OSAC
Organization of Scientific Area Committees for Forensic Science

Getting National Quality Assurance Recognition for Your Latent Print Unit

IAI Conference
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Presented by

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Disclaimer

Opinions in this presentation are those of the authors and not necessarily those of OSAC, the National Institute of Standards and Technology, the U.S. Department of Commerce, the U.S. Government, or the speakers' employers.

Bottom Line Up Front

The IAI recommends your unit/office/lab implement OSAC Registry standards “to the largest extent possible.”

You may be asked on the witness stand if your latent print unit/office/lab follows IAI recommendations about implementing OSAC standards.

See the full list of recommending organizations at https://tinyurl.com/impl-suppt

Good Shortcuts to Remember:

- At nist.gov/osac click on **Registry Implementation** to find many of the links mentioned in these slides.
- Google OSAC FRS to quickly reach the OSAC Friction Ridge home page.

OSAC's Structure

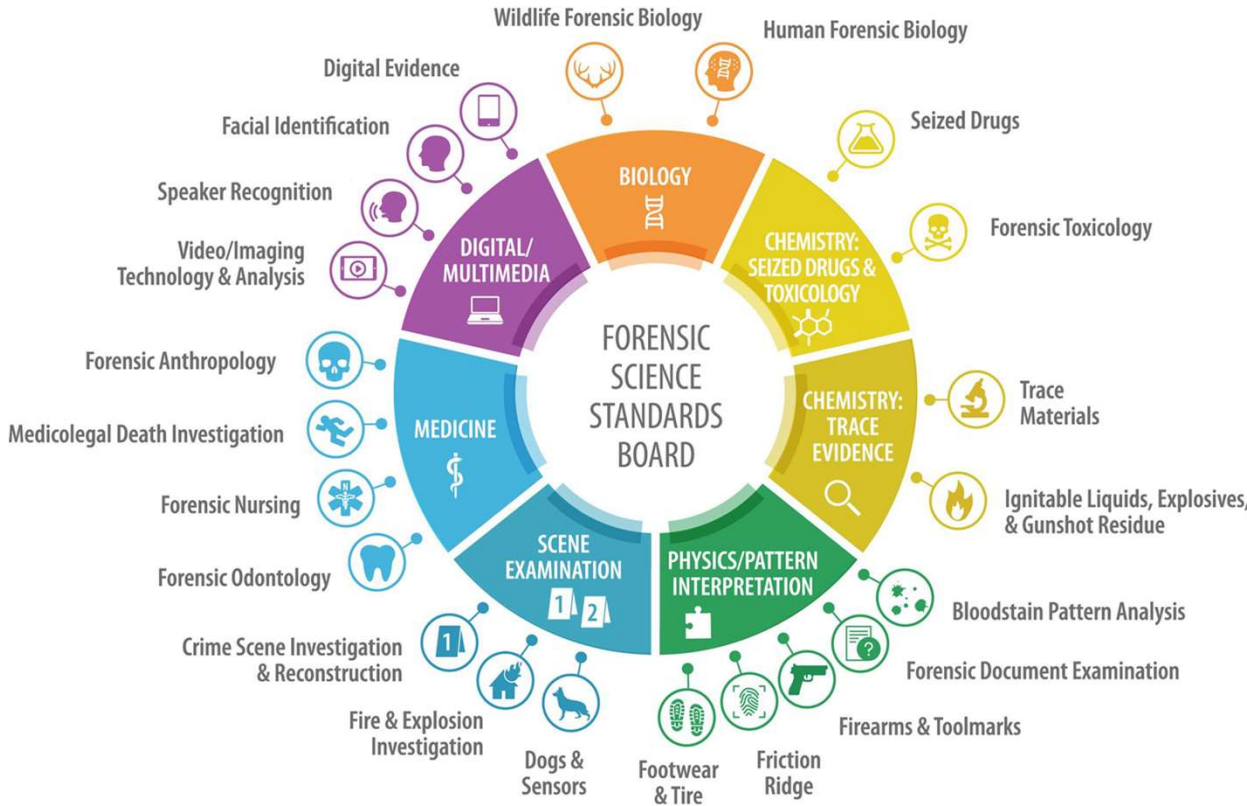
Forensic Science Standards Board (FSSB)

Seven Scientific Area Committees (SACs)

22 Subcommittees (SCs) Four

Resource Task Groups:

- Human factors
- Legal
- Quality
- Statistics
- Terminology



OSAC
Organization of Scientific Area Committees for Forensic Science

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

OSAC Registry

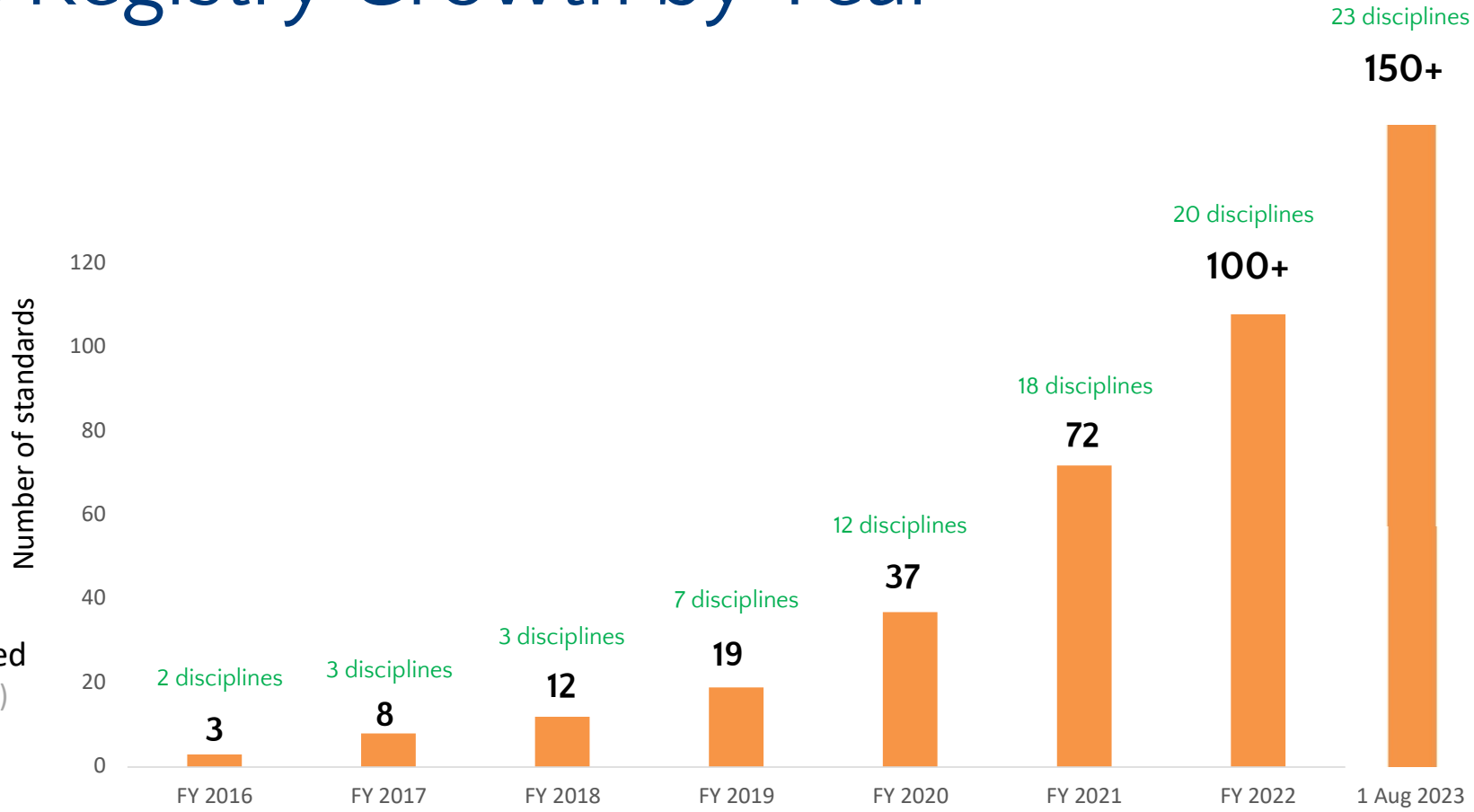
- Repository of high-quality, technically sound published and proposed standards and guidelines for forensic science.
- All standards on the OSAC Registry have passed a rigorous technical and quality review by OSAC members, including forensic science practitioners, research scientists, statisticians and legal experts.
- OSAC encourages the forensic science community to **implement** published and proposed standards.

https://www.nist.gov/osac/osac-registry

OSAC Registry Growth by Year

152

106 published
46 OSAC Proposed
(as of 1 Aug 2023)



Implementation Insights

Many large and small Latent Print offices/units/labs **already partially implement** portions of OSAC Registry Standards – often without knowing it.

Be proactive instead of reactive and get the recognition you already deserve by becoming an OSAC Standards Registry Implementer.

Implementation Insights

- NIST is a non-regulatory agency.
- OSAC is NOT the IMPLEMENTATION POLICE!
- OSAC is promoting voluntary standards implementation in the forensic science community.

Implementation Insights

Registry Implementation can be as simple or as complicated as you have resources and motivation to make it.

This presentation focuses on simplicity…

Implementation Insights

Every organization, from a large federal lab to a small police department or sheriff's office, is always striving to balance:

- Resources and personnel while
- providing timely & thorough support but
- without sacrificing performance (accuracy, reliability).

Implementation Insights

Registry Implementation signals that your office (or unit, agency, laboratory) prioritizes standardization, consistency, and equitable forensic science practices… even if it’s a small one or two-person latent print activity.

Implementation Options

- **Implementation declaration is not an "all or nothing" …**
- **The fact that a unit/lab/office does NOT fully implement all standards is OK!**

Units/offices/labs should do what they can with the resources they have to implement standards or portions of standards in the best manner for their situation.

Implementation Options

An incremental approach to Registry Implementation can be ideal – *one step at a time*.

Implementation Options

Focus on the standards that are most applicable and impactful to the services your unit/office/laboratory provides…

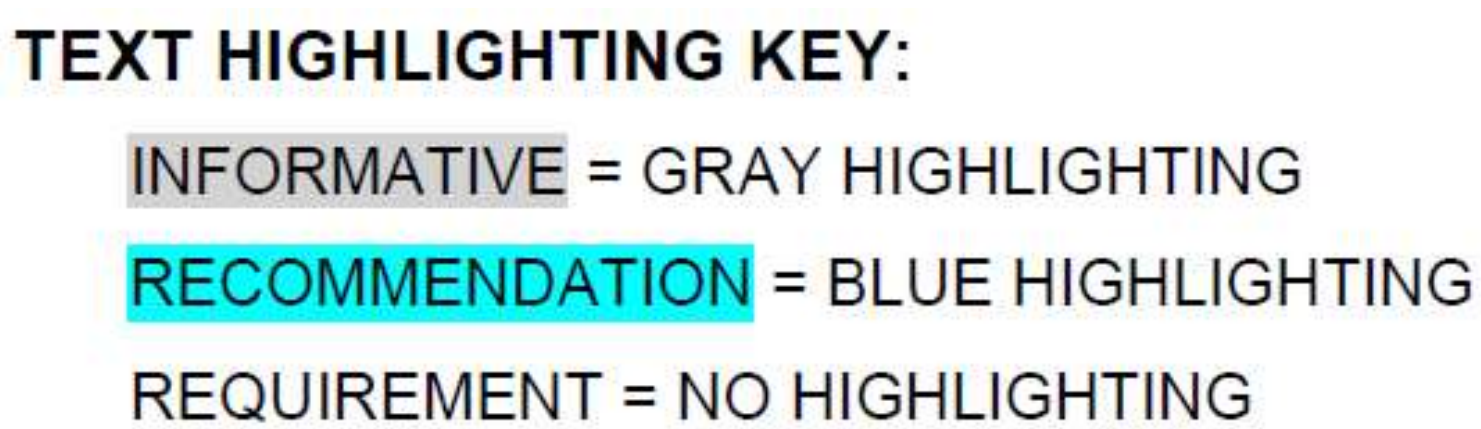
If some standards (or portions of standards) are not applicable or practical to implement, that's ok… But don't feel like its an "all or nothing" proposition.

The above is from Question 6 at https://www.nist.gov/osac/osac-registry-implementation-faqs

Highlighted Documents We Created to Help Navigate Implementation

Highlighted Documents

- Marked-Up PDF Files



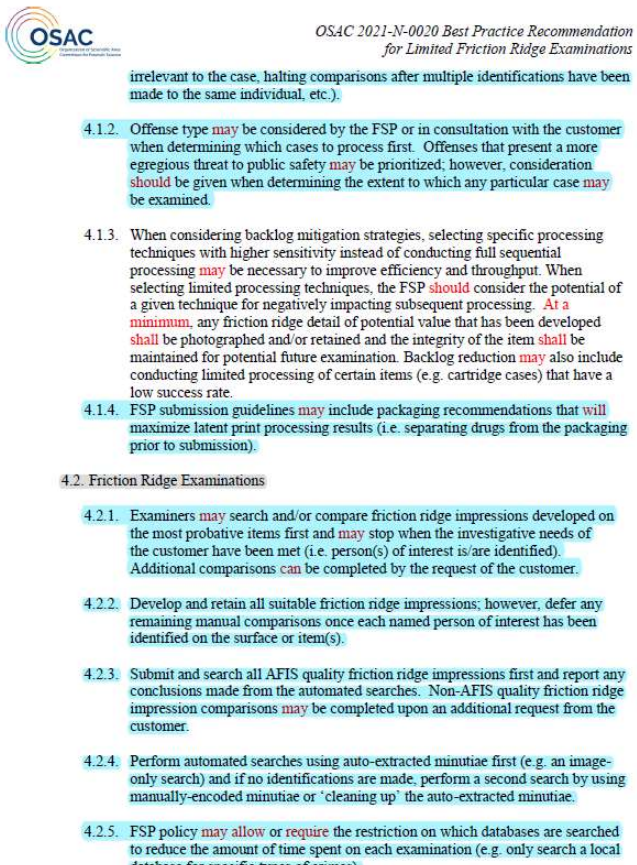
Highlighted Documents

- Trigger wording has red font.
  - Informative trigger wording includes: can, could, and may.
  - Recommendation trigger wording includes: should and recommend.
  - Requirement trigger wording includes must, shall, will, require and at a minimum.

Highlighted Documents

- Section Titles are informative.
- The word “not” immediately after “must”, “shall”, or “will” typically means something is prohibited.
- A requirement trigger word embedded below a recommendation trigger word typically means a recommendation instead of a requirement.

Highlighted Documents



irrelevant to the case, halting comparisons after multiple identifications have been made to the same individual, etc.).

4.1.2. Offense type may be considered by the FSP or in consultation with the customer when determining which cases to process first. Offenses that present a more egregious threat to public safety may be prioritized; however, consideration should be given when determining the extent to which any particular case may be examined.

4.1.3. When considering backlog mitigation strategies, selecting specific processing techniques with higher sensitivity instead of conducting full sequential processing may be necessary to improve efficiency and throughput. When selecting limited processing techniques, the FSP should consider the potential of a given technique for negatively impacting subsequent processing. At a minimum, any friction ridge detail of potential value that has been developed shall be photographed and/or retained and the integrity of the item shall be maintained for potential future examination. Backlog reduction may also include conducting limited processing of certain items (e.g. cartridge cases) that have a low success rate.

4.1.4. FSP submission guidelines may include packaging recommendations that will maximize latent print processing results (i.e. separating drugs from the packaging prior to submission).

4.2. Friction Ridge Examinations

4.2.1. Examiners may search and/or compare friction ridge impressions developed on the most probative items first and may stop when the investigative needs of the customer have been met (i.e. person(s) of interest is/are identified). Additional comparisons can be completed by the request of the customer.

4.2.2. Develop and retain all suitable friction ridge impressions; however, defer any remaining manual comparisons once each named person of interest has been identified on the surface or item(s).

4.2.3. Submit and search all AFIS quality friction ridge impressions first and report any conclusions made from the automated searches. Non-AFIS quality friction ridge impression comparisons may be completed upon an additional request from the customer.

4.2.4. Perform automated searches using auto-extracted minutiae first (e.g. an image-only search) and if no identifications are made, perform a second search by using manually-encoded minutiae or "cleaning up" the auto-extracted minutiae.

4.2.5. FSP policy may allow or require the restriction on which databases are searched to reduce the amount of time spent on each examination (e.g. only search a local database for specific types of crimes).

Highlighted Documents (BPR LP Limited Exams)

4.1.2. Offense type may be considered by the FSP or in consultation with the customer when determining which cases to process first. Offenses that present a more egregious threat to public safety may be prioritized; however, consideration should be given when determining the extent to which any particular case may be examined.

4.1.3. When considering backlog mitigation strategies, selecting specific processing techniques with higher sensitivity instead of conducting full sequential processing may be necessary to improve efficiency and throughput. When selecting limited processing techniques, the FSP should consider the potential of a given technique for negatively impacting subsequent processing. At a minimum, any friction ridge detail of potential value that has been developed shall be photographed and/or retained and the integrity of the item shall be maintained for potential future examination. Backlog reduction may also include conducting limited processing of certain items (e.g. cartridge cases) that have a low success rate.

Highlighted Documents (BPR LP Limited Exams)

4.3. Necessary Documentation and Reporting

4.3.1. The FSP shall communicate with the customers when performing limited examinations; both to determine if the examination is still required and to establish the extent or order of the examinations.

4.3.2. Any FSP that performs or plans to perform limited examinations shall notify an customers of that policy in advance. The extent of the examination shall be documented in the case file and reported to the customer. This documentation shall include any evidence that was not processed and/or any friction ridge impressions that were of potential value that were not analyzed or compared.

Highlighted Documents (Standard for Processing)

4. Processing Considerations

4.1 The FSP shall apply processing techniques in the sequences (i.e., sequential processing) prescribed in this document, from least destructive to most destructive, for the detection of friction ridge impressions.

4.1.1 The FSP may supplement and/or deviate from the sequences for the detection of friction ridge impressions in certain situations. Some examples of when the FSP may supplement and/or deviate from the sequences are:

- The item does not react to a processing technique as expected (i.e. dry plastic vs soft plastic, thermal paper).
- The item of evidence has an obvious known contaminant such as blood or grease.
- The processing technique has not been validated to perform sufficiently in certain environmental conditions.
- The size of the item does not allow for a specific processing technique that aligns to the required sequence.
- The FSP has evaluated the efficacy and limitations of the processing technique, availability of resources, the circumstances of the case, and the type and condition of the evidence.

Checklists We Created to Help Navigate Implementation

Checklists

- Excel Files
- PDF Files (same content as Excel Files)

Checklists

Include Highlighting & Trigger Word Mark-Ups

TEXT HIGHLIGHTING KEY:

INFORMATIVE = GRAY HIGHLIGHTING
RECOMMENDATION = BLUE HIGHLIGHTING
REQUIREMENT = NO HIGHLIGHTING

- Trigger wording has red font.
  - Informative trigger wording includes: can, could, and may.
  - Recommendation trigger wording includes: should and recommend.
  - Requirement trigger wording includes: must, shall, will, require and at a minimum.
- Section Titles are informative.
- The word "not" immediately after "must", "shall", or "will" typically means something is prohibited.
- A requirement trigger word embedded below a recommendation trigger word typically means a recommendation instead of a requirement.

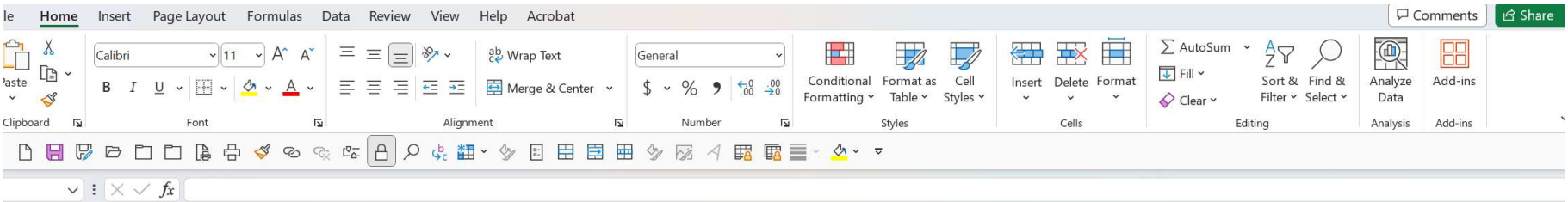
Checklists (PDF Version)

Implementation Status	Full	Partial	Not Yet / Undecided	Will Not	N/A
4.2.4. Perform automated searches using auto-extracted minutiae first (e.g. an image-only search) and if no identifications are made, perform a second search by using manually-encoded minutiae or 'cleaning up' the auto-extracted minutiae.					
4.2.5. FSP policy may allow or require the restriction on which databases are searched to reduce the amount of time spent on each examination (e.g. only search a local database for specific types of crimes).					

Checklists (PDF Version)

4.4.5. Tests shall be administered such that the results produced by individual FSP personnel are their own and not influenced by other participants, such as through Consultation, prior to Verification or Technical Review.					
NOTE: This does not preclude participants from using tools or equipment (including automated comparison software or statistical models) that are otherwise available and permissible for use in normal casework.					
4.4.6. Tests should be administered such that participants are not exposed to cues—no matter how subtle—that may hint at or guide them to the expected results without direct examination of the test specimen.					

Checklists (Excel Version)



	B	C	D	E	F	G
	Implementation Status	**Full**	**Partial**	**Not Yet / Undecided**	**Will Not**	**N/A**
	4.1.4. FSP submission guidelines may include packaging recommendations that will maximize latent print processing results (i.e. separating drugs from the packaging prior to submission).					
	4.2. Friction Ridge Examinations					
	4.2.1. Examiners may search and/or compare friction ridge impressions developed on the most probative items first and may stop when the investigative needs of the customer have been met (i.e. person(s) of interest is/are identified). Additional comparisons can be completed by the request of the customer.					
	4.2.2. Develop and retain all suitable friction ridge impressions; however, defer any remaining manual comparisons once each named person of interest has been identified on the surface or item(s).					
	4.2.3. Submit and search all AFIS quality friction ridge impressions first and report any conclusions made from the automated searches. Non-AFIS quality friction ridge impression comparisons may be completed upon an additional request from the customer.					

OSAC Registry - Standards Implementation Declaration

FRICTION RIDGE

	Standard	Date added to OSAC Registry
1.	ANSI/ASTM E3235-21, *Standard Practice for Latent Print Evidence Imaging Resolution* (Note: Subco	Jun 07, 2022
2.	OSAC … *…ons for Limited Examinations*	Apr 05, 2022
3.	OSAC … …ection of Friction Ridge Impres	Sep 06, 2022
4.	OSAC … …Ridge Examination	Jun 07, 2022

Digital Imaging Resolution

Limited Exams

Processing Evidence

Proficiency Testing

OSAC Registry - Standards Implementation Declaration

FRICTION RIDGE

	Standard	Date added to OSAC Registry
1.	ANSI/ [illegible] ion (Not [illegible] Subc [illegible] **Digital Imaging Resolution**	Jun 07, 2022
2.	OSAC [illegible] ons for Limited Examinations **Limited Exams**	Apr 05, 2022
3.	OSAC [illegible] ection of Friction Ridge Impres [illegible] **Processing Evidence**	Sep 06, 2022
4.	OSAC [illegible] Ridge Examination **Proficiency Testing**	Jun 07, 2022

6.2 Point and shoot and cell phone cameras are not recommended for taking photographs intended for comparative analysis purposes for several reasons, some of which include, but are not limited to:

6.2.1 The lenses are usually not as well corrected for distortion.

6.2.2 The macro range is usually in the wide-angle zoom range.

6.3 Spare batteries for any camera using removable batteries.

6.4 Appropriate light sources (for example, floodlights, flashlights, LASER, alternate light sources (ALS), or a combination thereof).

6.17 A magnifier.

6.18 For camera resolution testing, an opaque or a transparent, or both, resolution test target with resolution bars within the range of 9.8 to 13 cycles per millimetre (c/mm), which is also, called line pairs per millimetre (lp/mm). Resolution targets are calibrated by an accredited calibration provider traceable to NIST or equivalent metrology institute.

6.19 A flatbed scanner either from the FBI Certified Biometric Products List (**9**)or with the following specifications:

6.19.1 A preferred machine resolution of 2400 ppi 1200 minimum.

6.19.2 A reflected document size of at least 8.5×11 in.

6.19.3 A minimum Dmax rating of 4.0.

6.19.4 A transmitted light (transparency) adapter of at least 4×5 in. 8×10 in. is preferred.

6.20 For the flatbed scanner higher resolution targets should be needed to determine at what point increasing the nominal resolution setting only increases the file size, without any

OSAC Registry – Standards Implementation Declaration Categories

Implemented (Full)	Implemented (Partial)	Not Yet Implemented/ Undecided	Will Not Implement	Not Applicable
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐

OSAC Registry–Standards Implementation Declaration

OSAC Registry - Standards Implementation Declaration

FRICTION RIDGE		If this discipline is not performed in your organization, check the box and continue to the next discipline ☐				
Standard	Date added to OSAC Registry	Implemented (Full)	Implemented (Partial)	Not Yet Implemented/ Undecided	Will Not Implement	Not Applicable
1. ANSI/ASTM E3235-21, *Standard Practice for Latent Print Evidence Imaging Resolution* (Note: This standard was drafted by the Video/Imaging Technology & Analysis Subcommittee and is also included under that section below)	Jun 07, 2022	☐	☐	☐	☐	☐
2. OSAC 2021-N-0020, *Best Practice Recommendations for Limited Examinations*	Apr 05, 2022	☐	☐	☐	☐	☐
3. OSAC 2022-N-0033, Standard for Processing Evidence for the Detection of Friction Ridge Impressions	Sep 06, 2022	☐	☐	☐	☐	☐
4. OSAC 2022-S-0012, Standard for Proficiency Testing in Friction Ridge Examination	Jun 07, 2022	☐	☐	☐	☐	☐

Even just one check mark in one box in the two left columns means your unit/office/lab is an OSAC Registry Standards Implementer

Standard Practice for Latent Print Evidence Imaging Resolution

6. Recommended Photographic Equipment

6.4 Appropriate light sources (for example, floodlights, flashlights, LASER, alternate light sources (ALS), or a combination thereof).

6.7 Sturdy copy stand, tripod or other sturdy camera support.

6.11 Lens cleaner and lens cleaning tissue.

6.14 Computer with appropriate software.

6.17 A magnifier.

OSAC Registry–Standards Implementation Declaration

OSAC Registry - Standards Implementation Declaration

FRICTION RIDGE	If this discipline is … ck the box … ntinue to the next discipline ☐					
Standard	Date added to OSAC Registry	Implemented (Full)	Implemented (Partial)	N… …ented/ …decided	Will Not Implement	Not Applicable
1. ANSI/ASTM E3235-21, *Standard Practice for Latent Print Evidence Imaging Resolution* (Note: This standard was drafted by the Video/Imaging Technology & Analysis Subcommittee and is also included under that section below)	Jun 07, 2022	☐	■	☐	☐	☐
2. OSAC 2021-N-0020, *Best Practice Recommendations for Limited Examinations*	Apr 05, 2022	☐	☐	☐	☐	☐
3. OSAC 2022-N-0033, Standard for Processing Evidence for the Detection of Friction Ridge Impressions	Sep 06, 2022	☐	☐	☐	☐	☐
4. OSAC 2022-S-0012, Standard for Proficiency Testing in Friction Ridge Examination	Jun 07, 2022	☐	☐	☐	☐	☐

BINGO! You are an official OSAC Registry Standards Implementer …complete a check box for the remaining three lines (whatever applies – even Undecided) and email your signed form to NIST.

Implementation Options

An incremental approach to Registry Implementation can be just one partial implementation to begin with…

OSAC Registry–Standards Implementation Declaration

Declaration: This forensic science service provider (FSSP) has determined current compliance or has self-adopted, either in its entirety or partially, the following standards on the OSAC Registry in its standard operating procedures (SOP) manual(s) or quality manual. Standards may also be checked as not yet implemented, will not implement, or as not applicable.

Forensic Science Service Provider _____

Address _____

FSSP Director Signature _____ **Printed Name** _____ **Date:** _____

The person you consider to be your Forensic Director may sign this form…

That might be your Sheriff, Police Chief, Chief of Detectives, your only Latent Print Examiner, or someone else.

OSAC Implementer Certificate

ORGANIZATION OF SCIENTIFIC AREA COMMITTEES FOR FORENSIC SCIENCE

OSAC IMPLEMENTER

RECOGNIZES

Macon County Sheriff's Office

As an Implementer of OSAC Registry Standards

OSAC REGISTRY

OSAC PROGRAM MANAGER

8/10/2023
DATE ISSUED

Lab-133
CERTIFICATE NO.

OSAC
Organization of Scientific Area Committees for Forensic Science

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

OSAC Registry Implementers: As of Aug 2022

OSAC has received 95 Implementation Declarations from FSSPs (22 states):

- 61 state lab locations (12 states)
- 22 local/county/city labs
- 4 Federal labs
- 4 private labs
- 2 university labs
- 2 international labs

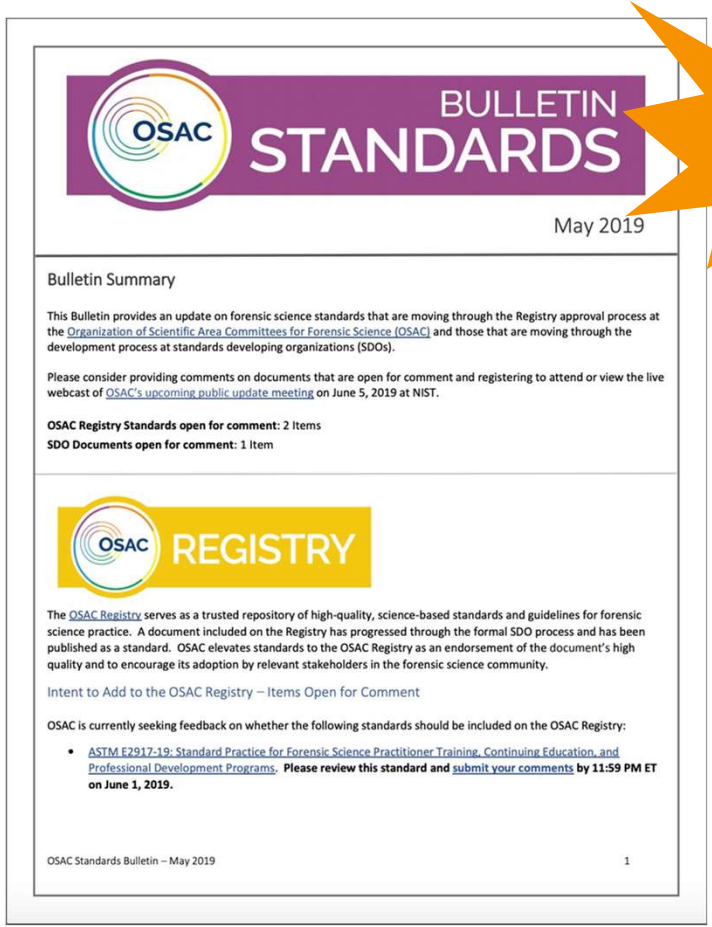
56 newsletter/media releases

Share your implementation story in a news release and in the OSAC newsletter!

https://www.nist.gov/organization-scientific-area-committees-forensic-science/osac-registry-implementers

How to Stay Informed: OSAC Standards Bulletin

- Monthly Release – 20,000 distribution list
- Announces:
  - New standards placed on OSAC Registry
  - OSAC open comment periods
  - New SDO published standard
  - SDO open comment periods
  - New draft standards introduced to SDOs
  - **www.nist.gov/osac**



OSAC BULLETIN STANDARDS

May 2019

Bulletin Summary

This Bulletin provides an update on forensic science standards that are moving through the Registry approval process at the Organization of Scientific Area Committees for Forensic Science (OSAC) and those that are moving through the development process at standards developing organizations (SDOs).

Please consider providing comments on documents that are open for comment and registering to attend or view the live webcast of OSAC's upcoming public update meeting on June 5, 2019 at NIST.

OSAC Registry Standards open for comment: 2 Items
SDO Documents open for comment: 1 Item

OSAC REGISTRY

The OSAC Registry serves as a trusted repository of high-quality, science-based standards and guidelines for forensic science practice. A document included on the Registry has progressed through the formal SDO process and has been published as a standard. OSAC elevates standards to the OSAC Registry as an endorsement of the document's high quality and to encourage its adoption by relevant stakeholders in the forensic science community.

Intent to Add to the OSAC Registry – Items Open for Comment

OSAC is currently seeking feedback on whether the following standards should be included on the OSAC Registry:

- ASTM E2917-19: Standard Practice for Forensic Science Practitioner Training, Continuing Education, and Professional Development Programs. **Please review this standard and submit your comments by 11:59 PM ET on June 1, 2019.**

OSAC Standards Bulletin – May 2019 1

Sign Up for Bulletin

OSAC Organization of Scientific Area Committees for Forensic Science

NIST National Institute of Standards and Technology U.S. Department of Commerce

Implementation Progress Beyond Declaration

A great pathway for progress is to work towards implementing ALL applicable documents on the OSAC Friction Ridge List insofar as resources permit.

Temporary Location of Files Supporting Implementation OSAC FRS Documents

frictionridges.net/Implement

OSAC FRS Documents at an SDO for Further Development & Publication

Best Practice Recommendation for the Resolution of Conflicts in Friction Ridge Examination

This document describes the best practice recommendations for how to resolve conflicts between examiners at any point in the technical review or verification process…

OSAC FRS Documents at an SDO for Further Development & Publication

Best Practice Recommendations for the Verification Component in Friction Ridge Examination

This document describes best practice recommendations for how to conduct the Verification phase during friction ridge impression examinations. These recommendations apply to both suitability determinations and resulting conclusions…

OSAC FRS Documents at an SDO for Further Development & Publication

Best Practice Recommendation for Articulating a Source Identification in Friction Ridge Examination

This document offers guidance for articulating the decision-making process leading to the source identification conclusion resulting from the examination of friction ridge evidence. This document takes into consideration the current status of professional practices, legal decisions, and scientific research.

OSAC FRS Documents at an SDO for Further Development & Publication

Standard for Friction Ridge Examination Conclusions

This standard defines terms and establishes qualitative expressions for the range of conclusions that may be reached following friction ridge comparisons. For the purpose of this document, conclusions are defined as expert opinions based on the friction ridge detail and information under observation and interpreted using acquired knowledge, skill, and experience of a friction ridge examiner...

OSAC FRS Documents at an SDO for Further Development & Publication

Standard for Friction Ridge Examination Training Program

This document provides the minimum requirements for a friction ridge examination training program from which training manuals/procedures should be developed.

This document does not provide minimum training objectives or prescriptive lesson plans…

OSAC FRS Documents at an SDO for Further Development & Publication

Standard for Examining Friction Ridge Impressions

This document specifies the minimum requirements for conducting friction ridge examinations. It includes the overarching examination framework as well as specific requirements for each component of any examination methodology…

OSAC FRS Documents at an SDO for Further Development & Publication

Best Practice Recommendations for Technical Review in Friction Ridge Identification

This document describes the best practice recommendations for how to perform the technical review of friction ridge impression examinations. Examples are also provided…

OSAC FRS Documents at an SDO for Further Development & Publication

Standard for Consultation During Friction Ridge Examination

This document prescribes the minimum requirements for examiners when consulting with one another during the examination of friction ridge impressions, as well as related documentation requirements for examination notes and reports. This document does not apply to conflict resolution.

OSAC FRS Documents at an SDO for Further Development & Publication

Best Practice Recommendation for Analysis of Friction Ridge Impressions

This document provides the best practice recommendations for the analysis of friction ridge impressions. This document does not address the comparison or evaluation stages of the friction ridge examination methodology.

OSAC FRS Documents at an SDO for Further Development & Publication

Best Practice Recommendation for Comparison and Evaluation of Friction Ridge Impressions

This document provides the best practice recommendation for the comparison and evaluation of friction ridge impressions. This document does not address the analysis stage of the friction ridge examination methodology.

OSAC FRS Documents at an SDO for Further Development & Publication

Standard for Reporting Results from Friction Ridge Examinations

This document prescribes the minimum requirements that shall be included in friction ridge examination reports. This document does not include the requirements for supporting documentation of reported elements (e.g. case notes, custody documents, etc.), or testimony.

OSAC FRS Documents at an SDO for Further Development & Publication

Best Practice Recommendation for Testimony Monitoring

This document prescribes the best practice recommendations for testimony review of personnel by a Forensic Service Provider…

Questions?