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Idaho State Police Forensic Services

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# NIBIN ACQUISITION ANALYTICAL METHODS- EXTERNAL TECHNICIANS

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## Revision History

[illegible]

# Analytical Method #1: Creation and Acquisition of Exemplars/Test Fires

## 1.0 References/Definitions

### 1.1 References

- 1.1.1 – ISPFS Recommendations for test firing, if performed by a NIBIN entry Technician
- 1.1.2- Applicable Agency Policies/procedures relating to safe handling of firearms, ammunition, and test firing for NIBIN.
- 1.1.3 This method is not intended to replace an external agency policy regarding test firing a seized firearm for NIBIN, it should be considered supplemental recommendations, or can be used by Agencies who have not yet defined a procedure.

### 1.2 Definitions

**Originating Agency Name** – Originating Law Enforcement Agency name from the dropdown menu for the agency submitting the evidence for entry into NIBIN.

**Case Number** – This field will reflect the Law Enforcement Agency (LEA) investigation number/Agency Case number. The associated ISPFS Agency designator will be entered as a case number prefix. (Example SP101-K21000001 would be entered as the case number, with SP101 being the agency designator, and K21... being the associated case number)

**Occurrence Date** – The date of incident. This would be the date of firearm or cartridge case recovery or the crime date.

**Reception Date** – The date ballistic evidence (recovered firearm or fired cartridge case) is initially submitted and/or delivered for any forensic analysis (i.e., DNA, Latent fingerprints, NIBIN, etc.). This information must be recorded accurately. When a “reception date” field is included during the NIBIN acquisition process, this information must be entered. A separate record of the date (intake log, evidence tag or chain of custody, property receipt, spreadsheet, etc.) will not be required when the “reception date” field is available; however, supporting documentation to verify the accuracy may still be requested.

**Event Type** – The type of incident/crime involving the evidence recovery must be accurately entered from the dropdown menu if available and known at the time of acquisition.

**Originating Agency Reference** – LEA Investigation Number (also referred to as Originating Agency Case Number). This number needs to be entered exactly as it appears on the evidence intake form and in the agency's reporting management system. This field needs to be completed even if the case number and reference number are the same.

**Firearm Exhibit** – For all test-fired firearms, the Exhibit Number, Make, Model, Caliber, Type of Firearm, and Serial Number under the Firearms Exhibit Details must be accurately entered, if available and known at the time of acquisition.

## 2.0 Scope

- 2.1 Provide recommendations for creating NIBIN-only test fires. Defining the requirements and standard procedures for firearms related evidence entry and maintenance in relation to the NIBIN database program managed by the ATF.

## 3.0 Equipment/Reagents

- 3.1 Bullet trap/Designated Test firing area- outdoor range
- 3.2 Envelopes- NIBIN Exemplar envelopes or similar
- 3.3 Gloves
- 3.4 Hearing protection
- 3.5 Eye Protection

## 4.0 Procedure

- 4.1 Review all pertinent case information to ensure all other case considerations such as, but not limited to, DNA, latent prints, trace evidence, or firearm functionality analyses have been addressed prior to NIBIN submission.
- 4.2 If the firearm in question requires examination by the ISP Forensic Services Firearm section for any reason, creation of NIBIN test fires should not be performed, and the evidence should be submitted for examination. ISP Forensic Services Firearms unit will use laboratory created test fires for entry into the IBIS/NIBIN system
  - 4.2.1 Following ATF recommendations for eligible firearms, determine firearms needing test firing.
    - 4.2.1.1 Perform a pre-test firing safety check of the firearm to ensure that test firing is safe to be completed.
      - This should include: examining the firearm for any visible external damage
      - Check the barrel of the firearm to ensure there are no obstructions, this can be done with a non-marking dowel or flashlight.

4.2.1.2 Complete the NIBIN collection envelope with required information pertaining to the firearm being test fired.

- **Date recovered-** Crime date, or date the firearm was seized
- **Date fired-** date the test firing was performed
- **Location recovered-** physical address of incident where firearm was recovered.
- **Agency Case and Firearm related information-** Agency Name, case number and agency item number associated, Investigating officer email, make, model, serial number and caliber.

4.2.1.3 Using appropriate caliber and recommended ammunition, test fire the firearm a minimum of two times.

- For AR platform rifles, verify the caliber listed on the barrel is consistent with the caliber marked on the receiver. There may be a notable difference which could be a safety concern if the incorrect ammunition is selected for test firing.

4.2.1.4 Package the test fires in the NIBIN envelope.

4.2.1.5 Following agency protocols, return the firearm to evidence and complete the requirement necessary for documenting performance of the test firing process.

4.2.1.6 Place marker of some sort on firearm package to indicate test firing for NIBIN was performed.

4.2.1.7 Submit NIBIN test fire packets to appropriate location for entry into NIBIN.

4.2.1.7.1 For agencies with trained NIBIN acquisition technicians, refer to your agency's procedures for submission for NIBIN entry.

4.2.1.7.2 For agencies without NIBIN Acquisition technicians; submit NIBIN test fire packets to the ISP Forensic Services Coeur d'Alene Lab or Meridian Lab.

4.3 Entry of NIBIN test fires/Exemplars- See Analytical Method 3

## 5.0 Comments

If there are questions regarding firearm please contact the NIBIN Technical Administrator in the Coeur d'Alene ISP Forensic lab, by phone or email.

# Analytical Method #2: Triaging Fired Evidence Cartridge Cases

## 1.0 Background/References

This set of Analytical Methods is separate from the Acquisition methods found in the ISPFS Firearms Analytical Methods and is designed for NIBIN Technicians not employed full-time by ISPFS.

## 2.0 Scope

- 2.1 In combination with ATF/FTI triage training presented during NIBIN acquisition training this method can be used as a reference for determining the possible minimum number of cartridge cases that may be entered.
- 2.2 This method and ISPFS do not limit the number of cartridge cases that may be entered by a NIBIN user from a particular case. If a NIBIN technician prefers to enter all fired evidence, there are no limitations of completing entries on any items.
- 2.3 Triaging is not considered examination or comparison of fired cartridge cases. Evaluation of general characteristics present visually on a fired cartridge case is used to determine the best sample to be acquired and entered into the NIBIN/IBIS database.

## 3.0 Equipment/Reagents

- 3.1 Evidence cartridge cases
- 3.2 Evidence tape
- 3.3 Acetone
- 3.4 Gloves

## 4.0 Procedure

- 4.1 Each Law Enforcement case with fired ammunition components shall be evaluated according to the agencies respective evidential policies.
  - 4.1.1 Fired cartridge cases of eligible calibers may be entered into NIBIN.
  - 4.1.2 If latent print or biological processing is needed on the fired ammunition components this should be completed prior to NIBIN entry, if possible.
    - 4.1.2.1- Appropriate precautions should be taken, for all items where Latent or biological processing has not been completed, i.e., gloves should be worn.

4.1.2.2 If there are multiple items of the same caliber and class characteristics, one item may be chosen, based on results of the triaging process, for entry into the NIBIN system, leaving the other items available for additional analyses.

4.1.2.3 The NIBIN user will determine the number of items entered based on training, experience, or overall comfort of entry process.

## 4.2 Triaging fired evidence cartridge cases for NIBIN Entry

4.2.1 Evidence should first be separated into groupings based on caliber of the fired cartridge cases, if more than one caliber is recovered from a scene. (i.e., grouped into two separate categories: 9mm, and 45 Auto cartridge cases).

4.2.1.1 A minimum of one evidential cartridge case per caliber should be entered.

4.2.2 Firing pin shape, and breechface marks evaluated.

4.2.2.1 If multiple firing pin shapes are present in each caliber, groupings of evidence will be made for each firing pin shape observed.

4.2.2.1a Example: 9mm cartridge case with circular firing pin impression would be grouped separately than 9mm cartridge cases with elliptical firing pin impressions.

4.2.2.2 Minimum of one fired cartridge case of single caliber and firing pin shape should be entered. Using the example above: two (2) fired 9mm cartridge cases should be entered into the NIBIN system.

4.2.3 Ejector marks, multiple brands/compositions of fired cartridge cases recovered.

4.2.3.1 Minimum of one fired cartridge case of each brand should be entered.

4.2.3.2 If two fired cartridge cases are triaged to have the potential of being fired from the same firearm, and one cartridge case has an easily identifiable ejector mark, and the second does not, recommendations are to acquire at least the cartridge case with the ejector mark present.

4.2.4 Refer to section 5 of this method for examples of workflows. **Comparisons between test fires and evidence cartridge cases explained in this method do not constitute a firearms examination and/or comparison.** General characteristics are being evaluated and should not be constituted as a comparison, but rather an evaluation of general features visualized.

4.2.5 After triaging of evidential recovered cartridge cases is complete refer to Analytical Method 3 for NIBIN entry procedures for evidential cartridge cases.

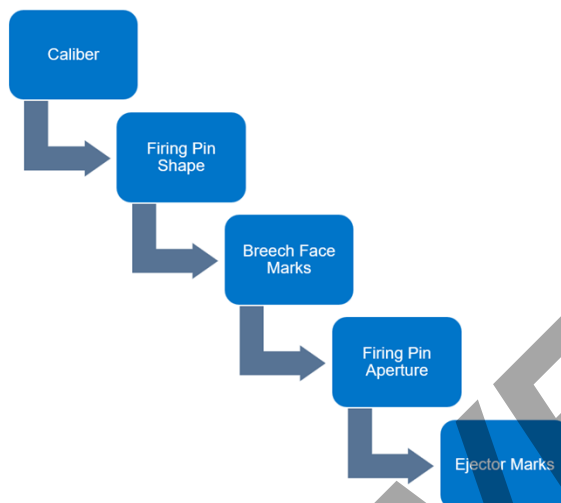
## 5.0 Work Instructions/Triaging Flow charts provided by FTI.

Example Triaging workflows from ATF's Triage training PowerPoint.

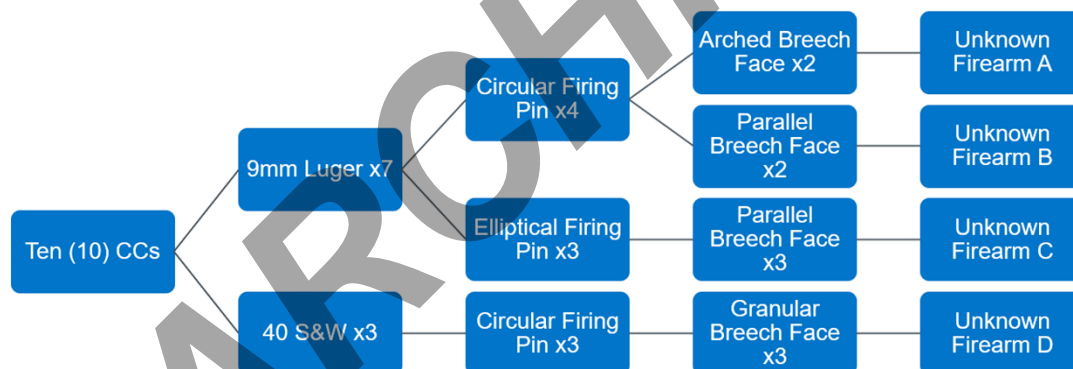
### 5.1 General triaging

ULTRA

## Triage Priority



### 5.2 Multiple fired cartridge case triaging example



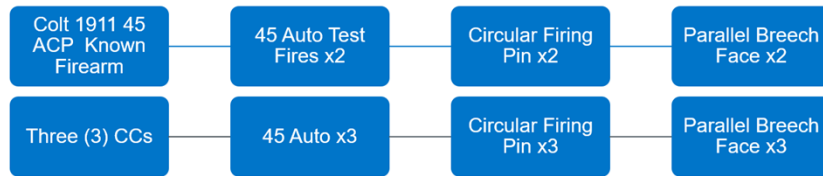
Enter 1 CC from each Firearm into IBIS.

### 5.3 Firearm and fired cartridge case Triaging example (does not constitute firearms comparison)

ULTRA



## Cartridge Case Triage



Test fires from the Colt 1911 pistol should be compared with the evidence CCs. In the event that the evidence was determined to have been fired from the Colt 1911, one test-fire CC should be entered into IBIS. If the evidence is determined to have been fired from a different firearm, one evidence CC and one test-fire CC should be entered into IBIS.

## 6.0 Comments

There is no maximum number of evidential fired cartridge cases that can be entered into the IBIS/NIBIN database for an individual case.

# Analytical Method #3: Acquisition of Exemplar Test Fires and/or Evidence Cartridge Cases

## 1.0 Background/References

- 1.1 This set of Analytical Methods is separate from the Acquisition methods found in the ISPFS Firearms Analytical Methods and is designed for NIBIN Technicians not employed full-time by ISPFS.
- 1.2 The goals of the NIBIN program are to reduce firearms violence through promoting a comprehensive evidence collection, timely entry and correlation of evidence, providing investigative support, and ongoing facilitation of feedback regarding the NIBIN program. As an ATF-NIBIN partner, the Idaho State Police Forensic Services is committed to assisting the ATF in the NIBIN program.

Currently ISPFS has two NIBIN terminals that can be accessed. The Coeur d'Alene Crime Laboratory has access to a regional NIBIN unit (Site 367US) located at the Washington State Patrol Crime Laboratory located in Cheney, Washington. The Meridian Laboratory has access to the NIBIN unit (Site 451US) located at ISP Headquarters. These units are deployed by the ATF and are the property of the ATF and U.S. Government. Specialized security clearance is required for all IBIS/NIBIN users and is issued by the ATF.

Each IBIS /NIBIN user is required to complete the ATF IBIS/NIBIN Acquisition training and pass a competency test administered by the ATF, or an approved NIBIN Acquisition Trainer (NAT) prior to participating in the NIBIN program. ISPFS may require additional training to perform entries for casework related samples.

## 2.0 Scope

- 2.1 Defining the requirements and standard procedures for firearms related evidence entry and maintenance in relation to the NIBIN database program managed by the ATF.

## 3.0 Equipment/Reagents

- 3.1 Exemplar Test fires created by Submitting Agency
- 3.2 Evidence containing fired cartridge case(s) collected/recovered from a scene response.

- 3.3 BrassTrax Acquisition unit
- 3.4 Gloves
- 3.5 Cleaning Solvents- Acetone
- 3.6 toothbrush, cotton swabs for cleaning
- 3.7 Stereo Microscope

## 4.0 Procedure

**NOTE:** *Prior to entry of any evidential cartridge case, determination must be made if the cartridge case will need latent print or biological processing. If fingerprint or biological processing is required, DO NOT enter the evidence cartridge case into NIBIN without this analysis being completed first.*

**Note 2:** *Following IBIS guidelines and ATF IBIS Data Entry Protocol, requested test fires and evidence cartridge cases will be entered into the NIBIN database. The selected cartridge cases may be cleaned with acetone when appropriate and placed in the cartridge case holder of the IBIS unit. When the acquisition is complete, the images are sent to the NIBIN server for correlations. A manual correlation may be requested as needed. Correlations will be performed and reported by an external agency.*

### 4.1 Type of IBIS Entries

4.1.1 Following IBIS guidelines and ATF IBIS Data Entry Protocol requested test fires will be entered into the NIBIN database. The selected cartridge cases may be cleaned with acetone when appropriate and placed in the cartridge case holder of the IBIS unit. When the acquisition is complete, the images are sent to the NIBIN server for correlations. A manual correlation may be requested as needed. Correlations will be performed and reported by an external agency.

#### 4.1.2 Test Fired Cartridge Cases (Exemplars)

4.1.2.1 The test fired cartridge cases will be examined and one will be selected to be entered into NIBIN unless the test fired cartridge cases differ considerably in appearance (i.e. different headstamp or compositions, primer shear on one and not the other, etc.). If they differ, two cases may be entered at the discretion of the IBIS user. When an ejector is present, the IBIS user should acquire the ejector mark based on ULTRA ELECTRONICS protocol.

4.1.2.2 All firearm and exemplar related information will be entered into the IBIS instrument following ULTRA ELECTRONICS guidelines and ATF/IBIS Data Entry Protocol.

#### 4.1. 3 Evidence Cartridge Cases/Firearms

4.1. 3.1 Any evidence/scene cartridge cases or test fires from evidence firearms that meet the ATF criteria for entry will be entered into IBIS/NIBIN.

4.1. 3.2 Prior to handling casework evidence, the operator will review all pertinent case information to ensure all other case considerations such as, but not limited to, DNA or latent prints analyses have been addressed.

4.1. 3.2.1 For all entries, if two or more evidence cartridge cases are submitted of the same caliber family, the IBIS operator will examine the cartridge cases evaluating the caliber, the class characteristics of the breech face marks and the firing pin impression to determine which item(s) should be entered into IBIS. When an ejector is present, the IBIS user should acquire the ejector mark. If class characteristics vary or ammunition type varies, a test fire/evidence cartridge case from each group should be entered into IBIS.

4.1. 3.3 All evidence cartridge cases will be entered into the IBIS instrument following ULTRA ELECTRONICS guidelines and ATF/IBIS Data Entry Protocol.

#### 4.1.4 IBIS Laboratory Reports

- Documentation and reporting for NIBIN Entries performed by users outside of ISPFS will be completed based on the agency's policy regarding documentation and reporting. It is suggested that agencies maintain a copy of the "Case Maintenance" printout generated by the IBIS instrument after entry is completed.

#### 4.1.5 Timeliness of Entry

Items for IBIS entry should be entered as soon as possible, upon receipt by the Firearms section, or other qualified laboratory personnel. Section 5.8 of the 2022 ATF MROS defines entry standards.

#### 4.2 IBIS Acquisition Instrument

4.2.1 All equipment directly related to IBIS BRASSTRAX is owned by ATF and serviced by ULTRA ELECTRONICS. No adjustment or addition to any part of the system is permitted. The IBIS Acquisition Unit (AU) performs automatic self-diagnostic tests. If one of these tests reports an error, a calibration may be performed. Any time there is a problem that the user is unable or not authorized to resolve, ULTRA ELECTRONICS must be called.

4.2.2 No one may enter or retrieve data until they have been trained by the ATF or ULTRA ELECTRONICS and final approval is given by the ATF. All persons using the IBIS/NIBIN system must have an ULTRA ELECTRONICS generated password and security clearance granted by the ATF.

## 4.3 IBIS Acquisition

NOTE: When creating a new NIBIN case, and completing information related to the exhibit to be acquired, refer to the IBIS training guide available through the ULTRA ELECTRONICS website. In addition to the IBIS training guide, ensure that the appropriate procedures are followed (external agencies approved for entries should follow entry guidelines set forth by ISPFS, or their respective agency)

### 4.3.1 Case Information

4.3.1.1 In addition to the IBIS Procedures and training guide: Provide all relevant case information, including Investigating officer email (lead notifications are sent to the email provided). ISPFS and external users will follow the following

4.3.1.2 Case ID – All case identification begins with the designated Agency abbreviation followed by the Agency Case number. (A list of the Agency Abbreviations is provided by ISPFS to all NIBIN users, located in the NIBIN Binder dedicated to each entry unit.) Example: SP10 K19000001

4.3.1.2.1 All exhibits from a single case may be entered under one case number. The exhibits are to be labeled appropriately. Exhibits may include firearms, test fires and/or evidence.

4.3.1.2.2 For exemplars, case identification should use an abbreviation for the submitting agency and the agency case number. Example: ACSO 2019DR12345

### 4.3.2 Firearms Entry

4.3.2.1 In addition to the IBIS Procedures and training guide:

4.3.2.1.1 Exhibit number - Enter Gun followed by the agency item number of the firearm from the Submission paperwork or item's packaging for as many firearms as are necessary to list. This exhibit number is often the same as what the submitting agency used as its evidence marking. Example: "GUN MC2"

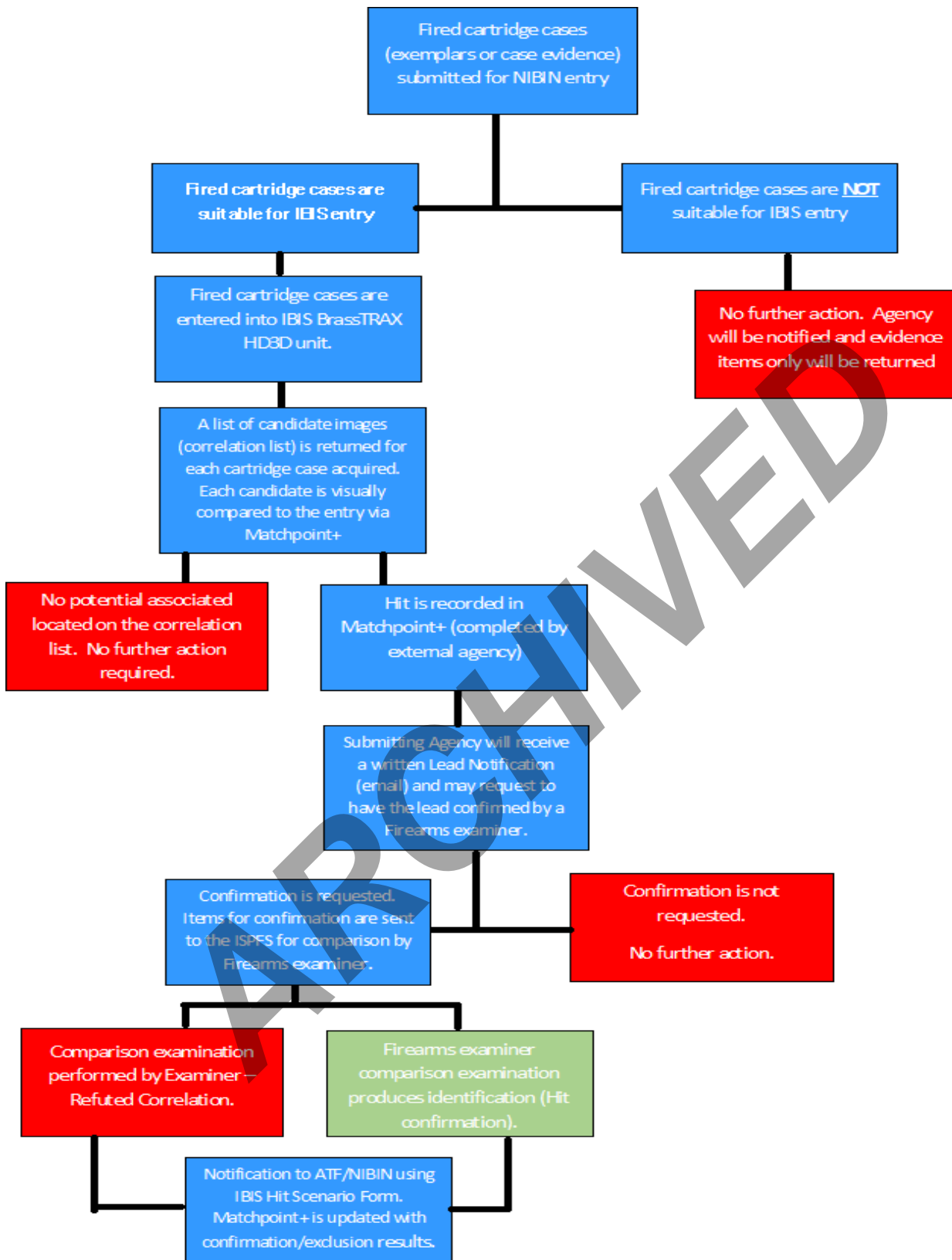
4.3.2.1.2 All test fire exhibits will begin with TF. Test Fires should correspond with the firearm entered in section 4.3.2.1 of this method.

### 4.3.3 Evidence Cartridge Case Entry

4.3.3.1 In addition to the IBIS Procedures and training guide:

4.3.3.1.1 Exhibit numbers – All crime evidence exhibits begin with EX. After EX, enter any identifiers that apply to the exhibit such as EX 3-1 or EX MC10, and designated as "Crime Evidence".

## 5.0 Work Instructions



## Analytical Method #4: Correlations

### 1.0 Background/References

- 1.1 Correlations are the review and comparison of entries into the IBIS/NIBIN system. Correlations first undergo an automatic algorithm-based comparison, generating a match score that must undergo further review by a user trained in correlation reviews.

### 2.0 Scope

- 2.1 Correlations are not performed at Meridian Site 451, due to no MatchPoint System being at the Facility. Correlations for Site 451 are completed by the NNCTC.
- 2.2 Correlations may be performed using the MatchPoint System at the WSP Site 367.

### 3.0 Equipment/Reagents

- 3.1 MatchPoint Correlation System

### 4.0 Procedure-

- 4.1 Correlations can be performed by a Firearms Examiner or user separately trained in Correlations using MatchPoint system at site 367.
  - 4.1.1 On the MatchPoint Correlation System, load the samples pending correlation.
    - 4.1.1.1 Review the top 20-30 highest match scores using a side-by-side review of the cartridge cases.
      - 4.1.1.1.1 If a possible lead should be generated, make a notation of the case number and exhibit needing reviewed, for the WSP Correlation users to review and issue a Lead Notification
- 4.2 Additional instructions for use of the MatchPoint Software to complete correlations from FTI should be used.

## Analytical Method #5: Lead Notifications

### 1.0 Background/References

- 1.1 Upon completion of correlation requests- lead notifications may be generated and disseminated to law enforcement.
- 1.2 These lead notifications are not considered confirmatory analysis and are to indicate that there is a possible investigative lead.

### 2.0 Scope

- 2.1 Lead notifications are sent to appropriate law enforcement personnel when there is a potential of firearms evidence &/or test fires being related.
- 2.2 A lead notification is an unconfirmed, potential association between two or more items of firearms related evidence based on a correlation review of the digital images in the NIBIN database by a user trained in correlations. A NIBIN lead is intended to provide a lead for investigative purposes.
- 2.3 If confirmation by a Firearms examiner is needed to verify the lead, please contact the Firearms Section of the Idaho State Police Forensic Services lab, located in Coeur d'Alene.

### 3.0 Equipment/Reagents

- 3.1 MatchPoint Correlation Station
- 3.2 Huddle Notification System access

### 4.0 Procedure

- 4.1 Lead notifications for entries made for Idaho Law enforcement agencies are performed in the following manner.
  - 4.1.1 Entries completed at site 451US- Meridian- Lead Notifications are generated and disseminated to ISPFS via Huddle, the ISPFS NIBIN Technical Administrator or ISPFS Firearms Technical Lead will disseminate lead notifications to at minimum the Investigating officer listed in the NIBIN Entry.
  - 4.1.2 Entries completed at Site 367US- Cheney, WA – Lead notifications are generated and disseminated by the WSP Crime laboratory designee.