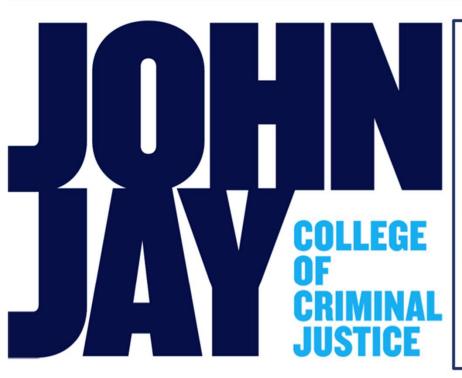
JOHN JAY COLLEGE – CENTER FOR CYBERCRIME STUDIES



Mission Statement: To lead, coordinate, catalyze, and produce cutting-edge, multidisciplinary research on cybercrime and develop evidence-based solutions to counter cybercrime.

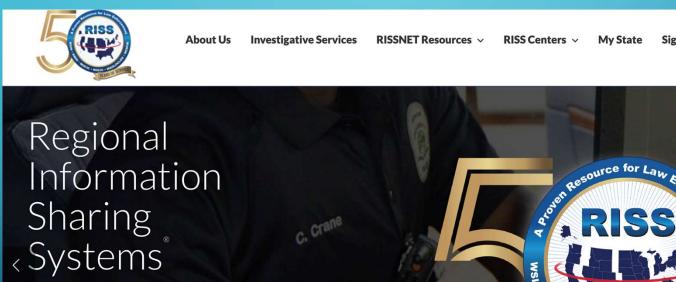
The Center draws on cross-disciplinary expertise to:

- conduct innovative and collaborative research on cybercrime;
- inform policies and practices designed to investigate, respond to, mitigate, and prevent cybercrime; and
- assist national and international public and private sectors in recognizing the changing cybercrime risk landscape, detecting cybersecurity vulnerabilities, and identifying the methods used by cybercriminals to adapt to and evade law enforcement and cybersecurity measures.

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POLICE

NATIONAL WHITE COLLAR CRIME CENTER



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ONLINE TRAINING

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Economic Crime Courses

Learn to examine documents, recognize fraud indicators, and bring financial crime cases to prosecution.



Cybercrime Courses

Learn to conduct cyber investigations, process digital evidence, and investigate network intrusions.



Intelligence Courses

Analyze and report on criminal intelligence data in cases ranging from local crime to terrorism.



Legal Courses

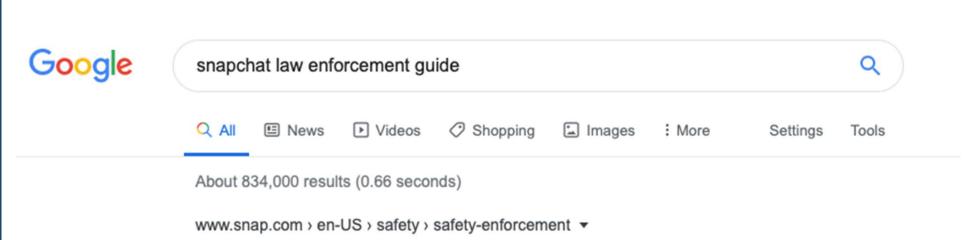
Interactive courses delivered by renowned subject matter experts to improve your investigative skills.





LAW ENFORCEMENT RESOURCE GUIDES

- IDENTIFY THE SERVICE PROVIDER YOU WANT INFORMATION FROM.
- MOST SERVICE PROVIDERS HAVE ONLINE GUIDES
 FOR LAW ENFORCEMENT AND LEGAL COMPLIANCE.
- VISIT THEIR WEBSITE OR GOOGLE "X LAW ENFORCEMENT GUIDE."



Safety Center – Law Enforcement – Snap Inc.

Many questions relating to **law enforcement** requests are answered in our **Law Enforcement Guide**. There you'll find details regarding possible availability of **Snapchat** user records, information, or content and the type of legal process required to compel disclosure of that data.



Information for Law Enforcement

These operational guidelines are provided for law enforcement and governmental officials who are seeking to request user account information from Snap Inc.

Many questions relating to law enforcement requests are answered in our Law Enforcement Guide. There you'll find details regarding possible availability of Snapchat user records, information, or content and the type of legal process required to compel disclosure of that data.

Domestic Legal Process Requests

As a U.S. company, Snap Inc. requires domestic law enforcement and governmental agencies to follow U.S. legal process for us to release any user account information.

For the most part, our ability to disclose user information is governed by the Electronic Communications Privacy Act, 18 U.S.C. § 2701, et seq. (ECPA). ECPA mandates that we disclose certain user information to law enforcement only in response to specific types of legal process, including subpoenas, court orders, and search warrants. Generally speaking, ECPA authorizes law enforcement to compel us to disclose basic subscriber information, non-content account information, and account content (definitions for these are provided in Section V of our Law Enforcement Guide) in response to appropriate legal process.

International Legal Process Requests

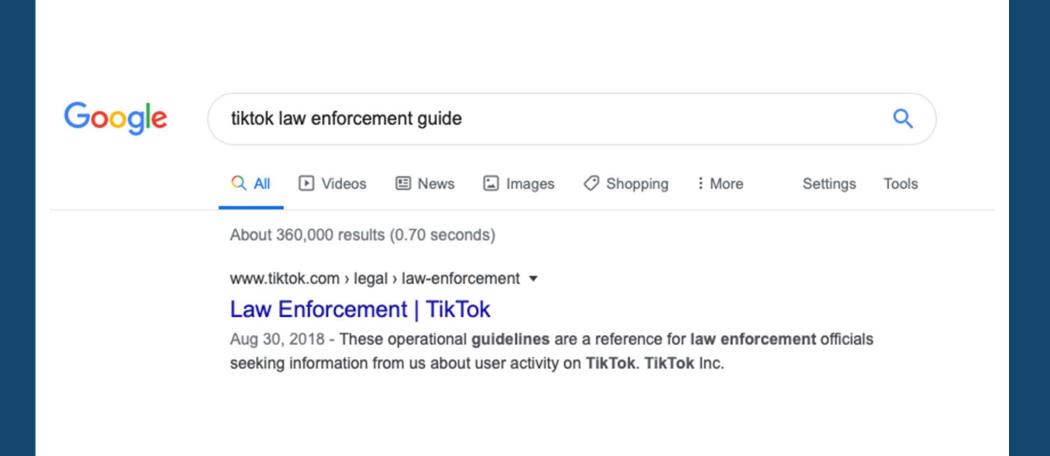
International law enforcement and governmental agencies must use Mutual Legal Assistance Treaty (MLAT) or letters rogatory processes to request user information from Snap Inc.

If you require assistance regarding the MLAT or letters rogatory processes, we urge you to seek assistance from your local prosecutorial authority, the U.S. Legal Attaché for your jurisdiction, or the U.S. Department of Justice Computer Crime & Intellectual Property Section (CCIPS). Snap Inc. is not able to offer you assistance with the MLAT or letters rogatory processes.

Emergency Requests

Under 18 U.S.C. §§ 2702(b)(8) and 2702(c)(4), we are able to voluntarily disclose information when we believe in good faith that an emergency posing a threat of imminent death or serious bodily injury would require the immediate disclosure of such information.

Information for law enforcement about submitting requests can be found in our Law Enforcement Guide. All emergency requests must be signed by a sworn law enforcement official and must come from an official law enforcement email domain.



Legal

Cookies Policy

Privacy Policy for Younger Users

Open Source

Virtual Items

Intellectual Property Policy

Law Enforcement

Privacy Policy

Terms of Service

Law Enforcement Data Request Guidelines

Last updated: August 30, 2018

If you are a law enforcement official with primary jurisdiction in country or region Cambodia, Hong Kong, Indonesia, Laos, Philippines, Singapore, Thailand, Japan, Korea, Taiwan, Vietnam, Malaysia, Macau, please refer to this guideline. If you follow the below guideline your request can not be processed.

If you are a law enforcement official with primary jurisdiction in Russia, please refer to this guideline. If you follow the below guideline your request can not be processed.

These operational guidelines are a reference for law enforcement officials seeking information from us about user activity on TikTok. TikTok Inc. ("TikTok" or "Company") may change these guidelines at any time, without notice.

TikTok's policy on responding to law enforcement requests

TikTok is committed to assisting law enforcement while respecting the privacy and rights of its users. To obtain non-public user information, law enforcement must provide the appropriate legal documents required for the type of information being sought, such as a subpoena, court order, or warrant, or submit an emergency request.

What information may be available in response to a lawful request?

The following information may be available in response to an enforceable law enforcement request:

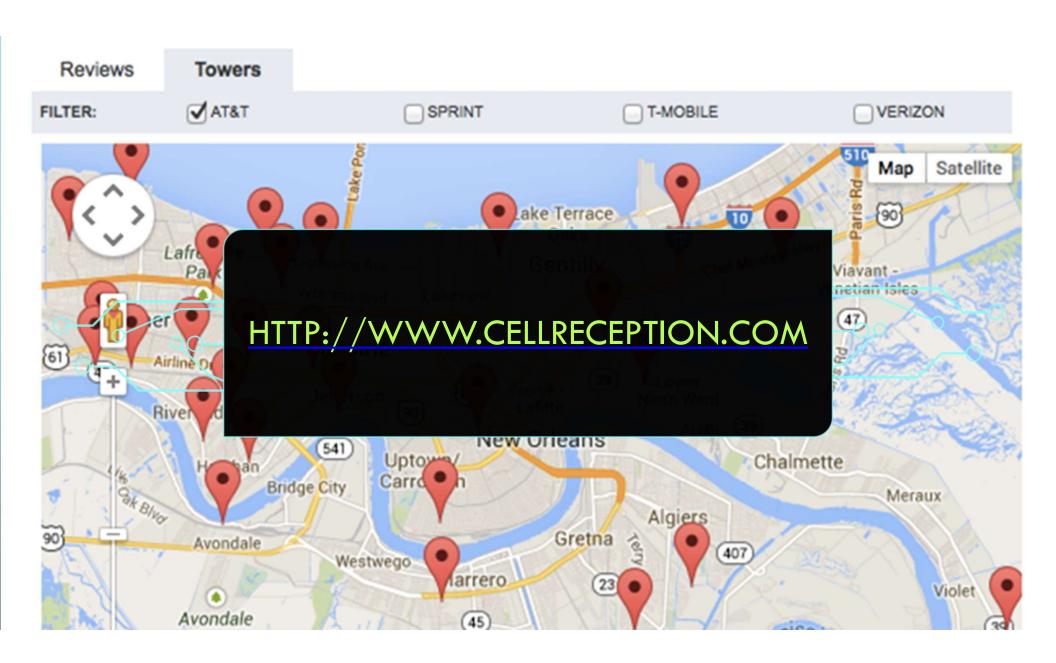
Subscriber InformationUser account information is collected when a user registers a new account
or otherwise revises applicable fields within the application ("Account Information"). Note, some of
the categories listed below are not required to create an account. Account Information may
include:UsernameFirst and last nameEmail addressPhone numberDevice ModelAccount creation

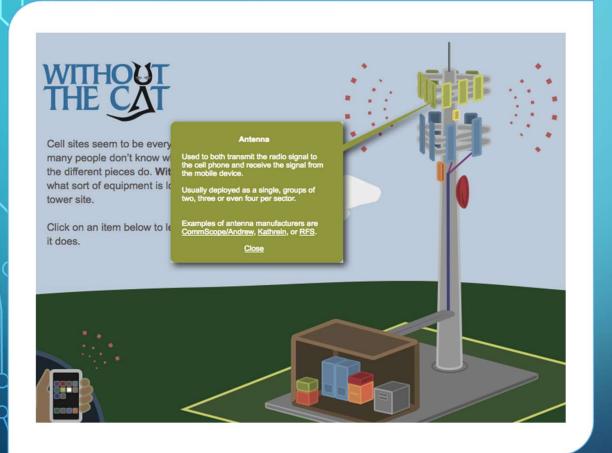




CELL TOWERS

- Coverage ~ 10 square miles
- Strong signal, near tower*
- Towers can be leased
- Can be disguised in trees, water towers, houses, etc.
- For CELL tower reference
 - http://www.cellreception.com
- * The closest CELL tower does not
- have to pick up your signal





WITHOUTTHECAT.COM



EVIDENCE ADMISSIBILITY

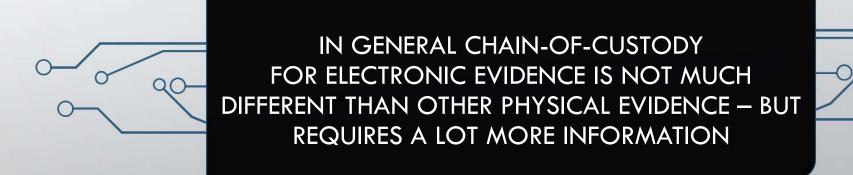
Evidence Collection

- Follow established legal processes.
- Use accepted and proven techniques and tools.
- Employ certified digital experts.



CHAIN OF CUSTODY

- Chronological Documentation
 - •Accounts for location and access of evidence from the time it is collected/seized until the time it is used in a legal or administrative proceeding.



CHAIN-OF-CUSTODY

The "sequencing" of the CoC follows this order: identification and collection; analysis; storage; preservation; transportation; presentation in court; return to owner.

The CoC shows: who obtained the evidence; where and when the evidence was obtained; who secured the evidence; who had control or possession of the evidence.

EVIDENCE

- Evidence should be handled according to agency policy while maintaining a chain of custody.
- Network isolation should be maintained.
- Additional forensic analysis may need to be performed:
 - To conduct traditional forensic processes on a mobile phone (DNA, latent prints, etc.).
 - Contact appropriate crime lab personnel for guidance on processing order to avoid the destruction of forensic evidence.

EVIDENCE: FARADAY

- Faraday Bag/Box: Used for digital evidence collection, preservation and examination.
 - Shields digital evidence from cellular, WiFi,
 Bluetooth and radio frequency (RF) signals.
 - https://edecdf.com/collections/mobile
- Faraday Cage/Tent

FARADAY BAGS/BOXES/CAGES/TENTS



- Evidence
- Preservation
- Examination







Seizing Evidence

- Review search warrant.
- "Ask" mobile user for pass codes or PINs.
- Process Immediately OR Turn off Phone and remove battery?
 - Turning OFF:
 - Preserves call logs and last cell tower location information (LOCI).
 - Prevents overwriting deleted data.
 - · Prevents improper mobile phone handling.
 - CON Removes information from active memory.
 - CON May make it harder for forensic analysis.

Seizing Evidence

- Locking the phone by password or PIN.
- Many mobile phones can be placed in "Airplane" mode.
 - Not really a great solution Does not do what people expects
- Collect associated chargers, cables, peripherals, and manuals.

PYRAMID LEVELS OF EXAMINATION

CHIP OFF

PHYSICAL

FILE SYSTEM

LOGICAL

MANUAL

- The higher the level, the more complex
- Tools more \$
- Longer analysis times
- More training
- More Invasive



mobileforensics





MOBILE FORENSIC PRODUCTS

• EnCase Mobile Investigator: \$???

• AccessData MPE+: \$5,000

• Cellebrite UFED Ultimate: \$15,000

• Lantern 3: \$600

• Oxygen Forensic: \$12,000+

• Magnet AXIOM: \$1700 + Annual Maintenance

• Cellebrite Advanced Services: \$1000 / Phone

• berla.co: Cars & GPS Units

EVIDENCE

- Overview
- Contacts
- **■** Calls
- Voicemail
- Messages
- Notes
- **Calendar**
- Internet (bookmark)
- Internet (displayed)
- Internet (history)

- Dictionary
- ...l Wifi
- Videos
- Images
- Documents
- Facebook (message)
- ## Facebook (contact)
- **Ⅲ** Apps
- O Timeline
- Breadcrumbs



LANTERN3

Calls

Hashes	MD5: e94e1a7807db3547a0c2b0c382ce8c37 SHA1: dbf19e3eefd5f2f728088a4ca7cd25294309350a	
Incomir	67	
Out ing	33	
Rep ting	100 of 100	
Source.	private/var/mobile/Library/CallHistory/call_history.db	

pe		Time	To/From	Number	Duration
	ď	09/20/2013 13:35:36 EDT	स व्य	Œ	00:01:17
	ď	09/20/2013 12:53:19 EDT		(6	00:02:19
	ď	09/20/2013 12:52:42 EDT		(6	00:00:20
	Ç	09/20/2013 12:52:24 EDT		(6	00:00:08
	ď	09/20/2013 12:51:43 EDT		(¢	00:00:34
	1	09/20/2013 12:41:03 EDT		(6	00:00:00
	ď	09/20/2013 12:15:25 EDT		(E	00:03:01
	!	09/20/2013 11:38:40 EDT		(E	00:00:00
	v.	09/19/2013 18:36:17 EDT		(E	00:01:18

Voicemail

Reporting

рш		Tim	From	Number	Duration	Deleted Date	Listen	Hashes
	V	09/' /201 12:31· اب	1		00:00:21		238.amr	MD5: 9e9a49373a225adfafab39913046b03d SHA1: 44a48cfefa89e6a90738c561d932648a4eeb0d85
	•	09/26/2013 07:51:34 EDT	1		00:00:25		239.amr	MD5: 91f98e01a77e4fce6914330e8abcc2fc SHA1: 95fff9d74c86b88609b87a34785aef86406b8051
	•	09/20/2013 19:09:41 EDT	1		00:00:26		237.amr	MD5: 3c47cc0fd7c949df3e6e136999ede72b SHA1: a78cf38247bef7defd904be7bf10164d574d3fec
		09/17/2013 15:36:54 EDT			00:00:27		236.amr	MD5: 10c098081496d1d6dfb1ba78e1743b48 SHA1: e7368e834e3a89c693fc85d6d299785da7c225ff
	Ī	09/14/2013 17:59:39 EDT	1		00:00:10	09/14/2013	235.amr	MD5: 5fb8732deecb9804ca9002cb97560fb0 SHA1: eb5663abf5c42450d9e53c0938caf2a1048e5507
	Ī	09/14/2013 15:22:46 EDT	1		00:00:28	09/14/2013	234.amr	MD5: a3b830702726420d84216ce2349cf2f1 SHA1: ab9721b4f281b1230c9673dd8c32b058db2a3541
	Ī	09/07/2013 06:21:27 EDT	1		00:00:06	09/07/2013	231.amr	MD5: ab433e05b2484d6f2ce7133c143e6033 SHA1: 71f3d3baaa0b5a2eb2058fdef7ae8e153e6e9d1a
	Ī	09/02/2013 06:14:06 EDT	1		00:00:09	09/02/2013	225.amr	MD5: ab41b1de77658d8f5c3911a543808c2b SHA1: 33c584aeba9bb8b73b4136dfe9c5cab01cd4eaf7

Messages

(Page 1 of 164)

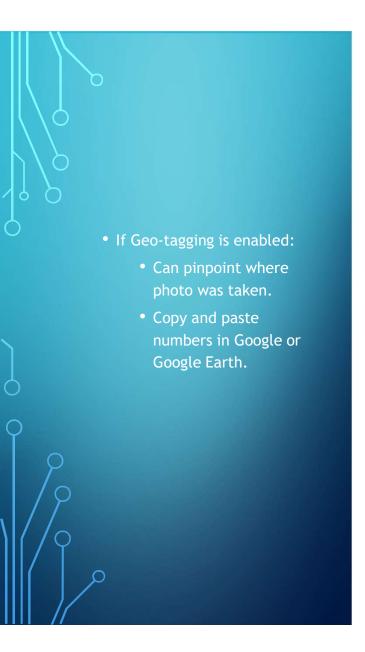
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Incoming	16030
Outgoing	12280
Reporting	28310 of 28310
Source File	private/var/mobile/Library/SMS/sms.db

P	Ė	B	•	•	Time	To/From	Number	Text
				~	03/03/2013 01:34:40 EST			
				~	03/03/2013 01:32:32 EST			
				~	03/03/2013 01:19:44 EST			
					03/03/2013 01:19:44 EST			
				~	03/03/2013 01:19:44 EST			
					03/03/2013 01:19:44 EST			

Wifi

Hashes	MD5: a7a98542baaf86abffb0785da0c9d751 SHA1: b41f2935561e8a4b6f6f089b328eb3056e783a15
Reporting	87 of 87
Source File	private/var/mobile/SystemConfiguration/com.apple.wifi.plist

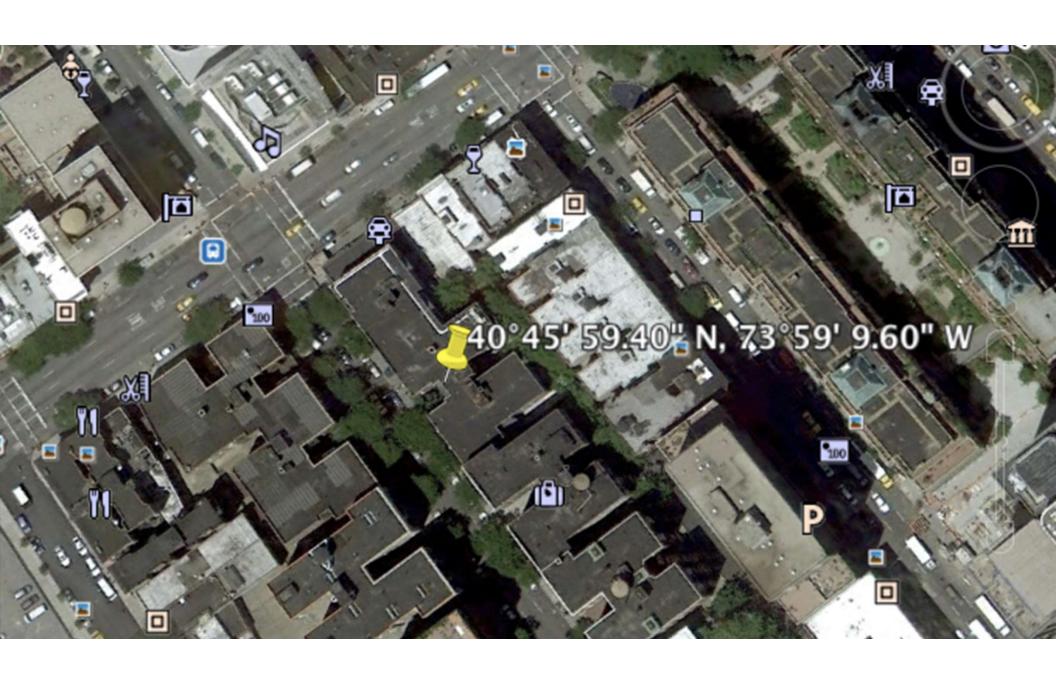
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	09/20/2013 06:33:48 EDT	last joined	r	0	Open
	09/07/2013 17:25:52 EDT	last joined	E	5	Open
	09/03/2013 20:28:39 EDT	last joined	F	0	Secure
	08/04/2013 20:02:44 EDT	last joined	н	0	Secure
	07/29/2013 15:38:24 EDT	last joined	C	2	Open
	07/10/2013 15:05:33 EDT	first joined	C	2	Open
	07/05/2013 14:42:32 EDT	last joined	F	2	Open
	06/04/2013 12:50:39 EDT	first joined	1	0	Open
	05/31/2013 21:14:29 EDT	last joined	t	7	Secure



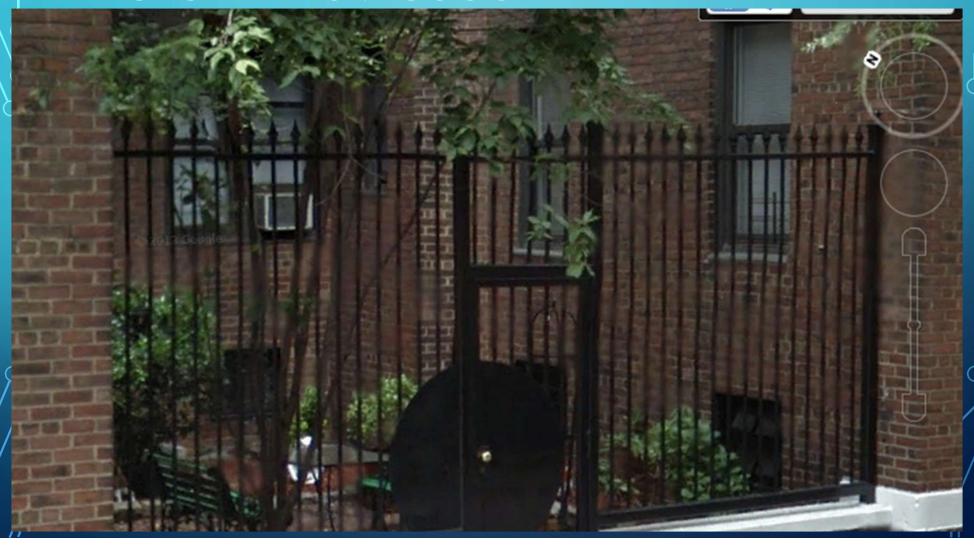
Breadcrumbs

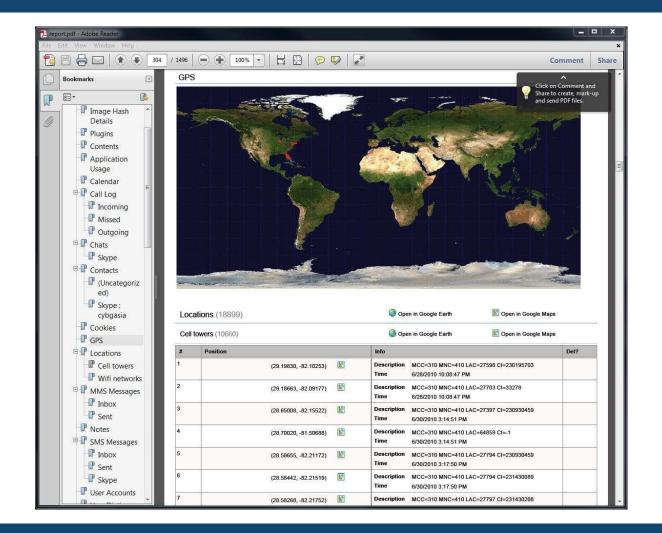
h	Time	Description	Latitude	Longitude	Where	
	12/01/2011 00:44:13 EST	Photo IMG_0009.JPG			NY	(
	12/01/2011 00:44:17 EST	Photo IMG_0010.JPG			NY	1
	12/01/2011 00:44:20 EST	Photo IMG_0011.JPG			NY	(
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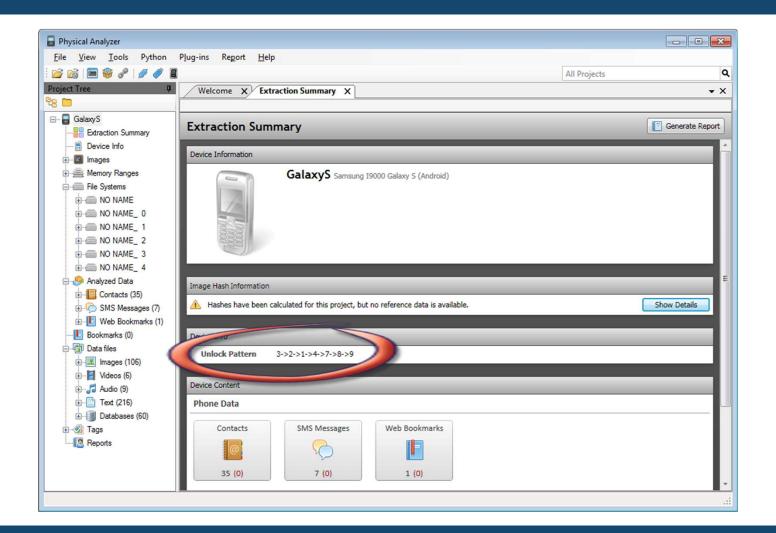
ACTUAL PICTURE

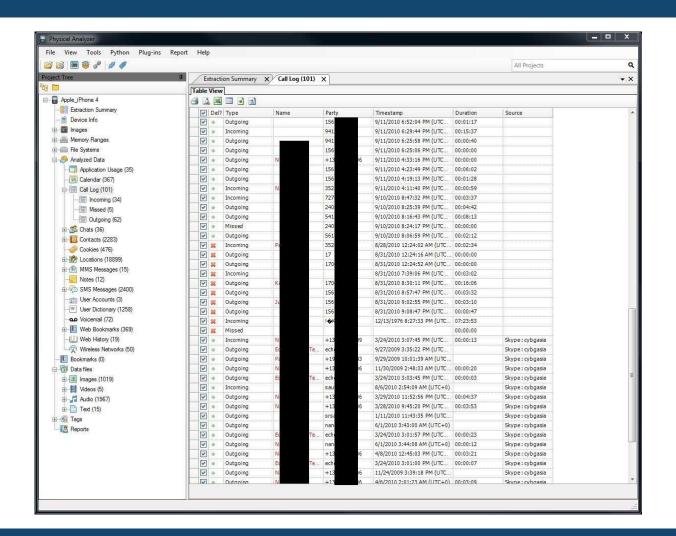


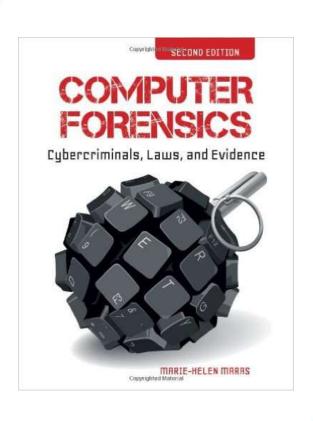
PICTURE FROM GOOGLE EARTH







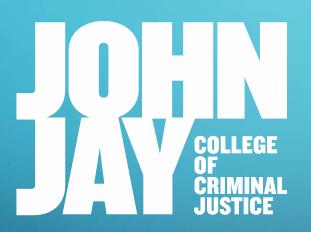




MARIE-HELEN MARAS ISBN-13: 978-1449692223

CERTIFIED INSPECTOR GENERAL INVESTIGATOR

DIGITAL EVIDENCE





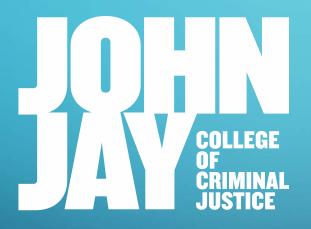
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awandt@jjay.cuny.edu

http://wandt.us

CERTIFIED INSPECTOR GENERAL INVESTIGATOR

SOCIAL MEDIA & CLOUD FORENSICS

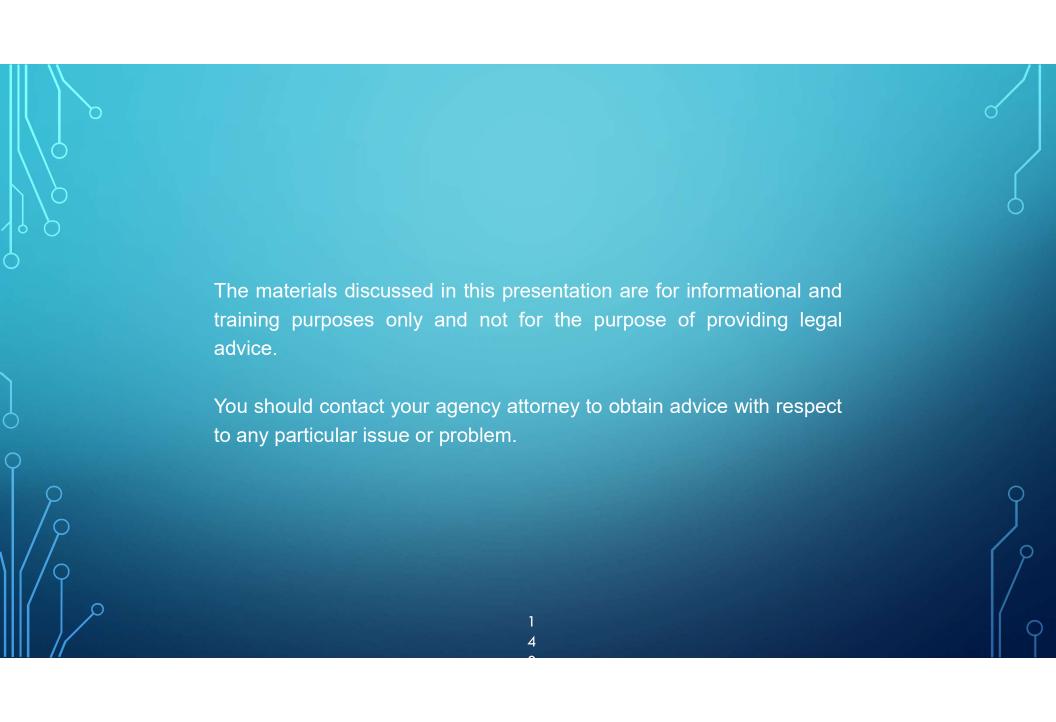




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FORMER SWORN LAW ENFORCEMENT OFFICER

INSTRUCTOR:
ASSOCIATION OF INSPECTORS' GENERAL

MASTER SCUBA DIVER UNDERWATER PHOTOGRAPHER



https://wandt.us

wandt.us/aig







LEARNING OBJECTIVES

- Understand how social media plays key rolls in today's investigations.
- Understand what types of evidence may be preserved on social media
- Understand the difference between OSINT and legal process investigations.
- Understand the value and basic concepts involved in geofencing.
- Get basic exposure to cloud forensics and understand why it is so difficult to conduct advanced cloud-based investigations.



SOCIAL MEDIA: USE IN LAW ENFORCEMENT

- (LexisNexis® Risk Solutions, 2016)
- Four (4) out of five (5) respondents actively use social media as a tool in investigations.
- Most common uses include:
 - Identifying people and locations.
 - Discovering criminal activity and locations.
 - Gathering evidence and statements.
- Facebook and YouTube are the most widely used platforms for investigations. (Instagram & Snapchat)

SURVEY OF LAW ENFORCEMENT PROFESSIONALS

25% use social media daily for investigations.

73% believe social media helps solve crimes faster.

According to respondents, search warrants utilizing social media to establish probable cause holds up in court when challenged 87% of the time.

Over half (52%) of agencies still don't have a formal process for using social media for investigations.

Less than 20% of respondents learned how to use social media for investigations through formal training at agency or training.



ASSOCIATION OF INSPECTORS GENERAL ANNUAL MEETING SURVEY

2022

N = 76

