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Special **REPORT**

Forensic Examination of Digital Evidence: A Guide for Law Enforcement

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Forensic Examination of Digital Evidence: A Guide for Law Enforcement

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Sarah V. Hart
Director

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Foreword

Developments in the world have shown how simple it is to acquire all sorts of information through the use of computers. This information can be used for a variety of endeavors, and criminal activity is a major one. In an effort to fight this new crime wave, law enforcement agencies, financial institutions, and investment firms are incorporating computer forensics into their infrastructure. From network security breaches to child pornography investigations, the common bridge is the demonstration that the particular electronic media contained the incriminating evidence. Supportive examination procedures and protocols should be in place in order to show that the electronic media contains the incriminating evidence.

To assist law enforcement agencies and prosecutorial offices, a series of guides dealing with digital evidence has been selected to address the complete investigation process. This process expands from the crime scene through analysis and finally into the courtroom. The guides summarize information from a select group of practitioners who are knowledgeable about the subject matter. These groups are more commonly known as technical working groups.

This guide is the second in a series. The first guide, *Electronic Crime Scene Investigation: A Guide for First Responders*, is available through the National Institute of Justice Web site at http://www.ojp.usdoj.gov/nij/pubs-sum/187736.htm.

The remaining guides in the series will address—

- Using high technology to investigate.
- Investigating high technology crimes.
- Creating a digital evidence forensic unit.
- Presenting digital evidence in the courtroom.

Because of the complex issues associated with digital evidence examination, the Technical Working Group for the Examination of Digital Evidence (TWGEDE) recognized that its recommendations may not be feasible in all circumstances. The guide's recommendations are not legal mandates or policy directives, nor do they represent the *only* correct courses of action. Rather, the recommendations represent a consensus of the diverse views and experiences of the technical working group members who have provided valuable insight into these important issues. The National Institute of Justice (NIJ) expects that each jurisdiction will be able to use these recommendations to spark discussions and ensure that its practices and procedures are best suited to its unique environment.

It is our hope that, through these materials, more of our Nation's law enforcement personnel will be trained to work effectively with digital evidence and maximize the reliability of that evidence to the benefit of criminal case prosecutions.

NIJ extends its appreciation to the participants in the TWGEDE for their dedication to the preparation of this guide. Their efforts are particularly commendable given that they were not relieved of their existing duties with their home offices or agencies while they participated in the TWGEDE. What is more, it was necessary for

TWGEDE members to attend numerous (and lengthy) guide preparation meetings that were held at locations far removed from their home offices or agencies. In recognition of this, NIJ expresses great appreciation for the commitment made by the home offices or agencies of TWGEDE members in suffering the periodic unavailability of their employees.

Sarah V. Hart
Director
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Technical Working Group for the Examination of Digital Evidence

The process of developing the guide was initiated through an invitational process. Invitees for the Technical Working Group for the Examination of Digital Evidence (TWGEDE) were selected initially for their expertise with digital evidence and then by their profession. The intent was to incorporate a medley of individuals with law enforcement, corporate, or legal affiliations to ensure a complete representation of the communities involved with digital evidence.

A small core of individuals was invited to comprise the planning panel. The task of the planning panel was to formulate a basic outline of topics that would be considered for inclusion.

NIJ thanks Michael P. Everitt of the U.S. Postal Service, Office of Inspector General, and Michael J. Menz. Both of these individuals provided their invaluable time and expertise during the guide's review process.

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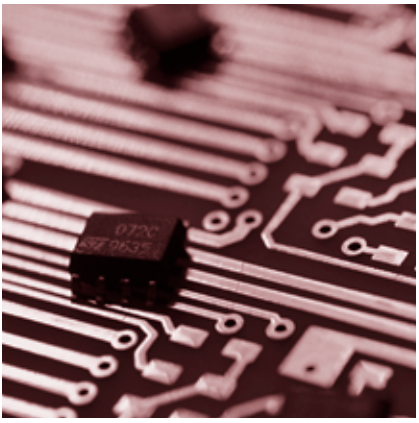
Introduction

*Note: Terms that are defined in the glossary appear in **bold italics** on their first appearance in the body of the report.*



This guide is intended for use by law enforcement officers and other members of the law enforcement community who are responsible for the ***examination*** of ***digital evidence***.

This guide is not all-inclusive. Rather, it deals with common situations encountered during the examination of digital evidence. It is **not** a mandate for the law enforcement community; it is a guide agencies can use to help them develop their own policies and procedures.

Technology is advancing at such a rapid rate that the suggestions in this guide are best examined in the context of current technology and practices. Each case is unique and the judgment of the examiner should be given deference in the implementation of the procedures suggested in this guide. Circumstances of individual cases and Federal, State, and local laws/rules may also require actions other than those described in this guide.

When dealing with digital evidence, the following general forensic and procedural principles should be applied:

- Actions taken to secure and collect digital evidence should not affect the integrity of that evidence.
- Persons conducting an examination of digital evidence should be trained for that purpose.
- Activity relating to the seizure, examination, storage, or transfer of digital evidence should be documented, preserved, and available for review.

Through all of this, the examiner should be cognizant of the need to conduct an accurate and impartial examination of the digital evidence.

How is digital evidence processed?

Assessment. Computer forensic examiners should assess digital evidence thoroughly with respect to the scope of the case to determine the course of action to take.

Acquisition. Digital evidence, by its very nature, is fragile and can be altered, damaged, or destroyed by improper handling or examination. Examination is best conducted on a ***copy*** of the ***original evidence***. The original evidence should be acquired in a manner that protects and preserves the integrity of the evidence.

Examination. The purpose of the examination process is to extract and analyze digital evidence. Extraction refers to the recovery of data from its media. ***Analysis*** refers to the interpretation of the recovered data and putting it in a logical and useful format.

Documenting and reporting. Actions and observations should be documented throughout the forensic processing of evidence. This will conclude with the preparation of a written report of the findings.

Is your agency prepared to handle digital evidence?

This document recommends that agencies likely to handle digital evidence identify appropriate external resources for the processing of digital evidence before they are needed. These resources should be readily available for situations that are beyond the technical expertise or resources of the department. It is also recommended that agencies develop policies and procedures to ensure compliance with Federal, State, and local laws.

The following five topics describe the necessary basic steps to conduct a computer forensic examination and suggest the order in which they should be conducted. Although documentation is listed as the last step, a well-trained examiner understands that documentation is continuous throughout the entire examination process.

1. Policy and Procedure Development
2. Evidence Assessment
3. Evidence Acquisition
4. Evidence Examination
5. Documenting and Reporting

Each of these steps is explained further in the subsequent chapters. The chapters are further supported by the specialized information provided in the appendixes.

Chapter 1. Policy and Procedure Development

Principle: Computer forensics as a discipline demands specially trained personnel, support from management, and the necessary funding to keep a unit operating. This can be attained by constructing a comprehensive training program for examiners, sound digital evidence recovery techniques, and a commitment to keep any developed unit operating at maximum efficiency.

Procedure: Departments should create policies and procedures for the establishment and/or operation of a computer forensics unit.

Protocols and procedures

Mission statement

Developing policies and procedures that establish the parameters for operation and function is an important phase of creating a computer forensics unit. An effective way to begin this task is to develop a mission statement that incorporates the core functions of the unit, whether those functions include high-technology crime investigations, evidence collection, or forensic analysis.

Personnel

The policies and procedures should consider defining the personnel requirements for the unit. Topics that might be included in this section are job descriptions and minimum qualifications, hours of operation, on-call duty status, command structure, and team configuration.

Administrative considerations

Software licensing. Ensure that all software used by the computer forensics unit is properly licensed by the agency or an individual assigned to the unit.

Resource commitment. Establishing and operating a computer forensics unit may require *significant* allocation of financial resources and personnel. Many of the expenses are recurring and will have to be budgeted on a yearly basis. Resource allocation should include the type of facility that will house the unit, equipment used by examiners, software and hardware requirements, upgrades, training, and ongoing professional development and retention of examiners.

Training. It is important that computer forensics units maintain skilled, competent examiners. This can be accomplished by developing the skills of existing personnel or hiring individuals from specific disciplines. Because of the dynamic nature of the field, a comprehensive

ongoing training plan should be developed based on currently available training resources and should be considered in budget submissions. Consideration may also be given to mentor programs, on-the-job training, and other forms of career development.

Service request and intake

Guidelines should be developed to establish a process for the submission of forensic service requests and the intake of accepted requests for examination of digital evidence. Topics to consider in these guidelines include request and intake forms, point of contact, required documentation, acceptance criteria,* and requirements for the submission of physical evidence. Field personnel are expected to know the policies for service request and intake.

Case management

Once a request for forensic services is approved, criteria for prioritizing and assigning examinations should be determined and implemented. Criteria may include the nature of the crime, court dates, deadlines, potential victims, legal considerations, volatile nature of the evidence, and available resources.

Evidence handling and retention

Guidelines should be established for receiving, processing, documenting, and handling evidence and work products associated with the examination. The guidelines should be consistent with existing departmental policy. However, criteria for digital evidence handling and retention may exceed established departmental policies. **Note:** Evidence identified as contraband, such as child pornography, may require special consideration, such as obtaining specific contraband-related seizure and search warrants.

It is important to remember that other forensic disciplines might be able to recover other evidence, such as fingerprints on the hard drive, hair or fibers in the keyboard, and handwritten disk labels or printed material. In these instances, procedures should be developed to determine the order and manner in which examinations should be performed to reap full evidentiary value.

Case processing

Standard operating procedures (SOPs) should be developed for preserving and processing digital evidence. SOPs should be general enough to address the basic steps in a routine forensic examination while providing flexibility to respond to unique circumstances arising from unforeseen situations.

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*One particular scenario for which an acceptance criteria policy and procedure may be helpful is one in which field personnel have made post-seizure changes to the evidence. This sometimes occurs when field personnel, often unaware of the effects of their actions, attempt to look for files on the original media, thereby changing date and time stamps associated with those files and possibly affecting other data on the media. Although perhaps not fatal to the case, this is one factor that likely would require documentation and should be considered before accepting this service request. One step in this procedure might be to submit the facts to the relevant prosecuting agency to determine whether it would consider the case to be viable, given the post-seizure alteration.

Developing technical procedures

Established procedures should guide the technical process of the examination of evidence. Procedures should be tested prior to their implementation to ensure that the results obtained are valid and independently reproducible. The steps in the development and validation of the procedures should be documented and include:

- Identifying the task or problem.
- Proposing possible solutions.
- Testing each solution on a known control sample.
- Evaluating the results of the test.
- Finalizing the procedure.

Original evidence should never be used to develop procedures.

Chapter 2. Evidence Assessment

Principle: The digital evidence should be thoroughly assessed with respect to the scope of the case to determine the course of action.

Procedure: Conduct a thorough assessment by reviewing the search warrant or other legal authorization, case detail, nature of hardware and software, potential evidence sought, and the circumstances surrounding the ***acquisition*** of the evidence to be examined.

Case assessment

- Review the case investigator's request for service.
  - — Identify the legal authority for the forensic examination request.
  - — Ensure there is a completed request for assistance (see appendix D for examples).
  - — Complete documentation of chain of custody.
- Consult with the case investigator about the case and let him or her know what the forensic examination may or may not discover. When talking with the investigator about the facts of the case, consider the following:
  - — Discuss whether other forensic processes need to be performed on the evidence (e.g., DNA analysis, fingerprint, toolmarks, trace, and questioned documents).
  - — Discuss the possibility of pursuing other investigative avenues to obtain additional digital evidence (e.g., sending a ***preservation order*** to an ***Internet service provider (ISP)***, identifying remote storage locations, obtaining e-mail).
  - — Consider the relevance of peripheral components to the investigation. For example, in forgery or fraud cases consider noncomputer equipment such as laminators, credit card blanks, check paper, scanners, and printers. In child pornography cases consider digital cameras.
  - — Determine the potential evidence being sought (e.g., photographs, spreadsheets, documents, databases, financial records).
  - — Determine additional information regarding the case (e.g., aliases, e-mail accounts, e-mail addresses, ISP used, names, ***network*** configuration and users, system logs, passwords, user names). This information may be obtained through interviews with the ***system administrator***, users, and employees.

— Assess the skill levels of the computer users involved. Techniques employed by skilled users to conceal or destroy evidence may be more sophisticated (e.g., ***encryption***, booby traps, ***steganography***).

— Prioritize the order in which evidence is to be examined.

— Determine if additional personnel will be needed.

— Determine the equipment needed.

The assessment might uncover evidence pertaining to other criminal activity (e.g., money laundering in conjunction with narcotics activities).

Onsite considerations

The following material does not provide complete information on examination of digital evidence; it is a general guide for law enforcement agencies that assess digital evidence at the crime scene. Readers may also want to consult *Electronic Crime Scene Investigation: A Guide for First Responders*, available at http://www.ojp.usdoj.gov/nij/pubs-sum/187736.htm.

Consider safety of personnel at the scene. Always ensure the scene is properly secured before and during the search.

In some cases, the examiner may only have the opportunity to do the following while onsite:

- Identify the number and type of computers.
- Determine if a network is present.
- Interview the system administrator and users.
- Identify and document the types and volume of media, including ***removable media***. Document the location from which the media was removed.
- Identify offsite storage areas and/or remote computing locations.
- Identify ***proprietary software***.

- Evaluate general conditions of the site.
- Determine the operating system in question.

Determine the need for and contact available outside resources, if necessary. Establish and retain a phone list of such resources.

Processing location assessment

Assess the evidence to determine where the examination should occur. It is preferable to complete an examination in a controlled environment, such as a dedicated forensic work area or laboratory. Whenever circumstances require an onsite examination to be conducted, attempt to control the environment. Assessment considerations might include the following:

- The time needed onsite to accomplish evidence recovery.
- Logistic and personnel concerns associated with long-term deployment.
- The impact on the business due to a lengthy search.
- The suitability of equipment, resources, media, training, and experience for an onsite examination.

Legal considerations

- Determine the extent of the authority to search.
- Identify possible concerns related to applicable Federal statutes (such as the Electronic Communications Privacy Act of 1986 (ECPA) and the Cable Communications Policy Act (CCPA), both as amended by the USA PATRIOT ACT of 2001, and/or the Privacy Protection Act of 1980 (PPA)), State statutes, and local policies and laws.

If evidence is located that was not authorized in the original search authority, determine what additional legal process may be necessary to continue the search (e.g., warrant, amended consent form). Contact legal advisors for assistance if needed.

Evidence assessment

- Prioritize the evidence (e.g., distribution CDs versus user-created CDs).
  - — Location where evidence is found.
  - — Stability of media to be examined.

- Determine how to document the evidence (e.g., photograph, sketch, notes).
- Evaluate storage locations for ***electromagnetic interference***.
- Ascertain the condition of the evidence as a result of packaging, transport, or storage.
- Assess the need to provide continuous electric power to battery-operated devices.

Note: The procedures outlined are based on a compilation of generally accepted practices. Consult individual agency policy and seek legal advice, if necessary, before initiating an examination. Actual conditions may require alternative steps to those outlined in this guide. A thorough case assessment is a foundation for subsequent procedures.

Chapter 3. Evidence Acquisition

Principle: Digital evidence, by its very nature, is fragile and can be altered, damaged, or destroyed by improper handling or examination. For these reasons special precautions should be taken to preserve this type of evidence. Failure to do so may render it unusable or lead to an inaccurate conclusion.

Procedure: Acquire the original digital evidence in a manner that protects and preserves the evidence. The following bullets outline the basic steps:

- Secure digital evidence in accordance with departmental guidelines. In the absence of such guidelines, useful information can be found in *Electronic Crime Scene Investigation: A Guide for First Responders* (http://www.ojp.usdoj.gov/nij/pubs-sum/187736.htm).
- Document hardware and software configuration of the examiner's system.
- Verify operation of the examiner's computer system to include hardware and software.
- Disassemble the case of the computer to be examined to permit physical access to the storage devices.
  - Take care to ensure equipment is protected from static electricity and magnetic fields.
- Identify storage devices that need to be acquired. These devices can be internal, external, or both.
- Document internal storage devices and hardware configuration.
  - Drive condition (e.g., make, model, geometry, size, jumper settings, location, drive interface).
  - Internal components (e.g., sound card; video card; network card, including ***media access control (MAC)*** address; personal computer memory card international association (PCMCIA) cards).
- Disconnect storage devices (using the power connector or data cable from the back of the drive or from the motherboard) to prevent the destruction, damage, or alteration of data.

- Retrieve configuration information from the suspect's system through controlled boots.
  - Perform a controlled boot to capture ***CMOS/BIOS*** information and test functionality.
    - Boot sequence (this may mean changing the BIOS to ensure the system boots from the floppy or CD-ROM drive).
    - Time and date.
    - Power on passwords.
  - Perform a second controlled boot to test the computer's functionality and the forensic boot disk.
    - Ensure the power and data cables are properly connected to the floppy or CD-ROM drive, and ensure the power and data cables to the storage devices are still disconnected.
    - Place the forensic boot disk into the floppy or CD-ROM drive. Boot the computer and ensure the computer will boot from the forensic boot disk.
  - Reconnect the storage devices and perform a third controlled boot to capture the drive configuration information from the CMOS/BIOS.
    - Ensure there is a forensic boot disk in the floppy or CD-ROM drive to prevent the computer from accidentally booting from the storage devices.
    - Drive configuration information includes logical block addressing (LBA); large disk; cylinders, heads, and sectors (CHS); or auto-detect.
- Power system down.
- Whenever possible, remove the subject storage device and perform the acquisition using the examiner's system. When attaching the subject device to the examiner's system, configure the storage device so that it will be recognized.
- Exceptional circumstances, including the following, may result in a decision not to remove the storage devices from the subject system:
  - RAID (redundant array of inexpensive disks). Removing the disks and acquiring them individually may not yield usable results.
  - Laptop systems. The system drive may be difficult to access or may be unusable when detached from the original system.
  - Hardware dependency (legacy equipment). Older drives may not be readable in newer systems.
  - Equipment availability. The examiner does not have access to necessary equipment.

— Network storage. It may be necessary to use the network equipment to acquire the data.

When using the subject computer to acquire digital evidence, reattach the subject storage device and attach the examiner's evidence storage device (e.g., hard drive, tape drive, ***CD-RW***, ***MO***).

- Ensure that the examiner's storage device is ***forensically*** clean when acquiring the evidence.

Write protection should be initiated, if available, to preserve and protect original evidence.

Note: The examiner should consider creating a known value for the subject evidence prior to acquiring the evidence (e.g., performing an independent cyclic redundancy check (CRC), ***hashing***). Depending on the selected acquisition method, this process may already be completed.

- If hardware write protection is used:
  - — Install a write protection device.
  - — Boot system with the examiner's controlled operating system.
- If software write protection is used:
  - — Boot system with the examiner-controlled operating system.
  - — Activate write protection.
- Investigate the geometry of any storage devices to ensure that all space is accounted for, including host-protected data areas (e.g., nonhost specific data such as the partition table matches the physical geometry of the drive).
- Capture the electronic serial number of the drive and other user-accessible, host-specific data.
- Acquire the subject evidence to the examiner's storage device using the appropriate software and hardware tools, such as:
  - — Stand-alone duplication software.
  - — Forensic analysis software suite.
  - — Dedicated hardware devices.
- Verify successful acquisition by comparing known values of the original and the copy or by doing a sector-by-sector comparison of the original to the copy.

Chapter 4. Evidence Examination

Principle: General forensic principles apply when examining digital evidence. Different types of cases and media may require different methods of examination. Persons conducting an examination of digital evidence should be trained for this purpose.

Procedure: Conduct the examination on data that have been acquired using accepted forensic procedures. Whenever possible, the examination should not be conducted on original evidence.

This chapter discusses the extraction and the analysis of digital evidence. Extraction refers to the recovery of data from the media. Analysis refers to the interpretation of the recovered data and placement of it in a logical and useful format (e.g., how did it get there, where did it come from, and what does it mean?). The concepts offered are intended to assist the examiner in developing procedures and structuring the examination of the digital evidence. These concepts are not intended to be all-inclusive and recognize that not all of the following techniques may be used in a case. It is up to the discretion of the examiner to select the appropriate approach.

When conducting evidence examination, consider using the following steps:

Step 1. Preparation

Prepare working directory/directories on separate media to which evidentiary files and data can be recovered and/or extracted.

Step 2. Extraction

Discussed below are two different types of extraction, physical and logical. The physical extraction phase identifies and recovers data across the entire physical drive without regard to ***file system***. The logical extraction phase identifies and recovers files and data based on the installed operating system(s), file system(s), and/or application(s).

Physical extraction

During this stage the extraction of the data from the drive occurs at the physical level regardless of file systems present on the drive. This may include the following methods: keyword searching, file carving, and extraction of the partition table and unused space on the physical drive.

- Performing a keyword search across the physical drive may be useful as it allows the examiner to extract data that may not be accounted for by the operating system and file system.

- File carving utilities processed across the physical drive may assist in recovering and extracting useable files and data that may not be accounted for by the operating system and file system.
- Examining the partition structure may identify the file systems present and determine if the entire physical size of the hard drive is accounted for.

Logical extraction

During this stage the extraction of the data from the drive is based on the file system(s) present on the drive and may include data from such areas as active files, ***deleted files***, ***file slack***, and unallocated file space. Steps may include:

- Extraction of the file system information to reveal characteristics such as directory structure, file attributes, file names, date and time stamps, file size, and file location.
- Data reduction to identify and eliminate known files through the comparison of calculated hash values to authenticated hash values.
- Extraction of files pertinent to the examination. Methods to accomplish this may be based on file name and extension, file header, file content, and location on the drive.
- Recovery of deleted files.
- Extraction of ***password-protected***, encrypted, and compressed data.
- Extraction of file slack.
- Extraction of the ***unallocated space***.

Step 3. Analysis of extracted data

Analysis is the process of interpreting the extracted data to determine their significance to the case. Some examples of analysis that may be performed include timeframe, data hiding, application and file, and ownership and possession. Analysis may require a review of the request for service, legal authority for the search of the digital evidence, investigative leads, and/or analytical leads.

Timeframe analysis

Timeframe analysis can be useful in determining when events occurred on a computer system, which can be used as a part of associating usage of the computer to an individual(s) at the time the events occurred. Two methods that can be used are:

- Reviewing the time and date stamps contained in the file system metadata (e.g., last modified, last accessed, created, change of status) to link files of interest to the timeframes relevant to the investigation. An example of this analysis would be using the last modified date and time to establish when the contents of a file were last changed.

- Reviewing system and application logs that may be present. These may include error logs, installation logs, connection logs, security logs, etc. For example, examination of a security log may indicate when a user name/password combination was used to log into a system.

Note: Take into consideration any differences in the individual's computer date and time as reported in the BIOS.

Data hiding analysis

Data can be concealed on a computer system. Data hiding analysis can be useful in detecting and recovering such data and may indicate knowledge, ownership, or intent. Methods that can be used include:

- Correlating the file headers to the corresponding file extensions to identify any mismatches. Presence of mismatches may indicate that the user intentionally hid data.
- Gaining access to all password-protected, encrypted, and ***compressed files***, which may indicate an attempt to conceal the data from unauthorized users. A password itself may be as relevant as the contents of the file.
- Steganography.
- Gaining access to a ***host-protected area (HPA)***. The presence of user-created data in an HPA may indicate an attempt to conceal data.

Application and file analysis

Many programs and files identified may contain information relevant to the investigation and provide insight into the capability of the system and the knowledge of the user. Results of this analysis may indicate additional steps that need to be taken in the extraction and analysis processes. Some examples include:

- Reviewing file names for relevance and patterns.
- Examining file content.
- Identifying the number and type of operating system(s).
- Correlating the files to the installed applications.
- Considering relationships between files. For example, correlating Internet history to cache files and e-mail files to e-mail attachments.
- Identifying unknown file types to determine their value to the investigation.
- Examining the users' default storage location(s) for applications and the ***file structure*** of the drive to determine if files have been stored in their default or an alternate location(s).
- Examining user-configuration settings.

- Analyzing file metadata, the content of the user-created file containing data additional to that presented to the user, typically viewed through the application that created it. For example, files created with word processing applications may include authorship, time last edited, number of times edited, and where they were printed or saved.

Ownership and possession

In some instances it may be essential to identify the individual(s) who created, modified, or accessed a file. It may also be important to determine ownership and knowledgeable possession of the questioned data. Elements of knowledgeable possession may be based on the analysis described above, including one or more of the following factors.

- Placing the subject at the computer at a particular date and time may help determine ownership and possession (timeframe analysis).
- Files of interest may be located in nondefault locations (e.g., user-created directory named "child porn") (application and file analysis).
- The file name itself may be of evidentiary value and also may indicate the contents of the file (application and file analysis).
- Hidden data may indicate a deliberate attempt to avoid detection (hidden data analysis).
- If the passwords needed to gain access to encrypted and password-protected files are recovered, the passwords themselves may indicate possession or ownership (hidden data analysis).
- Contents of a file may indicate ownership or possession by containing information specific to a user (application and file analysis).

Step 4. Conclusion

In and of themselves, results obtained from any one of these steps may not be sufficient to draw a conclusion. When viewed as a whole, however, associations between individual results may provide a more complete picture. As a final step in the examination process, be sure to consider the results of the extraction and analysis in their entirety.

Chapter 5. Documenting and Reporting

Principle: The examiner is responsible for completely and accurately reporting his or her findings and the results of the analysis of the digital evidence examination. Documentation is an ongoing process throughout the examination. It is important to accurately record the steps taken during the digital evidence examination.

Procedure: All documentation should be complete, accurate, and comprehensive. The resulting report should be written for the intended audience.

Examiner's notes

Documentation should be contemporaneous with the examination, and retention of notes should be consistent with departmental policies. The following is a list of general considerations that may assist the examiner throughout the documentation process.

- Take notes when consulting with the case investigator and/or prosecutor.
- Maintain a copy of the search authority with the case notes.
- Maintain the initial request for assistance with the case file.
- Maintain a copy of chain of custody documentation.
- Take notes detailed enough to allow complete duplication of actions.
- Include in the notes dates, times, and descriptions and results of actions taken.
- Document irregularities encountered and any actions taken regarding the irregularities during the examination.
- Include additional information, such as network topology, list of authorized users, user agreements, and/or passwords.
- Document changes made to the system or network by or at the direction of law enforcement or the examiner.
- Document the operating system and relevant software version and current, installed patches.
- Document information obtained at the scene regarding remote storage, remote user access, and offsite backups.

During the course of an examination, information of evidentiary value may be found that is beyond the scope of the current legal authority. Document this information and bring it to the attention of the case agent because the information may be needed to obtain additional search authorities.

Examiner's report

This section provides guidance in preparing the report that will be submitted to the investigator, prosecutor, and others. These are general suggestions; departmental policy may dictate report writing specifics, such as its order and contents. The report may include:

- Identity of the reporting agency.
- Case identifier or submission number.
- Case investigator.
- Identity of the submitter.
- Date of receipt.
- Date of report.
- Descriptive list of items submitted for examination, including serial number, make, and model.
- Identity and signature of the examiner.
- Brief description of steps taken during examination, such as string searches, graphics image searches, and recovering erased files.
- Results/conclusions.

The following sections have been found to be useful in other report formats. See appendix A for sample reports.

Summary of findings

This section may consist of a brief summary of the results of the examinations performed on the items submitted for analysis. All findings listed in the summary should also be contained in the details of findings section of the report.

Details of findings

This section should describe in greater detail the results of the examinations and may include:

- Specific files related to the request.
- Other files, including deleted files, that support the findings.
- String searches, keyword searches, and text string searches.
- Internet-related evidence, such as Web site traffic analysis, chat logs, cache files, e-mail, and news group activity.
- Graphic image analysis.
- Indicators of ownership, which could include program registration data.
- Data analysis.
- Description of relevant programs on the examined items.
- Techniques used to hide or mask data, such as encryption, steganography, hidden attributes, hidden partitions, and ***file name anomalies***.

Supporting materials

List supporting materials that are included with the report, such as printouts of particular items of evidence, digital copies of evidence, and chain of custody documentation.

Glossary

A glossary may be included with the report to assist the reader in understanding any technical terms used. Use a generally accepted source for the definition of the terms and include appropriate references.

Appendix A. Case Examples

The following two case briefs are examples of what could be involved in case analysis.

Disclaimer: The chosen case scenarios are for instructional purposes only and any association to an actual case and litigation is purely coincidental. Names and locations presented in the case scenarios are fictitious and are not intended to reflect actual people or places. Reference herein to any specific commercial products, processes, or services by trade name, trademark, manufacturer, or otherwise does not constitute or imply its endorsement, recommendation, or favoring by the U.S., State, or local governments, and the information and statements shall not be used for the purposes of advertising.

Case brief 1

SUBJECT owned a roofing company. SUBJECT gave his laptop computer to an employee to take to Mom & Pop's Computer Repair for monitor problems. Upon repairing the laptop, Mom of Mom & Pop's started the laptop to ensure the monitor had been fixed. A standard procedure of Mom & Pop's was to go to the *Recent* menu on the *Start Bar* of Windows® 98 systems and select files for viewing. Mom was presented with what appeared to be an image of a young child depicted in a sexually explicit manner. Mom telephoned the county sheriff. A sheriff's deputy responded and observed the image and confirmed it to be a violation of a State statute. The laptop was seized because it contained contraband. The seizure was performed in a manner consistent with recommendations found in *Electronic Crime Scene Investigation: A Guide for First Responders*. The laptop was entered into evidence according to agency policy, and a search warrant was obtained for the examination of the computer. The computer was submitted for examination.

Objective: To determine whether SUBJECT possessed child pornography. This was complicated by the number of people who handled the laptop.

Computer type: Generic laptop, serial # 123456789.

Operating system: Microsoft® Windows® 98.

Offense: Possession of child pornography.

Case agent: Investigator Johnson.

Evidence number: 012345.

Chain of custody: See attached form.

Where examination took place: Criminal investigations unit.

Tools used: Disk acquisition utility, universal graphic viewer, command line.

Processing

Assessment: Reviewed the case investigator's request for service. The search warrant provided legal authority. The investigator was interested in finding all information pertaining to child pornography, access dates, and ownership of the computer. It was determined that the equipment needed was available in the forensic lab.

Acquisition: The hardware configuration was documented and a ***duplicate*** of the hard drive was created in a manner that protected and preserved the evidence. The CMOS information, including the time and date, was documented.

Examination: The directory and file structures, including file dates and times, were recorded. A file header search was conducted to locate all graphic images. The image files were reviewed and those files containing images of what appeared to be children depicted in a sexually explicit manner were preserved. Shortcut files were recovered that pointed to files on floppy disks with sexually explicit file names involving children. The last accessed time and date of the files indicated the files were last accessed 10 days before the laptop was delivered to Mom & Pop's.

Documentation and reporting: The investigator was given a report describing the findings of the examination. The investigator determined that he needed to conduct interviews.

Next step: The employee who delivered the laptop computer to Mom & Pop's Computer Repair was interviewed, and he indicated that he had never operated the computer. Further, the employee stated SUBJECT had shown him images of a sexual nature involving children on the laptop. SUBJECT told the employee that he keeps his pictures on floppy disks at home; he just forgot this one image on the laptop.

The State's Attorney's Office was briefed in hope of obtaining a search warrant for SUBJECT's home based on the examination of the digital evidence and the interview of the employee. A warrant was drafted, presented to a judicial officer, and signed. During the subsequent search, floppy disks were discovered at SUBJECT's house. Forensic examination of the floppies revealed additional child pornography, including images in which SUBJECT was a participant. This resulted in the arrest of SUBJECT.

Case brief 1 report

REPORT OF MEDIA ANALYSIS

MEMORANDUM FOR: County Sheriff's Police
Investigator Johnson
Anytown, USA 01234

SUBJECT: Forensic Media Analysis Report
SUBJECT: DOE, JOHN
Case Number: 012345

1. Status: Closed.

2. Summary of Findings:

- 327 files containing images of what appeared to be children depicted in a sexually explicit manner were recovered.
- 34 shortcut files that pointed to files on floppy disks with sexually explicit file names involving children were recovered.

3. Items Analyzed:

TAG NUMBER:	**ITEM DESCRIPTION:**
012345	One Generic laptop, Serial # 123456789

4. Details of Findings:

- Findings in this paragraph related to the Generic Hard Drive, Model ABCDE, Serial # 3456ABCD, recovered from Tag Number 012345, One Generic laptop, Serial # 123456789.

  1) The examined hard drive was found to contain a Microsoft® Windows® 98 operating system.

  2) The directory and file listing for the media was saved to the Microsoft® Access Database TAG012345.MDB.

  3) The directory C:\JOHN DOE\PERSONAL\FAV PICS\, was found to contain 327 files containing images of what appeared to be children depicted in a sexually explicit manner. The file directory for 327 files disclosed that the files' creation date and times are 5 July 2001 between 11:33 p.m. and 11:45 p.m., and the last access date for 326 files listed is 27 December 2001. In addition, the file directory information for one file disclosed the last access date as 6 January 2002.

  4) The directory C:\JOHN DOE\PERSONAL\FAV PICS TO DISK\ contained 34 shortcut files that pointed to files on floppy disks with sexually explicit file names involving children. The file directory information for the 34 shortcut files disclosed

the files' creation date and times are 5 July 2001 between 11:23 p.m. and 11:57 p.m., and the last access date for the 34 shortcut files was listed as 5 July 2001.

5) The directory C:\JOHN DOE\LEGAL\ contained five Microsoft® Word documents related to various contract relationships John Doe Roofing had with other entities.

6) The directory C:\JOHN DOE\JOHN DOE ROOFING\ contained files related to operation of John Doe Roofing.

7) No further user-created files were present on the media.

5. Glossary:

Shortcut File: A file created that links to another file.

6. Items Provided: In addition to this hard copy report, one compact disk (CD) was submitted with an electronic copy of this report. The report on CD contains hyperlinks to the above-mentioned files and directories.

IMA D. EXAMINER
Computer Forensic Examiner

Released by_____

Case brief 2

A concerned citizen contacted the police department regarding possible stolen property. He told police that while he was searching the Internet, hoping to find a motorcycle for a reasonable price, he found an ad that met his requirements. This ad listed a Honda motorcycle for a low price, so he contacted the seller. Upon meeting the seller he became suspicious that the motorcycle was stolen. After hearing this information, police alerted the Auto Theft Unit. The Auto Theft Unit conducted a sting operation to purchase the motorcycle. Undercover officers met with the suspect, who, after receiving payment, provided them with the vehicle, a vehicle title, registration card, and insurance card. The suspect was arrested and the vehicle he was driving was searched incident to his arrest. During the search, a notebook computer was seized. Although the documents provided by the suspect looked authentic, document examiners determined that the documents were counterfeit. The auto theft investigator contacted the computer forensic laboratory for assistance in examining the seized computer. The investigator obtained a search warrant to analyze the computer and search for materials used in making counterfeit documents and other evidence related to the auto theft charges. The laptop computer was submitted to the computer forensic laboratory for analysis.

Objective: Determine if the suspect used the laptop computer as an instrument of the crimes of Auto Theft, Fraud, Forgery, Uttering False Documents, and Possession of Counterfeit Vehicle Titles and/or as a repository of data related to those crimes.

Computer type: Gateway Solo® 9100 notebook computer.

Operating system: Microsoft® Windows® 98.

Offenses: Auto Theft, Fraud, Forgery, Uttering False Documents, and Possession of Counterfeit Vehicle Titles.

Case agent: Auto Theft Unit Investigator.

Where examination took place: Computer Forensic Laboratory.

Tools used: Guidance Software™ EnCase®, DIGit©, Jasc Software™ Quick View Plus®, and AccessData™ Password Recovery Tool Kit™.

Processing

Assessment

1. Documentation provided by the investigator was reviewed.

   a. Legal authority was established by a search warrant obtained specifically for the examination of the computer in a laboratory setting.

   b. Chain of custody was properly documented on the appropriate departmental forms.

   c. The request for service and a detailed summary explained the investigation, provided keyword lists, and provided information about the suspect, the stolen vehicle, the counterfeit documents, and the Internet advertisement. The investigator also provided photocopies of the counterfeit documents.

2. The computer forensic investigator met with the case agent and discussed additional investigative avenues and potential evidence being sought in the investigation.

3. Evidence intake was completed.

    a. The evidence was marked and photographed.

    b. A file was created and the case information was entered into the laboratory database.

    c. The computer was stored in the laboratory's property room.

4. The case was assigned to a computer forensic investigator.

Imaging

1. The notebook computer was examined and photographed.

    a. The hardware was examined and documented.

    b. A controlled boot disk was placed in the computer's floppy drive. The computer was powered on and the BIOS setup program was entered. The BIOS information was documented and the system time was compared to a trusted time source and documented. The boot sequence was checked and documented; the system was already set to boot from the floppy drive first.

    c. The notebook computer was powered off without making any changes to the BIOS.

2. EnCase® was used to create an evidence file containing the ***image*** of the notebook computer's hard drive.

    a. The notebook computer was connected to a laboratory computer through a null-modem cable, which connected to the computers' parallel ports.

    b. The notebook computer was booted to the DOS prompt with a controlled boot disk and EnCase® was started in server mode.

    c. The laboratory computer, equipped with a magneto-optical drive for file storage, was booted to the DOS prompt with a controlled boot disk. EnCase® was started in server mode and evidence files for the notebook computer were acquired and written to magneto-optical disks.

    d. When the imaging process was completed, the computers were powered off.

        i. The notebook computer was returned to the laboratory property room.

        ii. The magneto-optical disks containing the EnCase® evidence files were write-protected and entered into evidence.

Analysis

1. A laboratory computer was prepared with Windows® 98, EnCase® for Windows, and other forensic software programs.

2. The EnCase® evidence files from the notebook computer were copied to the laboratory computer's hard drive.

3. A new EnCase® case file was opened and the notebook computer's evidence files were examined using EnCase®.

   a. Deleted files were recovered by EnCase®.

   b. File data, including file names, dates and times, physical and logical size, and complete path, were recorded.

   c. Keyword text searches were conducted based on information provided by the investigator. All hits were reviewed.

   d. Graphics files were opened and viewed.

   e. HTML files were opened and viewed.

   f. Data files were opened and viewed; two password-protected and encrypted files were located.

   g. Unallocated and slack space were searched.

   h. Files of evidentiary value or investigative interest were copied/unerased from the EnCase® evidence file and copied to a compact disk.

4. Unallocated clusters were copied/unerased from the EnCase® evidence file to a clean hard drive, wiped to U.S. Department of Defense recommendations (DoD 5200.28-STD). DIGit© was then used to carve images from unallocated space. The carved images were extracted from DIGit©, opened, and viewed. A total of 8,476 images were extracted.

5. The password-protected files were copied/unerased to a 1.44 MB floppy disk. AccessData™ Password Recovery Tool Kit™ was run on the files and passwords were recovered for both files. The files were opened using the passwords and viewed.

Findings

The analysis of the notebook computer resulted in the recovery of 176 files of evidentiary value or investigative interest. The recovered files included:

1. 59 document files including documents containing the suspect's name and personal information; text included in the counterfeit documents; scanned payroll, corporate, and certified checks; text concerning and describing stolen items; and text describing the recovered motorcycle.

2. 38 graphics files including high-resolution image files depicting payroll, corporate, and certified checks; U.S. currency; vehicle titles; registration cards and driver's license templates from Georgia and other States; insurance cards from various companies; and counterfeit certified checks payable to a computer company ranging from $25,000 to $40,000 for the purchase of notebook computers. Most graphics were scanned.

3. 63 HTML files including Hotmail® and Yahoo® e-mail and classified advertisements for the recovered motorcycle, other vehicles, and several brands of notebook computers; e-mail text, including e-mails between the suspect and the concerned citizen concerning the sale of the recovered motorcycle; and e-mails between the suspect and a computer company concerning the purchase of notebook computers.

4. 14 graphics files carved from unallocated space depicting checks at various stages of completion and scanned images of U.S. currency.

5. Two password-protected and encrypted files.

   a. WordPerfect® document containing a list of personal information on several individuals including names, addresses, dates of birth, credit card and bank account numbers and expiration dates, checking account information, and other information. Password [**nomoresecrets**].

   b. Microsoft® Word document containing vehicle title information for the recovered motorcycle. Password [**HELLO**].

Documentation

1. Forensic Report – All actions, processes, and findings were described in a detailed Forensic Report, which is maintained in the laboratory case file.

2. Police Report – The case agent was provided with a police report describing the evidence examined, techniques used, and the findings.

3. Work Product – A compact disk containing files and file data of evidentiary value or investigative interest was created. The original was stored in the laboratory case file. Copies were provided to the case agent and the prosecutor.

Summary

Based on the information revealed by the computer analysis, several new avenues of investigation were opened.

✔ By contacting the victims listed in the password-protected WordPerfect® document, investigators learned that the victims had all been robbed in the same city during the previous summer by an individual meeting the description of the suspect.

- ✔ Contact with the computer company revealed the counterfeit checks found on the suspect's computer had been accepted for the purchase of computers, and that the computers were shipped to him and were the subject of an ongoing investigation. Model numbers and serial numbers provided by the computer company matched several of the Hotmail® and Yahoo® classified ads found on the suspect's computer.
- ✔ Several of the counterfeit checks found on the suspect's computer were already the subject of ongoing investigations.
- ✔ Information recovered concerning other vehicles led to the recovery of additional stolen vehicles.
- ✔ The specific information sought in the search warrant concerning the sale of the stolen motorcycle and the counterfeit documents was recovered from the suspect's computer.

Conclusion

The suspect eventually plead guilty and is now incarcerated.

Case brief 2 report

Department of State Police
Computer Crimes Unit
Computer Forensics Laboratory
7155-C Columbia Gateway Drive
Columbia, MD 21046
(410) 290-0000

April 19, 1999

MEMO TO FILE

FORENSIC EXAMINER PROCESSING NOTES: **SGT. David B. Smith (5555)**
FORENSIC CASE NUMBER: **99-03-333-A**

REQUESTER:	TFC. Brian Jones State Police Auto Theft Unit (310-288-8433)
OFFENSE:	Auto Theft, Forgery
CASE NUMBER:	01-39-00333
RECEIVED:	March 19, 1999
OPENED:	March 24, 1999
COMPLETED:	April 19, 1999
FORENSIC HOURS:	40 hours
OS EXAMINED:	Microsoft® Windows® 98
FILE SYSTEM:	[FAT32]
DATA ANALYZED:	7,782 MB

Evidence Description: Item 1: One Gateway Solo® 9100 Notebook Computer, Serial Number 555-Z3025-00-002-0433.

Action Taken:

March 24, 1999

1600 hours: I retrieved the original digital evidence from the CCU Property Room. I inventoried, marked, and cataloged the evidence described on the MSP Form 67. All original evidence listed on the Chain of Custody Form was accounted for.

1620 hours: I examined the Gateway Solo® 9100 notebook computer and completed an **Initial Computer Evidence Processing** form (see attached). The computer contained one fixed disk. The notebook case was not opened to expose the drive (Original Digital Evidence# hdd01). I inserted a controlled boot disk in the notebook computer floppy drive and powered on the computer. I pressed F1 to enter the setup utility. I documented the BIOS settings:

State Police - Computer Forensics Laboratory
Forensic Report - Laboratory Case Number 99-03-333-A
2 of 6 Initials **DBS**

BIOS	System Date	System Time	Memory	Boot Order
Award 4.5 pg	3/24/1999	16:30:03	128 MB	Floppy Drive Hard Drive
	Actual Date 3/24/1999	Actual Time 16:30:08	CPU Intel PII 300	

1730 hours: A controlled boot disk was placed in drive A: of the Solo 9100 notebook computer. A null-modem cable was attached to the parallel port of the notebook computer and to the parallel port of the Gateway GX-450XL laboratory computer. A second controlled boot disk was placed in the A: drive of the laboratory computer. The notebook computer was powered on and booted to the A:\ prompt. The laboratory computer, equipped with a Sony MO drive unit connected to an AHA2940 ***SCSI*** adapter, was powered on and booted to the A:\ prompt with the SCSI drivers loaded.

1735 hours: En.exe /s (EnCase® Version 1.9983 Server Mode) was executed on the notebook computer; EnCase® reported:

EnCase® (1.998) (DOS Version 7.10)

1 Physical Disks					1 Logical Volumes				
Disk 0	Size 7.6GB		CHS 7480:16:63		LP	LABEL	SYSTEM	FREE	SIZE
Lock	Code	Type	Sectors	Size	C0	NONAME	FAT32	5.5GB	7.6GB
80	0B	FAT32	16,000,740	7.6GB					

Server Mode

Connected...!

En.exe was executed on the laboratory computer; EnCase® reported:

EnCase® (1.998) Client Mode (DOS Version 7.10)

1 Physical Disks					1 Logical Volumes				
Disk 0	Size 7.6GB		CHS 7480:16:63		LP	LABEL	SYSTEM	FREE	SIZE
Lock	Code	Type	Sectors	Size	C0	NONAME	FAT32	5.5GB	7.6GB
80	0B	FAT32	16,000,740	7.6GB					

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3 of 6 Initials **DBS**

1750 hours: Acquisition of a compressed evidence file was started.

File Name & Path:	F:\hdd01
Case #:	01-39-00333
Examiner:	Sgt. David B. Smith
Evidence #:	99-03-333-A
Description:	555-Z3025-00-002-0433.

March 25, 1999

0900 hours: EnCase® reported: "An evidence file for drive 0 was successfully created . . . Elapsed Time 11:14:00, 7.6GB read, 0 errors, 11:14:00 elapsed, 0:00:00 remaining."

0910 hours: I exited EnCase® on the laboratory computer and returned to the A:\ prompt. The computer was powered off, the Sony MO disk containing the evidence files was removed from the MO drive unit and write protected and placed into evidence. A State Police Chain of Custody Form was completed.

March 30, 1999

1400 hours: The laboratory Gateway GX-450XL computer was equipped with a Sony MO drive unit connected to an AHA 2940UW SCSI adapter card. A controlled boot disk was placed in drive A:. The computer was powered on and the system booted to the A:\ prompt. The DOS copy command was used to copy the EnCase® evidence files from the Sony MO Dsk drive F: to "Data" hard drive, E:. The files were successfully copied. The computer was powered down and the Sony MO disk was returned to evidence.

April 1, 1999

0800 hours: The laboratory Gateway GX-450XL computer was booted to Windows® 98. EnCase® for Windows® 98 (version 1.999) was launched. I opened a new EnCase® case, titled *99-03-333-A*. I added the previously acquired evidence file into the case. EnCase® file Signatures was run.

0900 hours: I began a logical analysis of the data contained in the EnCase® case.

1000 hours: A data wiping utility was used to wipe removable drive I: on the laboratory Gateway GX-450XL computer. The drive was wiped to U.S. Department of Defense recommendations (DoD 5200.28-STD). Unallocated clusters and file slack from the evidence file space were then copied from the EnCase® case to drive I:. The files were divided into seven folders, each folder holding a maximum of 1,048MB. 575 files containing 5,944MB were copied.

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4 of 6 Initials **DBS**

1220 hours: NCIS DIGit© [Version 1.08] was executed. The files that had been copied from the evidence file to drive I: were examined. The files included both unallocated clusters and file slack. 5,944MB of data were processed in seven (7) batches. DIGit© reported extracting:

Files Extracted From Unallocated Space

DIGit© (Version 1.08)

Batch	HITS	Jpg	Bmp	Gif	Tif	Pcx	HTML	Word8	Total Megs Examined
1	5,378	197	82	4,908	11	16	66	98	1,048
2	2,499	53	48	2,258	14	3	76	47	1,048
3	599	0	6	550	4	6	11	22	1,048
4	0	0	0	0	0	0	0	0	1,048
5	0	0	0	0	0	0	0	0	1,048
6	0	0	0	0	0	0	0	0	704
7	0	0	0	0	0	0	0	0	512 bytes
Total	8,476	250	136	7,716	29	25	153	167	5,944MB

The extracted graphic files were viewed using Quick View Plus®.

April 4, 1999

0930 hours: I continued the examination of the graphics and HTML files previously extracted from unallocated clusters using DIGit©.

1000 hours: I used EnCase® version 1.999 to perform a keyword text string search of the entire case. All hits were examined and text with possible evidentiary value was extracted.

Search 1: **Keyword:** **honda** **Hits:** **433**

April 5, 1999

0700 hours: I continued the examination of HTML files previously extracted from unallocated clusters using DIGit©.

1354 hours I used EnCase® version 1.999 to perform a keyword text string search of the entire case. All hits were examined and text with possible evidentiary value was extracted.

Search 2:	**Keywords:**	**99985 (case)**	**Hits: 0**
		999886 (case)	**1**
		ZDF-3333 (case)	**0**
		39347618	**0**
		virginia	**212**
		georgia	**333**
		certificate of title	**0**
Search 3:	**Keyword:**	**motorcycle**	**Hits: 1,696**

State Police - Computer Forensics Laboratory
Forensic Report - Laboratory Case Number 99-03-333-A
5 of 6 Initials **DBS**

April 6, 1999

0800 hours: I used EnCase® version 1.999 to perform a keyword text string search of the entire case. All hits were examined and text with possible evidentiary value was extracted.

Search 4:	**Keywords:**	**suzuki gsxr**	**Hits: 2**
Search 5:	**Keyword:**	**brandell**	**Hits: 125**
Search 6:	**Keywords:**	**jh2sc3307wm20333**	**Hits: 5**
		..#..####..######(Grep)	**0**
Search 7:	**Keyword:**	**Jn8hd17y5nw011333**	**Hits: 0**

April 7, 1999

0800 hours: I continued the examination of the search results.

1333 hours: I used EnCase® version 1.999 to perform a keyword text string search of the entire case. All hits were examined and text with possible evidentiary value was extracted.

Search 8:	**Keywords:**	**9998##(Grep)**	**Hits: 5**
		hotmail	**19,465**
		chyma	**27,453**
		suzuki	**20**

April 19, 1999

0700 hours: I continued the file-by-file examination of the evidence files.

0900 hours: I completed the forensic examination. Documents, pictures, HTML files, and text fragments of investigative interest were located by utilizing individual file-by-file examination, EnCase® Keyword Text Searches, and NCIS DIGit©. The Keyword Text Searches are defined in the EnCase® Report. Files believed to be of investigative interest were bookmarked into categories as defined below. The files associated with the information described below were copied/unerased from the EnCase® case.

FINDINGS

The analysis of the notebook computer resulted in the recovery of 176 files of evidentiary value or investigative interest. The recovered files included:

1. 59 document files including documents containing the suspect's name and personal information; text included in the counterfeit documents; scanned payroll, corporate, and certified checks; text concerning and describing stolen items; and text describing the recovered motorcycle.

2. 38 graphics files including high-resolution image files depicting payroll, corporate, and certified checks; U.S. currency; vehicle titles; registration cards and driver's license templates from Georgia and other States; insurance cards from various

companies; and counterfeit certified checks payable to a computer company ranging from $25,000 to $40,000 for the purchase of notebook computers. Most graphics were scanned.

3. 63 HTML files including Hotmail® and Yahoo® e-mail and classified advertisements for the recovered motorcycle, other vehicles, and several brands of notebook computers; e-mail text, including e-mails between the suspect and the concerned citizen about the sale of the recovered motorcycle; e-mails between the suspect and a computer company concerning the purchase of notebook computers.

4. 14 graphics files carved from unallocated space depicting checks at various stages of completion and scanned images of U.S. currency.

5. Two password-protected and encrypted files.

   a. WordPerfect® document containing a list of personal information on several individuals including names, addresses, dates of birth, credit card and bank account numbers and expiration dates, checking account information, and other information. Password [**nomoresecrets**].

   b. Microsoft® Word document containing vehicle title information for the recovered motorcycle. Password [**HELLO**].

I created one compact disk containing copies of the above-described files, which will be maintained in the CFL case file. A copy of the compact disk was labeled and provided to the investigator.

1800 hours: The forensic examination was completed.

Sgt. David B. Smith (5555) [Signature]

Appendix B. Glossary

The following terms are included to assist the reader in understanding this guide.

Acquisition: A process by which digital evidence is duplicated, copied, or imaged.

Analysis: To look at the results of an examination for its significance and probative value to the case.

BIOS: Basic Input Output System. The set of routines stored in read-only memory that enables a computer to start the operating system and to communicate with the various devices in the system such as disk drives, keyboard, monitor, printer, and communication ports.

CD-RW: Compact disk-rewritable. A disk to which data can be written and erased.

CMOS: Complementary metal oxide semiconductor. A type of chip used to store BIOS configuration information.

Compressed file: A file that has been reduced in size through a compression algorithm to save disk space. The act of compressing a file will make it unreadable to most programs until the file is uncompressed. Most common compression utilities are PKZIP with an extension of .zip.

Copy: An accurate reproduction of information contained on an original physical item, independent of the electronic storage device (e.g., logical file copy). Maintains contents, but attributes may change during the reproduction.

Deleted files: If a subject knows there are incriminating files on the computer, he or she may delete them in an effort to eliminate the evidence. Many computer users think that this actually eliminates the information. However, depending on how the files are deleted, in many instances a forensic examiner is able to recover all or part of the original data.

Digital evidence: Information stored or transmitted in binary form that may be relied on in court.

Duplicate: An accurate digital reproduction of all data contained on a digital storage device (e.g., hard drive, CD-ROM, flash memory, floppy disk, Zip®, Jaz®). Maintains contents and attributes (e.g., bit stream, bit copy, and sector dump).

Electromagnetic interference: An electromagnetic disturbance that interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics/electrical equipment.

Encryption: Any procedure used in cryptography to convert plain text into cipher text in order to prevent anyone but the intended recipient from reading that data.

Examination: Technical review that makes the evidence visible and suitable for analysis; tests performed on the evidence to determine the presence or absence of specific data.

File name anomaly: Header/extension mismatch; file name inconsistent with the content of the file.

File slack: Space between the logical end of the file and the end of the last allocation unit for that file.

File structure: How an application program stores the contents of a file.

File system: The way the operating system keeps track of the files on the drive.

Forensically clean: Digital media that are completely wiped of nonessential and residual data, scanned for viruses, and verified before use.

Hashing: The process of using a mathematical algorithm against data to produce a numeric value that is representative of that data.

Host protected area: An area that can be defined on ***IDE*** drives that meets the technical specifications as defined by ATA4 and later. If a Max Address has been set that is less than a Native Max Address, then a host protected area is present.

IDE: Integrated drive electronics. A type of data communications interface generally associated with storage devices.

Image: An accurate digital representation of all data contained on a digital storage device (e.g., hard drive, CD-ROM, flash memory, floppy disk, Zip®, Jaz®). Maintains contents and attributes, but may include metadata such as CRCs, hash value, and audit information.

ISP: Internet service provider. An organization that provides access to the Internet. Small Internet service providers provide service via modem and an integrated services digital network (ISDN), while the larger ones also offer private line hookups (e.g., T1, fractional T1).

MAC address: Media access control address. A unique identifying number built (or "burned") into a network interface card by the manufacturer.

MO: Magneto-optical. A drive used to back up files on a personal computer using magnetic and optical technologies.

Network: A group of computers connected to one another to share information and resources.

Original evidence: Physical items and the data objects that are associated with those items at the time of seizure.

Password protected: Many software programs include the ability to protect a file using a password. One type of password protection is sometimes called "access denial." If this feature is used, the data will be present on the disk in the normal manner, but the software program will not open or display the file without the user entering the password. In many cases, forensic examiners are able to bypass this feature.

Preservation Order: A document ordering a person or company to preserve potential evidence. The authority for preservation letters to ISPs is in 18 USC 2703(f).

Proprietary software: Software that is owned by an individual or company and that requires the purchase of a license.

Removable media: Items (e.g., floppy disks, CDs, DVDs, cartridges, tape) that store data and can be easily removed.

SCSI: Small Computer System Interface. A type of data communications interface.

Steganography: The art and science of communicating in a way that hides the existence of the communication. It is used to hide a file inside another. For example, a child pornography image can be hidden inside another graphic image file, audio file, or other file format.

System administrator: The individual who has legitimate supervisory rights over a computer system. The administrator maintains the highest access to the system. Also can be known as sysop, sysadmin, and system operator.

Unallocated space: Allocation units not assigned to active files within a file system.

Write protection: Hardware or software methods of preventing data from being written to a disk or other medium.

Appendix C. Sample Worksheets

These worksheets are specific to the Drug Enforcement Administration and are provided as examples.

Computer Evidence Worksheet

Case Number: _____ **Exhibit Number:** _____

Laboratory Number: _____ **Control Number:** _____

Computer Information

Manufacturer: _____ Model: _____

Serial Number: _____

Examiner Markings: _____

Computer Type: Desktop ☐ Laptop ☐ Other: _____

Computer Condition: Good ☐ Damaged ☐ **(See Remarks)**

Number of Hard Drives: _____ 3.5" Floppy Drive ☐ 5.25" Floppy Drive ☐

Modem ☐ Network Card ☐ Tape Drive ☐ Tape Drive Type: _____

100 MB Zip ☐ 250 MB Zip ☐ CD Reader ☐ CD Read/Write ☐

DVD ☐ Other: _____

CMOS Information Not Available ☐

Password Logon: Yes ☐ No ☐ Password = _____

Current Time: _____ AM ☐ PM ☐ Current Date: / /

CMOS Time: _____ AM ☐ PM ☐ CMOS Date: / /

CMOS Hard Drive #1 Settings Auto ☐

Capacity: _____ Cylinders: _____ Heads: _____ Sectors: _____

Mode: LBA ☐ Normal ☐ Auto ☐ Legacy CHS ☐

CMOS Hard Drive #2 Settings Auto ☐

Capacity: _____ Cylinders: _____ Heads: _____ Sectors: _____

Mode: LBA ☐ Normal ☐ Auto ☐ Legacy CHS ☐

Sub Exhibits Split From This Computer

Sub Number	Type	Where Found

Remarks

Computer Evidence Worksheet **Page 2 of 2**

Hard Drive Evidence Worksheet

Case Number: _____ **Exhibit Number:** _____

Laboratory Number: _____ **Control Number:** _____

Hard Drive #1 Label Information **[Not Available ☐]** **Hard Drive #2 Label Information** **[Not Available ☐]**

Manufacturer:	Manufacturer:
Model:	Model:
Serial Number:	Serial Number:
Capacity: Cylinders:	Capacity: Cylinders:
Heads: Sectors:	Heads: Sectors:
Controller Rev.	Controller Rev.
IDE ☐ 50 Pin SCSI ☐	IDE ☐ 50 Pin SCSI ☐
68 Pin SCSI ☐ 80 Pin SCSI ☐ Other ☐	68 Pin SCSI ☐ 80 Pin SCSI ☐ Other ☐
Jumper: Master ☐ Slave ☐ Cable Select ☐ Undetermined ☐	Jumper: Master ☐ Slave ☐ Cable Select ☐ Undetermined ☐

Hard Drive #1 Parameter Information

DOS FDisk ☐ PTable ☐ PartInfo ☐ Linux FDisk ☐ SafeBack ☐ EnCase ☐ Other:

Capacity: _____ Cylinders: _____ Heads: _____ Sectors: _____

LBA Addressable Sectors: _____ Formatted Drive Capacity: _____

Volume Label: _____

Partitions

Name:	Bootable?	Start:	End:	Type:
	☐			
	☐			
	☐			
	☐			

Hard Drive #2 Parameter Information

DOS FDisk ☐ PTable ☐ PartInfo ☐ Linux FDisk ☐ SafeBack ☐ EnCase ☐ Other:

Capacity: _____ Cylinders: _____ Heads: _____ Sectors: _____

LBA Addressable Sectors: _____ Formatted Drive Capacity: _____

Volume Label: _____

Partitions

Name:	Bootable?	Start:	End:	Type:
	☐			
	☐			
	☐			
	☐			

Image Archive Information

Archive Method: Direct to Tape ☐ NTBackup ☐ Tar ☐ Other :* _____ Compressed? ☐

Attach appropriate worksheet for backup method used.

Tape Type: DAT 24 ☐ Dat 40 ☐ DLT ☐* Other *: Number Used:

**Requires Lab Director Approval*

Analysis Platform Information

Operating Systems Used: DOS ☐ Windows ☐ Mac ☐ *nix ☐ Other: _____

Version: _____

Analysis Software Base: I-Look ☐ EnCase ☐ DOS Utilities ☐ *nix Utilities ☐ Other:*

Version: _____

Restored Work Copy/Image Validated:	Yes ☐ No ☐

List of utilities used other than base

Utility	Version	Purpose

Analysis Milestones

Milestone	Remarks	Initials
Run Anti-Virus Scan		
Full File List with Meta Data		
Identify Users/Logons/ISP Accounts, etc.		
Browse File System		
Keyword/String Search		
Web/E-mail Header Recovery		
Recover & Examine Free/Slack Space		
Examine Swap		
Unerase/Recover Deleted Files		
Execute Programs as Needed		
Examine/Recover Mail/Chat		
Crack Passwords		

Removable Media Worksheet

Case Number: _____ **Exhibit Number:** _____

Laboratory Number: _____ **Control Number:** _____

Media Type / Quantity

Diskette [ ]	**LS-120 [ ]**	**100 MB Zip [ ]**	**250 MB Zip [ ]**
1 GB Jaz [ ]	**2 GB Jaz [ ]**	**Magneto-Optical [ ]**	**Tape [ ]**
CD [ ]	**DVD [ ]**	**Other [ ]**	

Examination

Exhibit # Sub-Exhibit #	Triage	Duplicated	Browse	Unerase	Keyword Search
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	☐	☐	☐	☐	☐

Examiner **Date** **Supervisor Review** **Date**

Exhibit # Sub-Exhibit #	Triage	Duplicated	Browse	Unerase	Keyword Search
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Digital Evidence Removable Media Worksheet **Page 2 of 2**

Appendix D. Examples of Request for Service Forms

Example 1: Regional Computer Forensics Lab • 4455 Genesee Street, Cheektowaga, NY 14225

REQUEST FOR SERVICE

CASE INFORMATION:		***RCFL Case #:***
Submitting Person/ID#:	Date:	Agency Case #:
Submitting Agency:	Service: **Field Lab Tech**	Case Title:
Agency Property Tag #:	Suspect's Name:	
Case Agent:	Phone #:	
DDA/AUSA Assigned:	Phone #:	
Date Seized:	Case/Crime Type:	
Location Seized:	Pending Court Dates:	
Site #:	Date Analysis Needed:	
Suspect In Custody: **Yes/No**	Expected Evidence Return Date:	
Narcotics Related: **Yes/No**	Number of Computers Anticipated:	
Type of Seizure: (Circle) **Search Warrant Probation Parole Consent Admin Fed. Grand Jury Other:**		
Has this evidence been previously viewed and/or accessed by anyone? (Explain)		
Are you aware of any privileged information contained within evidence? (Explain)		
Do you want Standard Case Related Search Strings run against evidence? **Yes/No** (Circle Requested Searches) **Child Porn Narcotics Financial Crimes Internet Crimes Extortion Other:**		

SERVICE REQUESTED: ***(Requests for Field Service must be received at least 2 business days prior to the search.)***

INSTRUCTIONS:

a. Please prepare one form for each search site (address).
b. Please provide ***ALL*** requested information and note any unusual circumstances in the Service Request area.
c. Please attach an Evidence Custody Form listing each individual container or package of submitted evidence.

RCFL USE ONLY **Date Case**	**Received By:**
Case Priority:	**Priority Established By:**

Example 2: DoD Computer Forensics Laboratory (DCFL) Intake Form

(Form has been edited)

DEPARTMENT OF THE AIR FORCE

AIR FORCE OFFICE OF SPECIAL INVESTIGATIONS

(USE YOUR OWN LETTER HEAD)

MEMORANDUM FOR RECORD DoD Computer Forensics Laboratory
12 June 2000

TO: DoD Computer Forensics Laboratory (DCFL)
911 Elkridge Landing Road, Suite 300
Linthicum, MD 21090

FROM: Self-Explanatory

SUBJECT: Request Forensic Media Analysis (Complete Unit Investigation Number)

NOTE: Do not remove the captions (the bold face lettering only. Please remove the explanations.). If no information can be applied to a certain caption, then state N/A or unknown.

1. ***FULL NAME OF SUBJECT: (If unknown, then state "Unknown.")

JOHN JIM DOE

2. ***PRIORITY: Explain if there is publicity, high-level interest, or other reasons to justify placing this investigation ahead of others (e.g., court date, etc.).

3. CLASSIFICATION: Unclassified–Secret–Specialized Compartmented Information, as it pertains to the investigation, and properly mark all documents.

4. ***CASE AGENT: (This is the "Lead" investigator. For example, if this is a joint investigation, then provide the identification of the "Lead Investigator" of the "Lead Investigating Agency." Provide complete identification and where they are located.) SA Max Factor, AFOSI Detachment 998, Home AFB, WV, DSN: 234–2345 or Commercial: (234) 234–2345.

NOTE: The DCFL does not have DSN service yet. Please provide commercial telephone numbers.

5. ***SYNOPSIS OF THE CASE FACTS: (Brief description of allegation, situation, and background surrounding the investigation. Provide information that will be useful to the

examiner so they can better understand the investigation and provide a better examination). You can provide an already completed document or a pending report to cover this step.

6. ***ITEMS TO BE ANALYZED: (NOTE: IF NOT EVIDENCE, STATE THAT FACT)

NOTE: It is only required to list the items to be analyzed, not to answer all the questions.

This must be a complete list of all items that need analysis. An evidence listing must completely identify all items. The following is just a sample of how to list evidence:

Tag #'s	**Description**
Tag # XX	Western Digital Caviar 31600 Hard Drive, Serial #: WT2891586134 taken from AST Computer Serial # 186AUZ022348.
Tag # XX	Fujitsu M1636TAU Hard Drive, Serial #: 08613105, Size: 1226MB.
Tag # XX	Gateway 2000, 386/33 MHz, Serial #: 302557386-330XC. Computer System with a Western Digital 125 MB internal hard drive, a Seagate 107 MB internal hard drive, internal 3.5-inch high-density floppy drive, one internal 5.25-inch floppy drive, internal sound card. Gateway 2000 101 Keyboard, Serial #: 9208572226f7. Computer Mouse Device, Serial #: 850753.
Tag # XX	198 each 3.5-inch floppy diskettes 1 each 5.25-inch floppy diskettes

7. ***SUPPORT REQUESTED: (Specific and detailed request. Do not just cut and paste what is listed below. These are just some sample statements. If you do not know what one of these items is, then don't include it. Also, don't just say "give me everything" and expect DCFL to take it from there. List items you need the DCFL to find and how you need it produced and provided to you.)

e.g. **Computer Media**

Extract all system logs, graphic files, text, documents, etc.
Examine file system for modification to operating system software or configuration.
Examine file system for back doors, check for setuid and setgid files.
Examine file system for any sign of a sniffer program.
Extract data from this 8-mm tape and convert to readable format, cut to CD.
Backup hard drives and place backup on a CD, tape, or other format.
Analyze for deleted files and restore deleted files, cut findings to CD.
If possible, correlate sexually explicit images to the Internet history file.
Extract sexually explicit images from logical, slack space, free space, cut to CD.
Extract all pertinent text files of a sexual nature.
Provide an analysis report and cut all findings to CD (specify).
Conduct string search on physical level of media (provide list of words).

8. PERTINENT DATA: (e.g., provide passwords, keyword lists, operating system, nicknames, computer types, network information, Internet Protocol Address, and any other information that will assist with the analysis.)

NOTE: If network intrusion detection logs or other detection type logs are associated with the respective investigation (e.g., ASIM logs, Government Sniffer Logs, etc.), they should be provided (electronic form preferable, paper is acceptable). This will enhance the examiner's ability to provide a better product and to interpret the logs in an effort to search for the right items.

NOTE: The examiner will conduct only the specific tasks requested. If not specified, then it will not be done. If obvious items are left off the request, the DCFL will call to verify. The more detail you provide, the better and more analysis we conduct.

NOTE: Contact your servicing computer expert to aid in creation of this request, if necessary.

9. ***AUTHORITY: Please indicate the legal basis for DCFL conducting the search you are requesting. There are generally three bases in criminal cases that would allow DCFL to perform your request:

1. Search Warrant/Military Search Authority [include supporting affidavits].
2. Consent.
   - DoD Banner.
   - Unit User Agreement.
   - Written Consent Signed by Authorizer.
   - Written Record of the Designated Approval Authority or Other Official who has the Right to Consent to the Search of the Media.
   - Memorandum of oral consent with special emphasis as to the scope of the consent granted.
3. Written Memo from servicing legal office stating that there is no reasonable expectation of privacy in the media submitted.

Inclusion of a copy of documents listed above is mandatory along with the request and will speed the analysis. Failure to include the same will result in a delay until such time as DCFL is satisfied that there is a legal basis for conducting the analysis.

10. ***OTHER DOCUMENTS: Requestors **MUST** provide the form used to open the investigation within their organization (e.g., provide a copy of an ACISS report, Army Form 66, or Navy ALS, etc.).

11. INSTRUCTIONS: Let the DCFL know if you have specific instructions. Please send copy of analysis report to both ? and ? Please return all evidence to ?

12. ***POC is: (This is the Requestor's contacting information, i.e., the person who authored this request. It could be the same as the "Lead Agent," and, if so, just state "Same."). Provide complete identification and contacting information: SA Jane Doe, AFOSI Detachment 999 at DSN: 123–1234 or Commercial: (123) 123–1234.

NOTE: If the required information (marked by ***) is not outlined in or not with this request, then the request for examination will be placed on hold until ALL information is provided.

JANE DOE, SA, USAF
Computer Crime Investigations

Example 3: Department of Maryland State Police Computer Forensic Laboratory

Department of Maryland State Police
Computer Forensic Laboratory

TELEPHONE 410-290-1620 FAX 410-290-1831

7155 C Columbia Gateway Drive, Columbia, Maryland 21046

REQUEST FOR SERVICE

Date Submitted:				MSP Complaint Control #:
Submitting Agency:	Address:		County:	Agency Case #:
Submitting Officer	ID#:	E-mail Address:		Telephone:
Location Seized:		Date Seized:		Agency Property #:
Case Title:	Suspect's Last Name, First Name, MI:		Sex: M F	Age: / Tracking Number:
Crime:	Date of Offense:	Date Charges Filed:	Court Date:	Court / Location:
Owner of Property - Name:	Address:			Telephone:

Type of Seizure: (Circle) **Search Warrant** **Consent** **Administrative** **Federal Grand Jury** **Other:**

Number of Computers:	CCU Consulted Reference Seizure: ***(Attach a copy of the Search Warrant Affidavit and the Inventory/Return)***
Has this evidence been previoulsy viewed, accessed, and/or examined by anyone? (Explain)	**Yes** **No**
Are you aware of any pirvileged information contained within the evidence being submitted for examination? Explain)	**Yes** **No**
Are you aware of any other information related to the evidence being submitted? (Explain)	**Yes** **No**

☐ **Urgent Request for Examination**

Date Request Received:	Person Making Request - Name / Title	Telephone # where you can be reached:	Date Analysis Needed:
Reason for Request: ***(Except for Imminent Court dates, ALL Urgent requests must be accompanied by a letter of justification.)***			

SERVICE REQUESTED: ***(Requests for field service must be received at least 2 business days prior to search)***

INSTRUCTIONS

☐ Please prepare one form for each search site (address).
☐ Please provide ***ALL*** requested information and note any unusual circumstance in the "Service Requested" area.
☐ Please attach a **Request for Laboratory Examination Chain of Custody Log** (MSP Form 67) and a copy of your agency /installation **Property Record**, listing each container or package submitted as evidence.
☐ Please attach a **Detailed Summary** of suspect information, which includes personal data, e-mail addresses, nicknames, screen names, passwords, target websites, accomplices, and a list of unique keywords relevant to your investigation.

LABORATORY USE ONLY:

LabCASE #:

Date Case Received: _____

Received by: _____

Case Priority: 1 2 3 4 5

Priority Established by: _____

Appendix E. Legal Resources List

Publications

Searching and Seizing Computers and Obtaining Electronic Evidence in Criminal Investigations. Washington, D.C.: U.S. Department of Justice, Computer Crime and Intellectual Property Section, July 2002. (Online under http://www.cybercrime.gov/searching.html#A.)

Prosecuting Cases That Involve Computers: A Resource for State and Local Prosecutors (CD-ROM), National White Collar Crime Center, 2001. (See http://www.nctp.org and http://www.training.nw3c.org for information).

Forward Edge: Computer Training on Seizing Electronic Evidence (CD-ROM), U.S. Secret Service, 2001. (Contact your local U.S. Secret Service office.)

Legislation

Electronic Communications Privacy Act (ECPA). 18 USC 2510 et seq.; 18 USC 2701 et seq.; 18 USC 3121 et seq.

Privacy Protection Act (PPA). 42 USC 2000aa et seq.

USA PATRIOT ACT of 2001, Public Law 107-56, amended statutes relevant to computer investigations. Statutes amended include 18 USC 1030; 18 USC 2510 et seq.; 18 USC 2701 et seq.; 18 USC 3121 et seq.; and 47 USC 551.

Web sites

Computer Crime and Intellectual Property Section of the U.S. Department of Justice, 202–514–1026, http://www.cybercrime.gov.

National Cybercrime Training Partnership, 877–628–7674, http://www.nctp.org.

http://www.forensicsweb.com/downloads/cfid/isplist/isplist.htm

Appendix F. Technical Resources List

National

Computer Analysis Response Team
FBI Laboratory
935 Pennsylvania Avenue N.W.
Washington, DC 20535
Phone: 202–324–9307
http://www.fbi.gov/hq/lab/org/cart.htm

High Tech Crime Consortium
International Headquarters
1506 North Stevens Street
Tacoma, WA 98406–3826
Phone: 253–752–2427
Fax: 253–752–2430
E-mail: admin@hightechcrimecops.org
http://www.HighTechCrimeCops.org

Information Systems Security Association (ISSA)
7044 South 13th Street
Oak Creek, WI 53154
Phone: 800–370–4772
http://www.issa.org

Internal Revenue Service
Criminal Investigation Division
2433 South Kirkwood Court
Denver, CO 80222
Phone: 303–756–0646
http://www.treas.gov/irs/ci/index.htm

National Aeronautics and Space Administration
Office of Inspector General
Computer Crimes Division
300 E Street S.W.
Washington, DC 20546
Phone: 202–358–2573
http://www.hq.nasa.gov/office/oig/hq

National Association of Attorneys General
Computer Crime Point of Contact
750 First Street N.E.
Suite 1100
Washington, DC 20002
Phone: 202–326–6000
http://www.naag.org/issues/20010724-cc_list_bg.php

National Center for Forensic Science
University of Central Florida
P.O. Box 162367
Orlando, FL 32816
Phone: 407–823–6469
Fax: 407–823–3162
http://www.ncfs.ucf.org

National Criminal Justice Computer Laboratory and Training Center
SEARCH Group, Inc.
7311 Greenhaven Drive, Suite 145
Sacramento, CA 95831
Phone: 916–392–2550
http://www.search.org

National Law Enforcement and Corrections Technology Center (NLECTC)–Northeast
26 Electronic Parkway
Rome, NY 13441
Phone: 888–338–0584
Fax: 315–330–4315
http://www.justnet.org

National Law Enforcement and Corrections Technology Center (NLECTC)–West
c/o The Aerospace Corporation
2350 East El Segundo Boulevard
El Segundo, CA 90245
Phone: 888–548–1618
Fax: 310–336–2227
http://www.justnet.org

National Railroad Passenger Corporation (NRPC) (AMTRAK)
Office of Inspector General
Office of Investigations
10 G Street N.E., Suite 3E–400
Washington, DC 20002
Phone: 202–906–4318
E-mail: oigagent@aol.com

National White Collar Crime Center
Computer Crime Section
1000 Technology Drive, Suite 2130
Fairmont, WV 26554
Phone: 877–628–7674
http://www.cybercrime.org

Scientific Working Group for Digital Evidence
http://www.swgde.org

Social Security Administration
Office of Inspector General
Electronic Crimes Team
4–S–1 Operations Building
6401 Security Boulevard
Baltimore, MD 21235
Phone: 410–966–4225
Fax: 410–965–5705
http://www.ssa.gov/oig

U.S. Army Criminal Investigation Laboratory
U.S. Army Criminal Investigation Command
4553 N. 2d Street
Forest Park, GA 30297–5122
Phone: 404–469–7486

U.S. Customs Service CyberSmuggling Center
11320 Random Hills, Suite 400
Fairfax, VA 22030
Phone: 703–293–8005
Fax: 703–293–9127
http://www.customs.ustreas.gov/xp/cgov/enforcement/investigative_priorities/c3fact_sheet.xml

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U.S. Department of Defense
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http://www.dodig.osd.mil/dcis/dcismain.html
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Fax: 718–625–6708
E-mail: rweaver@usss.treas.gov

New York Police Department
Computer Investigation and Technology Unit
1 Police Plaza, Room 1112
New York, NY 10038
Phone: 646–610–5397
Fax: 646–610–6216
E-mail: citu@nypd.org
http://NYC.gov/html/nypd/html/db/citujd.html

New York State Attorney General's Office
Internet Bureau
120 Broadway
New York, NY 10271
Phone: 212–416–8433
http://www.oag.state.ny.us

New York State Department of Taxation and Finance
Office of Deputy Inspector General
W.A. Harriman Campus
Building 9, Room 481
Albany, NY 12227
Phone: 518–485–8698
http://www.tax.state.ny.us

New York State Police
Computer Crime Unit
Lt. Ronald R. Stevens
Forensic Investigation Center
Building 30, State Campus
1220 Washington Avenue
Albany, NY 12226
Phone: 518–457–5712
Fax: 518–402–2773
E-mail: nyspccu@troopers.state.ny.us
http://www.troopers.state.ny.us/CrimInv/ComputerCrime.html

Regional Computer Forensics Lab–Western New York
4455 Genesee Street
Cheektowaga, NY 14225
Phone: 716–631–0261
http://www.rcflwny.org

Rockland County Sheriff's Department
Computer Crime Task Force
Det. Lt. John J. Gould
55 New Hempstead Road
New City, NY 10956
Phone: 845–708–7860/845–638–5836
Fax: 845–708–7821
E-mail: gouldjo@co.rockland.ny.us
http://www.co.rockland.ny.us/Sheriff/default.htm

North Carolina

Charlotte Metro Electronic Financial Crimes Task Force
ATSAIC Ignacio Marino
One Fairview Center
6302 Fairview Road
Charlotte, NC 28210
Phone: 704–442–8370
Fax: 704–442–8369
E-mail: imarino@usss.treas.gov

Raleigh Police Department
Investigator Patrick Niemann
110 South McDowell Street
Raleigh, NC 27601
Phone: 919–890–3555
E-mail: niemannp@raleigh-nc.org
http://www.raleigh-nc.org/police/index.htm

North Dakota

North Dakota Bureau of Criminal Investigation
Tim J. Erickson
Special Agent
P.O. Box 1054
Bismarck, ND 58502–1054
Phone: 701–328–5500
E-mail: te409@state.nd.us
http://www.ag.state.nd.us/BCI/BCI.html

Ohio

Hamilton County Ohio Sheriff's Office
Maj. Bruce Knox
Justice Center
1000 Sycamore Street, Room 110
Cincinnati, OH 45202
Phone: 513–946–6651
Fax: 513–946–6690
http://www.hcso.org
(under the Administration Division)

Ohio Attorney General's Office
Bureau of Criminal Investigation
Computer Crime Unit
Kathleen Barch
Criminal Investigation Administrator
1560 State Route 56
London, OH 43140
Phone: 740–845–2410
E-mail: KBarch@ag.state.oh.us
http://www.ag.state.oh.us

Riverside Police Department
Officer Harold Jones
MCSE/Computer Crime Specialist
1791 Harshman Road
Riverside, OH 45424
Phone: 937–238–8064/937–233–1820
E-mail: hjones@cops.org
harold@search.org

Oklahoma

Oklahoma Attorney General
4545 North Lincoln Boulevard
Suite 260
Oklahoma City, OK 73105–3498
Phone: 405–521–4274
E-mail: jim_powell@oag.state.ok.us
http://www.oag.state.ok.us

Oklahoma State Bureau of Investigation
Mark R. McCoy, Ed.D., CFCE
Deputy Inspector
6600 North Harvey
Oklahoma City, OK 73116
Phone: 405–848–6724
Fax: 405–879–2622
E-mail: markm@osbi.state.ok.us
http://www.osbi.state.ok.us

Oregon

Deschutes County Sheriff's Office
Computer Crimes Detail
Sgt. Tom Nelson
Computer Forensics Specialist
63333 West Highway 20
Bend, OR 97701
Phone: 541–322–4811
E-mail: Tom_Nelson@co.deschutes.or.us

Gresham Police Department
Rich Boyd
Computer Forensic Investigator
1333 N.W. Eastman Parkway
Gresham, OR 97030
Phone: 503–666–1997
Fax: 503–665–1693
E-mail: boyd_r@ci.gresham.or.us

Oregon High-Tech Team
Joel Brillhart
Special Agent
FBI
20795 N.W. Cornell, Suite 100
Hillsboro, OR 97124
Phone: 503–615–6627
E-mail: joelb@ci.hillsboro.or.us

Oregon State Police
Det. Steve Payne
4760 Portland Road N.E.
Salem, OR 97305
Phone: 503–378–2110, ext. 409
Det. Randy Becker
4500 Rogue Valley Highway, Suite B
Central Point, OR 97502
Phone: 541–776–6114, ext. 243
http://www.osp.state.or.us

Portland Police Bureau
Computer Forensics Detail
Sgt. Randy Day
Supervisor
1111 S.W. Second Avenue, Room 1326
Portland, OR 97204
Phone: 503–823–0400
E-mail: rday@police.ci.portland.or.us
http://www.portlandpolicebureau.com/

Washington County Sheriff's Office
Computer Forensic Investigations
Brian Budlong
215 S.W. Adams Avenue, MS32
Hillsboro, OR 97123
Phone: 503–846–2573
Fax: 503–846–2637
E-mail: brian_budlong@co.washington.or.us
http://www.co.washington.or.us/cgi/sheriff/lec.pl

Pennsylvania

Allegheny County Police Department
High Tech Crime Unit
Det. T. Haney
400 North Lexington Street
Pittsburgh, PA 15208
Phone: 412–473–1304
Fax: 412–473–1377
E-mail: thaney@county.allegheny.pa.us
http://www.county.allegheny.pa.us/police/

Erie County District Attorney's Office
Erie County Courthouse
140 West Sixth Street
Erie, PA 16501
Phone: 814–451–6349
Fax: 814–451–6419

Rhode Island

Warwick Police Department
Detective Division
Det. Edmund Pierce
99 Veterans Memorial Drive
Warwick, RI 02886
Phone: 401–468–4200 (main)/
401–468–4263 (direct)
Fax: 401–468–4265
E-mail: WPDDetectives@cox.com
efp31@cox.net
http://www.warwickpd.org

South Carolina

South Carolina Law Enforcement Division (SLED)
South Carolina Computer Crime Center
Lt. L.J. "Chip" Johnson
Supervisory Special Agent
P.O. Box 21398
Columbia, SC 29221–1398
Phone: 803–737–9000
http://www.sled.state.sc.us/

Winthrop University
Winthrop Police Department
Daniel R. Yeargin
Assistant Chief of Police
2 Crawford Building
Rock Hill, SC 29733
Phone: 803–323–3496
E-mail: yeargind@winthrop.edu
http://www.winthrop.edu/publicsafety/

South Dakota

South Dakota Internet Crimes Enforcement
Robert Grandpre
Assistant Director DCI
Office of the Attorney General
Division of Criminal Investigation
3444 East Highway 34
c/o 500 East Capitol Avenue
Pierre, SD 57501–5070
Phone: 605–773–3331
Fax: 605–773–4629
E-mail: robertgrandpre@state.sd.us

Tennessee

Harriman Police Department
130 Pansy Hill Road
P.O. Drawer 433 (mailing address)
Harriman, TN 37748
Phone: 865–882–3383
Fax: 865–882–0700
E-mail: harrimanpd@comcast.net

Knox County Sheriff's Office
Carleton Bryant
Staff Attorney
400 West Main Avenue
Knoxville, TN 37902
Phone: 865–971–3911
E-mail: sheriff@esper.com
http://www.knoxsheriff.org/

Tennessee Attorney General's Office
David Neal
Forensic Technology Investigator
425 Fifth Avenue, North
Nashville, TN 37243
Phone: 615–532–9658
E-mail: david.neal@state.tn.us
http://www.attorneygeneral.state.tn.us/

Texas

Austin Police Department
715 East Eighth Street
Austin, TX 78701
http://www.ci.austin.tx.us/police

Bexar County District Attorney's Office
Russ Brandau/David Getrost
300 Dolorosa
San Antonio, TX 78205
Phone: 210–335–2368/210–335–2991
E-mail: rbrandau@co.bexar.tx.us
dgetrost@co.bexar.tx.us
http://www.co.bexar.tx.us/da/

Dallas Police Department
2014 Main Street
Dallas, TX 75201
http://www.dallaspolice.net

Federal Bureau of Investigation
Dallas Field Office
One Justice Way
J. Gordon Shanklin Building
Dallas, TX 75220
Phone: 972–559–5000
http://dallas.fbi.gov

Houston Police Department
1200 Travis Street
Houston, TX 77002
http://www.ci.houston.tx.us/departme/police

Office of the Attorney General
Internet Bureau
P.O. Box 12548
Austin, TX 78711–2548
Phone: 512–936–2899
http://www.oag.state.tx.us
http://www.texasinternetbureau.com

Portland Police Department
Det. Terrell Elliott
902 Moore Avenue
Portland, TX 78374
Phone: 361–643–2546
Fax: 361–643–5689
E-mail: telliott@portlandpd.com
http://www.portlandpd.com

Texas Department of Public Safety
5805 North Lamar Boulevard
Austin, TX 78752–4422
P.O. Box 4087 (mailing address)
Austin, TX 78773–0001
Phone: 512–424–2200/800–252–5402
E-mail: specialcrimes@txdps.state.tx.us
http://www.txdps.state.tx.us

Utah

Utah Department of Public Safety
State Bureau of Investigations, Forensic Computer Lab
Daniel D. Hooper
Special Agent
3888 West 5400 South
Kearns, UT 84118
Phone: 801–955–2121
E-mail: dhooper@utah.gov

Vermont

State of Vermont Department of Public Safety
Bureau of Criminal Investigation
Sgt. Mark Lauer
103 South Main Street
Waterbury, VT 05671–2101
Phone: 802–241–5367
Fax: 802–241–5349
E-mail: mlauer@dps.state.vt.us
http://www.dps.state.vt.us/vtsp

Vermont Internet Crimes Task Force
Lt. Michael Schirling
Burlington Police
1 North Avenue
Burlington, VT 05401
Phone: 802–658–2704, ext. 131
E-mail: mschirling@bpdvt.org

Virginia

Arlington County Police Department
Criminal Investigations Division
Computer Forensics
Det. Ray Rimer
1425 North Courthouse Road
Arlington, VA 22201
Phone: 703–228–7994
Pager: 703–866–8965
E-mail: rimer550@erols.com
cfu550@aol.com
http://www.co.arlington.va.us/police/

Fairfax County Police Department
Computer Forensics Section
Lt. Dave Russell
4100 Chain Bridge Road
Fairfax, VA 22030
Phone: 703–246–7867
Fax: 703–246–4253
http://www.co.fairfax.va.us/ps/police/homepage.htm

Richmond Police Department
Technology Crimes Section
Det. Jeff Deem
200 West Grace Street
Richmond, VA 23220
Phone: 804–646–3949
Fax: 804–646–4880
E-mail: jdeem@ci.richmond.va.us
http://www.ci.richmond.va.us/police/

Virginia Beach Police Department
Det. Michael Encarnacao
Special Investigations CERU
2509 Princess Anne Road
Virginia Beach, VA 23456
Phone: 757–427–1749
E-mail: mikee@cops.org
http://www.vbgov.com

Virginia Department of Motor Vehicles
Law Enforcement Section
Larry L. Barnett
Assistant Special Agent in Charge
945 Edwards Ferry Road N.E.
Leesburg, VA 20176
Phone: 703–771–4757
E-mail: lbtrip@erols.com

Virginia Office of the Attorney General
Addison L. Cheeseman
Senior Criminal Investigator
900 East Main Street
Richmond, VA 23219
Phone: 804–786–6554
E-mail: acheeseman@oag.state.va.us
http://www.oag.state.va.us/

Virginia State Police
Andrew Clark, CFCE
Computer Technology Specialist 3
Richmond, VA 23236
Phone: 804–323–2040
E-mail: AndyClark@att.net
http://www.vsp.state.va.us

Washington

King County Sheriff's Office
Fraud/Computer Investigations Unit
Sgt. Steve Davis/Det. Brian Palmer
401 Fourth Avenue North, RJC 104
Kent, WA 98032–4429
Phone: 206–296–4280
E-mail: steven.davis@metrokc.gov
bk.palmer@metrokc.gov
http://www.metrokc.gov/sheriff

Lynnwood Police Department
High Tech Property Crimes
Det. Douglas J. Teachworth
19321 44th Avenue West
P.O. Box 5008 (mailing address)
Lynnwood, WA 98046–5008
Phone: 425–744–6916
E-mail: dteachworth@ci.lynnwood.wa.us
http://www.ci.lynnwood.wa.us/police/default.asp

Tacoma Police Department
Pierce County Data Recovery Unit
Det. Richard Voce
930 Tacoma Avenue South
Tacoma, WA 98402
Phone: 253–591–5679/253–594–7906
E-mail: rvoce@ci.tacoma.wa.us
http://www.TacomaPolice.org

Vancouver Police Department
Maggi Holbrook, CFCE
Computer Forensics Investigator
605 East Evergreen Boulevard
Vancouver, WA 98661
Phone: 360–735–8887
E-mail: ecrimes@ci.vancouver.wa.us
http://www.ci.vancouver.wa.us

Washington State Department of Fish and Wildlife
John D. Flanagan
Computer Forensics Examiner
600 Capitol Way North
Olympia, WA 98501
Phone: 360–902–2210
Cell phone: 360–556–0195
E-mail: flanajdf@dfw.wa.gov
http://www.wa.gov/wdfw

Washington State Patrol
Computer Crimes Unit
Sgt. Keith Huntley
Supervisor
Airdustrial Way, Building 17
Olympia, WA 98507–2347
Phone: 360–753–3277
E-mail: khuntle@wsp.wa.gov

West Virginia

National White Collar Crime Center
1000 Technology Drive, Suite 2130
Fairmont, WV 26554
Phone: 877–628–7674
http://www.cybercrime.org

Wisconsin

Green Bay Police Department
Lt. Rick Dekker
307 South Adams Street
Green Bay, WI 54301
Phone: 920–448–3200
E-mail: rickdk@ci.green-bay.wi.us
http://www.gbpolice.org

Wisconsin Department of Justice
P.O. Box 7857
Madison, WI 53707–7857
Phone: 608–266–1221
http://www.doj.state.wi.us

Wood County Sheriff's Department
400 Market Street
Wis Rapids, WI 54495
Phone: 715–421–8700
E-mail: wcsd@tznet.com
http://www.tznet.com/wcsd

Wyoming

Casper Police Department
210 North David
Casper, WY 82601
Phone: 307–235–8489
http://www.cityofcasperwy.com/services/police.html

Gillette Police Department
Sgt. Dave Adsit, CCNA
201 East Fifth Street
Gillette, WY 82716
Phone: 307–682–5109
E-mail: davea@www.ci.gillette.wy.us
http://www.ci.gillette.wy.us

Green River Police Department
Corp. Tom Jarvie/Sgt. David Hyer
50 East Second North
Green River, WY 82935
Phone: 307–872–0555
E-mail: tjarvie@cityofgreenriver.org
dhyer@cityofgreenriver.org
http://www.cityofgreenriver.org/police/

Natrona County Sheriff's Office
Investigator Chris Poldervaart
201 North David Street
Casper, WY 82601
Phone: 307–235–9282
E-mail: poldc@natrona.net

Wyoming Division of Criminal Investigation
316 West 22nd Street
Cheyenne, WY 82002
Phone: 307–777–7183
Fax: 307–777–7252
Patrick Seals, Special Agent
E-mail: pseals@state.wy.us
Michael B. Curran, Special Agent
E-mail: mcurra@state.wy.us
Flint Waters, Special Agent
E-mail: fwater@state.wy.us
Bob Leazenby, Special Agent
E-mail: rleaze@state.wy.us
http://www.attorneygeneral.state.wy.us/dci

International

Australia

Western Australia Police
Det./Sgt. Ted Wisniewski
Computer Crime Investigation
Commercial Crime Division
Level 7 Eastpoint Plaza
233 Adelaide Tce
Perth WA 6000
Phone: +61 8 92200700
Fax: +61 8 92254489
E-mail: Computer.Crime@police.wa.gov.au

Brazil

Instituto De Criminalística - Polícia Civil Do Distrito Federal
SAISO - Lote 23 - Bloco "C" Complexo de Poilcia Civil
70610–200
Brasilia, Brazil
Phone: 55 +61 362–5948/55 +61 233–9530
E-mail: perint@pcdf.df.gov.br

Canada

Royal Canadian Mounted Police
Technical Operations Directorate
Technological Crime Branch
1426 St. Joseph Boulevard
Gloucester, Ontario
Canada KIA OR2
Phone: 613–993–1777

Switzerland

Computer Crime Unit (GCI)
Det. Pascal Seeger/Det. Didiser Frezza
5, ch. de la Graviere
1227 Acacias, Geneva
Switzerland
Phone: +41 22 427.80.16 (17)
Fax: +41 22 820.30.16
E-mail: gci@police.ge.ch

United Kingdom

HM Inland Revenue
Special Compliance Office
Forensic Computing Team
Barkley House
P.O. Box 20
Castle Meadow Road
Nottingham
NG2 1BA
UK
Phone: +44 (0)115 974 0887
Fax: +44 (0)115 974 0890
E-mail: lindsay.j.scrimshaw@ir.gsi.gov.uk

National High-Tech Crime Unit
P.O. Box 10101
London
E14 9NF
UK
Phone: +44 (0) 870–241–0549
Fax: +44 (0) 870–241–5729
E-mail: admin@nhtcu.org

Appendix G. Training Resources List

The following list of nonprofit agencies, organizations, and institutions includes Federal, law enforcement, and academia sources that provide computer forensic training.

Arizona Regional Computer Forensic Laboratory
Sgt. R. Hopper
P.O. Box 6638
Phoenix, AZ 85005
Phone: 602–223–2698
Fax: 602–223–2332

Canadian Police College
P.O. Box 8900
Ottawa, Ontario
Canada K1G 3J2
Phone: 613–993–9500
E-mail: cpc@cpc.gc.ca
http://www.cpc.gc.ca

DoD Computer Investigations Training Program
911 Elkridge Landing Road
Airport Square 11 Building
Suite 200
Linthicum, MD 21090
Phone: 410–981–1604
Fax: 410–850–8906
E-mail: info@dcitp.gov
http://www.dcitp.gov

FBI Academy at Quantico
U.S. Marine Corps Base
Quantico, VA
Phone: 703–640–6131
http://www.fbi.gov/hq/td/academy/academy.htm

Federal Law Enforcement Training Center
Headquarters Facility
120 Chapel Crossing Road
Glynco, GA 31524
Phone: 912–267–2100
http://www.fletc.gov

Federal Law Enforcement Training Center
Artesia Facility
1300 West Richey Avenue
Artesia, NM 88210
Phone: 505–748–8000
http://www.fletc.gov

Federal Law Enforcement Training Center
Charleston Facility
2000 Bainbridge Avenue
Charleston, SC 29405–2607
Phone: 843–743–8858
http://www.fletc.gov

Florida Association of Computer Crime Investigators, Inc.
P.O. Box 1503
Bartow, FL 33831–1503
Phone: 352–357–0500
E-mail: info@facci.org
http://www.facci.org

Forensic Association of Computer Technologists
P.O. Box 703
Des Moines, IA 50303
Phone: 515–281–7671
http://www.byteoutofcrime.org

High Technology Crime Investigation Association (International)
1474 Freeman Drive
Amissville, VA 20106
Phone: 540–937–5019
http://www.htcia.org

Hilbert College
Economic Crime Investigation Program
5200 South Park Avenue
Hamburg, NY 14075
Phone: 716–649–7900
http://www.hilbert.edu

Information Systems Security Association (ISSA)
7044 South 13th Street
Oak Creek, WI 53154
Phone: 800–370–4772
http://www.issa.org

Institute of Police Technology and Management
University of North Florida
12000 Alumni Drive
Jacksonville, FL 32224–2678
Phone: 904–620–4786
Fax: 904–620–2453
http://www.iptm.org

International Association of Computer Investigative Specialists (IACIS)
P.O. Box 140
Donahue, IA 52746–0140
Phone: 877–890–6130
E-mail: iadmin@cops.org
http://www.cops.org

International Organization on Computer Evidence
Phone: +44 (0) 207–230–6485
E-mail: lwr@fss.org.uk
http://www.ioce.org

James Madison University
800 South Main Street
Harrisonburg, VA 22807
Phone: 540–568–6211
http://www.cs.jmu.edu/currentcourses.htm

Kennesaw State University
Southeast Cybercrime Institute
1000 Chastain Road
Kennesaw, GA 30144
Phone: 770–423–6965
http://cybercrime.kennesaw.edu

National Center for Forensic Science
University of Central Florida
P.O. Box 162367
Orlando, FL 32816–2367
Phone: 407–823–6469
E-mail: natlctr@mail.ucf.edu
http://www.ncfs.ucf.edu

National Criminal Justice Computer Laboratory and Training Center SEARCH Group, Inc.
7311 Greenhaven Drive, Suite 145
Sacramento, CA 95831
Phone: 916–392–2550
http://www.search.org

National High Tech Crime Training Centre
National Specialist Law Enforcement Centre
Wyboston Lakes Business and Leisure Centre
Great North Road
Wyboston, Bedfordshire
England MK44 3AL
Phone: +44 (0)01480 401872
Fax: +44 (0)1480 401950

National White Collar Crime Center
1000 Technology Drive, Suite 2130
Fairmont, WV 26554
Phone: 877–628–7674
http://www.cybercrime.org

Purdue University
CERIAS (Center for Education and Research in Information Assurance and Security)
Recitation Building
Purdue University
West Lafayette, IN 47907–1315
Phone: 765–494–7806
http://www.cerias.purdue.edu

Redlands Community College
Clayton Hoskinson, CFCE
Program Coordinator
Criminal Justice and Forensic Computer Science
1300 South Country Club Road
El Reno, OK 73036–5304
Phone: 405–262–2552, ext. 2517
E-mail: hoskinsonc@redlandscc.net

University of New Haven
School of Public Safety and Professional Studies
300 Orange Avenue
West Haven, CT 06516
Phone: 800–342–5864
http://www.newhaven.edu

University of New Haven–California Campus
Forensic Computer Investigation Program
6060 Sunrise Vista Drive
Citrus Heights, CA 95610
http://unhca.com

U.S. Department of Justice
Criminal Division
Computer Crime and Intellectual Property Section (CCIPS)
10th and Constitution Avenue N.W.
John C. Keeney Building, Suite 600
Washington, DC 20530
Phone: 202–514–1026
http://www.cycbercrime.gov

Utica College
Economic Crime Investigative Institute
1600 Burrstone Road
Utica, NY 13502
Phone: 508–247–9504
http://www.ecii.edu

Wisconsin Association of Computer Crime Investigators
P.O. Box 510212
New Berlin, WI 53151–0212
http://www.wacci.org

Appendix H. List of Organizations

The following is a list of organizations to which a draft copy of this document was mailed.

Alaska Criminal Laboratory
American Bar Association
American Society of Law Enforcement Trainers
Anchorage, Alaska, Police Department
Arapahoe County, Colorado, Sheriff's Office
Association of Federal Defense Attorneys
Bridgeport, Michigan, Forensic Laboratory
Bureau of Justice Assistance
Canadian Police Research Center
Cleveland State College Basic Police Academy
Commission of Accreditation for Law Enforcement Agencies
Connecticut Department of Public Safety
Criminal Justice Institute
Dallas County District Attorney's Office
Drug Enforcement Administration Computer Forensics
Fairbanks, Alaska, Police Department
Federal Bureau of Investigation
Federal Law Enforcement Training Center
Florida Department of Law Enforcement
Florida Department of Law Enforcement–Jacksonville Regional Operations Center
Florida Office of Statewide Prosecution
Frederick County, Maryland, State's Attorney's Office
Georgia Bureau of Investigation
Harlingen, Texas, Police Department
Illinois State Police
Indiana State Police Laboratory
Institute for Intergovernmental Research
Institute of Police Technology and Management
Institute for Security Technology Studies
Internal Revenue Service, Criminal Investigations
International Association of Chiefs of Police
International Association for Identification
Joint Council on Information Age Crime
Juneau, Alaska, Police Department
LaGrange, Georgia, Police Department
Law Enforcement Training Institute
Maine State Police Crime Laboratory
Massachusetts State Police Crime Laboratory
Metro Nashville Police Academy
Metro Nashville Police Department
Middletown Township, New Jersey, Police Department
MITRE Corporation
National Advocacy Center
National Aeronautics and Space Administration, Office of Inspector General, Computer Crimes Division
National Association of Attorneys General
National CyberScience Center
National District Attorneys Association
National Law Enforcement and Corrections Technology Center–Rocky Mountain
National Law Enforcement and Corrections Technology Center–Southeast
National Law Enforcement Council
National Sheriff's Association
National White Collar Crime Center
Naval Criminal Investigative Service
New Hampshire State Police Forensic Laboratory
North Carolina Justice Academy

Office of the District Attorney General–Nashville, Tennessee
Office of Law Enforcement Technology Commercialization
Ohio Bureau of Criminal ID and Investigation
Orange County, California, Sheriff's Department–Forensic Science Services
Orange County, New York, Community College–Criminal Justice Department
Peace Officers Standards and Training
Pharr, Texas, Police Department
Regional Computer Forensic Laboratory (San Diego, California)
Sedgwick County, Kansas, District Attorney's Office
Sitka, Alaska, Police Department
Social Security Administration–Office of the Inspector General
State of Florida Crime Laboratory
TASC, Inc.
Tennessee Bureau of Investigation
Tennessee Law Enforcement Training Academy
Texas Rangers Department of Public Safety
Town of Goshen, New York, Police Department
U.S. Army Criminal Investigation Laboratory
U.S. Attorney's Office–Western District of New York
U.S. Department of Justice–Computer Crime and Intellectual Property Section
U.S. Department of Justice–Fraud Section
U.S. Department of Justice–Office of Overseas Prosecutorial Development
U.S. Department of Justice–Western District of Michigan
Virginia State Police Academy

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The NIJ Director is appointed by the President and confirmed by the Senate. The Director establishes the Institute's objectives, guided by the priorities of the Office of Justice Programs, the U.S. Department of Justice, and the needs of the field. The Institute actively solicits the views of criminal justice and other professionals and researchers to inform its search for the knowledge and tools to guide policy and practice.

Strategic Goals

NIJ has seven strategic goals grouped into three categories:

Creating relevant knowledge and tools

1. Partner with State and local practitioners and policymakers to identify social science research and technology needs.
2. Create scientific, relevant, and reliable knowledge—with a particular emphasis on terrorism, violent crime, drugs and crime, cost-effectiveness, and community-based efforts—to enhance the administration of justice and public safety.
3. Develop affordable and effective tools and technologies to enhance the administration of justice and public safety.

Dissemination

4. Disseminate relevant knowledge and information to practitioners and policymakers in an understandable, timely, and concise manner.
5. Act as an honest broker to identify the information, tools, and technologies that respond to the needs of stakeholders.

Agency management

6. Practice fairness and openness in the research and development process.
7. Ensure professionalism, excellence, accountability, cost-effectiveness, and integrity in the management and conduct of NIJ activities and programs.

Program Areas

In addressing these strategic challenges, the Institute is involved in the following program areas: crime control and prevention, including policing; drugs and crime; justice systems and offender behavior, including corrections; violence and victimization; communications and information technologies; critical incident response; investigative and forensic sciences, including DNA; less-than-lethal technologies; officer protection; education and training technologies; testing and standards; technology assistance to law enforcement and corrections agencies; field testing of promising programs; and international crime control.

In addition to sponsoring research and development and technology assistance, NIJ evaluates programs, policies, and technologies. NIJ communicates its research and evaluation findings through conferences and print and electronic media.

To find out more about the National Institute of Justice, please visit:

http://www.ojp.usdoj.gov/nij

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