbps |
| Cal-ID AFIS | Cal-ID AFIS latent Terminals @ OCCL | AFIS LAN | 100Mbps |
| Cal-ID AFIS-TC | S&F | Sheriff's Network | 1Gbps |
| Cal-ID AFIS TC (Vendor Specific interface for | CalDOJ TC | CLETS/AFIS LAN | Unknown |



OC ABI System Requirements Specification

| System A | System B | Network utilized | Bandwidth capacity |
|--------------------------------------|----------------------------------|--------------------------------------|---------------------------|
| tenprint, latent and CalDOJ | | | |
| Cal-ID AFIS tenprint and Latent@OCCL | Cal-ID AFIS TC | AFIS LAN | Unknown |
| Cal-ID AFIS tenprint and Latent@OCCL | WIN | CLETS/NLETS | 100Mbps |
| Cal-ID NIST LIVE SCANS Transmission | S&F | Sheriff's Network and County Network | 1.5Mbps |
| S&F | LARS | Sheriff's Network | 1Gbps |
| S&F | CalDOJ | CLETS | 45Mbps |
| CEMS | OCCL | OCLN | 100Mbps |
| FBI | ULW | CJIS WAN | Unknown |
| GWS OCCL Palm Latent Terminal | CalDOJ | CLETS | Unknown |
| JIMS | CalDOJ | Web | Unknown |
| JADE | CalDOJ | Web | Unknown |
| LARS via S&F | OC Archive | | 1Gbps |
| LIMS | LIMS Terminal | Sheriff's Network | 1.5Mbps |
| LIMS | AFIS Latent Terminal (one way) | Multi-homed client (2 NICs) | 100 Mbps |
| LIMS | CalDOJ Latent Terminal (one way) | Multi-homed client (2 NICs) | 100 Mbps |

5.2 New Communications Infrastructure

The OC ABI System will employ a modern, standards-based architecture that will permit the integration of new services over time. The architecture is intended to offer the more flexibility and capability than the current architecture. Figure 2 shows the conceptual OC ABI System high-level architecture. Many of the current communications paths and the store and forward will migrate to new infrastructure to be provided by the selected OC ABI System vendor. Note that the existing OC Store & Forward device will be replaced and eventually removed when the existing legacy AFIS is shut down.

The OC ABI System will be connected electronically with the CalDOJ criminal justice environment and, through it, with the FBI and other external agencies.

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Figure 2 Conceptual OC ABI System Architecture

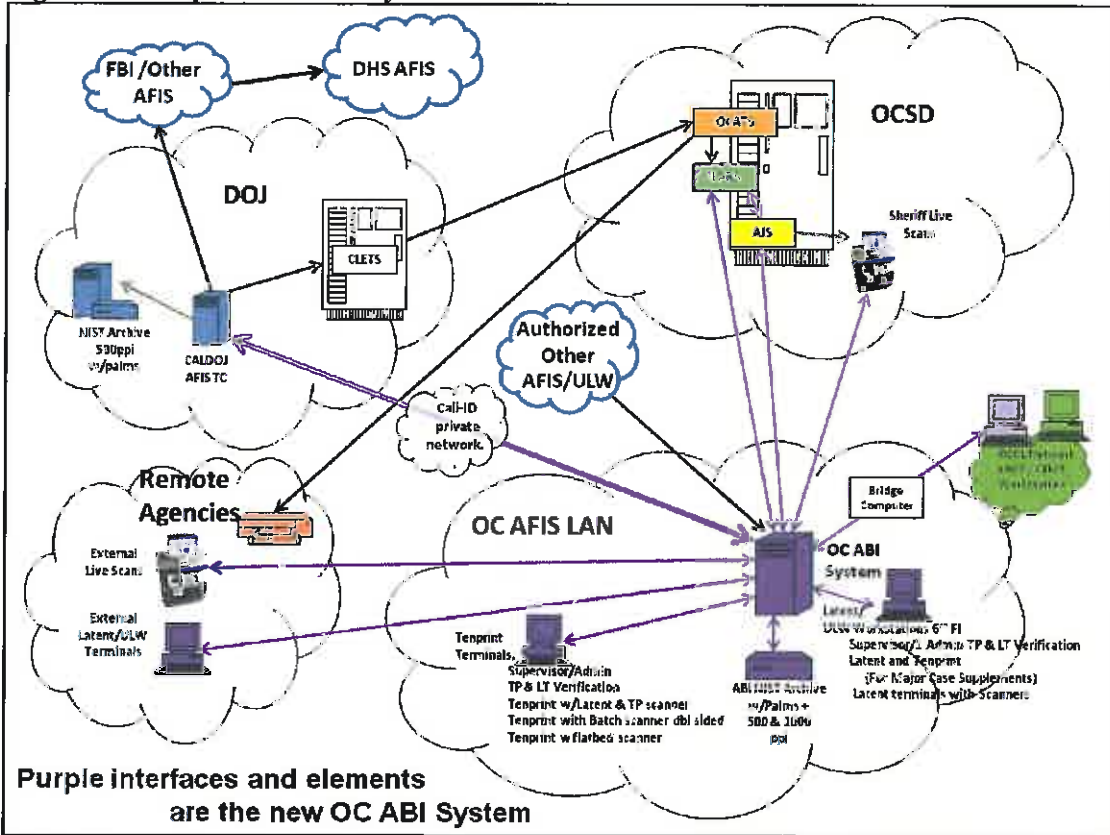


Table 49 provides a list of the systems that will be used in the OCSD criminal justice environment to support the new OC ABI System. The network will provide interconnectivity as appropriate.

Table 49 List of New OC ABI System Interfaces and Networks

| System A | System A Location | System B | System B Location |
|---|---|---|--------------------------------------|
| AJS | OCSD | OC ABI System | OCCL |
| OC ABI System | OCCL | AJS | OCSD |
| LARS | OCSD | OC ABI System | OCCL |
| OC ABI System | OCCL | LARS | OCSD |
| OC ABI System | OCCL | OC ABI System Latent Terminals | OC Terminal Locations See Appendix D |
| OC ABI System Latent Terminals | OC Terminal Locations See Appendix D | OC ABI System | OCCL |
| OC ABI System | OCCL | Cal-ID OC ABI System Tenprint Terminals | OCCL See Appendix D |
| Cal-ID OC ABI System Tenprint Terminals | OCCL See Appendix D | OC ABI System | OCCL |
| 35 Remote Agency NIST LIVE SCAN | Various Orange County Agencies See Appendix E | S&F | OCCL |



OC ABI System Requirements Specification

| System A | System A Location | System B | System B Location |
|---|------------------------|---|---|
| S&F | OCCL | 35 Remote Agency NIST LIVE SCAN | Various Orange County Agencies See Appendix E |
| 7 OCSD NIST LIVE SCAN | Various OCSD locations | S&F | OCCL |
| S&F | OCCL | 7 OCSD NIST LIVE SCAN | Various OCSD locations |
| S&F | OCCL | OC ABI System | OCCL |
| OC ABI System | OCCL | S&F | OCCL |
| OC ABI System | OCCL | CalDOJ TC | CalDOJ/Sacramento |
| CalDOJ TC | CalDOJ/Sacramento | OC ABI System | OCCL |
| OC ABI System | OCCL | Cross-jurisdictional systems (e.g. WIN, LASO, SFPD) | Various jurisdictions |
| Cross-jurisdictional systems (e.g. WIN, LASO, SFPD) | Various jurisdictions | OC ABI System | OCCL |
| FBI via DOJ CLETS | CalDOJ/Sacramento | OC ABI System | OCCL |
| OC ABI System | OCCL | FBI via DOJ CLETS | CalDOJ/Sacramento |
| FBI | FBI | ULW | OCCL |
| LIMS | OCCL | OC ABI System | OCCL |
| OC ABI System | OCCL | LIMS | OCCL |

Table 50 New OC ABI Network Requirements

| Requirement ID # | Requirement |
|------------------|--|
| NWReq001 | The OC ABI System network shall provide maximum Transmission times per the following list: <ul style="list-style-type: none"> • Tenprint Transactions without palms from a live scan to the OC ABI System central site – 30 seconds • Tenprint Transactions with palms from a live scan to the OC ABI System central site – 180 seconds • Responses to live scans – 10 seconds • Latent Transaction from a remote OC ABI Workstation to the OC ABI System central site – 90 seconds • Latent Transaction from a OCCL OC ABI Workstation to the OC ABI System central site – 10 seconds |
| NWReq002 | The OC ABI System network shall conform to FBI Criminal Justice Information Services (CJIS) CJISD-ITS-DOC-08140-5.0, CJIS Security Policy. |
| NWReq003 | The OC ABI System Network shall be sized to contain sufficient capacity to handle the peak communication Transaction rates provided in Tables 34 and 35 with a 50% design margin for each node and link. |
| NWReq004 | The OC ABI System Network shall provide connectivity between and among the systems and locations identified in Tables 48 and 49. |
| NWReq005 | The OC ABI System network shall be able to handle the protocols used by the non-OC ABI System components (e.g., Cal-DOJ network interface). |



*OC ABI System Requirements Specification***6 Qualification Requirements****6.1 Verification Methods**

This section establishes requirements for formal verification of the design and performance requirements set forth in Section III of this specification.

The specified methods of verification are inspection, analysis, demonstration, test and productive combinations of these methods. These methodologies are defined below:

Inspection: Verification by inspection will show through visual means that specified requirements have been met (e.g., examine a RAID disk drive and read the capacity from the label). For software, inspection includes physical examination of documentation, a listing of program code, or both to verify conformance to specified requirements.

Analysis: Analysis will verify the item meets specified requirements by technical evaluation of representative data (e.g., calculating availability using a model).

Demonstration: Demonstration will verify the item meets specified requirements by operational use in a scenario (e.g., scanning a latent image and generating an LFFS Transaction).

Test: Test will verify the item meets specified requirements by searching a controlled set of known test data through a system and documenting and analyzing the results (e.g., running "lights-out" latents through a system to determine the accuracy rate).

6.2 Verification Conditions

Verification Conditions are specific conditions under which the requirement will be verified. For testing of Accuracy and Response Time requirements, the following conditions will be set.

The converted repositories (known and unknown friction ridge files as well as related feature sets, pointers, and tables) will be audited as part of the central site technology Factory Acceptance Test (FAT). Accuracy tests will employ these repositories, while the search records will be data sets prepared by OCCL Cal-ID and having known image quality (tenprint only), minutiae counts (latents and their mates only) and mate or no-mate status information. FAT will include two accuracy tests: one with minimal intervention (known as lights out) and one with expert intervention following the vendor's recommended best practices. There will be appropriate levels of performance required for each of these two accuracy tests.

Table 51 shows the anticipated parameters for accuracy matching, with examiner assistance limited to orientation of latent images and marking the boundary (a.k.a. the region of interest) of the latent image area to be searched. This is referred to as Lights Out accuracy testing.

Table 51 Lights Out Accuracy Verification Conditions

| Field | TP-TP | TP-LT | LT-TP | KP ⁸ -PLT | PLT-KP |
|--|---------------|---------------------|---------------|----------------------|--------|
| Search Records | 10,000 | 10,000 ⁹ | 200 | 5,000 | 100 |
| Mated Records | 50% | 100 | 100 | 10 | 40 |
| NFIQ Average of Mated TPs | 3.1 or better | 3.1 or better | 3.1 or better | N/A | N/A |
| Minimum Number of Simultaneous Minutiae of Mated Items | N/A | 12 | 12 | 14 | 14 |
| Selectivity ¹⁰ | 1 | 1/5 | 1/5 | 1/5 | 1/5 |
| True Match Rate ¹¹ | 99.8% | 70% / | 70% / | 70% / | 70% / |

⁸ The abbreviation KP stands for Known Palm.

⁹ These Transactions will be cascaded from the 10,000 TP-TP searches.

¹⁰ Selectivity is a measure of allowed candidate list length.

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| Field | TP-TP | TP-LT | LT-TP | KP ⁸ -PLT | PLT-KP |
|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------|--------------------------|
| | | 80% | 80% | 80% | 80% |
| Non-Mated Search Records | 50% | 9,900 | 100 | 4,990 | 60 |
| Background Repository | All converted TP records | All converted LT records | All converted TP records | All converted Palm LT records | All converted KP records |

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Assumes a true mate is in the searched file.

OC ABI System Requirements Specification

System Requirements Specification Appendix A: Types of Transactions

For California (CA) EBTS, specific response TOTs will be provided after OC ABI System Contract Award. Therefore there are no specific CA response TOTs identified in the following table.

| OC ABI Service | Workflow # | Inbound EBTS TOT(s) | OC ABI Responses TOT(s) | Can Be Forwarded To CA, FBI, or Other EBTS | Forwarded TOT(s) | External Response TOT(s) |
|---|------------|------------------------------|-------------------------|--|-----------------------------------|--------------------------------------|
| Known Submittal Identification Services | | | | | | |
| Tenprint Fingerprint Identification Searches | WF01 | APP, CRM, CUS, DCD, IDN, REG | SRE, ERRRT | CA | APP, CRM, CUS, DCD, DNS, IDN, REG | FBI: SRE, ERRRT DHS: SRE ERRRT |
| Tenprint Fingerprint Identification Search (OC ABI & FBI) | WF01 | AMN, MPR | SRE, ERRRT | CA, FBI, Other | AMN, MPR | SRE, ERRRT |
| Fingerprint, Palmprint, Record Deletion, Seal Request | WF03 | | | CA, FBI | BDEC | FBI: SRE, ERRRT |
| Supplemental | WF03 | SUP | SRE, ERRRT | CA | SUP | |
| Known Submittal Identification: Tactical Services | | | | | | |
| TACTICAL Fingerprint Identification Search | WF02 | RPIS, TFS | RPISR, ERRRT | CA, FBI, Other | RPIS | FBI: RPISR, ERRRT |
| Tenprint Image Search, lights out (FBI EBTS) | WF02 | TPIS | SRT, ERRRT | CA, FBI, & Other | TPIS | SRT, ERRRT |
| Tenprint Image Search, lights out (CA EBTS) | WF02 | QID | SRT, ERRRT | CA | QID | |
| Personal Record Identifier | WF02 | PIR | SRT, ERRRT | CA | PIR | |
| DNA Notification Search | WF02 | DNS | DNR, ERRRT | CA | DNS | |
| Image Services | | | | | | |
| Fingerprint, Palmprint, Latent Supplemental | WF04 | IRQ | IRR, ISR, | CA, FBI | IRQ | IRR, ISR, ERRRT |

OC ABI System Requirements Specification

| OC ABI Service | Workflow # | Inbound EBTS TOT(s) | OC ABI Responses TOT(s) | Can Be Forwarded To. CA, FBI, or Other EBTS | Forwarded TOT(s) | External Response TOT(s) |
|--|------------|---------------------|-------------------------|---|------------------|--------------------------|
| Image/Features Retrieval Request | | | ERRI | | | |
| Subject Photo Request | WF04 | CPR | PRR, ERRI | CA, FBI | CPR | PRR, ERRI |
| Latent Services | | | | | | |
| Latent Print Image Investigation Search Request | WF06 | LFIS | SRL, ERRL | CA, FBI, Other | LFIS | SLR, ERRL |
| Latent Print Feature Investigation Search Request | WF06 | LFFS | SRL, ERRL | CA, FBI, Other | LFFS | SLR, ERRL |
| Unsolved Biometric Notification | WF05 | n/a | ULM | FBI CA | n/a | ULM |
| Unsolicited Unsolved Latent Record Delete Notification | LCMS | n/a | UULD | FBI CA | n/a | UULD |
| Unsolved Latent Add Confirm Request | LCMS | ULAC | ULAR, ERRL | CA, FBI | ULAC | ULAR, ERRL |
| Unsolved Latent File Delete Request | LCMS | ULD | ULDR, ERRL | CA, FBI | ULD | ULDR, ERRL |
| Latent Decision Request | LCMS | BDEC | BDECR, ERRI | CA, FBI | BDEC | BDER, ERRI |
| Latent Search Status and Modification Query | LCMS | LSMQ | LSMR, ERRA | CA, FBI | LSMQ | LSMR, ERRA |
| Latent Penetration Query | LCMS | LPNQ | LPNR, ERRL | CA, FBI | LPNQ | LPNR, ERRL |



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OC ABI System Requirements Specification

System Requirements Specification Appendix B: Table of Processing Parameters (PP)

| PP# | Processing Parameter Description | WF0 1 | 01Res p | 01 Err | WF0 2 | 02Res p | 02 Err | WF0 3 | 03Res p | 03 Err | WF0 4 | 04Res p | 04 Err | WF0 5 | 05Res p | 05 Err | WF0 6 | 06Res p | 06 Err | |
|--------|--------------------------------------|-------|---------|--------|-------|---------|--------|-------|---------|--------|-------|---------|--------|-------|---------|--------|-------|---------|--------|---|
| PP01 | TOT | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP02 | ORI | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP03 | Workflow Number | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP04 | Activation Date | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP05 | Termination Date | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP06 | FP Records in Matcher | X | | | X | | | X | | | | | | | | | | | | |
| PP07 | Palm Records in Matcher | X | | | X | | | X | | | | | | | | | | | | |
| PP08 | DAI | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP09 | Response TOT | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP10 | Response Error TOT | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP11 | Scan Image(s) | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP12 | Temprint/Latent Input Key Entry Form | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP13 | Create NIST Package | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP14 | Ingest NIST Package | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP15 | Parse NIST Package | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP16 | Feature Extraction | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP17 | Quality Control (QC) * 20 | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP17-A | Sequence Check | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP17-B | Sequence Check REJECT | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP17-C | Image Placement Check | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP17-D | Minimum Minutia Count Check | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP17-E | Pattern Call Check | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP18 | 1:1 LARS Interface | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP18-A | 1:1 TOT | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP18-B | 1:1 DAI | X | | | X | | | X | | | X | | | X | | | X | | | |
| PP18-C | 1:1 TCN | X | | | X | | | X | | | X | | | X | | | X | | | |





OC ABI System Requirements Specification

| PP# | Processing Parameter Description | WF0 1 | 01Res p | 01 Err | WF0 2 | 02Res p | 02 Err | WF0 3 | 03Res p | 03 Err | WF0 4 | 04Res p | 04 Err | WF0 5 | 05Res p | 05 Err | WF0 6 | 06Res p | 06 Err | |
|---------|--|-------|---------|--------|-------|---------|--------|-------|---------|--------|-------|---------|--------|-------|---------|--------|-------|---------|--------|--|
| PP18-D | TP-TP 1:1 Search | X | | | X | | | X | | | | | | | | | | | | |
| PP18-D1 | Default Matcher Priority | X | | | X | | | X | | | | | | | | | | | | |
| PP18-D2 | 1:1 Auto Match Threshold (1) | X | | | X | | | X | | | | | | | | | | | | |
| PP18-D3 | 1:1 Auto No-Match Threshold (4) | X | | | X | | | X | | | | | | | | | | | | |
| PP18-D4 | 1:1 Mandatory Match | X | | | X | | | X | | | | | | | | | | | | |
| PP19 | TP-TP 1:n Search | X | | | X | | | X | | | | | | | | | | | | |
| PP19-A | Default Matcher Priority | X | | | X | | | X | | | | | | | | | | | | |
| PP19-B | 1:n Auto Match Threshold 2 | X | | | X | | | X | | | | | | | | | | | | |
| PP19-C | 1:n Auto No-match Threshold 3 | X | | | X | | | X | | | | | | | | | | | | |
| PP19-D | 1:n Mandatory Match | X | | | X | | | X | | | | | | | | | | | | |
| PP20 | TP-LT Search | X | | | X | | | X | | | | | | | | | | | | |
| PP20-A | Default Matcher Priority | X | | | X | | | X | | | | | | | | | | | | |
| PP20-B | 1:n Auto Match Threshold 5 | X | | | X | | | X | | | | | | | | | | | | |
| PP20-C | 1:n Auto No-match Threshold 6 | X | | | X | | | X | | | | | | | | | | | | |
| PP21 | KP-PLT Search | X | | | X | | | X | | | | | | | | | | | | |
| PP21-A | Default Matcher Priority | X | | | X | | | X | | | | | | | | | | | | |
| PP21-B | 1:n Auto Match Threshold 7 | X | | | X | | | X | | | | | | | | | | | | |
| PP21-C | 1:n Auto No-match Threshold 8 | X | | | X | | | X | | | | | | | | | | | | |
| PP22 | TP-TP 1:1 Auto Verification | X | | | X | | | X | | | | | | | | | | | | |
| PP23 | TP-TP 1:n Auto Verification | X | | | X | | | X | | | | | | | | | | | | |
| PP24 | 1:1 Examiner Verification | X | | | | | | X | | | | | | | | | | | | |
| PP25 | 1:n Examiner Verification | X | | | | | | X | | | | | | | | | | | | |
| PP26 | Combined 1:1 & 1:n Examiner Verification | X | | | X | | | X | | | | | | | | | | | | |
| PP27 | Consolidation(s) | X | | | X | | | X | | | | | | | | | | | | |
| PP27-A | Examiner Verification Determination | X | | | X | | | X | | | | | | | | | | | | |
| PP27-B | Auto Consolidation(s) | X | | | X | | | X | | | | | | | | | | | | |

OC ABI System Requirements Specification

| PP# | Processing Parameter Description | WF01 | 01Res P | 01 Err | WF02 | 02Res P | 02 Err | WF03 | 03Res P | 03 Err | WF04 | 04Res P | 04 Err | WF05 | 05Res P | 05 Err | WF06 | 06Res P | 06 Err | |
|---------|---|------|---------|--------|------|---------|--------|------|---------|--------|------|---------|--------|------|---------|--------|------|---------|--------|---|
| PP27-B1 | Use Oldest OCN | X | | | | | | X | | | | | | | | | | | | |
| PP27-B2 | Use Newest OCN | X | | | | | | X | | | | | | | | | | | | |
| PP28 | Assign new OCN for new enrollees | X | | | | | | X | | | | | | | | | | | | |
| PP28-A | Assign from Series (A,B,C,D,etc.) | X | | | | | | X | | | | | | | | | | | | |
| PP29 | Use Ingested OCN for new enrollee | X | | | | | | X | | | | | | | | | | | | |
| PP30 | Repository Update | X | | | | | | X | | | | | | | | | | | | |
| PP31 | MCI Update | X | | | | | | X | | | | | | | | | | | | |
| PP32 | ANSI/NIST Archive Update | X | X | | X | X | | X | X | | X | X | | X | X | | X | X | | X |
| PP32-A | Update Photo/SMT indices | X | | | X | | | X | | | X | | | | | | X | | | |
| PP32-B | Update all text data indices | X | | | X | | | X | | | X | | | | | | X | | | |
| PP33 | Return Response to Originator | X | | | X | | | X | | | | | | | | | | | | |
| PP33-A | Default Return DAI; | X | | | X | | | X | | | X | | | | | | X | | | |
| PP33-B | Default Return TOT | | | | X | | | O | | | X | | | | | | X | | | |
| PP33-C | Default Return Error TOT | X | | | X | | | X | | | X | | | | | | X | | | |
| PP33-D | Set of Return Type-1 Fields | X | | | X | | | X | | | X | | | | | | X | | | |
| PP33-E | Set of Return Owner/Authorized Type-2 Fields | X | | | X | | | X | | | X | | | | | | X | | | |
| PP33-F | Set of Return Non Owner/Generic Type-2 Fields | X | | | X | | | X | | | X | | | | | | X | | | |
| PP34 | ANSI/NIST Archive Update | X | | | | | | | | | | | | | | | | | | |
| PP35 | Forward to CALDOJ | X | | | X | | | X | | | X | | | | | | X | | | X |
| PP35-A | Regardless of manual or auto match/no match | X | | | X | | | X | | | | | | | | | | | | |
| PP35-B | All No match | X | | | X | | | X | | | | | | | | | | | | |
| PP35-C | One or more auto Match | X | | | X | | | X | | | | | | | | | | | | |
| PP35-D | Single Auto Match only with CII from MCI | X | | | X | | | X | | | | | | | | | | | | |
| PP35-E | Simultaneously | X | | | X | | | X | | | | | | | | | | | | |
| PP35-F | Default forward DAI to CALDOJ | X | | | X | | | X | | | X | | | | | | X | | | X |



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| PP# | Processing Parameter Description | WF01 | 01 Res p | 01 Err | WF02 | 02 Res p | 02 Err | WF03 | 03 Res p | 03 Err r | WF04 | 04 Res p | 04 Err r | WF05 | 05 Res p | 05 Err r | WF06 | 06 Res p | 06 Err r |
|--------|---|------|----------|--------|------|----------|--------|------|----------|----------|------|----------|----------|------|----------|----------|------|----------|----------|
| PP35-G | Default forward TOT to CALDOJ | X | | | X | | | X | | | X | | | | X | | X | | |
| PP35-H | Map Type-1 Fields Instruction set | X | | | X | | | X | | | X | | | | X | | X | | |
| PP35-I | Map Type-2 Fields Instruction set | X | | | X | | | X | | | X | | | | X | | X | | |
| PP35-J | ANSI/NIST Archive Update (forward) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP35-K | Receive Response from CalDOJ | X | | | X | | | X | | | X | | | | X | | X | | |
| PP35-L | Forward CALDOJ Response to Originator | X | | | X | | | X | | | X | | | | X | | X | | |
| PP35-M | Default forward Response DAI | X | | | X | | | X | | | X | | | | X | | X | | |
| PP35-N | Default forward Response TOT | X | | | X | | | X | | | X | | | | X | | X | | |
| PP35-O | Default forward Error Response TOT | X | | | X | | | X | | | X | | | | X | | X | | |
| PP35-P | ANSI/NIST Archive Update (Response) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP36 | Forward to FBI/Other AFIS | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-A | Regardless of manual or auto match/no match | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-B | All No match | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-C | One or more auto Match | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-D | Single Auto Match only with FBI from MCI | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-E | Simultaneously | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-F | Default forward DAI | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-G | Default forward TOT | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-H | Map Type-1 Fields Instruction set | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-I | Map Type-2 Fields Instruction set | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-J | ANSI/NIST Archive Update (Forward) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PP36-K | Receive Response from FBI/OTHER | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-L | Forward FBI/OTHER Response to Originator | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-M | Default forward Response DAI | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-N | Default forward Response TOT | X | | | X | | | X | | | X | | | | X | | X | | |
| PP36-O | Default forward Error Response TOT | X | | | X | | | X | | | X | | | | X | | X | | |

Contractor's Initial: _____
 Contract # MA-060-13010457

OC ABI System Requirements Specification

| PP# | Processing Parameter Description | WF0 1 | 01Res P | 01 Err | WF0 2 | 02Res P | 02 Err | WF0 3 | 03Res P | 03 Err | WF0 4 | 04Res P | 04 Err | WF0 5 | 05Res P | 05 Err | WF0 6 | 06Res P | 06 Err |
|--------|-------------------------------------|-------|---------|--------|-------|---------|--------|-------|---------|--------|-------|---------|--------|-------|---------|--------|-------|---------|--------|
| PP36-P | ANSI/NIST Archive Update (Response) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

*OC ABI System Requirements Specification***System Requirements Specification Appendix C: Table of Dissemination Fields**

The Fields listed in this Appendix are those that can be disseminated when presented to non-owner agencies.

| Mne | Field Name | FBI Field# | CA Field # subset# |
|--------------|-------------------------------|-------------|--------------------|
| AGE | Age | 2.023 | 2.655 |
| AKA | Alias | 2.019 | 2.151 |
| BKF | Booking For | | 2.111 |
| BORI | Booking Controlling ORI | | 2.110 |
| CRI | Controlling ORI | 2.073 (1-3) | |
| CTZ | Citizenship | 2.021 | 2.159 |
| DAI | Destination Agency Identifier | 1.007 | 1.007 |
| DAT | FBI Input Date | 1.005 | |
| DOA | Date of Arrest | 2.045 | 2.113 |
| DOB | Date of Birth | 2.022 | 2.153 |
| EYE | Eye Color | 2.031 | 2.156 |
| FBI | FBI Identification number | 2.014 | 2.174 |
| FP | CA Input Date | | 2.117(2) |
| HGT | Height | 2.027 | 2.165 |
| LSID | Live Scan ID | | 2.105 |
| NAM | Name | 2.018 | 2.150 |
| OCA | OCA; BKN - Booking Number | | 2.112(1) |
| | OCA; MNN/OCN | | 2.112(2) |
| ORI | Originating Agency Identifier | 1.008 | 1.008 & 2.111(1) |
| POB | Place Of Birth | 2.020 | 2.158 |
| SCN | State Control Number | 1.009 | 2.103 |
| SEX | Gender | 2.024 | 2.154 |
| SID | State Identification number | 2.015 | 2.170 |
| TCN | Transaction Control Number | 1.009 | 1.009 |
| TCR | Transaction Control Reference | 1.010 | 1.010 |
| TOT/ TOT2 | Type of Transaction | 1.004 | 2.106 |
| WGT | Weight | 2.029 | 2.166 |

*OC ABI System Requirements Specification***System Requirements Specification Appendix D: Workstation Site Location**

The number of workstations, printers, and scanners by facility are presented below in Tables 52 and 53, to permit communications analysis to include the number of network interface cards, location of network drops, and the ratio of workstations to printers at each location.

The workstations, printers, and Automated Document Feeder (ADF) scanners are defined in the OC ABI System Requirements Specification Form and Fit Requirements, Section 4.7.

Table 52 Tenprint Device Locations

| Tenprint Location | Number of Workstations | Number of Shared Printers | Number of Scanners | Number of Shared ADF Scanners |
|-------------------|------------------------|---------------------------|--------------------|-------------------------------|
| OCCL – Cal-ID | 11 | 5 | 10 | 1 |

Table 53 Latent Device Locations

| Latent Location | Number of Workstations | Number of Printers | Number of Scanners |
|---------------------|------------------------|--------------------|--------------------|
| OCCL – ID | 10 | 5 | 9 |
| Anaheim PD | 1 | 1 | 1 |
| Buena Park PD | 1 | 1 | 1 |
| Costa Mesa PD | 1 | 1 | 1 |
| Fountain Valley PD | 1 | 1 | 1 |
| Fullerton PD | 1 | 1 | 1 |
| Garden Grove PD | 1 | 1 | 1 |
| Huntington Beach PD | 1 | 1 | 1 |
| Irvine PD | 1 | 1 | 1 |
| Newport Beach PD | 1 | 1 | 1 |
| Orange PD | 1 | 1 | 1 |
| Santa Ana PD | 1 | 1 | 1 |
| Westminster PD | 1 | 1 | 1 |

*OC ABI System Requirements Specification***System Requirements Specification Appendix E: Live Scans by Location**

The number of live scans by Agency is presented below, in Table 54, to permit communications analysis to include the number of network interface cards and location of network drops at each location.

Table 54 Live Scan Locations and Counts

| Agency | # of Live Scans | Daily Throughput | Peak Hourly Throughput |
|--|-----------------|------------------|------------------------|
| Allso Viejo | 2 | 20 | 4 |
| Orange PD | 2 | 20 | 4 |
| Brea PD | 1 | 10 | 2 |
| Buena Park PD | 1 | 10 | 2 |
| Cal-ID | 1 | 10 | 2 |
| OCCL Cal-ID Other Prints | 3 | 30 | 6 |
| Costa Mesa PD | 1 | 10 | 2 |
| Cal State University Fullerton PD | 1 | 10 | 2 |
| Cypress PD | 1 | 10 | 2 |
| Fountain Valley PD | 1 | 10 | 2 |
| Fullerton PD | 2 | 20 | 4 |
| Garden Grove PD | 2 | 10 | 2 |
| Huntington Beach PD | 1 | 10 | 2 |
| OCSD Jail: Intake Release Center (IRC) | 5 | 300 | 60 |
| Irvine PD | 1 | 10 | 2 |
| Juvenile Hall | 1 | 10 | 2 |
| Laguna Beach PD | 1 | 10 | 2 |
| La Habra PD | 1 | 10 | 2 |
| La Palma PD | 1 | 10 | 2 |
| Los Alamitos PD | 1 | 10 | 2 |
| Newport Beach PD | 1 | 10 | 2 |
| Placentia PD | 1 | 10 | 2 |
| Probation | 1 | 10 | 2 |
| Santa Ana PD | 1 | 10 | 2 |
| Seal Beach PD | 1 | 10 | 2 |
| OCSD Jail: Theo Lacy Facility (TLF) | 3 | 30 | 6 |
| Tustin PD | 1 | 10 | 2 |
| University of California Irvine PD | 1 | 10 | 2 |
| Westminster PD - 2 locations | 2 | 20 | 4 |
| Totals: | 42 | | |

OC ABI System Requirements Specification

System Requirements Specification Appendix F: List of All Requirements

The requirements are listed alphabetically below.

Functional Requirements

| # | Requirement ID | Requirement |
|-----|-----------------|--|
| F1 | AdminFuncReq001 | The OC ABI System shall support the Cal-ID Administrator to selectively set up and manage at least 10 classes of users (e.g., latent supervisor) with configurable permissions per class. |
| F2 | AdminFuncReq002 | The OC ABI System shall support the Cal-ID Administrator in assigning a default modular system workflow and default processing parameters (PP) for each TOT, ORI, and LSID/AFIS combination. |
| F3 | AdminFuncReq003 | The OC ABI System shall support the Cal-ID Administrator or Cal-ID Supervisor in editing the default PP [AdminFuncReq002], as minimally specified in Appendix B. |
| F4 | AdminFuncReq004 | Reserved |
| F5 | AdminFuncReq005 | Reserved |
| F6 | AdminFuncReq006 | The OC ABI System shall support the Cal-ID Administrator in assigning, editing, and managing the fields and record types that may be disseminated and viewed (BisRule001) to non-owner and/or to OCCL examiners with limited file access authorization. The list of all fields is provided in Appendix C Dissemination List. |
| F7 | AdminFuncReq007 | The OC ABI System shall support the Cal-ID Administrator in assigning, editing, and managing workflow priorities PPs as defined in AdminFuncReq003, with up to 9 priorities to conform to the ANSI/NIST Standard for Field 1.006: "The values will range from "1" to "9", with "1" denoting the highest priority. The default value will be defined by the agency receiving the Transaction." |
| F8 | AdminFuncReq008 | The OC ABI System shall support the Cal-ID Administrator in assigning, editing, and managing all matching Thresholds specific to each TOT, ORI and LSID group as defined in AdminFuncReq003. |
| F9 | AdminFuncReq009 | Reserved |
| F10 | AdminFuncReq010 | The OC ABI System shall enable the Cal-ID Administrator to selectively back up the OC ABI System, biographic, ANSI/NIST Archive, and/or forensic files at all System levels. |
| F11 | AdminFuncReq011 | The OC ABI System shall support the Cal-ID Administrator in selectively restoring the OC ABI System, biographic, ANSI/NIST Archive, and forensic files. |
| F12 | AdminFuncReq012 | The OC ABI System shall allow the Cal-ID Administrator to selectively ingest any supported Transaction(s), individually or in bulk, and process them as appropriate to the TOT to include dynamically modifying the ingested Transactions; TOT into another TOT individually or in bulk. |
| F13 | AdminFuncReq013 | The OC ABI System shall permit the Cal-ID Administrator to selectively cancel programs that are not responding and restart any program or computer. |
| F14 | AdminFuncReq014 | The OC ABI System shall support the Cal-ID Administrator in selectively exporting, in bulk or individually, ANSI/NIST conformant Transactions along with any control files or indices such as the MCI. |
| F15 | AdminFuncReq015 | The OC ABI System shall support the Cal-ID Administrator in selectively exporting "unknown" (latent) files in bulk or individually to include images, EFS features, and case / image information. |
| F16 | AdminFuncReq016 | Reserved |
| F17 | AdminFuncReq017 | The OC ABI System shall support automated logging of the following information: <ol style="list-style-type: none"> 1. Use by time, person, functionality, etc. 2. Viruses encountered – at the device level. 3. All events associated with unsuccessful login attempts, at the device level. |
| F18 | AdminFuncReq018 | The OC ABI System shall support automated logging of the following information for the date / time of the request: <ol style="list-style-type: none"> 1. Disk memory used, free, and totals by System and component: <ul style="list-style-type: none"> ▪ ANSI/NIST Archive ▪ Temporary files (e.g. Transaction temp files) |

OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|-----|-----------------|---|
| | | <ul style="list-style-type: none"> ▪ LCMS <ol style="list-style-type: none"> 2. Peak and average matcher memory use on an hourly and daily basis, used and free, and totals by System and component 3. Matcher utilization/saturation at the device level on an hourly and daily basis |
| F19 | AdminFuncReq019 | <p>The OC ABI System shall support automated logging of the following information for a definable date / time range:</p> <ol style="list-style-type: none"> 1. A record of all abnormal shutdown(s) of any computer along with any available diagnostics. 2. Number and percentage of Transactions by class and TOT that failed/passed parser and image quality checks. 3. Number and percentage of Transactions by class and TOT that were manually reviewed by OCCL staff for QC. 4. Number and percentage of Transactions by class and TOT that were manually reviewed by OCCL staff for Verification. 5. Number and percentage of Transactions by class and TOT that were "errored out" in any workflow processing or output step. |
| F20 | AdminFuncReq020 | The OC ABI System shall support automated logging of individual finger and average by hand NFIQ scores sorted by TOT, submitting ORI, or date/time range. |
| F21 | AdminFuncReq021 | The OC ABI System shall support automated logging of vendor selected quality assessment score of individual fingers and averages by hand to include for each log entry the respective TOT, submitting ORI, and date/time. |
| F22 | AdminFuncReq022 | The OC ABI System shall support automated logging of vendor selected quality assessment score of individual palm images and averages by hand to include for each log entry the respective TOT, submitting ORI, and date/time. |
| F23 | AdminFuncReq023 | The OC ABI System shall support the administrators in generating reports using a robust report generation tool that permits ad hoc selection of fields, data ranges within fields, and Boolean operators against the repository, system logs, and system performance and capacity metrics. |
| F24 | AdminFuncReq024 | The OC ABI System shall support mathematical analysis and dynamic ordering of information within the reports [AdminFuncReq023]. |
| F25 | AdminFuncReq025 | The OC ABI System shall support exporting report content [AdminFuncReq024] to Word™, Excel™, or PDF™ as requested. |
| F26 | AdminFuncReq026 | <p>The OC ABI System shall support system administrators and supervisor(s) by providing demographic search capability against facial photos and SMTs as follows:</p> <ul style="list-style-type: none"> • Ingest search parameters selected from a pull down list of Field types • Search and produce a candidate list of OCN and TCNs that contain the matched demographics with thumbnails of the photo/SMT • Permit the examiner to select an OCN and/or TCN from the candidate list and bring up the associated Photo or SMT from the MCI file or to a specific archived Transaction within the constraints of BisRule001. The list will be presented/sorted by the preponderance of the matching demographics. • Selectively print the candidate list and/or the selected subject |
| F27 | AdminFuncReq027 | The OC ABI System shall support the Cal-ID Administrator in assigning PPs to workflows as defined in AdminFuncReq003 to establish, define, modify and delete authorized access and functionalities (TOT) for each cross-jurisdictional ORI, including but not limited to establishing the default matching priority processing parameters, threshold parameters, and per AdminFuncReq006 the Fields and records that can be exchanged. |
| F28 | AdminFuncReq028 | The OC ABI System shall support the Cal-ID Administrator with the ability to set the auto assign OCN number to any group of numbers by selecting a beginning and end OCN. |
| F29 | AdminFuncReq029 | The OC ABI System shall support the Cal-ID Administrator in assigning a default set of forms, key entry and data validations for each TOT and DAI. The validation can vary for each TOT depending on the destination agency. |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|-----|-----------------|--|
| F30 | AdminFuncReq030 | The OC ABI System shall support the Cal-ID Administrator or Cal-ID Supervisor in selecting a specific TOT set of data entry and data validation guidelines to include at the TOT and DAI level: <ol style="list-style-type: none"> 1. Tables and field definitions will be initially defined using Appendix A and will be periodically updated by the OC ABI System Cal-ID Administrator. 2. All default values will be identified 3. Fields can be defined to be automatically populated with a default and/or cascading value into other fields to best minimize key entry 4. The OC ABI System will provide drop down menus for data fields 5. Tables can be defined to accept new values as identified by the operator |
| F31 | AdminFuncReq031 | Reserved. |
| F32 | AdminFuncReq032 | The OC ABI System shall notify the Cal-ID Administrator when: <ol style="list-style-type: none"> 1. The temporary buffer (StorageReq001 or StorageReq002) is 90% full; every 24 hours until it falls below 90% 2. The temporary buffer (StorageReq001 or StorageReq002) is 98% full; every hour until it falls below 98% 3. If either temporary buffer (StorageReq001 or StorageReq002) reaches 100% full. 4. Note: the OC ABI System will notify the Cal-ID Administrator and the Cal-ID Administrator or the system supervisor who will have the ability to manually delete Transactions per AdminFuncReq033. |
| F33 | AdminFuncReq033 | The OC ABI System shall provide the Cal-ID Administrator with the ability to manually delete Transactions from the temporary queues on a one by one basis or by selecting groups based on TOT, ORIs and/or completion or initial dates. |
| F34 | AdminFuncReq034 | The OC ABI System shall provide the Cal-ID Administrator with the ability to monitor the OC ABI System network by producing network access summary reports, workload and peak load reports. |
| F35 | AdminFuncReq035 | The OC ABI System shall provide the Cal-ID Administrator with immediate notifications of any and all attempted and actual security breaches and unauthorized OC ABI System Network system accesses, by providing a detailed report of the access or breach of the network. |
| F36 | AdminFuncReq036 | The OC ABI System shall notify the Cal-ID Administrator when the Archive (StorageReq004) is 80% full, 85% full, and 90% full. |
| F37 | LCMSReq001 | The OC ABI System shall support latent examiners and system administrators in the creation of latent cases, independent of actually loading any images, to include entering and saving information in the following data Fields: <ol style="list-style-type: none"> 1. Case name 2. Case number 3. Owning agency 4. Date of crime 5. Date case opened in LCMS 6. Primary Examiner the case is assigned to 7. Secondary Examiner the case is assigned to 8. Supervisor Examiner the case is assigned to 9. Crime Lab reference number/lift number 10. 4-digit NCIC Uniform Offense Code 11. State Crime Code(s) – a pull down menu based on the 4-digit Uniform Crime code entered 12. Local Crime Code(s) – a pull down menu based on the 4-digit Uniform Crime code entered 13. Auto delete flag at statute of limitations date (Y/N) 14. Up to 10 additional free form Fields |
| F38 | LCMSReq002 | The OC ABI System shall support latent examiners and system administrators in populating and updating a "method of collection" table used in an LCMS pull-down menu of types of collection/processing to include lifts; digital imagery; Alternate Light Source (ALS); ninhydrin, DFO, or other chemical process; deposition |

OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|-----|----------------|--|
| | | processes; and up to 10 others. |
| F39 | LCMSReq003 | The OC ABI System shall permit Cal-ID System administrators in populating and updating a table of statutes of limitations based on state crime codes. |
| F40 | LCMSReq004 | The OC ABI System shall permit Cal-ID system administrators in selective maintenance of the LCMS files, unsolved latent file, and matcher files to include correcting incorrectly entered information, moving images between cases, associating cases, and updating the table of statutes of limitations based on state crime codes. |
| F41 | LCMSReq005 | The OC ABI System shall automatically track all latents submitted to external agencies for retention. |
| F42 | LCMSReq006 | The OC ABI System shall automatically track for reporting purposes all latents submitted by external and internal agencies including all vendor workstations and ULW applications. |
| F43 | LCMSReq007 | The OC ABI System shall automatically identify situations where searches against different latents from the same case have identical candidates anywhere in the top 100 positions and alert the examiner(s) assigned to the case with a message in their work queue. The OC ABI System examiner community refers to this as a latent candidate merge. |
| F44 | LCMSReq008 | The OC ABI System shall offer latent examiners and system administrators the ability to remove latent images from the OC ABI System and/or an external unsolved latent file(s). |
| F45 | LCMSReq009 | If latent examiners and system administrators elect [LCMSReq007] to remove a latent image from any external system's unsolved latent file, the OC ABI System shall automatically generate the appropriate TOT from Table 28. |
| F46 | LCMSReq010 | The OC ABI System shall automatically alert the system administrator via a message in an administrative queue when a case reaches the following windows: 90, 60, and 30 days from the expiration of the statute of limitations for any and all cases. |
| F47 | LCMSReq011 | The OC ABI System shall support the latent examiners and system administrators in selectively opening and dealing with administrative message in their work queue and in re-launching or closing cases where the statute of limitations expired notice has been sent to them. |
| F48 | LCMSReq012 | The OC ABI System shall automatically delete unsolved cases from the LCMS when the statute of limitations expires if the Auto-Delete flag was set to "Y" in LCMS when the case was opened or at any later point. |
| F49 | LCMSReq013 | If the LCMS automatically closes a latent case that has any images in an external system's unsolved latent file, the OC ABI System shall automatically generate the appropriate TOT from Table 28. |
| F50 | LCMSReq014 | The OC ABI System shall forward latent management Transactions to CalDOJ and/or the FBI's NGI system. |
| F51 | LCMSReq015 | The OC ABI System shall be able to ingest external system responses from CalDOJ, the FBI (ULAR, ULDR, LSMR, ERRL and ERRA TOTs). |
| F52 | LCMSReq016 | The OC ABI System shall use the response information from CalDOJ or the FBI to update the Transaction log. |
| F53 | LCMSReq017 | The OC ABI System shall automatically forward any external system response Transactions to the appropriate LCMS. |
| F54 | LCMSReq018 | The OC ABI System shall automatically log all latent management Transactions and activities to include date, time, person performing the activity, activity type, status (successful or problem encountered), and any changes to the OC ABI System or external system matcher files of unsolved latents. |
| F55 | LCMSReq019 | The OC ABI System shall record a copy of each ingested Transaction in the ANSI/NIST Archive in the fully CA/FBI EBTS compliant form in which it was received. |
| F56 | LCMSReq020 | The OC ABI System shall support latent examiners in the scanning of major case prints, to include known exemplars of palm and finger proximal, medial, distal, side and tip friction ridge, at 1000 ppi to include storing them in appropriate Type-14 or |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|-----|-----------------|--|
| | | Type-15 records, assigned to a specific Latent case. |
| F57 | LCMSReq021 | The OC ABI System shall support latent examiners in searching latents against the major case prints associated with a case. |
| F58 | LCMSReq022 | The OC ABI System shall support latent examiners and system administrators in the linking of major case prints to additional cases. |
| F59 | LCMSReq023 | The OC ABI System shall support latent examiners and system administrators in the deletion of major case prints. |
| F60 | LCMSReq024 | The OC ABI System shall support latent examiners by providing demographic search capability against facial photos and SMTs as follows: <ul style="list-style-type: none"> • Ingest search parameters selected from a pull down list of Field types • Search and produce a candidate list of OCN and TCNs that contain the matched demographics with thumbnails of the photo/SMT • Permit the examiner to select an OCN and/or TCN from the candidate list and bring up the associated Photo or SMT from the Master ID cross-reference file or to a specific archived Transaction within the constraints of BisRule001. The list will be presented/sorted by the preponderance of the matching demographics. • Selectively print the candidate list and/or the selected subject |
| F61 | LCMSReq025 | The LCMS will provide tracking of the processing of latents through all searches to include maintaining a log of searches, image processing, candidates, etc for all vendor workstations or a ULW application. |
| F62 | LCMSReq026 | The OC ABI System shall support latent examiners and system administrators in the relaunching LT-TP from file major case prints. |
| F63 | WF01InputReq001 | For paper forms submitted, the OC ABI System shall support: The ability for the operator to select from a menu of sets of card or paper forms, where the default will be dynamically set to the last processed set of forms. The ability for the operator to select from a menu of TOTs (as identified in Table 4, Table 8 and Table 12), where the default will be set to the last processed TOT. Scanning of the front and back sides (where information is found) of friction ridge forms at 250 or 300 ppi and creating the Type-20 record(s), compressed at 10:1 using JPEG 2000. Create an automated assignment of a unique TCN, which can be optionally overwritten by the Cal-ID operator. For flatbed scanners, display first side of any double sided form to the operator and support active key entering while the other side or additional cards (e.g., a palmpoint card) are being scanned. After scanning is complete, allow the operator to view the scanned card images and initiate a re-scan if appropriate. |
| F64 | WF01InputReq002 | For paper forms submitted, the OC ABI System shall provide the user with: The capability of automatically scanning the image portions of the fingerprint and/or palmpoint forms at 1,000 ppi using FBI certified EBTS Appendix-F scanner systems and FBI compression guidelines Automatically assigning the image(s) to Type-14/15 records, as appropriate. |
| F65 | WF01InputReq003 | For paper forms submitted, the OC ABI System shall provide the user with: The capability of entering Type-1 and Type-2 Field specific texts to an operator selected TOT and Destination Agency Identifier (DAI), per the corresponding CA/FBI EBTS. Linking the text Fields (Types 1 and 2) with the appropriate scanned images [WF01InputReq001 and WF01Input002]. The OC ABI System will perform data validations as the operator is entering data, such as date tests, etc. and notify operator at the time of any deficiency and support corrective actions. The OC ABI System will perform completed package checks to confirm all of the "required" fields and multiple field relationships have been properly populated. Double Key entry Verifications will be required based on the default processing parameters associated with the TOT selected. The fields requiring double key entry |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|-----|-----------------|---|
| | | will be defined in the processing parameters for each TOT and DAI. |
| F66 | WF01InputReq004 | For paper forms submitted, after scanning and text entry are complete the OC ABI System shall automatically create an ANSI/NIST Transaction with the Record Types-1, 2, 14, 15 (when palms are present), and 20 and put them in the processing queue for ingesting into the appropriate Workflows 01, 02, or 03. |
| F67 | WF01InputReq005 | The OC ABI System shall be able to: <ol style="list-style-type: none"> 1. Ingest EBTS Transactions as listed in Table 4, both electronically submitted Transactions and Transactions created in WF01InputReq004 2. Parse for compliance with the selected EBTS Transaction definitions per the processing parameters for the submitted TOT, ORI and LSID, then log the results per BisRule011 3. Check for adherence to annotations for missing images (e.g., AMP) 4. Check for duplicate TCN/BKN per BisRule006. 5. The OC ABI System will return the appropriate NIST error response specified in Appendix A with detailed error descriptions per CA/FBI guidelines for those that fail step 2 or 3 above. The results are to be returned, as appropriate, logged, and the Transaction removed from this Workflow. |
| F68 | WF01InputReq006 | The OC ABI System shall generate and store NFIQ scores for each finger (rolled and/or flats) and any other vendor utilized image quality assignment algorithm(s) and generate and store any Palm image quality assignment algorithm(s) and the generated score for each palm image – all per BisRule013. |
| F69 | WF01InputReq007 | The OC ABI System shall automatically assign pattern classification(s) to each finger image (whorl, right loop, left loop, arch and/or unknown). |
| F70 | WF01InputReq008 | The OC ABI System shall perform quality checks using the ingested friction ridge images against quality threshold processing parameters per BisRule011. |
| F71 | WF01InputReq009 | The OC ABI System shall conditionally forward the Transactions that fail the automated quality checks [WF01InputReq008] to appropriate examiner work queues for examiner-assisted QC or conditionally reject the Transaction per processing parameters based on the ingested TOT, ORI and LSID. All rejected are to be removed from this Workflow after sending the appropriate ANSI/NIST response Transaction. |
| F72 | WF01InputReq010 | The OC ABI System shall permit examiners to select a Transaction from the QC queue and present the first image from the selected Transaction within 4 seconds and all images within 30 seconds. |
| F73 | WF01InputReq011 | The OC ABI System shall provide support to examiners in performing QC activities: <ol style="list-style-type: none"> 1. Adjust sequence: <ul style="list-style-type: none"> ▪ From Plain to Rolled ▪ From Rolled to Rolled ▪ Whole hand swap 2. Correct or establish the pattern 3. Center images 4. Correct annotations 5. Provide an ability to reject a Transaction by: <ul style="list-style-type: none"> ▪ Supporting the operator with the ability to select a table of reasons from a list or enter a reason via the keyboard ▪ Automatically generate the appropriate NIST error response back to the originator |
| F74 | WF01InputReq012 | The OC ABI System shall record in a system log all quality checks (automated and manual) results and make them available for review. The results to be logged include all Type-1 and Type-2 record Fields, as well as: <ol style="list-style-type: none"> 1. Automated QC <ul style="list-style-type: none"> ▪ Fingerprint quality score per NFIQ and the NFIQ algorithm version for each |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|-----|-----------------|--|
| | | <p>rolled and plain finger per BisRule013</p> <ul style="list-style-type: none"> ▪ Any additional vendor selected Quality algorithm and generated score for each rolled and plain finger per BisRule013 ▪ The vendor selected Quality algorithm and generated score for each palm image per BisRule013 ▪ Rolled sequence results against the plains ▪ Presence of spurious fingers and palms ▪ Presence of AMP or Bandaged annotations when no images are present or any other annotations ▪ Automated pattern call(s) ▪ Rejected Transaction(s) <p>2. Manual QC</p> <ul style="list-style-type: none"> ▪ Pattern classifications after manual QC ▪ Manual sequence adjustments ▪ Manual image adjustments ▪ Annotations after manual QC ▪ Rejected Transaction(s) |
| F75 | WF01InputReq013 | The OC ABI System shall be able to respond to rejected Transactions via an EBTS error Transaction (corresponding response error TOT for the ingested TOT, ORI and LSID, per Appendix A). |
| F76 | WF01InputReq014 | The OC ABI System shall create and store Transactions per BisRule007 and BisRule013. |
| F77 | WF01InputReq015 | The OC ABI System shall rate any Type-10 frontal facial images in the accepted "final" Transactions per the ANSI/NIST 1-2011 Annex E SAP 30 in terms of pass or fail and record the results in a searchable data file. The "fail" determination will not cause a rejection of the Transaction and an error describing the image error shall be added as a determination in the message field in the response to the originator. The photo(s) evaluation algorithm(s)/version(s) ratings score for each image are to be stored in Field 10.024 of the Final Transaction. |
| F78 | WF01InputReq016 | <p>The OC ABI System shall forward the acceptable Transactions:</p> <ul style="list-style-type: none"> • An applicant Transaction (other than those with processing parameters indicating a local search) will go directly to the CalDOJ AFIS, bypassing the Cal-ID OC ABI System matching process per processing parameters • All others will go onto the OC ABI System for processing. |
| F79 | WF01OutReq001 | <p>The OC ABI System shall automatically generate and return the appropriate response for the ingested TOTs per the processing parameters back to the originating agency address as specified in the OC ORI table.</p> <p>The responses will contain the originating TCN in the Transaction Control Reference (TCR) and the response TCN will contain the originating TCN followed by a unique incident number. Where the subject was successfully searched the responses will contain the results (for Match and No-match) and the resulting OCN.</p> |
| F80 | WF01OutReq002 | The OC ABI System shall automatically forward authorized external system responses onto LARS and the originating agency per BisRule011 by adjusting the ORI and DAI of the Transaction. |
| F81 | WF01OutReq003 | Upon receipt of a successful search (i.e., non error) response from all systems searched, the OC ABI System shall automatically delete applicant Transactions from the archive, temporary storage and queues while retaining the logs and the responses received per BisRule011. |
| F82 | WF01OutReq004 | The OC ABI System shall automatically log all Transactions and responses per BisRule007 and BisRule011. |



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| # | Requirement ID | Requirement |
|------|----------------|--|
| F83 | WF01ProcReq001 | The OC ABI System shall "feature extract" all friction ridge images. |
| F84 | WF01ProcReq002 | The OC ABI System shall : <ol style="list-style-type: none"> 1. Create appropriate internal TP-TP searches per BisRule011. 2. Automatically cascade TP-LT and KP-PLT internal reverse latent searches based on BisRule011. |
| F85 | WF01ProcReq003 | The OC ABI System shall automatically execute all searches created in WF01ProcReq002. |
| F86 | WF01ProcReq004 | The OC ABI System shall be able to conditionally forward the TP-TP Transactions to the LARS System to solicit any possible name-based candidates via an EBTS Transaction using the appropriate Type-1 and Type-2 records in an ANSI/NIST Transaction. |
| F87 | WF01ProcReq005 | The OC ABI System shall be able to ingest LARS name search responses from the LARS system using the appropriate ANSI/NIST Transaction. |
| F88 | WF01ProcReq006 | Reserved |
| F89 | WF01ProcReq007 | The OC ABI System shall update the log entry and ANSI/NIST Archive for each LARS Transaction with the Type-1 and Type-2 information (WF01ProcReq004 through WF01ProcReq005). |
| F90 | WF01ProcReq008 | The OC ABI System shall automatically execute all 1:1 matches using the possible match OCN(s) returned from LARS. |
| F91 | WF01ProcReq009 | The OC ABI System shall create a verification package containing 1:n and 1:1 candidates' results and move it to a work queue for all Transactions independent of Auto No-Match, No-Match, or Indeterminate(s) per BisRule004. Only those Transactions that require manual verifications will be queued for operator intervention per processing parameters. |
| F92 | WF01ProcReq010 | If the TP-TP matcher score for a name-based searched 1:1 candidate is above a settable threshold [Threshold 1], the OC ABI System shall automatically declare a match on that Transaction. |
| F93 | WF01ProcReq011 | If the TP-TP matcher score for a 1:n candidate is above a settable threshold [Threshold 2], the OC ABI System shall automatically declare a match for that candidate OCN. |
| F94 | WF01ProcReq012 | If the matcher scores for all 1:n candidates are below a settable threshold [Threshold 3] and the matcher scores for all 1:1 candidates are below a settable threshold [Threshold 4], the OC ABI System shall automatically declare a no-match result for the Transaction. |
| F95 | WF01ProcReq013 | If there is more than one automatic match for disparate OCNs then the OC ABI System shall mark the Transactions indicator in the appropriate examiner work queues for conditional examiner-assisted verification. |
| F96 | WF01ProcReq014 | If there are any 1:n candidates with scores between Thresholds 2 and 3 or if there are any 1:1 candidates with scores between Thresholds 1 and 4, the OC ABI System shall mark a Transactions indicator in the appropriate examiner work queues for conditional examiner-assisted verification. |
| F97 | WF01ProcReq015 | The OC ABI System shall allow examiners to selectively pick a Transaction from the Verification queue and present the first images from the selected Transaction within 4 seconds of the selection and all images within 30 seconds, for both search prints and candidates. |
| F98 | WF01ProcReq016 | The OC ABI System shall provide support for examiners to verify candidates for searches selected from the queue and to selectively image process the original image and the candidate image separately or in synchrony (i.e., zoom, magnify, and rotate; and adjust contrast, brightness, and sharpness) as well as allow the examiner to select and view the candidate per BisRule004. |
| F99 | WF01ProcReq017 | The OC ABI System shall permit examiners to print any search or candidate fingerprint set with Type-1 and Type-2 data per BisRule001 and BisRule009. |
| F100 | WF01ProcReq018 | The OC ABI System shall permit an examiner to change any automated determinations to a manual decision (i.e. Auto-Match to Manual No-match, Auto No- |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|------|-----------------|---|
| | | Match to a Manual Match) when the verification candidate list has been presented to the examiner for verification purposes. |
| F101 | WF01ProcReq019 | The OC ABI System shall permit examiners to determine when more than one match determination will result in a consolidation process. The examiner can select the "target" OCN that one or more OCN and folder contents will be automatically merged with. |
| F102 | WF01ProcReq020 | The OC ABI System shall permit examiners to reverse a previously performed consolidation process. The examiner can selectively restore the information to the original OCN folders. |
| F103 | WF01ProcReq021 | In the case of a completely automatic and/or manual No-Match decision, and the processing parameters indicate a new OCN should be established, the OC ABI System shall establish a new OCN per BisRule008. |
| F104 | WF01ProcReq022 | The OC ABI System shall conditionally forward the relevant records (Types 1 & 2) in the Transactions automatically onto LARS, Automated Jail System (AJS), CalDOJ, the FBI and/or other cross-jurisdictional systems per BisRule005 and BisRule011: <ol style="list-style-type: none"> 1. The LARS will be sent the completed package including the resulting OCN placed in the OCN field for all criminal related Transactions. 2. The AJS will be sent the completed package including the resulting OCN placed in the OCN field for all criminal related Transactions originating from the OC Sheriffs Jail. 3. The Transactions are forwarded onto CalDOJ with the resulting OCN. CalDOJ will then conditionally forward them onto the FBI or other cross-jurisdictional systems. |
| F105 | WF01ProcReq023 | The OC ABI System shall ingest all ANSI/NIST formatted response Transactions from CalDOJ, FBI, DHS, and any other authorized systems where an OC search was forwarded. |
| F016 | WF01ProcReq024 | The OC ABI System shall store an original copy of all Transactions forwarded in the ANSI/NIST Archive per BisRule007. |
| F107 | WF01ProcReq025 | The OC ABI System shall update the MCI for each subject enrolled to include links to all successfully processed Transaction TCNs, prepared and received responses, consolidated OCNs, and all OC ABI System matcher identity tables per BisRule002 and BisRule008. |
| F108 | WF01ProcReq026 | The OC ABI System shall update the matchers with the "final" Transactions per BisRule003 and BisRule011. |
| F109 | WF01ProcReq027 | The OC ABI System shall automatically log all search Transactions results to include the original Type-1 and Type-2 fields, time received, time at end of processing, and identity decision. |
| F110 | WF01ProcReq028 | The OC ABI System shall update the Archive searchable indices using all of the text data fields contained in the Transaction for forensic/administrative demographic searches per BisRule007 and BisRule011. |
| F111 | WF01ProcReq029 | The OC ABI System shall log an error condition with explanation(s) when external system(s) returns error responses, rejects the Transaction or does not return expected response(s) within a specified period per BisRule011. |
| F112 | WF01ProcReq030 | The OC ABI System shall provide support for examiners to review candidates for searches selected from the queue for up to 30 days after the results have been returned to the submitter. |
| F113 | WF01ProcReq031 | The OC ABI System shall allow examiners to selectively pick a Transaction from the Verification queue per BisRule004 and return the first candidate image within 4 seconds and all images within 30 seconds. |
| F114 | WF02InputReq001 | The OC ABI System shall be able to: <ol style="list-style-type: none"> 1. Ingest EBTS Tactical Transactions initially listed in Table 8 using BisRule011 2. Parse for compliance with the selected EBTS Transaction definitions per the processing parameters for the submitted TOT, ORI and LSID, then log the results and the processing parameters |



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| # | Requirement ID | Requirement |
|------|-----------------|--|
| | | <p>3. Check for adherence to annotations for missing images</p> <p>The OC ABI System will return the appropriate NIST error response with detailed error descriptions per CA/FBI guidelines for those that fail step 2 or 3 above.</p> |
| F115 | WF02InputReq002 | The OC ABI System shall forward the acceptable Transactions onto the OC ABI System for Processing. |
| F116 | WF02InputReq003 | The OC ABI System shall generate and store in the Transaction the NFIQ scores, if not already present, for each finger (rolled and/or flats) and any other vendor utilized Image Quality Assignment algorithm(s) per BisRule013. |
| F117 | WF02InputReq004 | The OC ABI System shall selectively store all successfully ingested Transactions in the ANSI/NIST Archive per BisRule007 and BisRule011. |
| F118 | WF02OutReq001 | <p>The OC ABI System shall automatically generate and return the appropriate response for the ingested TOTs per BisRule011 back to the originating agency address as specified in the OC ORI table, and conditionally forward them on to CalDOJ and/or the FBI per BisRule005:</p> <ol style="list-style-type: none"> 1. For all TOT's other than DNS, <ol style="list-style-type: none"> a. For successfully searched Transactions, responses are to include the top five candidates above Threshold 3 with one facial image for each candidate, if available. b. If there are no candidates above Threshold 3 then return a no-candidate response and notification in the message field if the Transaction is being forwarded onto CalDOJ and/or the FBI, if appropriate. 2. For DNS TOT <ol style="list-style-type: none"> a. For successfully searched Transactions with a single OCN candidate result above Threshold 2, a match response is to be returned with the CII from the MCI, if available, and a notification in the message field that the Transaction is or is not being forwarded to CalDOJ and/or the FBI. b. For successfully searched Transactions with more than one candidate result above Threshold 2, then return a no-candidate response and notification in the message field if the Transaction is being forwarded onto CalDOJ and/or the FBI. c. If there are no candidates above Threshold 2 then return a no-candidate response and notification in the message field if the Transaction is being forwarded onto CalDOJ and/or the FBI. |
| F119 | WF02OutReq002 | The OC ABI System shall automatically forward authorized external system responses (candidates or errors) onto the originating agency per processing parameters by adjusting the DAI of the Transaction and logging them per BisRule007 and BisRule011. |
| F120 | WF02ProcReq001 | The OC ABI System shall "feature extract" the fingerprint images. |
| F121 | WF02ProcReq002 | The OC ABI System shall create appropriate internal TP-TP searches for the matchers per BisRule011. |
| F122 | WF02ProcReq003 | The OC ABI System shall automatically execute all searches created in [WF02ProcReq002]. |
| F123 | WF02ProcReq004 | The OC ABI System shall create a verification package and move it to a verification queue per BisRule004. |
| F124 | WF02ProcReq005 | The OC ABI System shall provide support for examiners to review candidates for searches selected from the queue for up to an adjustable period of time after the results have been returned to the submitter. For audit and problem resolution, the OC ABI System shall allow examiners to selectively pick a Transaction from the completed Verification queue and then present the first images from the selected Transaction within 4 seconds and all images within 30 seconds of the selection, for both the search prints and the candidates, per BisRule004. |



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| # | Requirement ID | Requirement |
|------|-----------------|--|
| F125 | WF02ProcReq006 | The OC ABI System shall conditionally forward the Transactions onto CalDOJ, the FBI or other cross-jurisdictional systems per the processing parameters for the ingested TOT, ORI and LSID and match results per BisRule005 and BisRule011, as well as the following: <ul style="list-style-type: none"> When the TOT is DNS and there is confirmed match on OCN that also contains a CII the OC ABI System will forward the DNS TOT onto CalDOJ. When the Transactions are conditionally forwarded onto CalDOJ, CalDOJ will conditionally forward them onto the FBI or other cross-jurisdictional systems. |
| F126 | WF02ProcReq007 | The OC ABI System shall store an original copy of Transactions forwarded in the ANSI/NIST Archive per BisRule007 and BisRule011. |
| F127 | WF02ProcReq008 | The OC ABI System shall ingest all NIST response Transactions from CalDOJ, FBI, DHS, and any other authorized systems where an OC tactical search was forwarded. |
| F128 | WF02ProcReq009 | The OC ABI System shall automatically log all search Transactions results to include the original Type-1 and Type-2 Fields, time received, time at end of processing, and the response message. |
| F129 | WF02ProcReq010 | The OC ABI System shall log an error condition with explanation(s) when external system(s) returns any error responses, rejects the Transaction, or does not return expected response(s) within a specified period per BisRule011. |
| F130 | WF03InputReq001 | The OC ABI System shall be able to: <ol style="list-style-type: none"> Ingest EBTS Transactions as listed in Table 12 Parse for compliance with the selected EBTS Transaction definitions per the processing parameters for the submitted TOT, ORI and LSID, then log the results and the processing parameters per BisRule011 Check for adherence to annotations for missing images The OC ABI System will return the appropriate NIST response with detailed error descriptions per CA/FBI guidelines for those that fail step 2 or 3 |
| F131 | WF03InputReq002 | The OC ABI System shall generate and store NFIQ scores for each finger (rolled and/or flats) and any other vendor utilized image quality assignment algorithm(s) and generate and store any Palm image quality assignment algorithm(s) and the generated score for each palm image – all per BisRule013. |
| F132 | WF03InputReq003 | The OC ABI System shall automatically assign pattern classification(s) to each finger image (whorl, right loop, left loop, arch and/or unknown) image to be updated. |
| F133 | WF03InputReq004 | The OC ABI System shall reject any Transaction that fails the image quality checks, per processing parameters based on the ingested TOT, ORI and LSID, all others will continue through maintenance processing. |
| F134 | WF03InputReq005 | The OC ABI System shall be able to respond to rejected Transactions via an EBTS error Transaction (corresponding response error TOT for the ingested TOT, ORI and LSID), see Appendix A. |
| F135 | WF03InputReq006 | The OC ABI System shall forward the acceptable Transactions onto the OC ABI System Processing. |
| F136 | WF03OutReq001 | The OC ABI System shall automatically generate and return the appropriate response for the ingested TOT(s), per the processing parameters, back to the originating agency address as specified in the OC ORI table: <ol style="list-style-type: none"> For successfully matched Transactions, responses include the successfully matched OCN. If there is no matching candidate, return an Error response. |
| F137 | WF03OutReq002 | The OC ABI System shall automatically forward authorized external system responses onto the originating agency per processing parameters by adjusting the ORI and DAI of the Transaction. |
| F138 | WF03OutReq003 | The OC ABI System shall automatically log all Transactions and responses per BisRule007 and BisRule011. |



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| # | Requirement ID | Requirement |
|------|----------------|---|
| F139 | WF03ProcReq001 | The OC ABI System shall "feature extract" all friction ridge images. |
| F140 | WF03ProcReq002 | The OC ABI System shall : <ol style="list-style-type: none"> 1. Create appropriate internal 1:1 TP-TP search requests per BisRule011 2. Automatically cascade TP-LT and KP-PLT internal reverse latent searches based on BisRule011. |
| F141 | WF03ProcReq003 | The OC ABI System shall automatically execute all searches created in WF03ProcReq002. |
| F142 | WF03ProcReq004 | If the TP-TP matcher score for a searched 1:1 candidate is above a settable threshold [Threshold 1] then the OC ABI System shall automatically declare a match on that Transaction and submit it for further maintenance processing. |
| F143 | WF03ProcReq005 | If the matcher score for a 1:1 search is below a settable threshold [Threshold 1], the OC ABI System shall automatically queue the results for verification. |
| F144 | WF03ProcReq006 | If the result of the verification is not a match, the OC ABI System shall so mark the Transaction. |
| F145 | WF03ProcReq007 | The OC ABI System shall provide the tenprint supervisor with a command screen that permits records to be selected by OCN and TCN and seal them at the OCN or TCN level by: <ol style="list-style-type: none"> 1. Marking all copies in the Archive inaccessible to anyone through any search mechanism (e.g., TCN or OCN search) other than authorized supervisors. 2. Removing all feature sets associated with the sealed Transaction from the matchers to include from any composite, best image sets. 3. Conditionally forward a Biometric Delete (BDEL) Transaction to CalDOJ if the Transaction had previously been submitted there. |
| F146 | WF03ProcReq008 | The OC ABI System shall provide the tenprint supervisor with a command screen that permits records to be selected by OCN and TCN and delete them at the OCN or TCN level an adjustable number of days (settable via a system configuration value) after the command is selected, by: <ol style="list-style-type: none"> 1. Deleting all copies in the Archive or any other files on the system. 2. Removing all feature sets associated with the deleted Transaction from the matchers to include from any composite, best image sets. 3. Conditionally forward the BDEL Transaction to CalDOJ if the Transaction had previously been submitted there. |
| F147 | WF03ProcReq009 | If the search results in a match [WF03ProcReq004] and the TOT = SUP, the OC ABI System shall automatically: <ol style="list-style-type: none"> 1. Update the record's information in all system locations to include the ANSI/NIST Archive per BisRule007 all copies in the Archive inaccessible to anyone other than authorized supervisors. 2. Forward the Transaction to CalDOJ, if the original Transaction was submitted to CalDOJ per BisRule005. |
| F148 | WF03ProcReq010 | The OC ABI System shall store an original copy of all Transactions forwarded in the ANSI/NIST Archive per BisRule007 and BisRule011. |
| F149 | WF03ProcReq011 | The OC ABI System shall store an original copy of all responses received in the ANSI/NIST Archive per BisRule007 and BisRule011. |
| F150 | WF03ProcReq012 | The OC ABI System shall update the MCI for each subject enrolled to include links to all successfully processed Transaction TCNs, prepared and received responses, consolidated OCNs, and all ABI System matcher identity tables per BisRule002 and BisRule008. |
| F151 | WF03ProcReq013 | The OC ABI System shall automatically log all maintenance Transaction results to include the original Type-1 and Type-2 Fields, time received, time at end of processing per BisRule007 and BisRule011. |
| F152 | WF03ProcReq014 | The OC ABI System shall permit the supervisor(s) to select and review all |



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| # | Requirement ID | Requirement |
|------|-----------------|---|
| | | Transactions marked for deletion that have not yet been deleted and selectively remove them from the delete queue. |
| F153 | WF03ProcReq015 | If the TOT = SUP, the OC ABI System shall update the ANSI/NIST Archive searchable indices using all of the text data fields contained in the Transaction for forensic/administrative demographic searches per BisRule011. |
| F154 | WF03ProcReq016 | If the TOT = SUP, the OC ABI System shall log an error condition with explanation(s) when external system(s) returns error responses, manual or automatically rejects the Transaction and/or does not return expected response(s) within a specified period per BisRule011. |
| F155 | WF03ProcReq017 | If the TOT = SUP, the OC ABI System shall provide support for examiners to review candidates for searches selected from the queue for a period of time after the results have been returned to the submitter. The OC ABI System shall allow examiners to selectively pick a Transaction from the completed Verification queue and present the first image within 4 seconds and all images within 30 seconds of the selected Transaction, for both the search prints and the candidates, per BisRule004. |
| F156 | WF04InputReq001 | The OC ABI System shall provide the ability to create Transactions as listed in Table 16 using pull-down menus or manually entering the Type-1 & 2 Fields. |
| F157 | WF04InputReq002 | The OC ABI System shall be able to: <ol style="list-style-type: none"> 1. Ingest EBTS Transactions as listed in WF04InputReq001 or directly from internal and external cross-jurisdictional systems 2. Parse for compliance with the selected EBTS Transaction definitions for the submitted TOT, ORI and LSID per processing parameters 3. The OC ABI System will return the appropriate NIST response with detailed error descriptions per CA/FBI guidelines for those that fail step 2 above |
| F158 | WF04InputReq003 | The OC ABI System shall record in a log the results of each EBTS Transaction ingested, including processing parameters. |
| F159 | WF04InputReq004 | The OC ABI System shall record a copy of each ingested Transaction in the ANSI/NIST Archive in the fully EBTS compliant form in which it was received pursuant to BisRule007. |
| F160 | WF04InputReq005 | The OC ABI System shall forward the acceptable Transactions onto the OC ABI System Processing. |
| F161 | WF04OutReq001 | The OC ABI System shall automatically generate and return the appropriate response for the ingested TOTs, per the processing parameters, back to the originating agency address as specified in the OC ORI table. The responses will contain the originating TCN in the TCR and the Response TCN will contain the originating TCN followed by a unique incident number. Where the subject was successfully found the responses will contain the results. |
| F162 | WF04OutReq002 | The OC ABI System shall automatically forward authorized external system responses onto the originating agency per processing parameters by adjusting the ORI and DAI of the Transaction. |
| F163 | WF04OutReq003 | The OC ABI System shall automatically log all Transactions and responses per BisRule007 and BisRule011. |
| F164 | WF04ProcReq001 | The OC ABI System shall process the EBTS Transactions from WF04InputReq005 and determine whether the requested image information is available on the OC ABI System. |
| F165 | WF04ProcReq002 | If the image is not available, the OC ABI System shall conditionally forward image retrieval request Transactions onto CalDOJ, the FBI's NGI system or other repositories. |
| F166 | WF04ProcReq003 | The OC ABI System shall be able to ingest the corresponding responses from CALDOJ, the FBI and other cross-jurisdictional systems. |
| F167 | WF04ProcReq004 | The OC ABI System shall use the response information from the OC ABI System and other systems interfaced to update the Transaction log. |
| F168 | WF05InputReq001 | The OC ABI System shall be able to ingest, EBTS Transactions as listed in Table |



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| # | Requirement ID | Requirement |
|------|-----------------|--|
| | | 20 as responses from searches made in response to WF01ProcReq002 and WF03ProcReq002. |
| F169 | WF05InputReq002 | The OC ABI System shall be able to ingest EBTS Transactions as listed in Table 20 as responses from CalDOJ or the FBI/NGI from OC latent's registered in those system(s). |
| F170 | WF05InputReq003 | The OC ABI System shall record in a log the results of each Transaction ingested. |
| F171 | WF05OutReq001 | The OC ABI System shall automatically prepare a LCMS report for all reverse latent searches. |
| F172 | WF05OutReq002 | The OC ABI System shall support the examiner in selecting to (1) mark the case as closed, (2) mark the latent image as matched, or (3) simply save and exit the LCMS file. |
| F173 | WF05OutReq003 | The OC ABI System shall maintain a searchable log of all reverse latent searches submitted to the OC ABI System by external systems from the OC ABI System |
| F174 | WF05OutReq004 | The OC ABI System shall automatically generate and return a BDEC per the processing parameters and examiners direction back to the originating agency address as specified in the OC ORI table. The responses will contain the originating TCN in the TCR and the Response TCN will contain the originating TCN followed by a unique incident number. Where the subject was reviewed by an examiner the responses will contain the results. |
| F175 | WF05OutReq005 | The OC ABI System shall be able to ingest external BDECR system responses from CalDOJ, the FBI (BDECR and ERRA TOTs). |
| F176 | WF05OutReq006 | The OC ABI System shall automatically log all Transactions and responses per BisRule007 and BisRule011. |
| F177 | WF05ProcReq001 | The OC ABI System shall record a copy of each ingested Transaction in the ANSI/NIST Archive in the fully EBTS compliant form in which it was received. |
| F178 | WF05ProcReq002 | The OC ABI System shall create an LCMS entry in the appropriate verification work queue for each Transaction listed in Table 20 that is received. |
| F179 | WF05ProcReq003 | The OC ABI System shall support examiners in selectively picking a Transaction from the Verification queue. |
| F180 | WF05ProcReq004 | The OC ABI System shall support the examiners in the verification of candidates for searches selected from the queue by providing the associated friction ridge images of the verification Transaction selection (reverse search print and original latent image) within 4 seconds for central site workstations and within 35 seconds for remote workstations. |
| F181 | WF05ProcReq005 | The OC ABI System shall support the examiners in the verification of candidates for searches selected from the queue and to selectively image process the original image and the candidate image separately or in synchrony (i.e., zoom, magnify, rotate, contrast adjust, brightness adjust, reverse black and white, apply gamma correction, mirror (horizontal or vertical), sharpen/un-sharpen, mark points of similarity, apply false color encoding based on image density, and generate histograms). |
| F182 | WF05ProcReq006 | The OC ABI System shall permit the examiners to print (1) any candidate latent image with case number and image number as well as time and date printed and/or (2) the search fingerprint/palmprint set with Type-1 and Type-2 data pursuant to BisRule009. |
| F183 | WF05ProcReq007 | The OC ABI System shall support the forensic examiner selectively declaring a match, returning the Transaction to the work queue, or queuing the Transaction for another OC examiner for consultation. |
| F184 | WF05ProcReq008 | The OC ABI System shall automatically log all reverse friction ridge search Transactions and the steps taken, the examiners involved, and the search results in the LCMS. |
| F185 | WF05ProcReq009 | The OC ABI System shall selectively support the preparation of court presentations when a match is found in any reverse latent search. |
| F186 | WF05ProcReq010 | The OC ABI System shall automatically log all reverse latent search Transactions and the examiners' results in the system log and LCMS. |
| F187 | WF05ProcReq011 | The OC ABI System shall support the forensic examiner in selectively marking the |



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| # | Requirement ID | Requirement |
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| | | match results to be sent back to the originating agency. |
| F188 | WF05ProcReq012 | The OC ABI System shall create a Work Queue that displays for operator review the resulting responses from CalDOJ, FBI, DHS and any other interfaced AFIS. |
| F189 | WF06InputReq001 | The OC ABI System shall support the examiners in creation of a new case in the appropriate LCMS to include entering data in the case information fields [LCMSReq001] as well as the following image fields per image: <ol style="list-style-type: none"> 1. Latent collection location. 2. "Method of Processing" using a pull-down menu. |
| F190 | WF06InputReq002 | The OC ABI System shall support the ingesting of digital images with latent fingerprints or palmprints captured at various scales as Type-13 records, with an option to save a copy as a Type-20 record, into a specific case using a pull-down menu or other means to select from cases associated with the examiner's agency. |
| F191 | WF06InputReq003 | The OC ABI System shall support the scanning and saving of latent friction ridge material into a specific case using a pull-down menu or other means to select from cases associated with the examiner's agency as follows: <ul style="list-style-type: none"> • as a Type-20 (optionally) record • at 1:1 scale • at 1,000 ppi • in 8-bit gray scale • using a capture box that can be adjusted up to 3 inches by 3 inches to select and save region(s) of interest into Type-13 record(s) |
| F192 | WF06InputReq004 | The OC ABI System shall support the ingesting of crime scene and object reference images captured by digital cameras for use in the LCMS into a specific case using a pull-down menu or other means to select from cases associated with the examiner's agency and save them as Type-21 and Type-20 record(s) respectively. |
| F193 | WF06InputReq005 | The OC ABI System shall support the ingesting of latent case textual information linked to a latent image as Type-1 and 2 fields from a NIST file or the keyboard into a specific case using a pull-down menu or other means to select from cases associated with the examiner's agency. |
| F194 | WF06InputReq006 | The OC ABI System shall support the scanning of inked fingerprints into Type-13 images at 1,000 ppi, 8-bit gray scale for searches using the latent matcher algorithms. |
| F195 | WF06InputReq007 | Reserved |
| F196 | WF06InputReq008 | The OC ABI System shall ingest LFFSs submitted from ULW software executing on a latent workstation, or by cross-jurisdictional submitters and after logging them into the LCMS, setting them for auto run. |
| F197 | WF06InputReq009 | The OC ABI System shall update the LCMS and ABI System logs with the results of each step in the forensic services input process. |
| F198 | WF06OutReq001 | The OC ABI System shall automatically prepare a LCMS report for all forensic searches that lead to an identification. |
| F199 | WF06OutReq002 | The OC ABI System shall support the examiner in selecting to (1) add new unsolved latent to the OC unsolved latent file with a link to the appropriate LCMS record(s), (2) delete the record, or (3) simply save and close the LCMS file. |
| F200 | WF06OutReq003 | The OC ABI System shall support the selective forwarding of LFFS Transactions to CalDOJ or the FBI, first using an LPNQ Transaction, if appropriate, or to other systems (e.g., cross-jurisdictional partners) using the EFS or ULW to generate a more appropriate Type-9 record pursuant to BisRule012. |
| F201 | WF06OutReq004 | The OC ABI System shall support the ingesting of any response to an LPNQ Transaction (an LPNR TOT) automatically forwarding it to the appropriate LCMS case. |
| F202 | WF06OutReq005 | The OC ABI System shall support the ingesting of any response to an LFFS Transaction (SRL or ERRL TOTs) automatically forwarding it to the appropriate LCMS case pursuant to BisRule012. |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|------|----------------|--|
| F203 | WF06OutReq006 | The OC ABI System shall maintain a searchable log of all forensic Transactions submitted (along with the responses) to the OC ABI System and to external systems in the system log and LCMS. |
| F204 | WF06OutReq007 | The OC ABI System shall support the selective forwarding of FBI and other external responses (SRL TOTs) to latent Transactions to the appropriate Verification queue [WF06OutReq006]. |
| F205 | WF06OutReq008 | The OC ABI System shall support the selective forwarding of latent case status and results to other OCCL systems such as the Laboratory Information Management System (LIMS) in a NIST formatted Transaction. |
| F206 | WF06ProcReq001 | The OC ABI System shall automatically queue the latent Transaction within the LCMS. |
| F207 | WF06ProcReq002 | The OC ABI System shall permit a forensic examiner to select a Transaction for preprocessing from the work queue or from unsolved Latent files (LT or PLT). |
| F208 | WF06ProcReq003 | The OC ABI System shall support the preprocessing of Type-13 latent images to include Photoshop-based image processing (such as, calculate and adjust scale and resolution using any ruler in the image or a ruler-type tool in the software, zoom, magnify, rotate, contrast adjust, brightness adjust, reverse black and white, apply gamma correction, apply a Fast Fourier Transform (FFT), mirror (horizontal or vertical), sharpen/unsharpen, mark features, apply false color encoding based on image density, generate histograms, and select a region of interest) and save the results to LCMS. |
| F209 | WF06ProcReq004 | The OC ABI System shall selectively export from the LCMS the Type-13 for preprocessing on another system. |
| F210 | WF06ProcReq005 | The OC ABI System shall import to the LCMS Type-13 images that were preprocessed on other systems (e.g., ULW workstations). |
| F211 | WF06ProcReq006 | The OC ABI System shall support examiners in selectively saving and exiting the latent file or submitting it for extraction. |
| F212 | WF06ProcReq007 | The OC ABI System shall support the auto-extraction of features from LCMS Transactions and save the results to the LCMS. |
| F213 | WF06ProcReq008 | The OC ABI System shall support the manual review and editing of features [WF06ProcReq007] by an examiner and save the results to the LCMS. |
| F214 | WF06ProcReq009 | The OC ABI System shall support the creation/editing of search parameters such as selective geographic location (state, multiple states, or county), crime type(s), a specific subject (e.g., a suspect in the case), pattern type, hand, or finger position, to include candidate list length (up to 250 candidates) using pull-down menus. |
| F215 | WF06ProcReq010 | The OC ABI System shall support the Transaction of forward latent searches selectively against any combination of known fingerprints, palmprints, and unsolved latents on the OC ABI System where the known fingerprints include all enrolled exemplars – both rolled and plain impressions. |
| F216 | WF06ProcReq011 | The OC ABI System shall automatically search the submitted forward latent searches from [WF06ProcReq010]. |
| F217 | WF06ProcReq012 | The OC ABI System shall automatically search the submitted forward latent searches from [WF06ProcReq010] against the appropriate unsolved latent repository (LT-LT/PLT-PLT) per BisRule011. |
| F218 | WF06ProcReq013 | The OC ABI System shall build candidate lists of possible matches to forward searches and queue them for forensic examiners to select for verification; candidate Type-2 information will include sex, DOB, and complete pattern type list in conformance to BisRule001. |
| F219 | WF06ProcReq014 | If the latent case was a remote, lights-out search, the OC ABI System shall automatically forward the candidate list to the submitting agency with the images of the top candidate(s) (a selectable number up to 10). |
| F220 | WF06ProcReq015 | The OC ABI System shall support examiners in selectively picking a Transaction from the Verification queue. |
| F221 | WF06ProcReq016 | The OC ABI System shall support the examiners in the verification of candidates for searches selected from the queue by providing the associated friction ridge images, features (search print and first candidate), and a list of Type-2 and record |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|------|----------------|--|
| | | processing history within 4 seconds of the selection for central site workstations and within 35 seconds for remote workstations. |
| F222 | WF06ProcReq017 | The OC ABI System shall support the examiners in the verification of candidates for searches selected from the queue and allow them to selectively image process the original image and the candidate image separately or in synchrony (i.e., zoom, magnify, rotate, contrast adjust, brightness adjust, reverse black and white, apply gamma correction, apply FFT, mirror [horizontal or vertical], sharpen/un-sharpen, mark points of similarity, apply false color encoding based on image density, generate histograms, turn on and turn off all minutiae, and display matching minutiae). |
| F223 | WF06ProcReq018 | The OC ABI System shall support the forensic examiner in selectively declaring a tentative match, declaring of investigatory value, returning the Transaction to the queue, queuing the Transaction to another examiner for confirmation or advice, or editing and resubmitting the search to include manually editing the feature set. |
| F224 | WF06ProcReq019 | The OC ABI System shall support a second forensic examiner selectively selecting a confirmation-verification package independent from the initial examiners determination and using the tools [WF06ProcReq016 and WF06ProcReq017] declaring a match, non-match, or elimination match/non-match; or editing and resubmitting the search to include manually editing the feature set. When the results from the first and second examiner do not match, the Transaction will be automatically queued for a supervisor's review. |
| F225 | WF06ProcReq020 | The OC ABI System shall automatically log all forward friction ridge search Transactions and the steps taken, the examiners involved, and the search results in the LCMS. |
| F226 | WF06ProcReq021 | The OC ABI System shall support the preparation of court presentations when a match is found in any forensic friction ridge search. |
| F227 | WF06ProcReq022 | The OC ABI System shall automatically log all forward latent search Transactions and the examiners' results in the system log and LCMS. |
| F228 | WF06ProcReq023 | The OC ABI System shall permit the examiners to print (1) any search latent image (with or without minutiae marked, selectively) with case number and image number as well as time and date printed and/or (2) search latent and any associated candidate fingerprint/palmprint set with Type-1 and Type-2 data pursuant to BisRule009. |
| F229 | WF06ProcReq024 | The OC ABI System shall support a supervisor forensic examiner selectively selecting a confirmation-verification package and using the tools [WF06ProcReq016 and WF06ProcReq017] declaring a match, non-match, or elimination match/non-match; or editing and resubmitting the search to include manually editing the feature set. |
| F230 | WF06ProcReq025 | The OC ABI System shall support the examiner in selectively creating an LFFS package for any latent image(s) in a case, with the appropriate Type-1, Type-2, Type-9, Type-13 records, and store it in the OC ABI System as an LFFS that can be accessed through the LCMS. |

Technical Requirements

| # | Requirement ID | Requirement |
|----|----------------|---|
| T1 | AccuracyReq001 | The OC ABI System shall provide accuracy for submitted Transactions per the values in Table 39 while conforming to the response times in Table 38. The accuracy will be measured with a mutually agreed upon test set consisting of search and reference file images of NIST Fingerprint Image Quality (NFIQ) level 3 or better and with vendor Best Practices being used. |
| T2 | BackupReq001 | The OC ABI System shall permit the Cal-ID Administrator to selectively create full and incremental backups of any or all files on its workstations to include administrative files, temporary ANSI/NIST Archive files, master identity indexes, Transaction results, and logs without impacting functionality of the System. |
| T3 | BackupReq002 | The OC ABI System shall permit the Cal-ID Administrator to selectively support the recovery of any or all files from the backups [BackupReq001] to the |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|-----|----------------|---|
| | | appropriate locations. |
| T4 | BackupReq003 | The OC ABI System shall permit the Cal-ID Administrator to selectively create full and incremental backups of any or all files on the OC ABI System to include administrative files, ANSI/NIST Archive files, Transaction files, master identity indexes, Transaction results, and the back-end matcher files to include feature sets and matcher identity indexes without impacting functionality of the System. |
| T5 | BackupReq004 | The OC ABI System shall permit the Cal-ID Administrator to selectively support the recovery of any or all files from the backups [BackupReq003] to the appropriate locations. |
| T6 | DASLReq001 | The OC ABI System shall be able to dynamically allocate software licenses within each of the two groups of OCCL workstations listed above. |
| T7 | EnvrnReq001 | Each workstation shall have an Uninterruptable Power Supply (UPS) that can support the workstation for up to 20 continuous minutes in the event of a loss of building power. |
| T8 | EnvrnReq002 | Each workstation UPS shall provide the user with a signal in cases where the UPS has been the only source of power to the device for 10 continuous minutes. |
| T9 | EnvrnReq003 | Each workstation shall automatically shut down properly based upon the receipt of a ten-minute warning if the operator does not initiate a shutdown within 15 minutes of the signal if the UPS has continuously remained the only source of power to the device for that time. |
| T10 | EnvrnReq004 | Each workstation shall be able to operate in an office environment, without any requirement for supplemental air conditioning or noise suppression: 68° to 72° temperature with a relative humidity between 40% and 60%. Noise below 70 decibels (dBA) measured at the workstation site. |
| T11 | F&FReq001 | Each tenprint workstation shall have: <ol style="list-style-type: none"> 1. A microprocessor with at least 2.8 GHz clock speed and at least 4 cores 2. Built in graphics or a graphics board with at least 512 MB of on board memory and a Digital Visual Interface (DVI) output port 3. 8 GB of internal RAM 4. One 27-inch or larger LED flat panel display with WQXGA or better using a DVI connection to the PC 5. 1 Gigabit Network Interface Card 6. At least one 500 GB hard disk drive 7. Wireless, silent, and backlit keyboard and wireless mouse 8. FBI EBTS Appendix F certified flatbed scanner at 1000 ppi (can be shared with adjacent tenprint workstation), to include the operating system and application software used in the certification. 9. At least 4 USB 2.0 Ports 10. CD/DVD read/write drive |
| T12 | F&FReq002 | Each latent workstation shall have: <ol style="list-style-type: none"> 1. A microprocessor with at least 3.2 GHz clock speed and at least 4 cores 2. Built in graphics or a graphics board with at least 1 GB of on board memory and a DVI output port 3. 8 GB of internal RAM 4. One 27-inch or larger LED flat panel display with WQXGA or better using a DVI connection to the PC 5. 10/100/1000 Base TX Ethernet 6. At least one 750 GB hard disk drive 7. Wireless, silent, and backlit keyboard and wireless mouse 8. FBI EBTS Appendix F certified flatbed scanner at 1000 ppi (can be shared with an adjacent latent workstation), to include the operating system and application software used in the certification. 9. At least 4 USB 2.0 Ports 10. CD/DVD read/write drive |
| T13 | F&FReq003 | Photoshop™ CS5 shall be fully accessible from the QC and verification screens, and the LCMS on each workstation to permit examiners to exercise all |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|-----|----------------|--|
| | | capabilities and options of the software's capabilities. |
| T14 | F&FReq004 | Each card printer shall have: <ol style="list-style-type: none"> 1. At least three drawers /trays to support fingerprint and palmprint card stock, and plain office paper (8.5 by 11 inch) simultaneously without having to physically change trays 2. FBI EBTS Appendix F Certified at 1000 ppi 3. Two sided print capability 4. Performance metric of 3 cards/min when operating in a one-sided mode 5. 1 Gigabit Network Interface Card 6. At least 256 MB of memory 7. Color and grey scale capability |
| T15 | F&FReq005 | The Automatic Document Feed (ADF), two sided scanner shall have: <ol style="list-style-type: none"> 1. Double sided scan capabilities 2. FBI EBTS Appendix F Certified at 1000 ppi 3. Performance metric of 4 minutes or less for a 1000 ppi fingerprint card scan – measured to the availability of the scanned image for workstation viewing |
| T16 | InfoSecReq001 | The OC ABI System design shall conform to the CJIS Security Policy v 5.0 or later. |
| T17 | InfoSecReq002 | Anti-virus software shall be loaded on all processors that run operating Systems where there are commercial anti-virus packages available. |
| T18 | InfoSecReq003 | The anti-virus software shall automatically virus scan all files on portable data storage devices (i.e., CDs, DVDs, USB devices with memory, and floppy disk media) presented to a System [InfoSecReq002] and report alerts and other problems. |
| T19 | InfoSecReq004 | The anti-virus software shall automatically log all virus alerts and action taken. |
| T20 | InfoSecReq005 | The OC ABI System shall support the updating of anti-virus software Repositories of virus information without compromising the security of the System. |
| T21 | InfoSecReq006 | Confirm Viability of NIST Package. The OC ABI System shall : Only accept Transactions from pre-authorized systems, as defined and maintained by the Cal-ID Administrator. The OC ABI System shall return a reject notice back to unauthorized systems and log all failed attempts.. |
| T22 | InfoSecReq007 | The OC ABI System shall Process Transactions from Internal and External Systems: Only when Transactions InfoSecRq001-006 has been met Only when the ingested TOT, ORI and LSID has been identified as "current" in the authorized Cal-ID Administrators Processing parameters (i.e. the request is within the activation and termination dates for same TOT, ORI and LSID). The OC ABI System shall retain a copy of the Processing Parameters used for each Transaction in the ANSI/NIST Archive and in the system logs. |
| T23 | InfoSecReq008 | The OC ABI System shall keeps its internal clocks synchronized at least once per month automatically with an approved external clock and facilitate synchronizing all system clocks within the OC ABI Network. |
| T24 | NWReq001 | The OC ABI System network shall provide maximum Transmission times per the following list: <ul style="list-style-type: none"> • Tenprint Transactions without palms from a live scan to the OC ABI System central site – 30 seconds • Tenprint Transactions with palms from a live scan to the OC ABI System central site – 180 seconds • Responses to live scans – 10 seconds • Latent Transaction from a remote OC ABI Workstation to the OC ABI System central site – 90 seconds • Latent Transaction from a OCCL OC ABI Workstation to the OC ABI System central site – 10 seconds |



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| # | Requirement ID | Requirement |
|-----|--------------------|---|
| T25 | NWReq002 | The OC ABI System network shall conform to FBI Criminal Justice Information Services (CJIS) CJISD-ITS-DOC-08140-5.0, CJIS Security Policy. |
| T26 | NWReq003 | The OC ABI System Network shall be sized to contain sufficient capacity to handle the peak communication Transaction rates provided in Tables 34 and 35 with a 50% design margin for each node and link. |
| T27 | NWReq004 | The OC ABI System Network shall provide connectivity between and among the systems and locations identified in Tables 48 and 49. |
| T28 | NWReq005 | The OC ABI System network shall be able to handle the protocols used by the non-OC ABI System components (e.g., Cal-DOJ network interface). |
| T29 | ResponseTimeReq001 | For the base contract, the OC ABI System shall provide responses for 95% of submitted Transactions per the values in Table 37. Response time to be measured from the beginning of the Transaction's ingest through the final response and the Transmission of a response back to the submitting site, with no error-burdened Transactions in the mix. The end-to-end measurement will exclude all human intervention times. |
| T30 | RMAReq001 | During the life of this contract, the OC ABI System shall provide functional support 24 hours a day, seven (7) days a week, with no more than a cumulative four (4) hours of scheduled outage time per any calendar month for routine maintenance, diagnostic tests, and upgrades. |
| T31 | RMAReq002 | During the life of this contract the OC ABI System shall provide functional support 24 hours a day, seven (7) days a week, with no more than 1.5 hours unscheduled outage of OC ABI System services – measured monthly, but not to include as unavailable time: 1) Up to four (4) cumulative hours of scheduled outages per month [RMARqt 001] 2) Any facility-wide power outages |
| T32 | RMAReq003 | During the life of this contract the portions of OC ABI System Network supplied by the selected vendor shall provide functional support 24 hours a day, seven (7) days a week, with no more than a cumulative four (4) hours of scheduled outage time per any calendar month for routine maintenance, diagnostic tests, and upgrades. |
| T33 | SafetyReq001 | All hardware configuration items delivered as part of the OC ABI System shall conform to the appropriate US Underwriters Lab standards for electronic devices and be so certified. |
| T34 | SafetyReq002 | All required grounding shall conform to the manufacturer's specifications and recommendations. |
| T35 | StorageReq001 | The OC ABI System shall have the capacity to store in the ANSI/NIST Archive at the initial delivery, at least the number of EBTS Transactions listed per year in Table 31 for the year 2019; where 100% of the new known friction ridges are captured at 1,000 ppi and all unknown friction ridges (i.e., latents) are captured at 1,000 ppi. |
| T36 | StorageReq002 | The OC ABI System shall have the capacity to store in the matchers the templates for enrolled fingerprints using BisRule003, up to the year 2019 capacity. |
| T37 | StorageReq003 | The OC ABI System shall have the capacity at the initial delivery to store in the matchers the templates for enrolled unsolved fingerprints and palmprints at the levels shown in Table 31 for the year 2019. |
| T38 | StorageReq004 | The OC ABI System shall have the capacity to store a backup copy on portable digital media of all ANSI/NIST Transactions that are in the ANSI/NIST Archive and the feature sets in the matchers, in any given year at the 2019 capacity, as a backup for the ANSI/NIST Archive and Matchers. |
| T39 | StorageReq005 | The OC ABI System shall have the capacity and ability to create and store a backup copy of all LCMS, Verification image sets, and other critical files that reside on any workstations, at the year 2019 capacity. |
| T40 | StorageReqTM001 | The OC ABI System shall have the disk storage capacity of at least 500 GB for storing Transactions in a temporary file. |
| T41 | StorageReqTM002 | The OC ABI System shall have the disk storage capacity of at least 500 GB for |



OC ABI System Requirements Specification

| # | Requirement ID | Requirement |
|-----|----------------|--|
| | | use in workflow 1, 2, 3, 5, and LCMS's work queues for quality control, tenprint verification, and palmprint verification. |
| T42 | ThruPutReq001 | The OC ABI System shall be able to ingest, process, and respond in the peak period to at least the percentage of the daily average Tenprint Identification Transactions (TP-TP) as stated in Table 34 and Table 35, while Forensic and Tactical Transactions are being ingested, processed, and responded to. [This requirement is independent of any time for examiners to perform QC on the input stream or to review candidate lists / perform verification.] |
| T43 | ThruPutReq002 | The OC ABI System shall be able to ingest, process, and respond in the peak period to at least the percentage of the daily average Forensic forward latent Transactions as stated in Table 34 and Table 35 while identification and Tactical Transactions are being ingested, processed, and responded to. [This requirement is independent of any time for examiners to perform QC on the input stream or to review candidate lists / perform verification.] |
| T44 | ThruPutReq003 | The OC ABI System shall be able to ingest, process, and respond in the peak period to at least the percentage of the daily average Tactical Transactions as stated in Table 34 and Table 35 while identification and Forensic latent Transactions are being ingested, processed, and responded to. |
| T45 | ThruPutReq004 | If in any day the OC ABI System is presented with more Transactions in a peak hour than the design capacity, the OC ABI System shall queue the additional work up and process it as soon as capacity is available with that processing to be based on the priority of the Transactions. |

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*OC ABI System Requirements Specification***System Requirements Specification Appendix G: Glossary of Terms**

| TERM | DEFINITION |
|--------------------------|---|
| ABI System | Automated Biometric Identification System |
| AFIS | Automated Fingerprint Identification System |
| AFIS-21 | Version of NEC AFIS |
| AFIS ANSI/NIST Archive | NEC (q.v.) ANSI/NIST Archive attached to the legacy AFIS-21 |
| AL/CC | Alameda/Contra Costa Counties combined AFIS |
| AMN | Amnesia Victim TOT (q.v.) |
| ANSI | American National Standards Institute - a governing body for US national standards |
| ANSI/NIST | A standard developed by NIST's (q.v.) Information Technology Lab (ITL) using the ANSI procedures and registered with ANSI |
| ANSI Standard | Shorthand for the American National Standard for Information Systems - Data Format for the Standard for the Interchange of Fingerprint Information, Facial, and Other Biometric Information - Part 1 |
| APP | CalDOJ (q.v.) Applicant Tenprint Transaction |
| CalDOJ | California Department of Justice |
| CalDOJ ANSI/NIST Archive | NEC (q.v.) NIST (q.v.) ANSI/NIST Archive attached to AFIS |
| Cal-ID | California Identification Unit - usually in reference to the local OCCL tenprint operational unit, but can also refer to CalDOJ's tenprint operations |
| CAR | Criminal Tenprint Transaction (Answer Required) - a criminal tenprint TOT (q.v.) |
| CDI | Computer Deductions Incorporated, a company |
| CEMS | Cal-ID Electronic Management System |
| CHP | California Highway Patrol |
| CII | Criminal Identification Index |
| CLETS | California Law Enforcement Telecommunications Network |
| Composite | A Feature Set made up with the features from the highest quality images from a subject's fingers or palms when there is more than one set of fingerprints or palmprints for a subject |
| CRM | CalDOJ Criminal Tenprint - Response Required |
| DAI | Destination Agency Identifier |
| DHS | Department of Homeland Security |
| DOB | Date of Birth |
| Domain | A group of agencies and departments that agree to share fingerprint-based Transactions using an agreed upon implementation of the ANSI/NIST Standard: Data Format for the Interchange of Fingerprint, Facial & Other Biometric Information. In this case, the Domain is the North American domain (1.013:NORAM) |
| DVI | Disaster Victim Identification |
| EBTS | Electronic Biometric Transmission Specification - adopted by a Domain as their implementation of the ANSI/NIST Standard for the Interchange of Fingerprint Images, |



OC ABI System Requirements Specification

| TERM | DEFINITION |
|--------|---|
| | commonly referred to as the FBI's implementation of the standard. |
| EFS | Extended Feature Set - a vendor-neutral set of descriptors used for latent encoding and searching across dissimilar AFIS Systems |
| EFSG | EFS User Guidelines for Markup |
| EFTS | Electronic Fingerprint Transmission Specification - a term originally used when only fingerprints were being exchanged - now replaced by the term EBTS for automated biometric identification systems; a Domain's implementation of the ANSI/NIST Standard |
| FAT | Factory Acceptance Test |
| FBI | Federal Bureau of Investigation |
| FIQ | Fingerprint Image Quality |
| FMR | False Match Rate - the probability that an incorrect false mate can be identified as an automated true mate regardless if the true mate is or is not in the background reference file (also known as a repository) |
| FP | Fingerprint |
| FTMR | Failure to Match Rate - the probability that a search will not return a true mate when the true mate is in the reference file. The failure to match rate is 100% minus the True Match Rate for closed systems (i.e., where the true mate is in the reference file). While not explicitly stated in the requirements, it will be calculated during testing and reported on |
| IAFIS | Integrated Automated Fingerprint Identification System - the FBI's system for integrating fingerprint comparisons with criminal history record processing |
| ICE | U.S. Immigration and Customs Enforcement |
| ID | Identification |
| IDN | CalDOJ Tenprint Identification only |
| IRQ | Image Request |
| Known | A friction ridge sample purposefully collected from a body. As opposed to unknown (q.v.) |
| KP | Known Palmprint |
| KP-PLT | Known Palmprint searched against the Unsolved Latent Palmprints |
| KST | Known and Suspected Terrorists |
| LAN | Local Area Network |
| LARS | Local Arrest Records System |
| LCMS | Latent Case Management System |
| LIMS | Laboratory Information Management System |
| LITS | Latent Interoperability Transmission Specification |
| LT | Latent |
| LT-LT | Latent to Latent Search: Single Latent searched against the Unsolved Latent File |
| LT-TP | Latent to Known Tenprint Search: Single Latent searched against the Tenprint Repository |
| MCI | Master Cross Index |
| MTBF | Mean Time Between Failures |



OC ABI System Requirements Specification

| TERM | DEFINITION |
|----------------------|--|
| NCIC | National Crime Information Center - an FBI Data System |
| NDR | Next Designation Repository |
| NEC | Nippon Electric Corporation, legacy AFIS-21 Vendor |
| NGI | Next Generation Identification System - the FBI's multi-modal replacement for IAFIS |
| NIST | National Institute of Standards and Technology - part of the US Department of Commerce |
| OC | Orange County |
| OC ANSI/NIST Archive | This is the Orange County NIST ANSI/NIST Archive that is attached to the S&F (q.v.) that stores the 1000 ppi records with palmprints captured since 2006 |
| OCATS | Orange County Automated Telecommunications System |
| OCCL | Orange County Crime Laboratory |
| OCN | Orange County Number |
| OCSD | The Orange County Sheriff-Coroner Department |
| OCSDN | The Orange County Sheriff-Coroner Department Network |
| ORI | Originating Agency Identification |
| PIV | Personal Identity Verification |
| PLT-PLT | A search of Unsolved Latent Palmprints against Unsolved Latent Palmprints |
| PP | Processing Parameters |
| QC | Quality Control |
| Record, record | (Capitalized) referring to an ANSI/NIST record, (lower case) referring to a record in a file, such as archive, matchers, logs, etc. |
| REG | CalDOJ Violent Criminal Tenprint Registration |
| RISC | Repository of Individuals of Special Concern – an FBI automated biometric identification system file |
| RMA | Reliability, Maintainability, and Availability |
| RVTM | Requirements Verification Traceability Matrix |
| S&F | Store and Forward |
| SAP | Subject Acquisition Profile |
| SAT | System Acceptance Test |
| SB/RV | San Bernardino/Riverside Counties combined AFIS |
| SDCO | San Diego County AFIS |
| SEL | Selectivity - the number of candidates that WILL be examined to determine the true match rate |
| SEX | Gender Code |
| SFPD | San Francisco Police Department AFIS |
| SID | State Identification Number |
| TAR | True Accept Rate |



OC ABI System Requirements Specification

| TERM | DEFINITION |
|--------------|--|
| TB | Terabytes |
| TBD | To Be Determined |
| TCN | Transaction Control Number |
| TCR | Transaction Control Reference |
| TMR | True Match Rate - the probability that a true match will be found when it is in the background reference file (also known as a repository). This term replaces older terminology such as matcher reliability or true accept rate |
| TOT | Type of Transaction |
| TP | Tenprint |
| TPIS | Tenprint Image Search - this is a lights out search that accepts less than ten fingers, no QC or operator verification intervention |
| TP-LT | Tenprint to Unsolved Latent File search |
| TP-TP | Tenprint to Tenprint 1:n search |
| Transaction | Referring to an electronic submitted set of ANSI/NIST Records that is processed on some system, e.g. in reference to the specific purpose, such as an applicant transaction or an arrest transaction. |
| Transmission | Referring to the sending of a transaction from one system to another, such as the electronic submittal of a transaction from a live scan device to the ABI System. |
| TRR | True Reject Rate |
| ULW | Universal Latent Workstation - interactive and interoperable software released by the FBI for fingerprint searches of the FBI systems |
| Unknown | A friction ridge sample collected from an object that is the result of contact with that object |
| UPS | Uninterruptable Power Supplies |
| USL | Unsolved Latent Repository – a file within an automated biometric identification system |
| WIN | Western Identification Network - combined 8 states AFIS |
| WSQ | Wavelet Scalar Quantization – a compression method used for Type-4, Type-14, and Type-15 friction ridge images collected at 500 ppi |

**ATTACHMENT B
COUNTY SUPPLIED ITEMS AND ASSISTANCE**

The County reserves the right to accept or reject any and all requests/requirements for County provided resources.

County does not reimburse parking expenses incurred by the Contractor.

Resources to be Provided by the County

County-furnished equipment, materials, facilities, or support that are necessary to implement and complete the project are detailed in the table below.

Table B-1: Orange County Crime Lab Responsibility Matrix

| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
|------------------------------------|---|---|
| Project Management Services | <ol style="list-style-type: none"> 1. Provide a Contract Project Manager (CPM) to coordinate all design definition, engineering efforts, procurement, factory integration and testing, shipment, installation, site integration, acceptance testing, training, transition and support activities 2. The CPM will also: <ol style="list-style-type: none"> a. Serve as primary customer contact and develop a close team environment between all our personnel and your personnel to facilitate a continuous transfer of knowledge throughout the contract b. Conduct the project's kickoff and status meetings, and provide status reports c. Create and maintain a Risk and Issue Management Plan d. Resolve deviations from the project scope and administer change control e. Ensure delivery of all project CDRLs, and coordination of all required meetings f. Track all progress against the approved PMP, other approved plans, and the IMS at least monthly and report status against the IMS at least monthly g. Manage configuration control activities, including serving on the configuration control board h. Ensure an In-Plant Security Plan is developed and implemented | <ol style="list-style-type: none"> 1. Provide a Project Manager to provide approval of all deliverables, Final Acceptance and any Change Orders 2. Your PM should also <ol style="list-style-type: none"> a. Serve as MT's primary point of contact b. Coordinate OCCL activities, including site preparation, installation support, integration testing support, acceptance testing, and training of your personnel. c. Coordinate OCCL attendance for project meetings d. Liaison with your 3rd party agencies e. Work with our personnel to verify the resolution of Action Item list issues f. Ensure the MTs personnel have the necessary site access and a safe work environment |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| <p>The OC ABI System Design Capacity is based on the following understanding of the project requirements:</p> <ol style="list-style-type: none"> 1. The AFIS images and text (separate from the archive) = 8,996,000 records (composite and incidents) of TP subject with palm; 1,282,000 tactical records; 2,631,000 palmprints; 68,000 latents; 26,000 latent palms 2. The number of matcher templates for enrolled fingerprints and palmprints in 2019 from SRS Table 31 = 4,626,000 composite records for TP-TP searches; 8,996,000 records (one composite + two incidents per person) for LT-TP searches; 2,631,000 composite records for LP-PP searches 3. The number of matcher templates for enrolled unsolved fingerprints and palmprints in 2019 from SRS Table 31 = 68,000 records for TP-ULF searches; 26,000 records for PP-ULP searches 4. The number of EBTS transactions in 2019 from SRS Table 31 = 10,926,000 tenprints; <u>2,631,000 palmprints</u>; 68,000 latent fingerprints; 26,000 latent palms; 16,116,000 NIST responses | | |
| <p>Project Design Documentation</p> | <ol style="list-style-type: none"> 1. Draft all Requirements and Design Documentation listed in the Project Communication Plan and provide to OCCL for review, comment and approval 2. Identify any errors, ambiguities, conflicts, incompletes, and other defects in the ABI System Requirements 3. Conduct site surveys at the OCCL and remote facilities, including: <ol style="list-style-type: none"> 1. Performing an analyses to determine the facilities requirements (e.g., heating, air conditioning, lighting, electrical power, structural loading, and physical access) 2. reviewing the network configuration at the OCCL central site and at each location hosting latent equipment to ensure that the equipment to be installed is compatible with existing or planned network topologies 3. documenting any incompatibilities between the OC ABI System equipment to be installed and the facilities or networks and identify any required facilities of network modifications in an Installation Survey Report (CDRL OC-23) 4. Conduct analysis to develop interface requirements 5. Conduct the System Requirements Review and System Design Review meetings 6. At the System Design Review, provide evidence that the design will satisfy the system requirements | <ol style="list-style-type: none"> 1. Review, provide feedback on and approve the Project Design Documents by the schedule deadline. |
| <p>Change Order Process</p> | <ol style="list-style-type: none"> 1. An OCCL Specification Change Request (OC-13) is created and submitted to the MorphoTrak Contract | <ol style="list-style-type: none"> 1. Issue Specification Change Requests for any required changes to the approved documents. 2. MorphoTrak and the OCCL will review and then |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>Project Manager</p> <ol style="list-style-type: none"> 2. The project team evaluates the proposed change and its impact to the project schedule and costs (if any). The MorphoTrak Contract Project Manager will draft a Change Order for OCCL review, including a description of the solution and the price, if any. No cost Change Orders may be provided to track changes after the SDR. 3. MorphoTrak and the OCCL will review and then formally reject, postpone, or accept changes based on need, overall effect, cost and schedules. The Change Order is finalized and purchased by being signed by both parties prior to the Change Order's expiration date. 4. Once the Change Order has been approved, the MorphoTrak Contract Project Manager will make any necessary adjustment to the Design Documents, project work plan and any other impacted deliverables, such as the BOM. | <p>formally reject, postpone, or accept changes based on need, overall effect, cost and schedules. The Change Order is finalized and purchased by being signed by both parties prior to the Change Order's expiration date.</p> |
| Electronic Data Migration | <ol style="list-style-type: none"> 1. Provide a migration plan describing how the data migration will be performed. (Note: The estimated quantity of records to migrate is 3.9 million that are fully ANSI/NIST conformant with Type-1, 2, 4/14, and possibly Type-15 records. The transactions may also contain Type-7 and Type-10 records to be retained) 2. Process the data to: <ol style="list-style-type: none"> a) Re-extract and replace all matching features for the tenprint data where the quality of the images permits b) Auto-extract latent features where the quality of the images permits c) Convert descriptor data from legacy format to replacement system format d) Add default values for new mandatory fields e) Perform 1:n TP:TP crosschecking to determine any previously unidentified matches. The results of crosschecking will be provided in a report to the | <ol style="list-style-type: none"> 1. Review and approve the Data Migration Plan <ol style="list-style-type: none"> a) One aspect of migration is mapping fields from legacy system to descriptors in the new database. The OCCL must review the migration plan and verify that the mapping is correct. Otherwise additional migration scripts may need to be run after the database load. Additions to the proposed migration scope or changes after the Migration Plan has been approved require a Change Request. MorphoTrak reserves the right to charge for Change Requests that involve additional equipment, functionality or labor. 2. Provide a copy of the data to be converted in NIST format, and either an associated data dictionary or database schema. Provide incremental records as needed during the migration. <ol style="list-style-type: none"> a) Tenprint and palm data should be provided in NIST format 3. Provide remote access into the replacement system for migration personnel for the duration of migration. Remote access will be |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>OCCL.</p> <p>f) Perform an OCN based 1:1 fingerprint match on all ingested transactions to verify tenprint records matches the already loaded tenprint cards by matching on all available fingers (up to 20). Provide a list of mismatches for OCCL resolution.</p> <p>g) Ensure conformance with BisRule002, BisRule003 and BisRule007 (See Table 9)</p> <p>3. Add tenprint and latent data to the new system</p> <p>4. Create both the ADS (Advance Data Storage) database and the MBSS (Matching Biometric Subsystem) database. Only palms with a matching fingerprint set will be loaded into the matchers. Ensure migrated/converted files are available in the operational OC ABI System for search, retrieval, record management (e.g., consolidation or deletion), and exporting as ANSI/NIST transactions or as ANSI/NIST Record Types (individually or in batches) based on selectable fields, in accordance with the procedures documented in Appendix C of the RFP SOW.</p> <p>5. Perform a primary migration and subsequent residuals to capture all the data up to the time of cutover.</p> <p>6. Perform 1:n TP:TP crosschecking to determine any previously unidentified matches. The results of crosschecking will be provided in a report to the OCCL.</p> <p>7. Provide Database Conversion Report listing which records were migrated successfully and which could not be migrated, with explanations for the exceptions. The report is provided monthly.</p> <p>8. Load the appropriate records into the matchers prior to FAT.</p> | <p>limited to certain pre-coordinated times.</p> <p>4. Ensure the quality of the data being provided.</p> <p>5. Audit the quality of the conversion product.</p> <p>6. Confirm the match recommendations resulting from the crosscheck.</p> |
| <p>Card Conversion activities and responsibilities are based on the following assumptions:</p> <ol style="list-style-type: none"> 1) The tenprint card file consists of tenprint and slap impressions printed on one side of standard FBI card stock in FBI format. No finger images will be captured from the back of the tenprint cards. Images will be scanned at 1,000 ppi for the front side and 250 ppi for the back side. The total quantity of tenprint cards to be converted is 2.7 million. 2) The palmpoint card file consists of impressions printed on two sides of standard card stock. Images from both sides of the card will be scanned at 1,000 ppi. The total quantity of palmpoint cards to be converted is 650,000. 3) Standard card stock consistent with FBI height, width and thickness. | | |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>4) Tenprint demographic data fields will be double key entered and verified, and will include the following fields (not to exceed 48 characters):</p> <ul style="list-style-type: none"> a. Name (FMLS) – up to 30 characters b. Key identifier (e.g. OCN) – up to 10 characters c. Date field (specific field to be determined by OCCL) – 1 date field, 8 characters <p>5) Palmprint demographic data fields will be double key entered and verified, and will include the following data field:</p> <ul style="list-style-type: none"> a. Key identifier – up to 10 characters b. Date Field (specific field to be determined by OCCL) – 1 date field, 8 characters <p>6) Converted tenprint and palmprint records will be stored in NIST format at 250 ppi to produce Type 20 archive records.</p> <p>7) Only cards suitable for batch processing will be converted. Cards not suitable for automated batch processing will be removed from their batch and returned to the contributing agency in separate batches. Examples of cards not suitable for automated batch processing include but are not limited to mangled/damaged cards, cards not conforming to standard FBI card stock dimensions (height, width and thickness) or have glued on attachments precluding automatic feeding. Specific conditions will be defined based on the card file inspection and defined in the Card Conversion Plan.</p> <p>8) Card preparation, sorting by format and labeling will be performed as noted under the following responsibilities sections. Cards will be returned in the order in which they are converted.</p> | |
| <p>Card Conversion</p> | <ol style="list-style-type: none"> 1. Perform on-site surveys at each contributing agency to identify the characteristics of your card files. The survey is intended to identify potential conversion issues, discuss card preparation expectations with you and define any risk mitigation that will be required. 2. Develop technical specifications defining the demographic data to be converted and type of images to be captured (Input Specification) and the resulting output (Record Output Specification). 3. Develop a Conversion Plan defining project specific data, process and procedures. 4. Ensure that OCCL employees understand the card preparation procedures included in the Conversion Plan, including the logging, grouping, and preparation for shipping 5. Provide secure shipping containers for the shipment of the cards to and from our Conversion facility 6. Coordinate shipping arrangements between our facility and the contributing agencies facilities 7. Process cards in accordance with the steps defined and mutually agreed upon as defined in the Conversion Plan. Processing includes: any exception processing as defined in the conversion plan. <ul style="list-style-type: none"> a. put barcodes on both the front and the back of the cards, to link the scanned images from both sides with each other and with the | <ol style="list-style-type: none"> 1. Support an on-site survey of card files by our personnel to include access to card files and discussions with a representative familiar with the characteristics of card file and the card file history. 2. Ensure the quality of the cards being converted is sufficient for automated processing. 3. Timely review and approval of the Conversion Plan. 4. Timely approval of the technical specification, including the data field definition. 5. Identify your points of contact and communication procedures for card shipping, issue resolution and general project management 6. Batch cards in accordance with defined requirements. 7. Ensure that cards are packed and ready for shipment to our card conversion facility in accordance with the guidelines defined in the conversion plan and in accordance with the mutually agreed upon transport schedule. Card should be provided in batches timed to ensure there is no interruption in the conversion process. 8. Identify a single point of contact available for resolution of data issues within a timeframe not to exceed 48 hours. 9. Review any exception reports and provide guidance on how the records should be handled. 10. Upon the return of the cards following the completion of conversion, notify Contractor of any discrepancies within 30 days. |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>appropriate TCN/BKN</p> <ul style="list-style-type: none"> b. scanning original inked forms at 1,000 ppi and compress the images with JPEG2000 at 10:1 (on average); 2.7 million tenprint records and 650 thousand palmprint sets (one 'set' consists of 2 palms, one on each side of a single form, for a total of 1.3 million individual palm images) c. double key enter all attributes d. scan the front and back of all cards at 250 or 300 ppi and save the images as Type-20 records e. perform duplicate check for converted records f. perform any exception processing as defined in the conversion plan. <p>8. Inventory and batch all cards and securely return them to the contributing agencies' facilities</p> <p>9. Provide NIST file samples of the first 1,000 cards converted and subsequent samples for each lot of 10,000 cards converted for quality assurance and audit purposes. Specific procedures to be defined in the Card Conversion Plan</p> <p>10. Advise OCCL of conditions that will impact both the schedule and price for the card conversion activity.</p> <p>11. Process up to three standard format variations for fingerprints and three for palmprints. Identify and advise OCCL of card formats will require a Change Order and may be quoted as an additional charge. Cards significantly in excess of the contractually agreed quantity will be charged at an additional per-card rate.</p> <p>12. Advise OCCL if cards are not batched and prepared properly or do not satisfy the stated assumptions. Advise OCCL of any impacts to project schedule or requirements for re-planning/additional project costs.</p> | |
| Purchasing | <ul style="list-style-type: none"> 1. Update the BOM as required following the System Design Review 2. Verify that the preliminary BOM is still valid and that no items have gone End-of-Life (EOL) replacement items will be | <ul style="list-style-type: none"> 1. Review and approve the BOM 2. Obtain the OCCL-provided material, such as copies of Microsoft Office™ for use on the workstations 3. Ship OCCL-provided material to MT for factory |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>identified if necessary and you will be notified of the changes</p> <ol style="list-style-type: none"> 3. Procure the hardware and 3rd party software listed on the BOM 4. Inventory the material and perform configuration management activities throughout the project 5. Install OCCL-provided Microsoft Office™ on the appropriate workstations 6. Stage the equipment as needed for factory testing | <p>staging</p> <ol style="list-style-type: none"> 4. Approve the hardware/COTS/MT software delivery. 5. Provide a temporary storage area for the delivered hardware if required. |
| Engineering Integration | <ol style="list-style-type: none"> 1. Configure the MT COTS software per the requirements in the approved Design Documents <ol style="list-style-type: none"> a. Develop, test and implement all the workflows b. Develop, test and implement the interfaces (on MT software side) required for the system operation as defined in the Interface Design Documents (IDD(s)) c. Provide Simulators/Test Files for MT software side to allow the OCCL to perform the tests of the external systems interfaces prior to the on-site integration. Simulators will reflect functionality only and unless otherwise specified, will not simulate performance of the actual system. d. Configure and test the user interfaces, access rights, scanning and printouts formats and reports for MT software according to the OC ABI System Requirements Design Document (RDD) e. Configure the data storage, backup, security, and user management for the items that are under MT responsibility. 2. Load the software and converted/migrated data on the staged equipment and perform basic functionality testing to verify the system is ready for Certification testing 3. Conduct a Test Readiness Review | <ol style="list-style-type: none"> 1. Develop, test and implement interfaces required from the OCCL systems to the new MT system as required by the IDD(s) 2. Provide Test Files/Simulators for the external systems to allow MT to perform testing prior to the on-site integration |
| Factory Testing | <ol style="list-style-type: none"> 1. Draft a Test and Evaluation Master Plan and submit for OCCL review and approval 2. Draft a FAT Test Plan and Test Procedures for OCCL review and approval. The Test Plan is designed to | <ol style="list-style-type: none"> 1. Review, provide feedback on, and approve the test plans and procedures 2. Provide information regarding the current system performance and functionality 3. Attend the FAT and participate in the testing 4. For each test scenario, either provide approval or |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>validate the approved requirements.</p> <ol style="list-style-type: none"> 3. Perform Certification testing per the approved Test Plan. Note that interfaces are simulated for all factory testing. 4. Note any issues and their severity in MTs System Product Report (SPR) database and track the resolution 5. Conduct a Factory Acceptance Test, Test Readiness Review (FAT TRR) per the approved Test Plan, including: <ol style="list-style-type: none"> a. Providing an overview/walk-through of the FAT activity which is to occur. b. Describing the test environment (equipment, software, databases, and interfaces) and how it differs from the operational environment (e.g., the use of simulators to represent external interfaces) c. Identifying and discussing the rationale for and implications of any proposed redlines to documents (i.e., test plans, test procedures, user documentation, installation documentation). d. Reporting on the status of all Action Items, Risks, and Issues that are currently open or have been closed since the previous PMR. Plans and/or options for their resolution will be addressed. e. Identifying any test procedures that the MT expects will fail or be incomplete during FAT execution, addressing the implications of those failures/incompletes for operations, and discussing plans/options for correcting the cause(s) of those failures. 6. Conduct a FAT per the approved Test Plan and Procedures (including any approved redlines). The system will be configured as specified in the OC ABI System Design Specification approved at the System Design Review with any changes to the Design Specification and the BOM approved by OCCL. 7. Document the test results, requirements satisfaction, and failures or incompletes in the FAT Test Report and provide a plan for resolution | <p>note discrepancies within the Test Procedure document</p> |
| Site Preparation | <ol style="list-style-type: none"> 1. Provide Installation Survey Reports (OC-23), including identifying facility and | <ol style="list-style-type: none"> 1. Identify the locations for each item procured. Provide an address, contact name and contact |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>network deficiencies</p> <ol style="list-style-type: none"> 2. Provide an Installation Plan (OC-25), including site preparation documentation identifying the power, network, AC, space, cabling, access, security and equipment layout requirements for the implementation of the system. It will also cover installation tasks, responsibilities, schedule, resource requirements. The Installation Plan covers all facilities receiving equipment. 3. Provide Installation Drawings (CDRL OC-26) to define equipment layout and cabling. 4. Provide a Version Description Document with the complete instructions necessary for a third party to install and configure all hardware, software, and data associated with each deployment. The document will include site-specific installation information (CDRL OC-24). 5. Provide a Transition Plan that addresses: <ol style="list-style-type: none"> a. parallel operations b. synchronization of the current and new repositories up to the final minutes c. timing of training relative to hardware installation d. sequence of switching services e. migration objectives f. activities and required resources g. schedule (down to hours and minutes as appropriate) h. tools i. assumptions j. OCCL furnished items k. Data and information l. Facilities requirements m. External personnel requirements | <p>phone number for each site</p> <ol style="list-style-type: none"> 2. Provide the access to the sites for site surveys by MT and assist in the surveys 3. Provide the required layout/information on the sites as well as the any known constraints 4. Review the site survey reports, Installation Plan, Installation Drawings and Transition Plan, confirm that there are no compliance issues, and approve the plans according to the schedule 5. Prepare the sites and the inter-connection of the sites according to the site preparation documentation 6. OCCL is responsible for the local area and wide area networks, including the network lines, firewalls, routers, hubs, network cards, and network switches other than AFIS network switches. Performance will be affected by network bandwidth. MorphoTrak requires a minimum 100Mb local area network for a central site connection, and at least 4.5Mb dedicated network connection for each remote latent station. 7. OCCL is responsible for network and power reliability and availability. Failure in these areas cannot be counted against MorphoTrak's reliability and availability contractual requirements 8. Provide a formal notice for MT indicating that the site preparation has been completed, validated and the inter-connection is operational before equipment is shipped to the sites 9. If the network is not functioning per the specifications when MT arrives for installation, requests for correction should be addressed within one day. Delays will impact the schedule and may result in charges for the additional labor and per diem expenses for the duration of the extension for the employees on site. |
| Shipping and Delivery | <ol style="list-style-type: none"> 1. Provide a schedule for shipping and delivery to each site 2. Conduct a Pre-Ship Review and obtain OCCL authorization to ship. This includes: <ol style="list-style-type: none"> a. Presenting the results of FAT b. Reviewing the status of all Action Items, Risks, and Issues that were presented at the FAT TRR and any changes to their status, and review any new Action Items, Risks, or Issues that arose as a result of FAT c. Addressing the readiness of required deliverables (e.g., equipment, | <ol style="list-style-type: none"> 1. Approve the schedule for shipment and delivery of the hardware and software for each site 2. Attend the Pre-Ship Review and provide ship authorization 3. Receive all material and immediately notify MT of any visible damage to shipping containers 4. Provide temporary storage for the delivered hardware if required |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>software, databases) to deploy, and personnel to conduct installation</p> <p>d. Addressing the readiness of the facilities to receive the deliverables</p> <p>e. Addressing the readiness of training plans, materials, and training personnel to provide training, and the readiness of trainees to receive training</p> <p>f. Providing an overview of plans for conduct of SAT and UAT.</p> <p>3. Securely crate or palletize all deliverables</p> <p>4. Provide shipping manifests that identify all items, including serial numbers</p> <p>5. Arrange for the secure shipping of all hardware, 3rd party and MT software to the designated target sites</p> | |
| Installation and On-Site Integration testing | <ol style="list-style-type: none"> 1. Propose the installation schedule in advance of delivery 2. Deliver, unpack and inventory all equipment at locations receiving equipment 3. Install the equipment and software deliveries at the OCCL central site to include the software per contract requirements 4. Install front-end workstations at the remote sites 5. Power up the equipment and verify connectivity between components 6. Troubleshoot any installation issues 7. Run on-site integration tests with the external systems 8. Identify any open issues prior to Site Acceptance Testing | <ol style="list-style-type: none"> 1. Confirm the installation schedule in advance of delivery and provide authorization to proceed with installation 2. Provide the access to the sites for MT and MT sub-contractors as required 3. Provide the support for site and security issues 4. Ensure timely IT support availability for addressing network issues 5. Arrange for access to test beds for interfaced systems (e.g., FBI, LARS, etc.) 6. Provide access to the site 8am to 8pm, Monday through Saturday, with escort if required |
| Site Acceptance Test (SAT) | <ol style="list-style-type: none"> 1. Draft a SAT Test Plan and Test Procedures for OCCL review and approval 2. Conduct a Site Acceptance Test, Test Readiness Review (SAT TRR) per the approved Test Plan, including: <ol style="list-style-type: none"> a. Providing an overview/walk-through of the SAT activity that is to occur b. Describing the test configuration and environment (equipment, software, databases, and interfaces). Any differences between the test and operational configuration and environment will be identified c. Describing precautions taken to ensure that operational databases | <ol style="list-style-type: none"> 1. Review, provide feedback on, and approve the test plans and procedures 2. Participate in the SAT, signing off on passed tests and identifying any failed requirements within the Test Procedure document 3. Validate the fixes during re-testing and sign-off the SAT 4. Participate in the Operational Readiness Review and either provide authorization to proceed with training or identify the discrepancies that must be addressed in order to receive authorization |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>will not be corrupted or cause the users of interfacing systems to take actions based on the belief that test messages are actual operational messages</p> <ul style="list-style-type: none"> d. Identifying and discussing the rationale for and implications of any proposed redlines to documents (i.e., test plans, test procedures, user documentation, installation documentation) e. Reporting on the status of all Action Items, Risks, and Issues that are currently open or have been closed since the PSR. Plans and/or options for their resolution will be addressed f. Identifying any test procedures that the Contractor expects will fail or be incomplete during SAT execution, address the implications of those failures/incompletes for operations, and discuss plans/options for correcting the cause(s) of those failures <p>3. Organize the SAT and run the tests according to the approved SAT Test Plan and Test Procedures, including any approved redlines</p> <ul style="list-style-type: none"> a. The SAT will be run on the operational system b. No interfaces will be simulated on the ABIS, however remote test beds will be used as appropriate to ensure operational databases are not corrupted with test data (for example, with the FBI) <p>4. Document the test results, requirements satisfaction, and failures or incompletes in the SAT Test Report and provide a plan for resolution</p> <p>5. Fix the punchlist issue, re-run the failed tests and issue a report for SAT re-test</p> <p>6. Conduct an Operational Readiness Review, including:</p> <ul style="list-style-type: none"> a. Presenting the results of SAT b. Reviewing the results of user training c. Reviewing the status of all Action Items, Risks, and Issues that were presented at the SAT TRR and any changes to their status, and review any new Action Items, Risks, or Issues that arose as a result of SAT d. Addressing the readiness of required deliverables (e.g., equipment, software, databases) to deploy, and | |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
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| | <p>personnel to conduct User Acceptance Test;</p> <p>e. Delivering to OCCL the software (installed executables) and the licenses for all commercial software components of the OC ABI System, and copies of all source code included in the operational OC ABI System that is not part of a commercial product</p> | |
| Training | <ol style="list-style-type: none"> 1. Draft a training schedule based upon your specific organizational and contractual requirements 2. Draft a Training Plan and submit it for OCCL review, and approval 3. Provide Tenprint Operations Training, Latent Operations Training, and System Administration Training per the approved schedule 4. Provide attendance sheets and training certificates 5. Provide, collect and review feedback forms 6. Trainers provide contact information for follow up questions | <ol style="list-style-type: none"> 1. Review, comment on and approve the Training Plan and schedule 2. Ensure the availability of the trainees and confirm they meet any prerequisite requirements 3. Provide a meeting room and projection equipment for the classroom training. 4. Trainees are encouraged to provide feedback on the training courses |
| Training Documentation | <ol style="list-style-type: none"> 1. Deliver the Training Materials and User Manuals (electronic copies, plus 1 hardcopy per trainee) | <ol style="list-style-type: none"> 1. OCCL may make unlimited electronic copies for internal use |
| User Acceptance Testing | <ol style="list-style-type: none"> 1. Update the Transition Plan as needed 2. Conduct the User Acceptance Test, Test Readiness Review (UAT TRR) 3. Assist OCCL staff in placing the system in parallel production status and assist users in the performance of user functions. Support will be provided for all shifts. 4. Track and address any issues found during the parallel use period that would prevent full production use 5. Assist OCCL staff in placing the system in full production mode 6. Engage the MT Customer Support Center to transition to warranty support and issue tracking. Support will be provided for all shifts. 7. Complete a final residual conversion and load records | <ol style="list-style-type: none"> 1. Participate in the UAT TRR and either provide authorization to begin UAT or identify the discrepancies that must be addressed to obtain authorization 2. Provide the staffing necessary to support cutover to parallel production 3. Monitor the system performance for a minimum of two weeks to ensure transactions are being processed properly 4. Identify and report any issues found during the parallel use period 5. Evaluate the system performance after 2 weeks and either provide authorization to proceed to full production mode or identify the discrepancies that must be addressed to obtain authorization 6. Notify remote sites of any downtime scheduled and how to report problems 7. Coordinate communications with the managers of any interfaced systems to support the transition from test mode to live mode 8. Assist in obtaining records for the residual |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
|--------------------------|--|--|
| | | conversion |
| Final Acceptance | <ol style="list-style-type: none"> 1. OCCL and MorphoTrak run the previously agreed-to SAT test procedures (OC-19) using an agreed-upon set of test data. This procedure includes a detailed set of tests covering all of the requirements specified in the ABI System Requirements Definition Document. 2. Any anomalies encountered are documented in the SAT Report punchlist (OC-20). A plan to fix these anomalies by a specific date is then entered into the punchlist. 3. MorphoTrak and OCCL participate in the ORR. When OCCL is comfortable with the state of the system, UAT is authorized to begin. 4. Provide help desk support number that OCCL can call with any system questions or issues. | <ol style="list-style-type: none"> 1. OCCL and MorphoTrak run the previously agreed-to SAT test procedures (OC-19) using an agreed-upon set of test data. This procedure includes a detailed set of tests covering all of the requirements specified in the ABI System Requirements Definition Document. 2. MorphoTrak and OCCL participate in the ORR. When OCCL is comfortable with the state of the system, UAT is authorized to begin. 3. UAT is conducted for a period of thirty (30) days. 4. Upon completion of the UAT, the OCCL will conduct a System Acceptance Review to determine if the system can be declared fully operational 5. Sign the acceptance certificate, which will include a reference to any remaining punchlist items and a statement that all invoices up until that time of acceptance will be paid by OCCL. |
| Travel | <ol style="list-style-type: none"> 1. Organize MT personnel travel 2. Pay for MT Personnel travel expenses | <ol style="list-style-type: none"> 1. Organize any OCCL personnel travel. No travel outside Orange County is expected. |

Table B-2: Orange County Crime Lab Responsibility Matrix
System Operations, Monitoring and Administration Tasks

| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
|--|-------------------|--|
| System Operations Report | | <ol style="list-style-type: none"> 1. Run system operations reports |
| <p>The required network analysis may result in recommendations to change OCCL, OCSD, or other County provided network lines, firewalls, routers, hubs, network cards, and network switches other than AFIS network switches. In addition, the required network analysis may result in recommendations to increase bandwidth. The County is responsible for all WAN connectivity and termination equipment. Provided that the County implements any recommended changes from MorphoTrak's Installation Survey Report (CDRL OC-23), the OC ABI System Network will support the requirements in SRS Table 50. The County will procure and provide to MT the network enhancements (hardware, software and broadband lines) as defined in the MT design task (SOW 3.2.3). MT will develop, install and maintain the new OC ABI System network (e.g. routers, network switches). MT will be responsible for connecting OC ABI System components to the current or augmented network as well as incorporating the new network in testing and maintenance tasks.</p> | | |
| LAN/WAN Administration & Supervision | | <ol style="list-style-type: none"> 1. All LAN/WAN administration, supervision and support |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
|--|---|---|
| User Management | | 1. System administrators will be responsible for user management including: <ol style="list-style-type: none"> a. Creating users b. Establishing and modifying user access rights c. Enabling and disabling user accounts d. Deactivating users |
| Help Desk | <ol style="list-style-type: none"> 1. Provide Call Center support per your service agreement, including a 1-800 number and email access 2. Record and track all service calls in our database 3. Dispatch local Customer Support Engineers as required per the Scope of Work | 1. Provide an end-user help desk, which shall: <ol style="list-style-type: none"> a. Serve as the first level support, providing assistance to operations personnel for workstation related questions and issues b. Notify and coordinate the notification of support resources, within your organization and to MT as dictated by the situation. c. Provide call follow-up and escalate issues to MT as necessary |
| Delivery of Consumables | | 1. Provide data backup tapes, Ink cartridges, paper, batteries and other consumables |
| System Monitoring | | 1. System administrators should monitor key components of the system, including: <ol style="list-style-type: none"> a. In-process transactions b. Services, interfaces and databases c. Notifications when an abnormal event is detected |
| System and Transaction Management | | 1. System administrators will manage key components of the system, including: <ol style="list-style-type: none"> a. Stopping and re-launching of all transactions in the system b. Enabling and purging transactions c. Changing transaction priority d. Starting and stopping of all services, interfaces and databases of the system |
| Storage Space Monitoring | | 1. Monitor storage space indicators to look for alerts of failure or of approaching capacity thresholds and make appropriate notifications |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
|-------------------------------|-------------------|--|
| Data Backup Management | | 1. Perform periodic backups of the system databases and verify the backups |

Table B-3: Orange County Crime Lab Responsibility Matrix
System Warranty and Maintenance Tasks

| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
|---------------------------------|--|--|
| Hardware Preventive Maintenance | <ol style="list-style-type: none"> 1. Perform all necessary preventive hardware maintenance. 2. Down time for performing hardware preventative maintenance at the Central Site will not exceed two (2) hours in any month unless agreed to in advance by OCCL. | |
| Software Preventive Maintenance | <ol style="list-style-type: none"> 1. Perform log analysis, software updates and load any software patches required to ensure software is performing per specification 2. Provide all upgrades to deliverables whenever new product releases are introduced (in accordance with MT Software Agreement in Part 1). 3. Down time for performing software preventative maintenance at the Central Site will not exceed two (2) hours in any month unless agreed to in advance by OCCL. | Confirm which software updates may be loaded and approve the schedule |
| Anti-Virus | MT runs Windows anti-virus software on their systems before shipping, typically Norton. We ship our systems with the Norton software and one year of virus definition upgrades are available. | <p>Responsible for virus management once the system is installed on your site, including definition downloads, virus checking and reporting</p> <p>Note: McAfee if also certified to run on MT products if you wish to utilize that software</p> |
| Performance Analysis & Tuning | <ol style="list-style-type: none"> 1. At a time agreed upon with OCCL, conduct monthly reviews of system capacity, usage, performance indicators and event logs to identify potential problems before they happen 2. Routinely evaluate performance indicators, make recommendations for altering system parameters and configurations to maintain optimum performance. Implement approved changes | Review and approve configuration changes |
| Remedial Maintenance Support | <ol style="list-style-type: none"> 1. Repair, replace or upgrade hardware as necessary to ensure that failed or degraded hardware is performing per specification within the conditions of the warranty and/or maintenance contract 2. Perform log analysis and technical | |



| Activity/ Deliverable | MT Responsibility | OCCL Responsibility |
|--------------------------|---|--|
| | <p>investigations as necessary to diagnose system events</p> <p>3. Produce software updates and fixes within the conditions of the warranty and/or maintenance contract. This may include source code analysis and patch creation</p> <p>4. Test and install software updates and fixes in the production environment within the conditions of the warranty and/or maintenance contract</p> | |
| Spares Management | Maintain and manage an appropriate inventory of spare parts and install spare parts as necessary in the event of a system failure | |
| Data Management | <p>1. As necessary, perform record analysis to address issues such as missed identifications or other record processing anomalies</p> <p>2. If the need arises, we will be responsible for restoring system data to correct any data loss or corruption of the permanent databases within the limits of the warranty and/or maintenance contract</p> | Notify MT of any known anomalies, such as missed identifications |



ATTACHMENT C COMPENSATION

This is a fixed fee Contract between the County and Contractor for goods and services provided herein. The Contractor agrees to accept the specified compensation as set forth in this Contract as full remuneration for services.

I. COMPENSATION

PAYMENT MILESTONES

The OC ABI Contract price consists of a Development Phase Price (Contract Award through successful completion of System Acceptance Review (SAR)) and a Sustainment Phase Price (post SAR).

The Development Phase is comprised of four (4) Payment Milestones. Upon successful completion of Milestone 1, the Contractor will be paid 20 percent of the Development Phase Price. Upon successful completion of Milestone 2, the Contractor will be paid an additional 30 percent of the Development Phase Price. Upon successful completion of Milestone 3, the Contractor will be paid an additional 30 percent of the Development Phase Price. Upon successful completion of Milestone 4, the Contractor will be paid the remaining Development Phase Price. "Successful completion" of a Payment Milestone requires written acceptance by the OCCL of all Contract Deliverable Requirements List (CDRL) items associated with the Milestone Review and deliverables that are due at any time prior to that review. The Payment Milestones are defined as follows:

1. **Payment Milestone 1** – Successful completion of the System Design Review (SDR). **\$ 1,295,600.00**
2. **Payment Milestone 2** – Successful Completion of the Pre-Ship Review (PSR). **\$ 1,943,400.00**
3. **Payment Milestone 3** – Successful Completion of the Site Acceptance Testing (SAT). **\$ 1,943,400.00**
4. **Payment Milestone 4** – Successful Completion of the System Acceptance Review (SAR) **\$ 1,295,600.00**

The Sustainment Phase (i.e. maintenance period) shall begin upon completion of the warranty period and continue through the initial contract period and any executed renewals. Sustainment Phase payments are to be invoiced monthly in arrears in the amount of **\$16,644.00** per month.

II. PAYMENT

a. Invoicing Instructions:

Invoices and support documentation are to be sent to:

County of Orange
 Sheriff-Coroner Department
 320 N. Flower St., 5th Floor
 Santa Ana, CA 92703
 Attention: Maria Manriquez

The Contractor may bill on the standard invoice form, but all invoices must have the following information:



1. County Contract Number (to be determined)
2. Contractor's Federal ID Number
3. Services performed, date of service, and amount being billed

The County's Project Manager is responsible for approval of invoices and subsequent submittal of invoices to the Auditor-Controller for processing of payment.

The responsibility for providing an acceptable invoice to the County for payment rests with the Contractor. Incomplete or incorrect invoices are not acceptable and will be returned to the Contractor for correction.

b. Terms:

The Auditor-Controller will make payment in arrears in accordance to ATTACHMENT C. All invoices must be verified and approved by the County Project Manager.

Payments made by the County shall not preclude the right of the County from thereafter disputing any items or services involved or billed under this Agreement and shall not be construed as acceptance of any part of the services.



EXHIBIT I**CHILD SUPPORT ENFORCEMENT REQUIREMENTS**

In order to comply with child support enforcement requirements of the County the required Contractor data and certifications must be submitted within 10 days of notification of award.

Failure of a bidder to submit the data and/or certifications required above shall result in the bid being deemed non-responsive and the bidder may be disqualified from being considered for Contract award. Subsequent to issuance of the Contract, failure to comply with all federal and state reporting requirements for Child Support Enforcement or to comply with all lawfully served Wage and Earnings Assignment Orders and Notices of Assignment shall constitute a material breach of the Contract. Failure to cure such breach within 60 calendar days of notice from the County shall constitute grounds for termination of the Contract.

The certifications will be stated as follows:

"I certify that MorphoTrak, Inc., is in full compliance with all applicable federal and state reporting requirements regarding its employees and with all lawfully served Wage and Earnings Assignment Orders and Notices of Assignments and will continue to be in compliance throughout the term of Contract # MA-060-13010457 with the County of Orange. I understand that failure to comply shall constitute a material breach of the Contract and that failure to cure such breach within 60 calendar days of notice from the County shall constitute grounds for termination of the Contract.

It is expressly understood that this data will be transmitted to governmental agencies charged with the establishment and enforcement of child support orders and for no other purposes and will be held confidential by those agencies.

Failure of the Contractor to timely submit the data and/or certifications required above or to comply with all federal and state reporting requirements for child support enforcement or to comply with all lawfully served Wage and Earnings Assignment Orders and Notices of Assignment shall constitute a material breach of the Contract. Failure to cure such breach within 60 calendar days of notice from the County shall constitute grounds for termination of the Contract.



**EXHIBIT III
COUNTY OF ORANGE**



FAITHFUL PERFORMANCE BOND

BOND NO. _____

(The premium charged on this bond is \$ _____, being at the rate of \$ _____ per thousand of the Contract price.)

THAT, WHEREAS, the COUNTY OF ORANGE, State of California, entered into a contract dated _____, hereinafter called "Contract," with

(Name and Address of Contractor)

hereinafter called "Principal," for the work described as follows:

_____ ;and

WHEREAS, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract.

NOW, THEREFORE, WE, the Principal, and

(Name and Address of Surety)

duly authorized to transact business under the laws of the State of California, as Surety, hereinafter called "Surety," are held and firmly bound unto COUNTY OF ORANGE in the penal sum of _____ Dollars (\$ _____), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such, that if the above bounden Principle, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the foregoing contract and any alteration thereof made as therein provided, on his or their part to be kept and performed at the time and in the manner therein specified, and in all respects according to their

true intent and meaning, and shall indemnify, defend with counsel approved in writing by COUNTY, and save harmless the COUNTY OF ORANGE, its officers and agents, as therein stipulated, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and virtue. And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed there under, or to the specifications accompanying the same, shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the work, or to the specifications.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this ____ day of _____, 2012.

APPROVED AS TO INSURER AND LIMITS

CONTRACTOR

By: _____
Risk Manager

By: _____
Name & Title (see footnote)

By: _____
Name & Title (see footnote)

APPROVED AS TO FORM
County Counsel

SURETY

By: _____
Deputy

By: _____

Dated: _____

Footnote: Pursuant to the requirements of California Corporations Code section 313, one of the following two methods must be used by a corporation when it enters into a contract with the County:

- 1) **Two people must sign** the document. One of them must be the chairman of the board, the president of any vice president. The other must be the secretary, any assistant secretary, the chief financial officer or any assistant treasurer.
- 2) One corporate officer may sign the document, providing that written evidence of the officer's authority to bind the corporation with his or her signature must be provided. This evidence would ideally be a corporate resolution.



EXHIBIT B

AMENDMENT NUMBER ONE (Contract Number MA-060-13010457)

**AMENDMENT NUMBER ONE
TO
CONTRACT MA-060-13010457
BETWEEN THE
COUNTY OF ORANGE
AND
MORPHOTRAK LLC**

This AMENDMENT NUMBER ONE to Contract number MA-060-13010457 (hereinafter "AMENDMENT NUMBER ONE") between the County of Orange, a political subdivision of the State of California (hereinafter "COUNTY") and MorphoTrak LLC, (hereinafter "CONTRACTOR") with a place of business at 1250 N. Tustin Avenue, Anaheim, CA 92807, is made and entered upon execution of all necessary signatures.

RECITALS:

WHEREAS, COUNTY and CONTRACTOR executed a Contract on December 18, 2012 for an Automated Biometric Identification System (ABIS), Contract Number MA-060-13010457 (hereinafter "ORIGINAL CONTRACT"), for a four (4) year term of December 18, 2012 through and including December 17, 2016, renewable for three (3) additional one-year terms; and

WHEREAS, COUNTY desires to insert approximately 5,400 file numbers into the ABIS as well as to increase the Contract dollar amount of \$7,077,184.00 by \$7,200.00 for a new not to exceed amount of \$7,084,384.00 and the CONTRACTOR has agreed to provide these goods/services at the rates set forth in the ORIGINAL CONTRACT and this AMENDMENT NUMBER ONE;

NOW THEREFORE, in consideration of the mutual obligations set forth herein, both COUNTY and CONTRACTOR agree as follows:

1. **ARTICLES**

- a. ATTACHMENT A.1, System Requirements Specification for the Orange County Automated Biometric Identification System, Section 3.2.1.2 WF01 Processing, Requirement ID # WF01ProcReq25 of the ORIGINAL CONTRACT, has been amended to add the following:

Insert approximately 5,400 file numbers into the ABIS

- b. ATTACHMENT C, Compensation of the ORIGINAL CONTRACT, has been modified to add the following:

One-time fee of \$7,200.00

2. A true and correct copy of the ORIGINAL CONTRACT (Contract Number MA-060-13010457) is attached hereto as Exhibit A and incorporated by this reference.
3. All other provisions of the ORIGINAL CONTRACT, as amended by AMENDMENT NUMBER ONE, except as amended herein remain in full force and effect

IN WITNESS WHEREOF, the Parties have executed AMENDMENT NUMBER ONE to Contract Number MA-060-13010457.

***Contractor: MorphoTrak LLC**

By: _____ Title: President & CEO

Print Name: Celeste Thomasson Date: December 7, 2015

***Contractor: MorphoTrak LLC**

By: _____ Title: VP & CFO

Print Name: Florian Hebras Date: December 7, 2015

*If a corporation, the document must be signed by two corporate officers. The first signature must be either the Chairman of the Board, President, or any Vice President. The second signature must be the secretary, an assistant secretary, the Chief Financial Officer, or any assistant treasurers. **In the alternative, a single corporate signature is acceptable when accompanied by a corporate document demonstrating the legal authority of the signature to bind the company.**

County Of Orange

A political subdivision of the State of California



Sheriff-Coroner Department

By: _____ Title: Purchasing Manager

Date: 12/8/15

EXHIBIT C

AMENDMENT NUMBER TWO (Contract Number MA-060-17010297)

**AMENDMENT NUMBER TWO
TO
CONTRACT MA-060-13010457
BETWEEN THE
COUNTY OF ORANGE
AND
MORPHOTRAK LLC**

This **AMENDMENT NUMBER TWO** to Contract number MA-060-13010457 (hereinafter "AMENDMENT NUMBER TWO") between the County of Orange, a political subdivision of the State of California (hereinafter "COUNTY") and MorphoTrak LLC, (hereinafter "CONTRACTOR") with a place of business at 5515 E. La Palma Ave., Suite 100, Anaheim, CA 92807, is made and entered upon execution of all necessary signatures.

RECITALS:

WHEREAS, COUNTY and CONTRACTOR executed a Contract on December 18, 2012 for an Automated Biometric Identification System (ABIS), Contract Number MA-060-13010457 (hereinafter "ORIGINAL CONTRACT"), for a four (4) year term of December 18, 2012 through and including December 17, 2016, renewable for three (3) additional one-year terms; and

WHEREAS, COUNTY and CONTRACTOR administratively on December 8, 2015 inserted approximately 5,400 file numbers into the ABIS and increased the Contract dollar amount of the initial four (4) year term of December 18, 2012 through and including December 17, 2016 in the amount of \$7,077,184.00 by \$7,200.00 for a new not to exceed amount of \$7,084,384.00 (hereinafter "AMENDMENT NUMBER ONE"); and

WHEREAS, the Sustainment Period under the ORIGINAL CONTRACT began with the expiration of the warranty, which occurred on January 26, 2016, and the COUNTY and CONTRACTOR desire to adjust the term of the contract to correspond with the expiration of the warranty, the COUNTY and CONTRACTOR desire to extend the ORIGINAL CONTRACT by forty (40) days; and

WHEREAS, the COUNTY and CONTRACTOR desire to renew and extend the ORIGINAL CONTRACT for one (1) year, forty (40) days as Contract Number MA-060-17010294 for the term of December 18, 2016 through and including January 26, 2018; and

WHEREAS, the COUNTY and CONTRACTOR desire to reduce the Contract dollar amount of \$7,084,384 to \$250,000 for the term of December 18, 2016 through and including January 26, 2018, as well as to modify Scope of Work Sustainment Sections to include additional services and the CONTRACTOR has agreed to provide these goods/services at the rates set forth in the ORIGINAL CONTRACT and this AMENDMENT NUMBER TWO;

NOW THEREFORE, in consideration of the mutual obligations set forth herein, both COUNTY and CONTRACTOR agree as follows:

1. ARTICLES

- a. Additional Terms and Conditions, Section Term of Contract, of the ORIGINAL CONTRACT is amended to read in its entirety as follows:

2. Term of Contract:

This Contract shall commence upon execution of all necessary signatures, and continue in effect from 12/18/2012 through and including 1/26/18, unless otherwise terminated by County. The period of 12/18/12 through and including 12/17/16 shall be known as Contract number MA-060-13010457. The period of 12/18/16 through and including 1/26/18 shall be known as Contract number MA-060-17010297. Contract may be renewed up two (2) additional one (1) year terms upon mutual agreement of both parties. The County does not have to give reason if it elects not to renew.

- b. ATTACHMENT A, Scope of Work, Section 3.4, SUSTAINMENT, of the ORIGINAL CONTRACT, is amended, in its entirety, to read as follows:

3.4 SUSTAINMENT

The Contractor *shall* provide all upgrades to their deliverables whenever new Contractor product releases are introduced during the term of the Contract. The Contractor *shall* provide corrective maintenance at no additional cost to OCCL for any error, malfunction, or defect in Contractor supplied equipment, software, or documentation that, when used as delivered, fails to perform in accordance with Contractor's officially announced, written or published, technical specifications or the requirements of this contract through the term of the Contract.

In support of the ongoing investment in the system, contractor shall provide for one person designated by OCCL to attend the annual User's Conference in North America. Contractor shall provide for all costs related to conference registration, roundtrip travel for event, ground transportation to/from conference airport and conference hotel, hotel accommodations, and daily meals.

- c. ATTACHMENT A, Scope of Work, 3.4.1 Preventative Maintenance, of the ORIGINAL CONTRACT, is amended to add the following list of products to be maintained by Contractor:

3.4.1 Preventative Maintenance

The following table lists additional Products to be maintained:
(Equipment is subject to location change and Node Name re-assignment)

| Product | Description | Location | Node Name | Qty |
|---------|---|--------------------------------|--------------------------|-----|
| ADS | Advanced Data Server -SAN Storage Area Network | Orange County Sheriff's Office | OCCLADS001 OCCLADS002 | 2 |

| | | | | |
|--------------------------|--|---|--|----|
| Tape Library | Backup Server | Orange County Sheriff's Office | OCCLBUS001 | 1 |
| DES | Data Exchange Server | Orange County Sheriff's Office | OCCLDES001 | 1 |
| DPS | Data Processing Server | Orange County Sheriff's Office | OCCLDPS001 OCCLDPS002 OCCLDPS003 | 3 |
| Domain Controller | Domain Controller | Orange County Sheriff's Office | OCCLDC001 OCCLDC002 | 2 |
| Expert Workstation | Expert Workstation -Windows 7 Operating System -Flatbed Scanner, Epson V700 -Printers, C746 -UPS -DELL PC, Keyboard, Mouse, Monitor | Orange County Sheriff's Office | OCCLLEW001- OCCLLEW009 OCCLTEW001- OCCLTEW012 | 21 |
| | | Remote Sites: Anaheim Police Department Buena Park Police Department Costa Mesa Police Department Fountain Valley Police Department Fullerton Police Department Garden Grove Police Department Huntington Beach Police Department Irvine Police Department Newport Beach Police Department Orange Police Department Santa Ana Police Department Westminster Police Department | OCCLLEW021 OCCLLEW022 OCCLLEW023 OCCLLEW024 OCCLLEW025 OCCLLEW026 OCCLLEW027 OCCLLEW028 OCCLLEW029 OCCLLEW030 OCCLLEW031 OCCLLEW032 | 12 |
| MBSS Matcher | Matcher -Server | Orange County Sheriff's Office | OCCLMBSS001- OCCLMBSS012 | 12 |
| BatchScan Station | BatchScan Station -Card Scanner, Epson 10000XL | Orange County Sheriff's Office | OCCLBAT001 | 1 |
| Mobile Gateway | | Orange County Sheriff's Office | | |
| WAS / Application Server | | Orange County Sheriff's Office | | 2 |

d. ATTACHMENT A, Scope of Work, 3.4.2 **Troubleshooting**, of the ORIGINAL CONTRACT, is amended to add the following Target Resolution Times service response:

3.4.2 Troubleshooting

The table below further defines the Target Resolution Times for various problem severity levels.

| SEVERITY LEVEL | DEFINITION | RESPONSE TIME | TARGET RESOLUTION TIME |
|----------------|--|--|---|
| 1 | Total System Failure - occurs when the System is not functioning and there is no workaround; such as a Central Server is down or when the workflow of an entire agency is not functioning. | Telephone conference within 1 hour of initial voice notification | Resolve within 24 hours of initial notification |

| | | | |
|---|--|---|--|
| 2 | Critical Failure - Critical process failure occurs when a crucial element in the System that does not prohibit continuance of basic operations is not functioning and there is usually no suitable work-around. Note that this may not be applicable to intermittent problems. | Telephone conference within 3 Standard Business Hours of initial voice notification | Resolve within 7 Standard Business Days of initial notification |
| 3 | Non-Critical Failure - Non-Critical part or component failure occurs when a System component is not functioning, but the System is still useable for its intended purpose, or there is a reasonable workaround. | Telephone conference within 6 Standard Business Hours of initial notification | Resolve within 180 days in a Seller-determined Patch or Release. |
| 4 | Inconvenience - An inconvenience occurs when System causes a minor disruption in the way tasks are performed but does not stop workflow. | Telephone conference within 2 Standard Business Days of initial notification | At Seller's discretion, may be in a future Release. |
| 5 | Customer request for an enhancement to System functionality is the responsibility of Seller's Product Management. | Determined by Seller's Product Management. | If accepted by Seller's Product Management, a release date will be provided with a fee schedule, when appropriate. |

- e. ATTACHMENT C, Section I, Compensation of the ORIGINAL CONTRACT, has been modified as follows:

The Sustainment Phase (i.e. maintenance period) shall begin upon completion of the warranty period and continue through the initial contract period and any executed renewals. Sustainment Phase payments are to be invoiced monthly in arrears in the amount of \$16,644.00 per month.

Contract shall not exceed \$250,000 for the term of December 18, 2016 through and including January 26, 2018.

2. A true and correct copy of the ORIGINAL CONTRACT (Contract Number MA-060-13010457) is attached hereto as Exhibit A and incorporated by this reference.
3. A true and correct copy of AMENDMENT NUMBER ONE (Contract Number MA-060-13010457) is attached hereto as Exhibit B and incorporated by this reference.
4. All other provisions of the ORIGINAL CONTRACT, and AMENDMENT NUMBER ONE as amended by AMENDMENT NUMBER TWO, except as amended herein remain in full force and effect

IN WITNESS WHEREOF, the Parties have executed AMENDMENT NUMBER TWO to Contract Number MA-060-13010457.

***Contractor: MorphoTrak LLC**

By: [Signature] Title: Vice President
Print Name: Walt Scott Date: November 8, 2016

***Contractor: MorphoTrak LLC**

By: _____ Title: _____
Print Name: _____ Date: _____

**If the contracting party is a corporation, (2) two signatures are required: (1) signature by the Chairman of the Board, the President or any Vice President; and one (1) signature by the Secretary, any Assistant Secretary, the Chief Financial Officer or any Assistant Treasurer. The signature of one person alone is sufficient to bind a corporation, as long as he or she holds corporate offices in each of the two categories described above. For County purposes, proof of such dual office holding will be satisfied by having the individual sign the instrument twice, each time indicating his or her office that qualifies under the above described provision.*

In the alternative, a single corporate signature is acceptable when accompanied by a corporate resolution demonstrating the legal authority of the signature to bind the company.

County Of Orange

A political subdivision of the State of California



Sheriff-Coroner Department

By: [Signature] Title: Purchasing Manager
Print Name: DWIGHT TAPPIN Date: 12/15/16

Approved by the Board of Supervisors: 12-13-16

Approved as to Form
Office of the County Counsel
Orange County, California

by [Signature]
Deputy

EXHIBIT D

AMENDMENT NUMBER THREE (Contract Number MA-060-18010022)

**AMENDMENT NUMBER THREE
TO
CONTRACT MA-060-13010457
BETWEEN THE
COUNTY OF ORANGE
AND
MORPHOTRAK LLC**

This AMENDMENT NUMBER THREE to Contract number MA-060-13010457 (hereinafter "AMENDMENT NUMBER THREE") between the County of Orange, a political subdivision of the State of California (hereinafter "COUNTY") and MorphoTrak LLC, (hereinafter "CONTRACTOR") with a place of business at 5515 E. La Palma Ave., Suite 100, Anaheim, CA 92807, is made and entered upon execution of all necessary signatures.

RECITALS:

WHEREAS, COUNTY and CONTRACTOR executed a Contract on December 18, 2012 for an Automated Biometric Identification System (ABIS), Contract Number MA-060-13010457 (hereinafter "ORIGINAL CONTRACT"), for a four (4) year term of December 18, 2012 through and including December 17, 2016, renewable for three (3) additional one-year terms; and

WHEREAS, COUNTY and CONTRACTOR administratively on December 8, 2015 inserted approximately 5,400 file numbers into the ABIS and increased the Contract dollar amount of the initial four (4) year term of December 18, 2012 through and including December 17, 2016 in the amount of \$7,077,184.00 by \$7,200.00 for a new not to exceed amount of \$7,084,384.00 (hereinafter "AMENDMENT NUMBER ONE"); and

WHEREAS, COUNTY and CONTRACTOR renewed the ORIGINAL CONTRACT for one (1) year, forty (40) days for a term of December 18, 2016 through and including January 26, 2018 as Contract Number MA-060-17010297 due to the Sustainment Period under the ORIGINAL CONTRACT beginning with the expiration of the warranty on January 26, 2016, reduced the Contract dollar amount of \$7,084,384 to \$250,000, and modified the Scope of Work Sustainment Sections to include additional services (hereinafter "AMENDMENT NUMBER TWO"); and

WHEREAS, COUNTY desires to renew the ORIGINAL CONTRACT as Contract Number MA-060-18010022 for a one-year term of January 27, 2018 through and including January 26, 2019 in the not to exceed amount of \$250,000 and the CONTRACTOR has agreed to provide these goods/services at the rates set forth in the ORIGINAL CONTRACT and AMENDMENT NUMBER TWO;

NOW THEREFORE, in consideration of the mutual obligations set forth herein, both COUNTY and CONTRACTOR agree as follows:

1. **ARTICLES**

- a. Additional Terms and Conditions, Section **Term of Contract**, of the ORIGINAL CONTRACT is amended to read in its entirety as follows:

1. Term of Contract:

This Contract shall commence upon execution of all necessary signatures, and continue in effect from 12/18/2012 through and including 1/26/19, unless otherwise terminated by County. The period of 12/18/12 through and including 12/17/16 shall be known as Contract number MA-060-13010457. The period of 12/18/16 through and including 1/26/18 shall be known as Contract number MA-060-17010297. The period of 1/27/18 through and including 1/26/19 shall be known as Contract number MA-060-18010022. Contract may be renewed up one (1) additional one (1) year term upon mutual agreement of both parties. The County does not have to give reason if it elects not to renew.

2. A true and correct copy of the ORIGINAL CONTRACT (Contract Number MA-060-13010457) is attached hereto as Exhibit A and incorporated by this reference.
3. A true and correct copy of AMENDMENT NUMBER ONE (Contract Number MA-060-13010457) is attached hereto as Exhibit B and incorporated by this reference.
4. A true and correct copy of AMENDMENT NUMBER TWO (Contract Number MA-060-17010297) is attached hereto as Exhibit C and incorporated by this reference.
5. All other provisions of the ORIGINAL CONTRACT, AMENDMENT NUMBER ONE and AMENDMENT NUMBER TWO as amended by AMENDMENT NUMBER THREE, except as amended herein remain in full force and effect.

IN WITNESS WHEREOF, the Parties have executed AMENDMENT NUMBER THREE to Contract Number MA-060-13010457.

***Contractor: MorphoTrak LLC**

By: [Signature] Title: Secretary & Treasurer

Print Name: Robert Hayes Date: September 15, 2017

***Contractor: MorphoTrak LLC**

By: _____ Title: _____

Print Name: _____ Date: _____

**If the contracting party is a corporation, (2) two signatures are required: (1) signature by the Chairman of the Board, the President or any Vice President; and one (1) signature by the Secretary, any Assistant Secretary, the Chief Financial Officer or any Assistant Treasurer. The signature of one person alone is sufficient to bind a corporation, as long as he or she holds corporate offices in each of the two categories described above. For County purposes, proof of such dual office holding will be satisfied by having the individual sign the instrument twice, each time indicating his or her office that qualifies under the above described provision.*

In the alternative, a single corporate signature is acceptable when accompanied by a corporate resolution demonstrating the legal authority of the signature to bind the company.

County Of Orange

A political subdivision of the State of California



Sheriff-Coroner Department

By: [Signature] Title: Supervising PCS
Print Name: Lorena Quintana Date: 10-31-17

Approved by the Board of Supervisors: 10-31-17

Approved as to Form
Office of the County Counsel
Orange County, California

by [Signature]
Deputy

EXHIBIT E

AMENDMENT NUMBER FOUR (Contract Number MA-060-19010727)

AMENDMENT NUMBER FOUR
TO
CONTRACT MA-060-13010457
BETWEEN THE
COUNTY OF ORANGE
AND
IDEMIA IDENTITY & SECURITY USA LLC (FORMERLY KNOWN AS MORPHOTRAK LLC)

This AMENDMENT NUMBER FOUR to Contract number MA-060-13010457 (hereinafter "AMENDMENT NUMBER FOUR") between the County of Orange, a political subdivision of the State of California (hereinafter "COUNTY") and Idemia Identity & Security USA LLC (formerly known as MorphoTrak LLC) (hereinafter "CONTRACTOR"), with a place of business at 5515 E. La Palma Ave., Suite 100, Anaheim, CA 92807, is made and entered upon execution of all necessary signatures.

RECITALS:

WHEREAS, COUNTY and MorphoTrak LLC executed a Contract on December 18, 2012 for an Automated Biometric Identification System (ABIS), Contract Number MA-060-13010457 (hereinafter "ORIGINAL CONTRACT"), for a four (4) year term of December 18, 2012 through and including December 17, 2016, renewable for three (3) additional one-year terms; and

WHEREAS, COUNTY and MorphoTrak LLC administratively on December 8, 2015 inserted approximately 5,400 file numbers into the ABIS and increased the Contract dollar amount of the initial four (4) year term of December 18, 2012 through and including December 17, 2016 in the amount of \$7,077,184.00 by \$7,200.00 for a new not to exceed amount of \$7,084,384.00 (hereinafter "AMENDMENT NUMBER ONE"); and

WHEREAS, COUNTY and MorphoTrak LLC renewed the ORIGINAL CONTRACT for one (1) year, forty (40) days for a term of December 18, 2016 through and including January 26, 2018 as Contract Number MA-060-17010297 due to the Sustainment Period under the ORIGINAL CONTRACT beginning with the expiration of the warranty on January 26, 2016, reduced the Contract dollar amount of \$7,084,384 to \$250,000, and modified the Scope of Work Sustainment Sections to include additional services (hereinafter "AMENDMENT NUMBER TWO"); and

WHEREAS, COUNTY and MorphoTrak LLC renewed the ORIGINAL CONTRACT as Contract Number MA-060-18010022 (hereinafter "AMENDMENT NUMBER THREE"), for a one (1) year term of January 27, 2018 through and including January 26, 2019 in the not to exceed amount of \$250,000;

WHEREAS, CONTRACTOR informs COUNTY that on July 1, 2018, MorphoTrak LLC merged with and into its affiliate, Idemia Identity & Security USA LLC, and that as a result of the merger, CONTRACTOR is the surviving company under the name "Idemia Identity & Security USA LLC"; and

WHEREAS, CONTRACTOR agrees to be bound by all of the terms and conditions of the ORIGINAL CONTRACT, as amended, just as if it had been an original signatory to the Contract, and COUNTY consents to the assignment of the ORIGINAL CONTRACT from MorphoTrak LLC to CONTRACTOR; and

WHEREAS, COUNTY desires to renew the ORIGINAL CONTRACT as Contract Number MA-

060-19010727, for a one-year term of January 27, 2019 through and including January 26, 2020; add a one-time increase of \$650,000 for an upgrade of the OC ABI System for SAP 40/51 Mugshot images, for an annual not to exceed amount of \$900,000; and revise Term S. Change of Ownership, and the CONTRACTOR has agreed to provide these goods/services at the rates set forth in the ORIGINAL CONTRACT and AMENDMENT NUMBER TWO, and has confirmed in writing that CONTRACTOR understands and is in compliance with the COUNTY's Conflict of Interest Policy as stated in Paragraph S herein;

NOW THEREFORE, in consideration of the mutual obligations set forth herein, and in the ORIGINAL CONTRACT, both COUNTY and CONTRACTOR agree as follows:

1. ASSIGNMENT OF CONTRACT

Effective July 1, 2018:

- a. COUNTY hereby approves the assignment of the ORIGINAL CONTRACT, as amended, from MorphoTrak LLC to CONTRACTOR.
- b. CONTRACTOR accepts the assignment of the ORIGINAL CONTRACT, as amended, agrees to provide all items covered thereunder, and assumes the rights, duties and obligations of MorphoTrak LLC under the ORIGINAL CONTRACT, as amended, and accepts and agrees to all terms and conditions of the ORIGINAL CONTRACT as amended.
- c. Wherever "MorphoTrak LLC" appears in the ORIGINAL CONTRACT, as amended, it is hereby replaced with "Idemia Identity & Security USA LLC".

2. ARTICLES

- a. General Terms and Conditions, Term S. Change of Ownership, of the ORIGINAL CONTRACT is amended to read as follows:
 - S. Change of Ownership/Name, Litigation Status, Conflicts with County Interests: Contractor agrees that if there is a change or transfer in ownership of Contractor's business prior to completion of this Contract, and the County agrees to an assignment of the Contract, the new owners shall be required under terms of sale or other transfer to assume Contractor's duties and obligations contained in this Contract and complete them to the satisfaction of the County.

County reserves the right to immediately terminate the Contract in the event the County determines that the assignee is not qualified or is otherwise unacceptable to the County for the provision of services under the Contract.

In addition, Contractor has the duty to notify the County in writing of any change in the Contractor's status with respect to name changes that do not require an assignment of the Contract. The Contractor is also obligated to notify the County in writing if the Contractor becomes a party to any litigation against the County, or a party to litigation that may reasonably affect the Contractor's performance under the Contract, as well as any potential conflicts of interest between Contractor and County that may arise prior

to or during the period of Contract performance. While Contractor will be required to provide this information without prompting from the County any time there is a change in Contractor's name, conflict of interest or litigation status, Contractor must also provide an update to the County of its status in these areas whenever requested by the County.

The Contractor shall exercise reasonable care and diligence to prevent any actions or conditions that could result in a conflict with County interests. In addition to the Contractor, this obligation shall apply to the Contractor's employees, agents, and subcontractors associated with the provision of goods and services provided under this Contract. The Contractor's efforts shall include, but not be limited to establishing rules and procedures preventing its employees, agents, and subcontractors from providing or offering gifts, entertainment, payments, loans or other considerations which could be deemed to influence or appear to influence County staff or elected officers in the performance of their duties.

- b. Additional Terms and Conditions, Section 2. Term of Contract, of the ORIGINAL CONTRACT is amended to read in its entirety as follows:

1. Term of Contract:

This Contract shall commence upon execution of all necessary signatures, and continue in effect from 12/18/2012 through and including 1/26/20, unless otherwise terminated by County. The period of 12/18/12 through and including 12/17/16 shall be known as Contract number MA-060- 13010457. The period of 12/18/16 through and including 1/26/18 shall be known as Contract number MA-060-17010297. The period of 1/27/18 through and including 1/26/19 shall be known as Contract number MA- 060-18010022. The period of 1/27/19 through and including 1/26/20 shall be known as Contract number MA-060-19010727. Contract is non- renewable.

- c. Attachment C., Compensation, of the ORIGINAL CONTRACT has been amended in part to add the following:

One-time upgrade of the OC ABIS System for SAP 40/51 Mugshot images in an amount not to exceed \$650,000.

Contract shall not exceed \$900,000 for the term of January 27, 2019 through and including January 26, 2020.

3. A true and correct copy of the ORIGINAL CONTRACT (Contract Number MA-060-13010457) is attached hereto as Exhibit A and incorporated by this reference.
4. A true and correct copy of AMENDMENT NUMBER ONE (Contract Number MA-060-13010457) is attached hereto as Exhibit B and incorporated by this reference.
5. A true and correct copy of AMENDMENT NUMBER TWO (Contract Number MA-060-17010297) is attached hereto as Exhibit C and incorporated by this reference.
6. A true and correct copy of AMENDMENT NUMBER THREE (Contract Number MA-060-

18010022) is attached hereto as Exhibit D and incorporated by this reference.

7. All other provisions of the ORIGINAL CONTRACT and AMENDMENTS NUMBERS ONE through THREE, except as amended herein and to the extent are not inconsistent with this AMENDMENT NUMBER FOUR, remain in full force and effect.

IN WITNESS WHEREOF, the Parties have executed AMENDMENT NUMBER FOUR to Contract Number MA-060-13010457.

*Contractor: Idemia Identity & Security USA LLC

By: [Signature] Title: Vice President
Print Name: Michael Kato Date: 12/7/18

*Contractor: Idemia Identity & Security USA LLC

By: _____ Title: _____
Print Name: _____ Date: _____

**If the contracting party is a corporation, (2) two signatures are required: (1) signature by the Chairman of the Board, the President or any Vice President; and one (1) signature by the Secretary, any Assistant Secretary, the Chief Financial Officer or any Assistant Treasurer. The signature of one person alone is sufficient to bind a corporation, as long as he or she holds corporate offices in each of the two categories described above. For County purposes, proof of such dual office holding will be satisfied by having the individual sign the instrument twice, each time indicating his or her office that qualifies under the above described provision.*

In the alternative, a single corporate signature is acceptable when accompanied by a corporate resolution demonstrating the legal authority of the signature to bind the company.

County Of Orange

A political subdivision of the State of California



Sheriff-Coroner Department

By: [Signature] Title: PURCHASING MANAGER
Print Name: DWIGHT DIPPING Date: 1/14/2019

Approved by the Board of Supervisors: 1/8/2019

Approved as to Form
Office of the County Counsel
Orange County, California

by [Signature]
Deputy



296 Concord Road
Billerica, MA, 01821, United States

County of Orange Police Dept.
3201 W. Fitchburg Blvd
3201 W. Fitchburg Blvd, Suite 108
Santa Ana, CA 92703

December 7, 2018

November 29, 2018

Subject: Michael Kato Letter of Authorization

To Whom It May Concern,

Michael Kato, Vice President, Program Management, has been duly authorized to sign maintenance on behalf of Idemia Identity & Security USA LLC (the "Company") pursuant to the Company's Delegation of Authority ("DOA") procedures, consistent with the Limited Liability Company Agreement.

Respectfully,

Lauren E. DiGiovine
Assistant Secy., Legal Counsel

|))))

EXHIBIT F

AMENDMENT NUMBER FIVE (Contract Number MA-060-19010727)

AMENDMENT NUMBER FIVE
TO
CONTRACT MA-060-13010457
BETWEEN THE
COUNTY OF ORANGE
AND
IDEMIA IDENTITY & SECURITY USA LLC (FORMERLY KNOWN AS MORPHOTRAK LLC)

This AMENDMENT NUMBER FIVE to Contract number MA-060-13010457 (hereinafter "AMENDMENT NUMBER FIVE") between the County of Orange, a political subdivision of the State of California (hereinafter "COUNTY") and Idemia Identity & Security USA LLC (formerly known as MorphoTrak LLC) (hereinafter "CONTRACTOR"), with a place of business at 5515 E. La Palma Ave., Suite 100, Anaheim, CA 92807, is made and entered upon execution of all necessary signatures.

RECITALS:

WHEREAS, COUNTY and CONTRACTOR executed a Contract on December 18, 2012 for an Automated Biometric Identification System (ABIS), Contract Number MA-060-13010457 (hereinafter "ORIGINAL CONTRACT"), for a four (4) year term of December 18, 2012 through and including December 17, 2016, renewable for three (3) additional one-year terms; and

WHEREAS, COUNTY and CONTRACTOR administratively on December 8, 2015 inserted approximately 5,400 file numbers into the ABIS and increased the Contract dollar amount of the initial four (4) year term of December 18, 2012 through and including December 17, 2016 in the amount of \$7,077,184.00 by \$7,200.00 for a new not to exceed amount of \$7,084,384.00 (hereinafter "AMENDMENT NUMBER ONE"); and

WHEREAS, COUNTY and CONTRACTOR renewed the ORIGINAL CONTRACT for one (1) year, forty (40) days for a term of December 18, 2016 through and including January 26, 2018 as Contract Number MA-060-17010297 due to the Sustainment Period under the ORIGINAL CONTRACT beginning with the expiration of the warranty on January 26, 2016, reduced the Contract dollar amount of \$7,084,384 to \$250,000, and modified the Scope of Work Sustainment Sections to include additional services (hereinafter "AMENDMENT NUMBER TWO"); and

WHEREAS, COUNTY and CONTRACTOR renewed the ORIGINAL CONTRACT as Contract Number MA-060-18010022 on October 31, 2017 (hereinafter "AMENDMENT NUMBER THREE"), for a one (1) year term of January 27, 2018 through and including January 26, 2019 in the not to exceed amount of \$250,000;

WHEREAS, CONTRACTOR informed COUNTY that on July 1, 2018, MorphoTrak LLC merged with and into its affiliate, Idemia Identity & Security USA LLC, and that as a result of the merger, CONTRACTOR is the surviving company under the name "Idemia Identity & Security USA LLC"; and

WHEREAS, CONTRACTOR agreed to be bound by all of the terms and conditions of the ORIGINAL CONTRACT, as amended, just as if it had been an original signatory to the Contract, and COUNTY consents to the assignment of the ORIGINAL CONTRACT from MorphoTrak LLC to CONTRACTOR; and

WHEREAS, COUNTY and CONTRACTOR renewed the ORIGINAL CONTRACT as Contract Number MA-060-19010727 on January 14, 2019 (hereinafter "AMENDMENT NUMBER FOUR"), for a one-year term of January 27, 2019 through and including January 26, 2020; added a one-time increase of \$650,000 for an upgrade of the OC ABI System for SAP 40/51 Mugshot images, for an annual not to exceed amount of \$900,000; and revised Term S. Change of Ownership and has confirmed in writing that CONTRACTOR understands and is in compliance with the COUNTY's Conflict of Interest Policy as stated in Paragraph S;

WHEREAS, COUNTY and CONTRACTOR desire to amend the ORIGINAL CONTRACT to add Attachment A.2, Scope of Work, to include the specifications of the one-time upgrade of the OC ABI System for SAP 40/51 Mugshot images, which was approved by the Board of Supervisors on January 14, 2019; reduce the cost of the one-time increase for the upgrade of the OC ABI System for SAP 40/50 Mugshot images from \$650,000 to \$595,000, for a revised annual not to exceed amount of \$795,000; and the CONTRACTOR has agreed to provide these goods/services at the rates set forth in the ORIGINAL CONTRACT, AMENDMENT NUMBER TWO and AMENDMENT NUMBER FOUR;

NOW THEREFORE, in consideration of the mutual obligations set forth herein, and in the ORIGINAL CONTRACT, both COUNTY and CONTRACTOR agree as follows:

1. ARTICLES

- a. General Terms and Conditions, Paragraph F, Acceptance/Payment, of the ORIGINAL CONTRACT is amended to read in its entirety as follows:

F. Acceptance/Payment: Unless otherwise agreed to in writing by County, 1) acceptance shall not be deemed complete unless in writing and until all the goods/services have actually been received, inspected, or tested to the satisfaction of County in accordance with the applicable provisions of this Contract (including all Attachments); 2) during the Development Phase, payments(s) may only be made in accordance with the four Payment Milestones specified in Attachment C; 3) payments during Sustainment (immediately following the end of the Warranty period) during the term of this Contract, including all renewals, shall be made monthly as specified in Attachment C; 4) payments for the ABI System Upgrade for SAP 40 and 51 Compliant Mugshots shall be made pursuant to the schedule specified in Attachment C; and 5) all payments shall be made in arrears after and within 30 calendar days upon the Auditor-Controller's receipt of an approved invoice submitted in accordance with the terms set forth herein, unless otherwise stated. The invoice must be verified and approved by the County's Project Manager and is subject to routine processing requirements of the County.

Payments made by the County shall not preclude the right of the County from thereafter disputing any items or services involved or billed under this Contract and shall not be construed as acceptance of any part of the services.

- b. ATTACHMENT A, Scope of Work for the Orange County Automated Biometric Identification System (OC ABI System) of the ORIGINAL CONTRACT is amended in part to add the following:

ATTACHMENT A.2

Scope of Work for

ABI System Upgrade for SAP40 and 51 Compliant Mugshots

Contractor shall upgrade the Orange County Sheriff's Department, Crime Lab (OCCL) MBIS 3.1 System to support LiveScans that submit SAP 40 / 51 mugshot images, which are significantly larger than standard mugshots. The OCCL also requires the systems to support scars, marks, and tattoo (SMT) images.

The upgrade solution includes the following:

- ❖ Expand the Data Processing Services (DPS) random access memory (RAM) so that the MBIS can handle the SAP 40 / 51 mugshot images. The expansion consists of adding a single standalone server to the existing rack. This server will expand memory by 48 GB and will be a logical extension of the current system that will not require operational changes.
- ❖ Develop, install, and test the MBIS updates required to handle the larger mugshot images. The software changes include:
 - Enable the Record Archive Server (RAS) to accept NIST files that are larger than 50 MB; the si2:e is configurable with an upper limit of 200 MB.
 - Enable storage of SAP 30 (current), SAP 40, and SAP 51 Images in the database. SAP 40 and 51 images will only be viewable from the RAS.
 - Provide the ability for DPS to generate a face template and quality value for facial images (QVU) for the SAP 40 frontal image for each submission; store the face template and QVU value in the ADS, but not the matcher.
 - Enable the RAS to display the JPEG 2000 compressed mugshot Images for both SAP 40 and SAP 51 mugshot images.
 - Determine which screens are unable to display the JPEG 2000 compressed mugshot images and fix those screens.
 - Enable the Card Print Service (CPS) to print SAP 40 mugshot images on mugshot print formats.
 - **Quality Control (QC) / Tenprint Database Maintenance (TOM):** Fetch / display only the SAP 30 mugshot images, unless otherwise requested by County, even though both the SAP 40 and SAP 51 mugshot Images will be stored.
 - **Tenprint Verification:** Fetch / display only the SAP 30 mugshot Images, even though both the SAP 40 and SAP 51 mugshot images will be stored, unless otherwise requested by County. SAP 40 and 51 images will be accessible from the RAS.
 - **Latent Verification:** Fetch / display only the SAP 30 mugshot images, even though both the SAP 40 and SAP 51 mugshot images will be stored, unless otherwise requested by County.
 - **Mobile ID:** Provide the ability to handle SAP 40 mugshots or SAP 30 mugshots (converted from SAP 40 to SAP 30).
 - **Cal-DOJ Submissions:** Images included for submission to Cal-DOJ will be sized (SAP 30) to ensure file sizes will be smaller than the 4 MB limit required by Cal-DOJ.

- c. Attachment C, Section I, Compensation, of the ORIGINAL CONTRACT has been amended in part to add the following:

For the ABI System Upgrade for SAP40 and 51 Compliant Mugshots, compensation shall be as follows:

| Qty. | Description | Price |
|------|--|-----------|
| 1 | <ul style="list-style-type: none"> • Expand the DPS RAM so that the MBIS can handle the SAP 40/51 mugshot images. The expansion consists of adding a single standalone server to the existing rack. • Develop the MBIS updates required to handle the larger mugshot images. | \$595,000 |
| | IDEMIA Professional Services, including: <ul style="list-style-type: none"> • Program Management • Installation and Acceptance Testing • Updated Documentation • One-Year Advantage warranty | Included |
| | Logistical Services, including: <ul style="list-style-type: none"> • Shipping Carriage Paid (CPT) Santa Ana • Delivery scheduled upon receipt of order | Included |
| | Total Price | \$595,000 |

The payment milestones for the ABI System Upgrade for SAP 40 and 51 Compliant Mugshots are as follows:

- Twenty-five percent (25%) is due at the time of Contract signing
- Thirty-five percent (35%) is due at hardware purchase
- Thirty-five percent (35%) is due upon equipment shipment
- Five percent (5%) is due at System Acceptance

- d. Attachment C, Section I, Compensation, of the ORIGINAL CONTRACT has been amended in part as follows:

One-time upgrade of the OC ABIS System for SAP 40/51 Mugshot images in an amount not to exceed \$595,000.

Contract shall not exceed \$795,000 for the term of January 27, 2019 through and including January 26, 2020.

- e. Attachment C, Section II, Payment, of the ORIGINAL CONTRACT has been amended in part as follows:

I. PAYMENT:

a. Invoicing Instructions:

Invoices are to be submitted per the payment instructions and milestones in Attachment C, Section I. Compensation, to the user agency/department to the ship-to address, unless otherwise directed in this Contract. Vendor shall reference Contract number, Federal Tax ID number, Services performed, date of service, and amount being billed on invoice.

Billing shall cover services and/or goods not previously invoiced.

Payments made by the County shall not preclude the right of the County from thereafter disputing any items or services involved or billed under this Contract and shall not be construed as acceptance of any part of the goods or services.

b. Terms:

The Auditor-Controller will make payments in accordance with Attachment C. All invoices must be verified and approved by the County Project Manager.

The Contractor shall reimburse the County of Orange for any monies paid to the Contractor for goods or services not provided or when good or services do not meet the Contract requirements.

Payments made by the County shall not preclude the right of the County from thereafter disputing any items or services involved or billed under this Contract and shall not be construed as acceptance of any part of the goods or services.

2. A true and correct copy of the ORIGINAL CONTRACT (Contract Number MA-060-13010457) is attached hereto as Exhibit A and incorporated by this reference.
3. A true and correct copy of AMENDMENT NUMBER ONE (Contract Number MA-060-13010457) is attached hereto as Exhibit B and incorporated by this reference.
4. A true and correct copy of AMENDMENT NUMBER TWO (Contract Number MA-060-17010297) is attached hereto as Exhibit C and incorporated by this reference.
5. A true and correct copy of AMENDMENT NUMBER THREE (Contract Number MA-060-18010022) is attached hereto as Exhibit D and incorporated by this reference.
6. A true and correct copy of AMENDMENT NUMBER FOUR (Contract Number MA-060-19010727) is attached hereto as Exhibit E and incorporated by this reference.
7. All other provisions of the ORIGINAL CONTRACT and AMENDMENTS NUMBERS ONE through FOUR, except as amended herein and to the extent are not inconsistent with this AMENDMENT NUMBER FIVE, remain in full force and effect.

(Signature page to follow)

IN WITNESS WHEREOF, the Parties have executed AMENDMENT NUMBER FIVE to Contract Number MA-060-13010457.

*Contractor: Idemia Identity & Security USA LLC

By: [Signature] Title: Vice President

Print Name: Michael Kato Date: May 22, 2019

*Contractor: Idemia Identity & Security USA LLC

By: _____ Title: _____

Print Name: _____ Date: _____

**If the contracting party is a corporation, (2) two signatures are required: (1) signature by the Chairman of the Board, the President or any Vice President; and one (1) signature by the Secretary, any Assistant Secretary, the Chief Financial Officer or any Assistant Treasurer. The signature of one person alone is sufficient to bind a corporation, as long as he or she holds corporate offices in each of the two categories described above. For County purposes, proof of such dual office holding will be satisfied by having the individual sign the instrument twice, each time indicating his or her office that qualifies under the above described provision.*

In the alternative, a single corporate signature is acceptable when accompanied by a corporate resolution demonstrating the legal authority of the signature to bind the company.

County Of Orange

A political subdivision of the State of California



Sheriff-Coroner Department

By: [Signature: Christina Reyes] Title: Admin. Mgr, DPA

Print Name: Christina Reyes Date: 5/23/19



296 Concord Road
Billerica, MA, 01821, United States

May 23, 2019

Subject: Michael Kato Letter of Authorization

To Whom It May Concern,

Michael Kato, Vice President, Program Management, has been duly authorized to sign Maintenance Contracts on behalf of Idemia Identity & Security USA LLC (the "Company") pursuant to the Company's Delegation of Authority ("DOA") procedures, consistent with the Limited Liability Company Agreement.

Respectfully,

A handwritten signature in blue ink, appearing to read "Lauren E. DiGiovine", written over a horizontal line.

Lauren E. DiGiovine
Assistant Secy., Legal Counsel

|) > >