

## **MINIMUM REQUIRED OPERATING STANDARDS FOR NATIONAL INTEGRATED BALLISTIC INFORMATION NETWORK (NIBIN) SITES**

This document consists of definitions and standards. The standards are minimum required operating standards that place specific requirements on all NIBIN sites. Equivalent measures not outlined in this document may also meet the standard if determined sufficient through an audit process.

### **EFFECTIVE DATE:**

These standards shall take effect July of 2018.

### **1.SCOPE**

The standards describe the minimum operating requirements that sites accessing and utilizing NIBIN shall follow to ensure the quality and integrity of the ballistic data shared on the Network. These standards apply to all sites accessing the NIBIN network.

### **2.DEFINITIONS**

As used in these standards, the following terms shall have the meanings specified:

- **Accreditation** - Status achieved by an agency that indicates they meet a minimum level of performance mandated by the accrediting agency
- **Accuracy** is the degree of conformity of a measured quantity to its actual (true) value.
- **Acquisition** - The digital imaging of various firearm-related markings present on cartridge casings into NIBIN.
- **ATF** is the Bureau of Alcohol, Tobacco, Firearms, and Explosives the Federal agency administering the NIBIN network.
- **AFTE** - The Association of Firearm and Tool Mark Examiners is the international professional organization for practitioners of Firearm and/or Toolmark Identification and has been dedicated to the exchange of information, methods and best practices, and the furtherance of research since its creation in 1969.
- **Audit** is an inspection used to evaluate, confirm, or verify activity related to quality.
- **BrassTraxHD3D** - "Trax," "Cartridge Case Acquisition Station" – current acquisition station developed by Forensic Technology that captures highly detailed images of cartridge cases, to include firing pin impressions on the primer, breech face, extractor, and ejector markings.
- **Business Day** – day of operation of the NIBIN site; excludes holidays, weekends, or other days of closure.
- **Correlation** – the automated comparison of an acquired digital image to other images in the databases using an algorithm that provides a list of ranked, possible matches.
- **Correlation Review** – the on-screen comparison of digital images by a trained technician/specialist to determine the potential for two cartridge casings to have been fired from the same weapon.
- **Crime Gun Intelligence Center** – (CGIC) - an ATF-led interagency collaboration focused on analyzing and investigating gun crime in a local community. CGIC unites cutting-edge technology and a dedicated multiagency investigative team to identify, disrupt and prosecute serial shooters and their sources of crime guns.

- **Employee** is a person: (1) in the service of the applicable federal, state or local government, subject to the terms, conditions and rules of federal/state/local employment and eligible for the federal/state/local benefits of service; or (2) formerly in the service of a federal, state, or local government who returns to service in the agency on a part time or temporary basis. For purposes of a vendor laboratory, an employee is a person in the service of a vendor laboratory and subject to the applicable terms, conditions and rules of employment of the vendor laboratory.
- **Firearms and Toolmark Examiner**, “Firearms Examiner” - is a forensic scientist who is an expert in evidence regarding firearms, toolmarks, and ballistics. They are also required to serve as expert witnesses, prepare courtroom evidence, and provide courtroom testimony, and they may provide training to law enforcement personnel.
- **IBIS** - Integrated Ballistics Identification System - An automated ballistics imaging and analysis system that populates a computerized database of digital ballistic images of bullets and casings from crime guns. Technology that enables the imaging and identification of large quantities of firearm evidence across a network of sites, as well as the automated identification of likely matching bullets or cartridge cases.
- **IBIS Technician**, “IBIS Tech,” “NIBIN Technician” – a trained technician/specialist able to use IBIS equipment for the acquisition and correlation review of digital images of firearms ballistic evidence. IBIS Technicians are able to determine potential links of two or more cartridge cases fired from the same weapon.
- **MatchPoint Plus** - current system developed by Ultra Electronics - Forensic Technology, Incorporated that stores the ballistic images and contains the algorithm program for correlation reviews.
- **Microscopic Comparison**, “Scope,” “Confirmation” - The process employed by a trained firearms examiner to determine whether or not fired cartridge cases came from the same firearm.
- **National Crime Gun Intelligence Governing Board**, formerly NIBIN Executive Board or “NEB” – group consisting of members of ATF, police departments, and forensic laboratories that oversees implementation and function of NIBIN program.
- **NIBIN** – National Integrated Ballistic Information Network is a program managed by ATF that automates the imaging of the unique identifiers of cartridge cases fired from firearms and stores the digital images into a database for comparison across a national network of participating sites.
- **NIBIN Authorized Trainer or NAT** – technician trained and authorized by ATF to train others in the acquisition of ballistic images.
- **NIBIN Hit** - NIBIN Hits are the result of two or more firearms ballistic evidence acquisitions that have been confirmed as a match by a firearms examiner. NIBIN Hits are based on correlation review of digital images using MATCHPOINT™ and microscopic confirmation by a firearms examiner. This information/intelligence can be used for investigative purposes and is suitable for court purposes.
- **NIBIN Lead** - A NIBIN Lead is an unconfirmed, potential association between two or more pieces of firearm ballistic evidence based on a correlation review of the digital images in the NIBIN database by either a firearms examiner or a trained IBIS technician. A NIBIN Lead is intended to provide a lead for investigative purposes.

- ***NIBIN Program Administrator*** - is an individual the NIBIN Site has designated to communicate with all parties (i.e. submitting law enforcement agencies, ATF Crime Gun Intelligence Centers (CGICs), etc.), involved in the NIBIN process. The NIBIN Program Administrator must be a qualified NIBIN user and full-time employee of the NIBIN site. The NIBIN Program Administrator should be responsible for implementing and directing policies and procedures of the NIBIN site.
- ***NIBIN Site*** – “Site” - Location at which NIBIN acquisition and/or correlation technology is present. NIBIN sites are located in forensic laboratories, police departments, etc.
- ***NNCTC*** – National NIBIN Correlation and Training Center – ATF facility located in Huntsville, Alabama that performs timely correlation reviews for multiple NIBIN sites and also provides training for Qualified NIBIN Users.
- ***Notification*** - A written or electronic communication to the submitter of firearms ballistic evidence indicating the results of an acquisition/correlation review. Notifications are not Laboratory Reports.
- ***Procedure*** (protocol, SOP or other equivalent) is an established practice to be followed in performing a specified task or under specific circumstances.
- ***Qualified Auditor*** – individual trained by ATF to conduct NIBIN site audits for compliance to minimum required operating standards
- ***Qualified NIBIN User*** – technician and/or firearms examiner trained by ATF, Forensic Technology, and/or a NIBIN Authorized Trainer (NAT) program to perform acquisition and/or correlation reviews of ballistic images on the national network.
- ***Rank Sort Function*** – function of Ultra Electronics - Forensic Technology, Incorporated software on MatchPoint machine that lists all potential matches of ballistic images to item under review in order of score across all images of regions of interest.
- ***Secondary review*** - ensures the work performed meets quality standards and removes any potential for bias. For NIBIN, ATF defines secondary review as a second correlation review or examination by a trained IBIS technician and/or firearms examiner using MatchPoint.
- ***Service*** is the performance of those adjustments or procedures specified which are to be performed by the user, manufacturer or other service personnel in order to ensure the intended performance of instruments and equipment.
- ***Suitable ballistic evidence*** – all fired cartridge cases recovered by law enforcement as well as test-fired cartridge cases from firearms recovered by law enforcement that were illegally possessed, used in a crime, or suspected by law enforcement officials of having been used in a crime.
- ***Technician*** (or equivalent role, position, or title as designated by the laboratory director) is an employee or contract employee who performs analytical techniques on forensic samples under the supervision of a qualified analyst. Technicians do not interpret data, reach conclusions on typing results, or prepare final reports.
- ***Test Fires*** - Cartridge cases known to be fired from a specific firearm in law enforcement custody.
- ***Triage*** – The process of assessing cartridge cases to determine the best representative sample from a group of cartridge cases having similar firearm produced markings for NIBIN entry. This is not, nor should it be interpreted as a comparative examination to determine how many firearms may have been responsible for firing the cartridge case.

- *Ultra Electronics - Forensic Technology, Incorporated* – “FT,” “FTI” - created the **Integrated Ballistics Identification System (IBIS)** in 1991; an IBIS machine incorporates technology for the acquisition and correlation of ballistic images.

**3. MINIMUM REQUIRED OPERATING STANDARDS:** ATF, through the National Crime Gun Intelligence Governing Board, has established the following minimum required operating standards to ensure the consistency, integrity, and success of NIBIN:

## **A. STANDARDS**

### **1. QUALITY ASSURANCE PROGRAM**

STANDARD 1.1 The NIBIN site shall establish, follow and maintain a documented quality system that is appropriate to the NIBIN acquisition and correlation processes and is equivalent to or more stringent than what is required by these Standards.

1.1.1 The quality system shall be documented and include or reference the following elements:

- 1.1.1.1 Goals and objectives
- 1.1.1.2 Organization and management
- 1.1.1.3 Personnel
- 1.1.1.4 Facilities
- 1.1.1.4 Acquisition, Correlation, NIBIN Lead Dissemination Procedures
- 1.1.1.5 Evidence Control
- 1.1.1.6 Validation
- 1.1.1.7 Equipment Calibration
- 1.1.1.8 Reports
- 1.1.1.9 Review
- 1.1.1.10 Corrective Action
- 1.1.1.11 Audits
- 1.1.1.12 Training Records
- 1.1.1.13 Safety
- 1.1.1.14 Outsourcing

Discussion:

This Standard sets forth requirements for the site to establish basic documented quality assurance procedures, regarding NIBIN analysis. While a site may opt for or be otherwise required to maintain ISO accreditation, this standard does not require such accreditation.

### **2. ORGANIZATION AND PERSONNEL**

STANDARD 2.1 The site shall:

2.1.1 Have a managerial staff with the authority and resources needed to discharge their duties and meet the requirements of the Standards in this document.

2.1.2 Have a NIBIN Program Administrator. For agencies or departments with multiple NIBIN sites, each site shall have a designated NIBIN Program Administrator.

2.1.2.1 The NIBIN Program Administrator shall meet the following qualifications:

2.1.2.1.1 Be a full-time employee of the agency/department operating the site. A full time on-site contractor with employee privileges is also appropriate for this position.

2.1.2.1.2 Minimum experience requirements: a qualified NIBIN user that has completed acquisition and correlation training.

2.1.2.2 The NIBIN Program Administrator shall be responsible for the following:

2.1.2.2.1 General duties and authority:

2.1.2.2.1.1 Oversee the operations of the site and success of NIBIN program.

2.1.2.2.1.2 Authority to initiate, suspend and resume NIBIN operations for the site or an individual.

2.1.2.3 The minimum specific responsibilities to be performed by the NIBIN Program Administrator include the following:

2.1.2.3.1 To evaluate and document approval of all methods used by the site and to propose new or modified procedures as needed.

2.1.2.3.2 To review the training records for newly qualified NIBIN users and approve their qualifications prior to performing NIBIN acquisitions or correlations, and to document such review.

2.1.2.3.6 To coordinate with audit personnel for NIBIN site audits.

2.1.2.4 Accessibility: The NIBIN Program Administrator shall be accessible to the site and ATF NIBIN Unit to provide onsite, telephone or electronic consultation as needed.

2.1.2.4.1 In the event that the NIBIN Program Administrator position of a site is vacated and there is no individual at the site who meets the requirements of this standard and can serve as a NIBIN Program Administrator, the site shall immediately contact the ATF and submit their contingency plan within 14 days to the ATF for its approval. Work in progress by

the site may be completed during this 14 day period but no new casework shall be started until the plan is approved by the ATF.

2.1.3 Ensure personnel operating within the NIBIN system shall have the proper level of training and experience for their position and that all individuals performing acquisitions and/or correlation reviews are Qualified NIBIN Users.

2.1.3.1 A qualified NIBIN user shall be an employee or contract employee of the site and meet the following qualifications:

2.1.3.1.1 Minimum training requirements:

2.1.3.1.1.1 The qualified NIBIN user must complete ATF-approved acquisition training administered by ATF, FT, and/or an NAT in order to utilize a NIBIN acquisition machine and acquire ballistic images.

2.1.3.1.1.2 The qualified NIBIN user must complete both ATF-approved acquisition and correlation training administered by ATF, FT, and/or an NAT in order to utilize a NIBIN correlation machine and perform correlation review of ballistic images.

2.1.4 Maintain records on the relevant qualifications, training, skills and experience of the NIBIN Administrator and Qualified NIBIN Users.

### **3. FACILITIES**

STANDARD 3.1 The site shall have a facility that is designed to ensure the integrity of the NIBIN analyses as well the evidence.

3.1.1 The NIBIN site will comply with all ATF, DOJ and/or other Federal security requirements related to the NIBIN program, network, or systems to ensure the integrity of the program.

3.1.2 The site will house NIBIN equipment in monitored, physically-restrictive environments and clearly identify the restricted areas. NIBIN equipment shall be in a room that is locked and monitored.

3.1.3 The site will ensure building facilities are secured outside of normal working hours. (Monitored 24 hours or locked and alarmed when no one is at site.)

3.1.4 The site will ensure security alarm systems (e.g., motion, thermal) in building housing NIBIN equipment. Test quarterly. Maintain test records for review. (Security alarm does not have to be installed in the NIBIN room)

3.1.5 Access to the site shall be controlled and limited in a manner to prevent access by unauthorized personnel but to allow for the timely submission of evidence by serviced police departments/agencies.

3.1.6 All exterior entrance/exit points require security control. The site will safeguard access to NIBIN equipment areas via key, magnetic card, or cipher lock.

3.1.7 The distribution of all keys, combinations, etc., shall be documented and limited to the personnel designated by NIBIN Program Administrator.

3.1.8 For personnel no longer directly using NIBIN equipment, the site will make sure procedure is in place to collect/and or change access into NIBIN room. (Either change lock and or collect keys used for access.)

3.1.9 The site will document visitor procedures to restrictive areas and maintain and update a restrictive area authorized personnel roster.

#### **4. EVIDENCE CONTROL**

STANDARD 4.1 The site shall have and follow a documented evidence control system to ensure the integrity of physical evidence.

4.1.1 Evidence shall be marked with a unique identifier on the evidence package. The site shall clearly define what constitutes evidence and what constitutes work product. The site shall have and follow a method to distinguish each sample throughout processing.

4.1.2 Chain of custody for all evidence shall be documented and maintained in hard or electronic format. The chain of custody shall include the signature, initials or electronic equivalent of each individual receiving or transferring the evidence, the corresponding date for each transfer, and the evidentiary item(s) transferred.

4.1.3 The site shall have and follow documented procedures designed to minimize loss, and/or deleterious change of evidence.

4.1.4 The site shall have secure, controlled access areas for evidence storage and work product in progress.

#### **5. PROCEDURES**

STANDARD 5.1 The site shall have and follow written procedures for all steps of the NIBIN process; these procedures must be approved by the NIBIN Program Administrator.

5.1.1 The site will not restrict submissions of ballistic evidence to the site by any serviced law enforcement agency/department.

5.1.2 The site will document and follow standard operating procedures for the acquisition of all ballistic images.

5.1.2.1 The site will perform acquisitions of all suitable ballistic evidence submitted to the site.

5.1.2.1.1 The site will document and follow procedure for the triage or grouping of multiple items of ballistic evidence from the same firearm.

5.1.2.1.2 The site will perform acquisitions of the best suitable examples of ballistic evidence following the triage process.

5.1.2.1.3 The site will perform acquisitions of all suitable ballistic evidence within 2 business days of receipt at the site.

5.1.2.1.4 The site will accurately enter all required information pertaining to the ballistic evidence during the acquisition process.

5.1.2.1.5 The site will record the date of the acquisition of each of item of ballistic evidence.

5.1.3 The site will document and follow standard operating procedures for the correlation review of ballistic images.

5.1.3.1 The site will document and follow procedure for the correlation review of potential NIBIN Leads. All correlation reviews will be done by a qualified NIBIN User that has completed both acquisition and correlation training.

5.1.3.2 The site will perform and document a second correlation review of potential NIBIN Leads. This secondary review will be performed by another qualified NIBIN user that has completed both acquisition and correlation training. Both the initial and secondary correlation reviews will be completed within 2 business days of the acquisition of the ballistic images of the item of evidence.

5.1.3.3 In the performance of correlation reviews, the qualified NIBIN users at the site will examine, at minimum, ballistic images of the top 30 from the rank sort list determined by the ballistics imaging software.

5.1.3.4 The documentation of any correlation review (primary or secondary) shall include at a minimum the primary case identifier(s), date of the review, the name of the NIBIN user, the items of evidence involved in the correlation, and the result of the review.

5.1.3.5 Sites utilizing the NNCTC for correlation reviews of ballistic images will not be subject to the requirements of Section 5.1.3.

5.1.4 The site will document and follow standard operating procedures for the dissemination of NIBIN leads.

5.1.4.1 Following the concurrence of a potential match from the secondary correlation review, a NIBIN lead will be disseminated within 24 hours to the agency submitting the specific ballistic evidence or its authorized representative for this product, such as the ATF Crime Gun Intelligence Center (CGIC).

5.1.4.2 The site will record the date of lead dissemination of each NIBIN lead.

5.1.4.3 Sites utilizing the NNCTC for correlation reviews of ballistic images will not be subject to the requirements of Section 5.1.4.

#### Discussion:

In order to optimize the comprehensiveness of ballistic information on the NIBIN network, a site will not implement policies that restrict the submission of suitable ballistic evidence for NIBIN analysis. Limiting submissions of suitable ballistic evidence based on specific crimes, firearm calibers other than specified below, or other restrictions is prohibited. Suitable ballistic evidence is considered all fired cartridge cases recovered by law enforcement as well as test-fired cartridge cases from firearms recovered by law enforcement that were illegally possessed, used in a crime, or suspected by law enforcement officials of having been used in a crime.

In general, NIBIN test firing is required for all semi-automatic pistols including .22 caliber, .223 and 7.62 semi-automatic rifles, 12 gauge shotguns and long guns that use handgun ammunition under the aforementioned guidelines. There may be exceptions to a firearm's test fire submission; firearms that are not typically test fired include revolvers, single shot or bolt action rifles, shotguns in other gauges, weapons never fired, or firearms deemed unsafe, inoperable, or incomplete.

Ballistics information and/or evidence from firearms taken into law enforcement custody through a Gun Buy Back Program, property damage crimes involving firearms, found or abandoned firearms, and domestic disturbances are permitted for entry in the NIBIN database. It is noted that some jurisdictions may have local regulations or policies that prohibit some of these items to be included in NIBIN.

A minimum correlation review of ballistic images of the top 30 from the rank sort list is required based on prior study and research (refs. *IBIS BrassTrax Correlation Review Techniques, Garten and Burrows, AFTE Journal, Volume 49, Number 2, Spring 2017; Evaluation of Rank Positions within Regions of Interest (ROI) for Published NIBIN Leads, Nichols, November 2016; IBIS BrassTrax Correlation Performance and Review Techniques, Garten, January 2018*). Such review has shown to find 96.9 - 97.4% of all potential ballistic image matches and optimizes the balance between identifying NIBIN Leads and timely review and turnaround. This requirement does not preclude a site from implementing policy and procedure for further review of images beyond the top 30 of the rank sort list or across specific regions of interest.

Sites should implement standard procedures for the dissemination of NIBIN leads to the agency/department submitting the specific ballistic evidence. Such procedures should consider the importance of timely dissemination of NIBIN leads and intelligence to investigators.

As required by the standard, NIBIN leads will be disseminated to the investigating entity of the agency/department submitting the ballistic evidence match. It is further recommended that leads also be disseminated to the local ATF Crime Gun Intelligence Center (CGIC). A submitting agency may implement policies in which the NIBIN site disseminates all leads

directly and solely to the local ATF Crime Gun Intelligence Center. Such policies shall be deemed in compliance with the standard. These steps will facilitate the coordination between investigators and further the collection of critical intelligence pertaining to the linked crimes.

## **6. CORRECTIVE ACTION**

**STANDARD 6.1** The site shall establish and follow a corrective action plan to address processes and procedures when the minimum required operating procedures are not met. The corrective action plan shall identify possible causes for non-compliance with the standards and address plans and measures to meet these standards. Documentation of the corrective actions shall be maintained in accordance with Standard 1.

**STANDARD 6.2** Corrective actions shall not be implemented without the documented approval of the NIBIN Program Administrator.

## **7. AUDITS**

**STANDARD 7.1** All sites will be audited in accordance with these standards by an ATF audit team beginning in July 2018. By December 31, 2020, each site must undergo the ATF audit and be in compliance with these standards in order to maintain access to the NIBIN network. After December 31, 2020, all sites will undergo a regular ATF audit on a biennial basis, once every two years.

7.1.1 Audits shall be conducted by an audit team comprised of qualified auditor(s).

7.1.2 All required documentation and records of the NIBIN analysis of submitted ballistic evidence pertaining to the accuracy and timeliness of acquisitions, correlation reviews, and NIBIN lead disseminations shall be maintained and made available during the audit.

7.1.3 All required documentation and records of training and experience for the NIBIN Program Administrator and Qualified NIBIN Users shall be maintained and made available during the audit.

7.1.4 All required documentation and records to verify compliance with these NIBIN standards shall be maintained and made available during the audit.