Matrimonial Law
And
Digital Forensics

Elizabeth Howell, JD and Andy Cobb, PhD

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Overview

- Why Do We Care About Digital Evidence
- What is Digital Forensics?
- The Digital Forensics Process
- Using a Digital Forensics Expert

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Why Do We Care?

- Affirms your client's credibility to the court
- Raise questions about the credibility of the opposing party
- Gives your client security that you are working to protect their electronic evidence
- Presents an opportunity for settlement

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What Is Digital Forensics?

- What is Forensics?
  - Locard's Exchange Principle

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What Is Digital Forensics?

- Goal:
  - Find out what happened

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What Is Digital Forensics?

- How?
  - Piece together the activity

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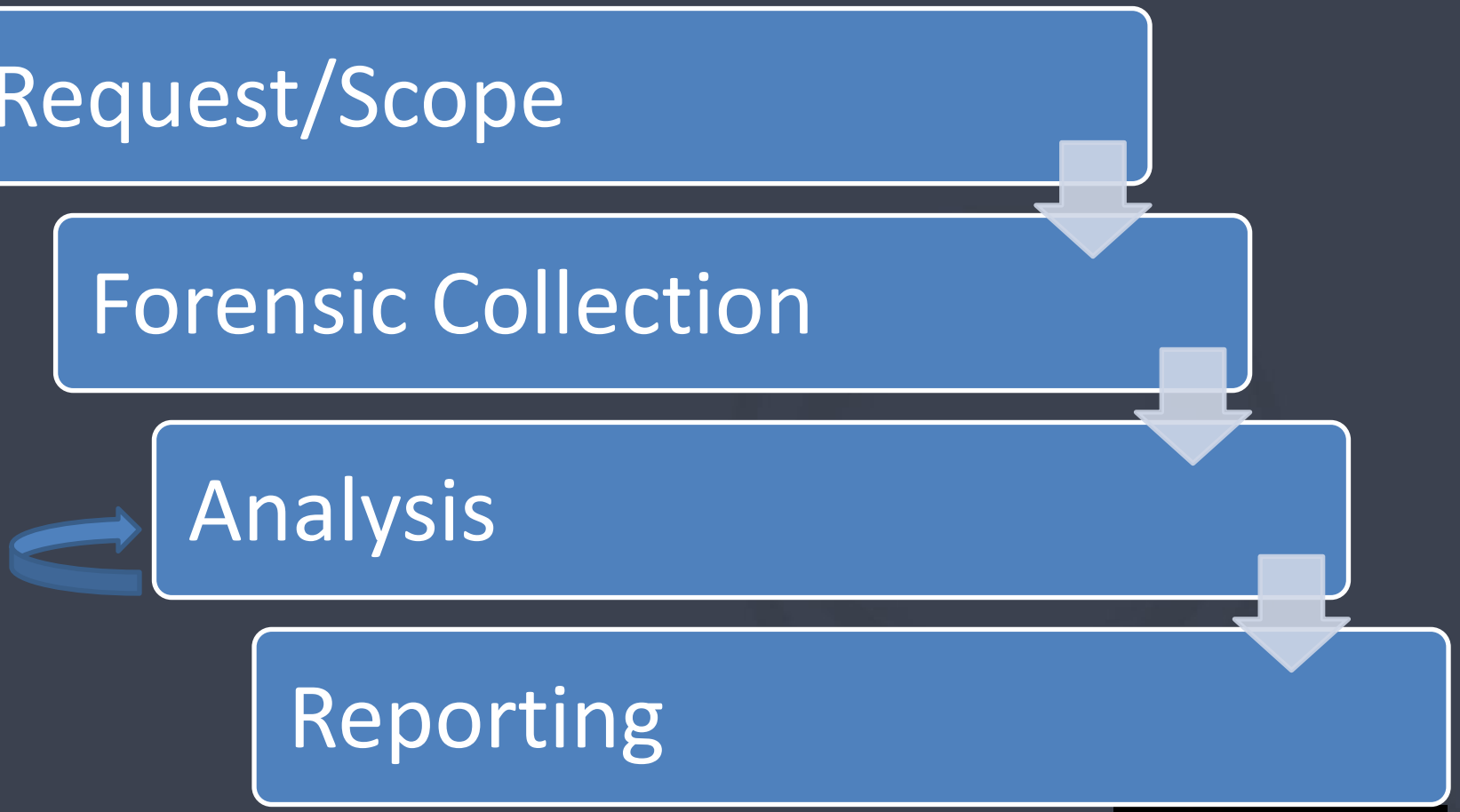
Digital Forensics Process



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Digital Forensics Process

- Scope
  - What do we know?
  - Who was involved?
  - What data are we interested in?
  - Where is that data?

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Digital Forensics Process

- Forensic Collection
  - Exact bit-for-bit copy
  - Metadata/timestamps preserved
  - Copy is verified
  - Where is that data?

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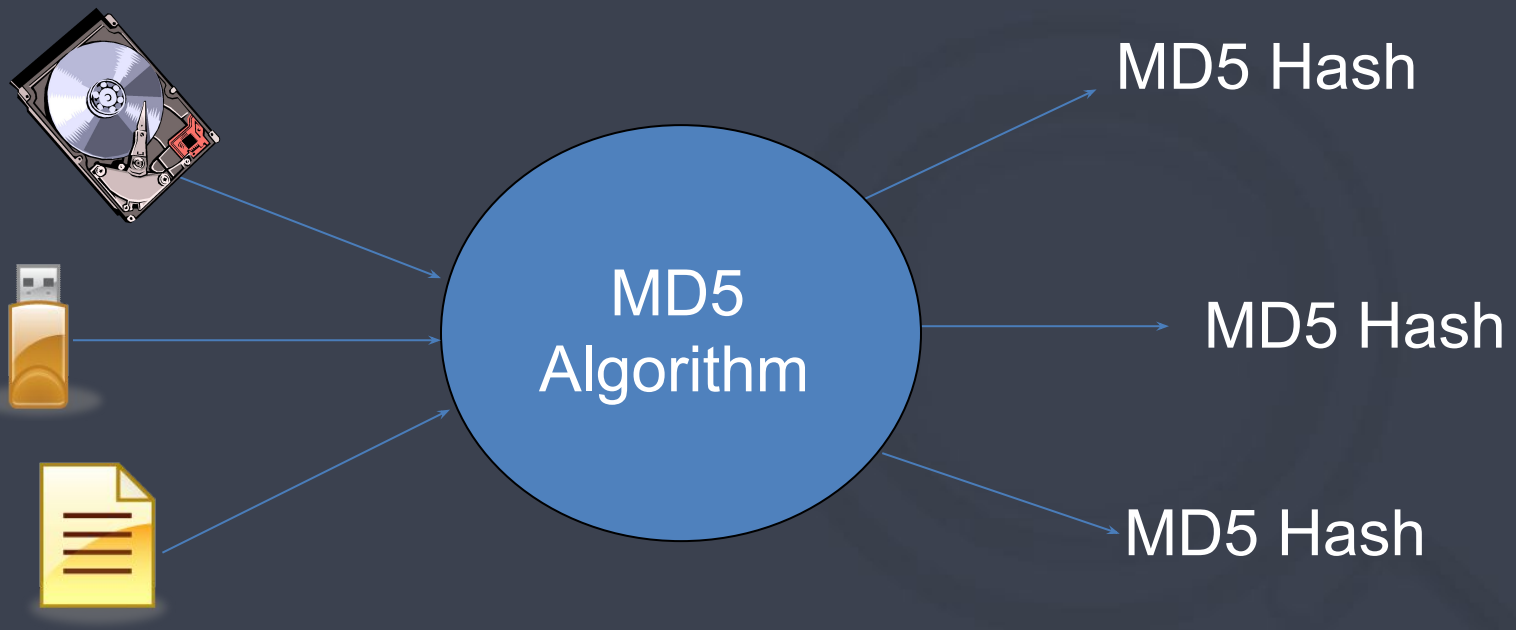
Digital Forensics Process

Verification



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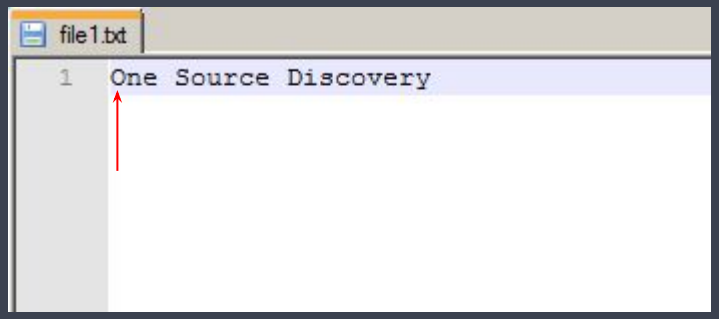
Digital Forensics Process

A small change makes a big difference!



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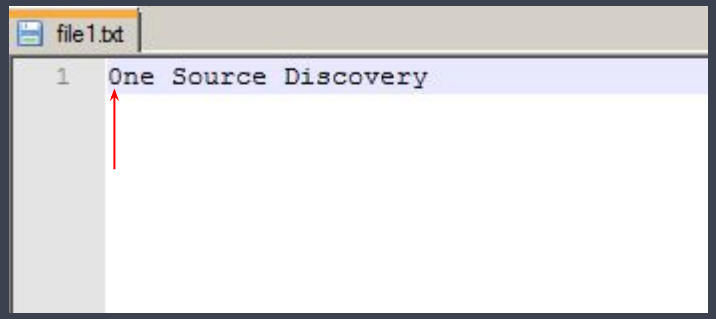

MD5 Hash

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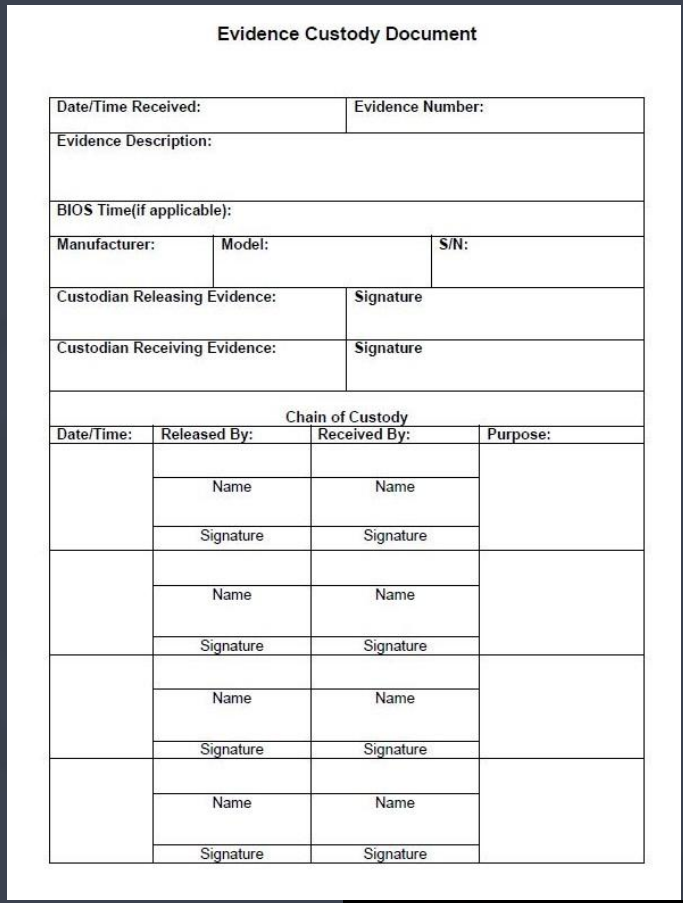
Digital Forensics Process

Maintain chain of custody for all evidence items



Evidence Custody Document

Date/Time Received:	**Evidence Number:**	
Evidence Description:		
BIOS Time(if applicable):		
Manufacturer:	**Model:**	**S/N:**
Custodian Releasing Evidence:	**Signature**	
Custodian Receiving Evidence:	**Signature**	

Chain of Custody

Date/Time:	Released By:	Received By:	Purpose:
	Name	Name	
	Signature	Signature	
	Name	Name	
	Signature	Signature	
	Name	Name	
	Signature	Signature	
	Name	Name	
	Signature	Signature	

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Digital Forensics Process

- Forensic Analysis
  - Analyze exact copies, not originals
  - What to analyze?
  - Iterative
  - Communicate findings

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Digital Forensics Process

- Reports
  - Phone call
  - Report from a tool
  - Affidavit or declaration
  - Testimony

Digital Forensics Process

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Cellphones

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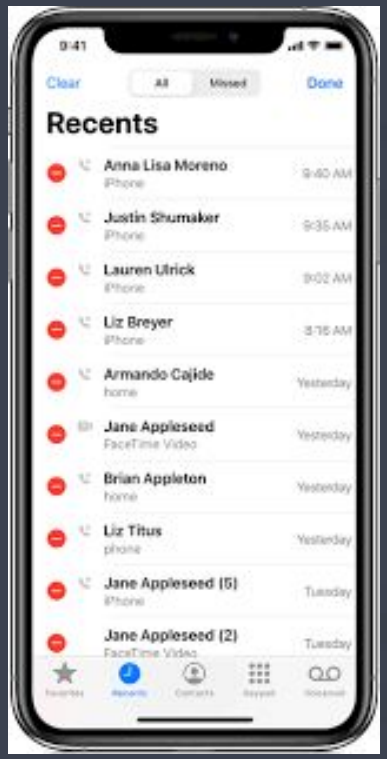
Cellphones

Actions on a phone…

- Passive events



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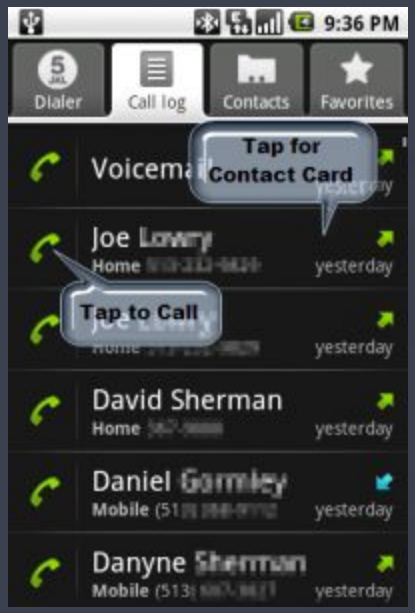
Passive Events

- Call logs
- Emails
- Calendar Events
- Voicemails
- Messages
- Notifications



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Cellphone Artifacts

- Passive Events
- Text and Instant Messages - even deleted

Deleted Data Recovery

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Chapter 1 Section 3.....
Chapter 2.....
Chapter 2 Section 4.....
Chapter 2 Section 4 Area 9....

Delete Chapter 1 Section 1

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Messaging Content

- SMS
- MMS
- Third Party Apps

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Cellphone Artifacts

- Passive Events
- Text and Instant Messages - even deleted
- Taking a photo or video

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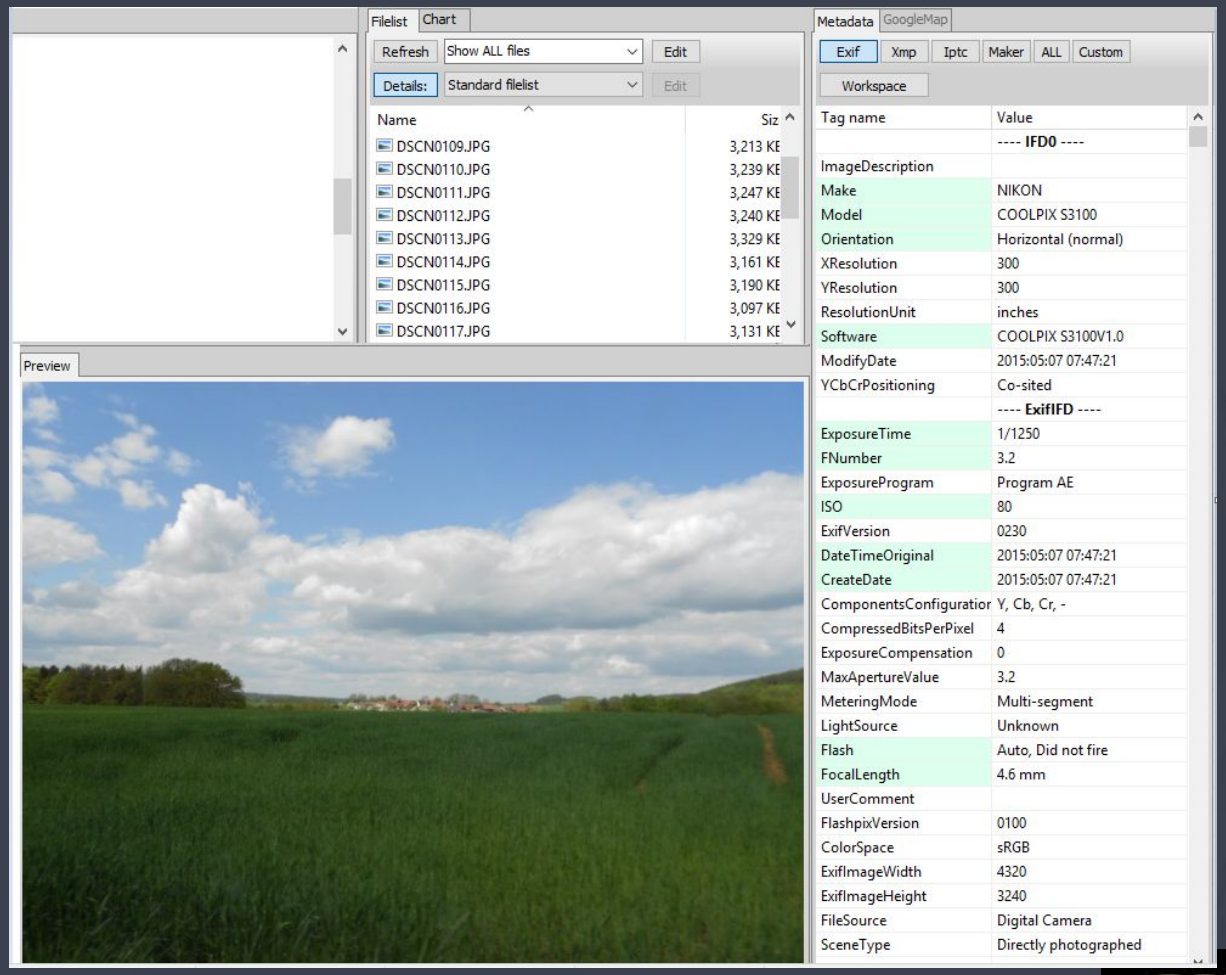
Photo Metadata



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Cellphone Artifacts

- Passive Events
- Text and Instant Messages - even deleted
- Taking a photo or video
- Browsing the web (even in “private” mode)

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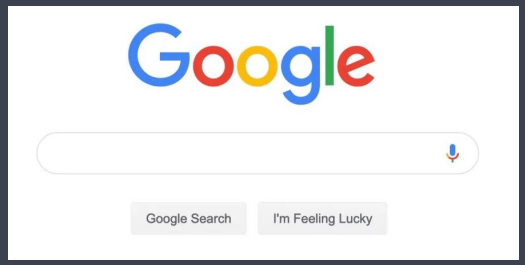
Web Searches

Type		Last Visited [UTC]	Last Visited [Local]	Hits	URL	Page Title
http	☑	2008-03-21 19:28:49	2008-03-21 15:28:49	85	http://www.myspace.com/	MySpace
http	☑	2008-03-21 19:19:16	2008-03-21 15:19:16	1	http://www.druglibrary.org/schaffer/history/e1880/chloroformhabit.htm	The Chloroform Habit as Described by One of I
http	☑	2008-03-21 19:19:04	2008-03-21 15:19:04	2	http://www.sci-spot.com/Chemistry/chloroform.htm	New Page 1
http	☑	2008-03-21 19:18:55	2008-03-21 15:18:55	1	http://www.blogger.com/navbar.g?targetBlogID=6649121&blogName=hulleye+come...	
http	☑	2008-03-21 19:18:55	2008-03-21 15:18:55	1	http://halai.blogspot.com/2005/06/how-to-make-chloroform.html	hulleye comes by.:how to make chloroform
http	☑	2008-03-21 19:16:57	2008-03-21 15:16:57	1	http://www.sci-spot.com/Chemistry/chloro2.htm	Sci-Spot.com - Chloroform
http	☑	2008-03-21 19:16:34	2008-03-21 15:16:34	1	http://www.sci-spot.com/Chemistry/chloroform.htm	New Page 1
http	☑	2008-03-21 19:16:30	2008-03-21 15:16:30	1	http://www.google.com/search?hl=en&sa=X&oi=spell&resnum=0&ct=result&cd=1&q...	how to make chloroform - Google Search
http	☑	2008-03-21 19:16:30	2008-03-21 15:16:30	1	http://www.google.com/search?hl=en&q=how+to+make+chloraform&btnG=Google...	how to make chloraform - Google Search
http	☑	2008-03-21 19:16:21	2008-03-21 15:16:21	95	http://www.google.com/	Google
http	☑	2008-03-21 19:16:13	2008-03-21 15:16:13	84	http://www.myspace.com/	MySpace



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Browser Activity

Type		Last Visited [UTC]	Last Visited [Local]	Hits	URL	Page Title
http	☑	2008-03-21 19:28:49	2008-03-21 15:28:49	85	http://www.myspace.com/	MySpace
http	☑	2008-03-21 19:19:16	2008-03-21 15:19:16	1	http://www.druglibrary.org/schaffer/history/e1880/chloroformhabit.htm	The Chloroform Habit as Described by One of I
http	☑	2008-03-21 19:19:04	2008-03-21 15:19:04	2	http://www.sci-spot.com/Chemistry/chloroform.htm	New Page 1
http	☑	2008-03-21 19:18:55	2008-03-21 15:18:55	1	http://www.blogger.com/navbar.g?targetBlogID=6649121&blogName=hulleye+come...	
http	☑	2008-03-21 19:18:55	2008-03-21 15:18:55	1	http://halai.blogspot.com/2005/06/how-to-make-chloroform.html	hulleye comes by.:how to make chloroform
http	☑	2008-03-21 19:16:57	2008-03-21 15:16:57	1	http://www.sci-spot.com/Chemistry/chloro2.htm	Sci-Spot.com - Chloroform
http	☑	2008-03-21 19:16:34	2008-03-21 15:16:34	1	http://www.sci-spot.com/Chemistry/chloroform.htm	New Page 1
http	☑	2008-03-21 19:16:30	2008-03-21 15:16:30	1	http://www.google.com/search?hl=en&sa=X&oi=spell&resnum=0&ct=result&cd=1&q...	how to make chloroform - Google Search
http	☑	2008-03-21 19:16:30	2008-03-21 15:16:30	1	http://www.google.com/search?hl=en&q=how+to+make+chloraform&btnG=Google...	how to make chloraform - Google Search
http	☑	2008-03-21 19:16:21	2008-03-21 15:16:21	95	http://www.google.com/	Google
http	☑	2008-03-21 19:16:13	2008-03-21 15:16:13	84	http://www.myspace.com/	MySpace

Cellphone Artifacts

- Passive Events
- Text and Instant Messages - even deleted
- Taking a photo or video
- Browsing the web (even in “private” mode)
- Apps: Facebook, Instagram, etc.

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Cellphone Artifacts

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Cellphone Artifacts

- Passive Events
- Text and Instant Messages - even deleted
- Taking a photo or video
- Browsing the web (even in “private” mode)
- Apps: Facebook, Instagram, etc.
- Locations

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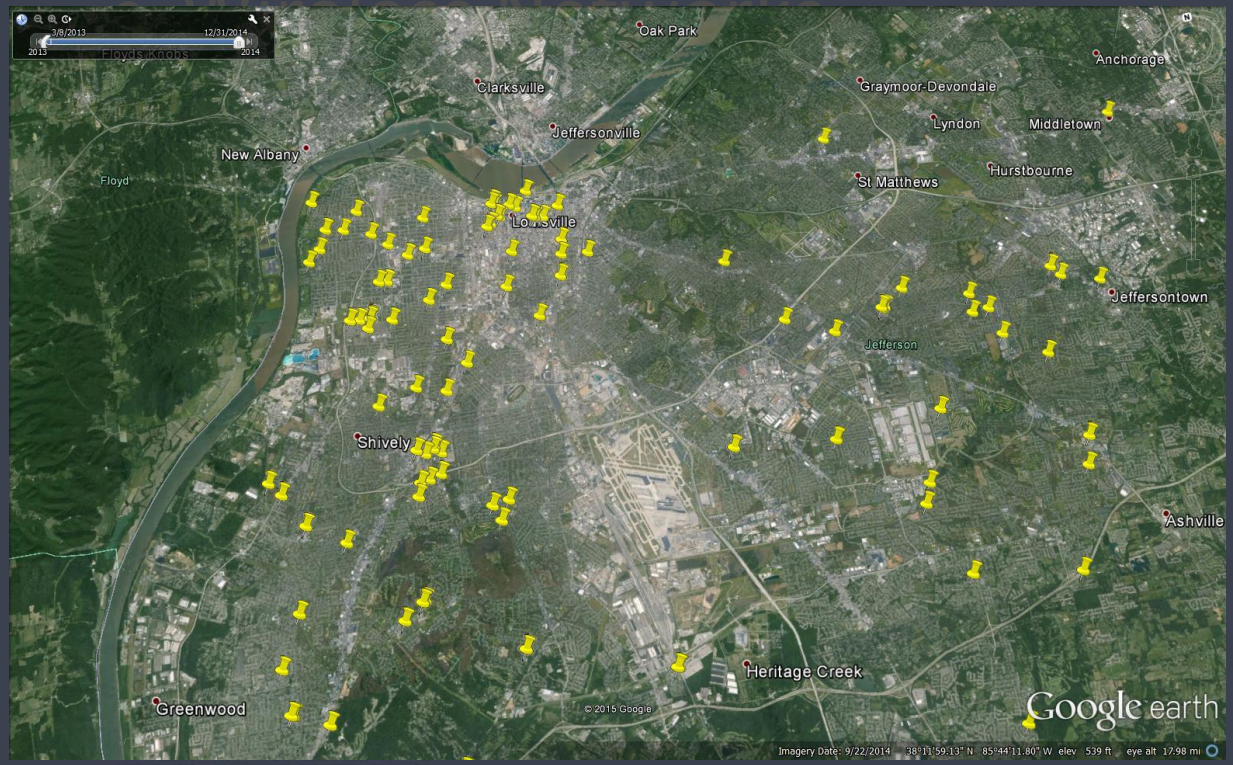
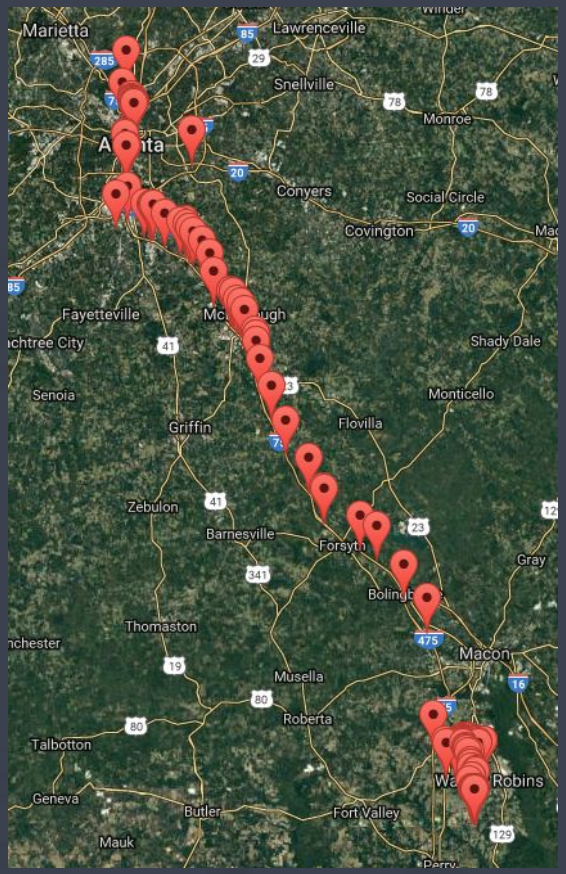
Cellphone Artifacts

GPS, Wifi, Cell towers





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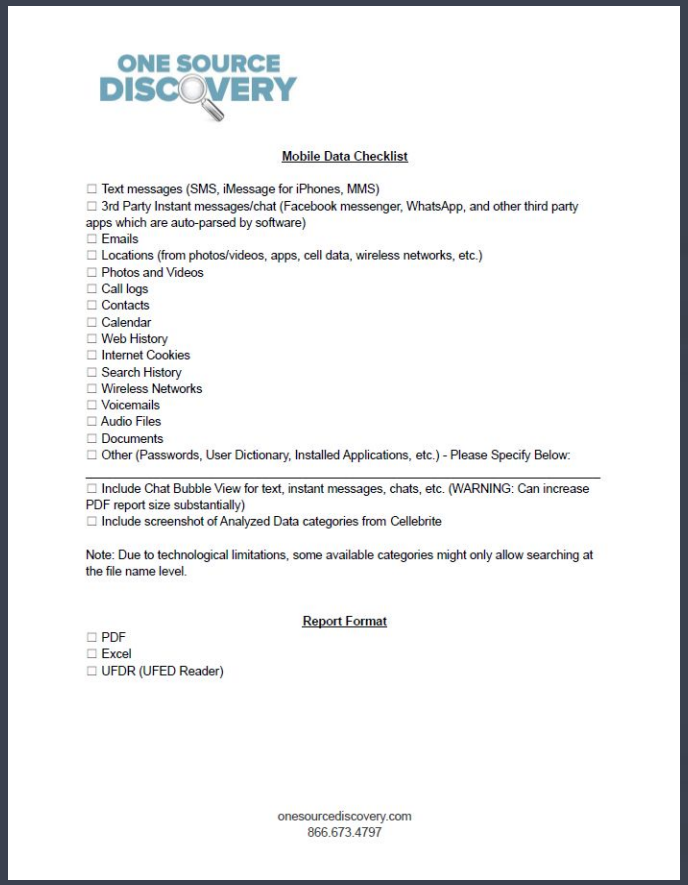
Cellphone Artifacts - Checklist



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Mobile Data Checklist

☐ Text messages (SMS, iMessage for iPhones, MMS)
☐ 3rd Party Instant messages/chat (Facebook messenger, WhatsApp, and other third party apps which are auto-parsed by software)
☐ Emails
☐ Locations (from photos/videos, apps, cell data, wireless networks, etc.)
☐ Photos and Videos
☐ Call logs
☐ Contacts
☐ Calendar
☐ Web History
☐ Internet Cookies
☐ Search History
☐ Wireless Networks
☐ Voicemails
☐ Audio Files
☐ Documents
☐ Other (Passwords, User Dictionary, Installed Applications, etc.) - Please Specify Below:

_____

☐ Include Chat Bubble View for text, instant messages, chats, etc. (WARNING: Can increase PDF report size substantially)
☐ Include screenshot of Analyzed Data categories from Cellebrite

Note: Due to technological limitations, some available categories might only allow searching at the file name level.

Report Format

☐ PDF
☐ Excel
☐ UFDR (UFED Reader)

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Cellphone Report

- Demo...

Case Study #1: The Prenuptial Agreement

You represent Wife who has come to you for a divorce with a Prenuptial Agreement in hand. It appears the parties signed the prenuptial agreement the day of their marriage in front of a notary without attorney representation. Wife wants the agreement upheld as it protects his large estate. Husband claims that there were irregularities in the execution of the agreement amounting to fraud, duress, mistake, or a misrepresentation or nondisclosure of material facts including that he did not read the prenuptial agreement, never met with an attorney, and was forced to sign it the day of the wedding or forgo a wedding.

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Case Study #2: The Bad Financial Actor

You represent Wife who has come to you for a divorce. Husband runs a business largely in cash with his brother. Your client suspects Husband is hiding the true nature of his income, as well as his contributions to the growth of the business during the marriage. Husband claims brother runs the business and he is only a lowly employee.

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Case Study #3: The Cheating Spouse

Your client believes the opposing party has been having an affair for the last six years of the marriage. They want you to prove it and take all the evidence to court so you can win their case.

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A Lawyer's Process

- **Setting up your case**
  - Do I need an expert?
  - Selecting your expert
  - Scope of assignment
  - How/when/where will I get results?
- Discovery
- Trial

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A Lawyer's Proces

- Setting up your case
- **Discovery**
  - Spoliation Letter
  - Requests for Production/Interrogatories
  - Motion
  - Dealing with Privilege
- Trial

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A Lawyer's Proces

- Setting up your case
- Discovery
- **Trial**

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A Lawyer's Proces

- What was the scope of your assignment in this matter?
- Did you compile a report?
    - What steps did you take in creating the report?
    - How did you set up the search?
    - Keywords
    - Can you walk me through your report?
        - modification date of a document is the most accurate means to determine when a document was edited or modified
        - creation date
        - multiple files
        - meta date (external v. internal).
- Admit Report

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A Lawyer's Proces

- Are these documents you forensically recovered?
- Are they the same document?
- Why would there be multiple copies of the same document?
- When were these documents modified? Why is that significant?
- Were they created at the same time? What does that signify?
- Move to admit

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Takeaways

- Get ahead of it
- Know what data you can get
- Solicit expert for ideas - they've seen a lot

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FAQs

- I cannot even work my iPhone, can I really do this?
- How do I know if my expert is actually qualified?
- What if I receive more data than I can manage?
- What if the data is just a bunch of junk?

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Q&A

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Andy Cobb: andy@onesourcediscovery.com

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