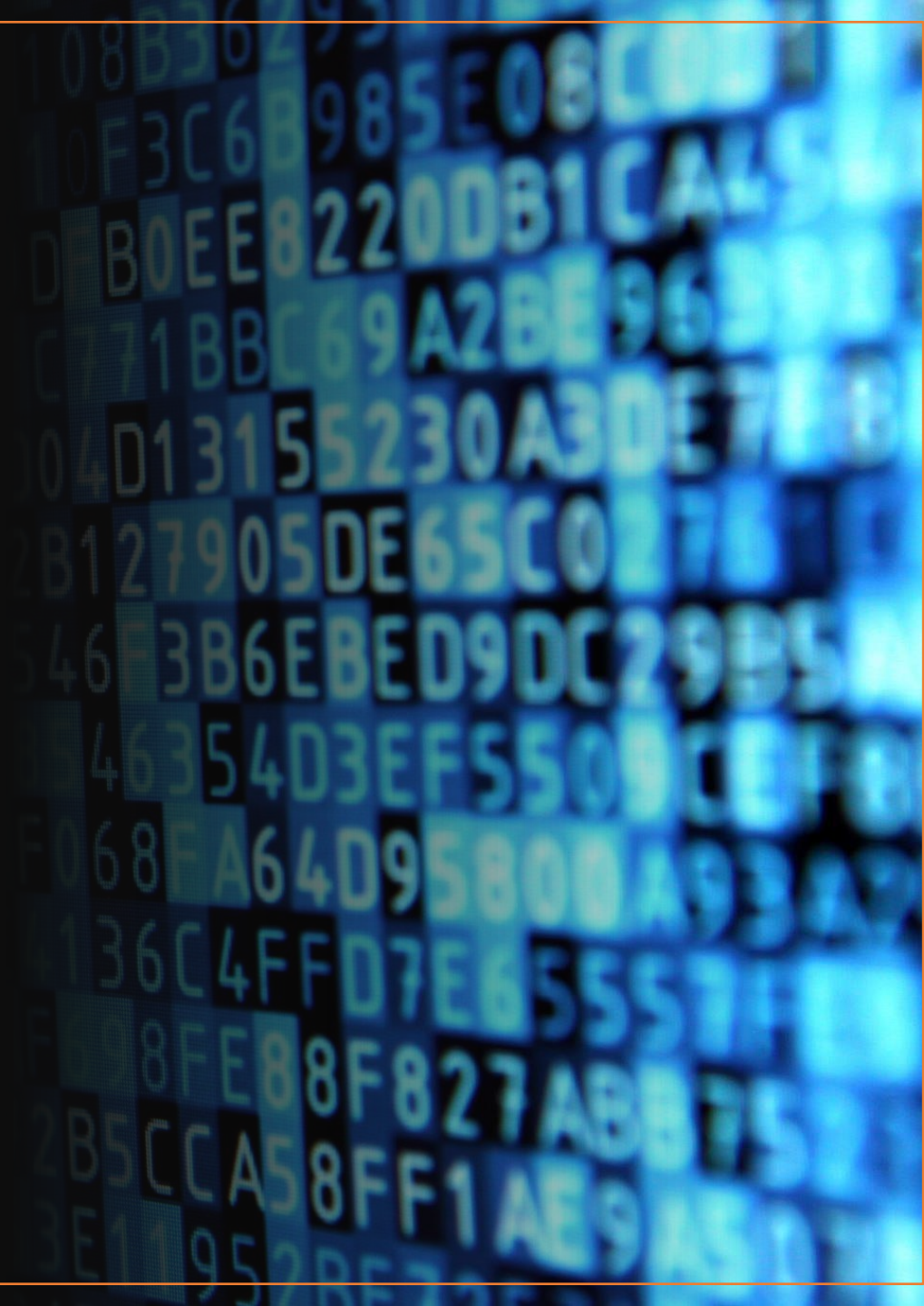


# Digital Evidence: Where is it? What is it?

Alice Fontier

The Neighborhood Defender

Service of Harlem



**THE FILES...**

**ARE IN THE COMPUTER?  
IT'S SO SIMPLE.**

quickmeme.com

## Computer Forensics

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# Cookies and deleted files



The screenshot shows a web browser window with the following elements:

- Address Bar:** Contains the URL `nyprdomainawareness.com/watch?v=dOw...45SmbVt4`.
- Search Bar:** Contains the text `nyprdomainawareness.com`.
- Video Player:** Displays a video titled "How real-time 911 analytics works". The video content includes a flowchart with the following steps:
  - Location of 911 call
  - ADDRESS MATCHING
  - GEOCODED RADIUS SEARCH
  - 2.2 billion DAS records
  - RECORD PRIORITIZATIONThe flowchart also includes a screenshot of a "10-10H1" interface with a table of results:

OVERVIEW	PEOPLE	911	MAP
1 ACTIVE WARRANTS			
2 911 EDWARDSIDE			
3 DOMESTIC INCIDENTS			
4 ARRESTS			
5 COMPLAINTS (PERMITS/INQUIRIES)			
6 ACTIVE CHARGES			

- History Sidebar:** Lists recent browsing history, including YouTube videos and Google search results.
- Notification Panel:** Opened on the right side, showing various notifications. A red arrow points to a notification icon in the top right corner of the browser window.

# Online History



# Cell Phones



**Your life:  
In Searchable  
Format**

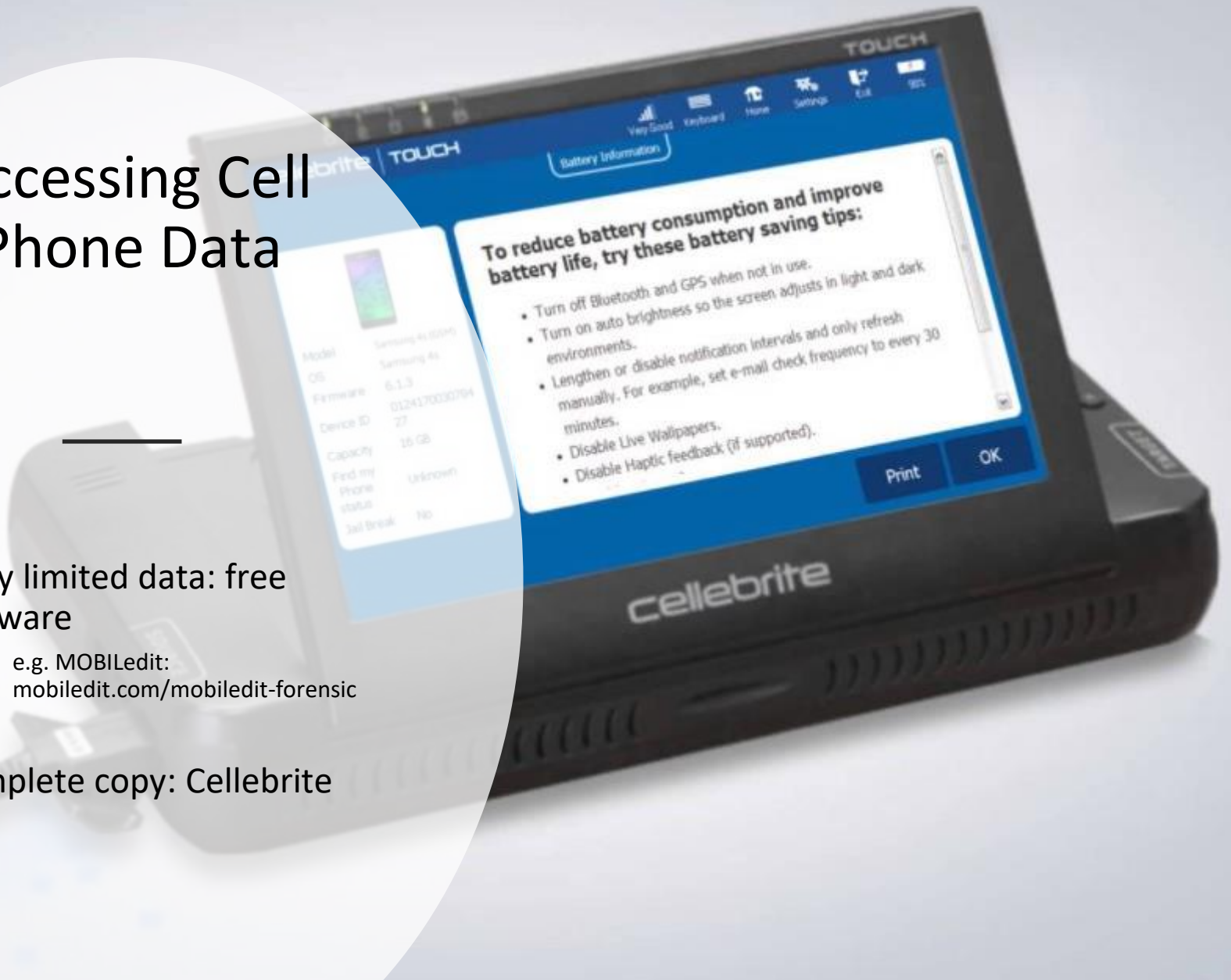
- **Texts/Emails/Messages**
- **Photos and Videos**
- **Data from apps**
- **Stored data**

# Accessing Cell Phone Data

Copy limited data: free software

e.g. MOBILedit:  
[mobiedit.com/mobiledit-forensic](http://mobiedit.com/mobiledit-forensic)

Complete copy: Cellebrite



Model	Samsung 4i (GT-I9070)
OS	Samsung 4i
Firmware	6.1.3
Device ID	0124170030704
Capacity	16 GB
Find my Phone status	Unknown
Jail Break	No

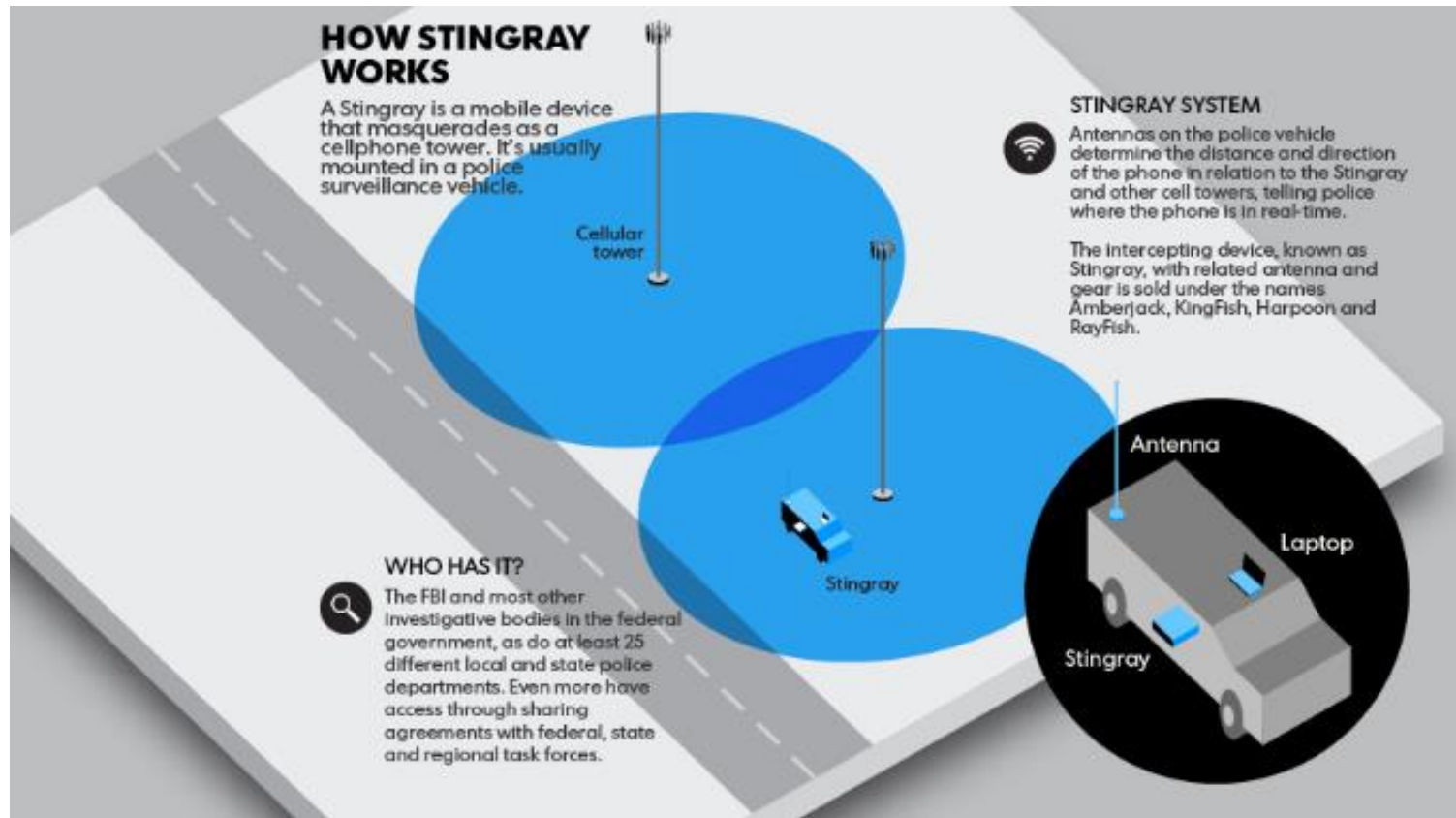
- To reduce battery consumption and improve battery life, try these battery saving tips:**
- Turn off Bluetooth and GPS when not in use.
  - Turn on auto brightness so the screen adjusts in light and dark environments.
  - Lengthen or disable notification intervals and only refresh manually. For example, set e-mail check frequency to every 30 minutes.
  - Disable Live Wallpapers.
  - Disable Haptic feedback (if supported).

# Cell Phone Location Tracking



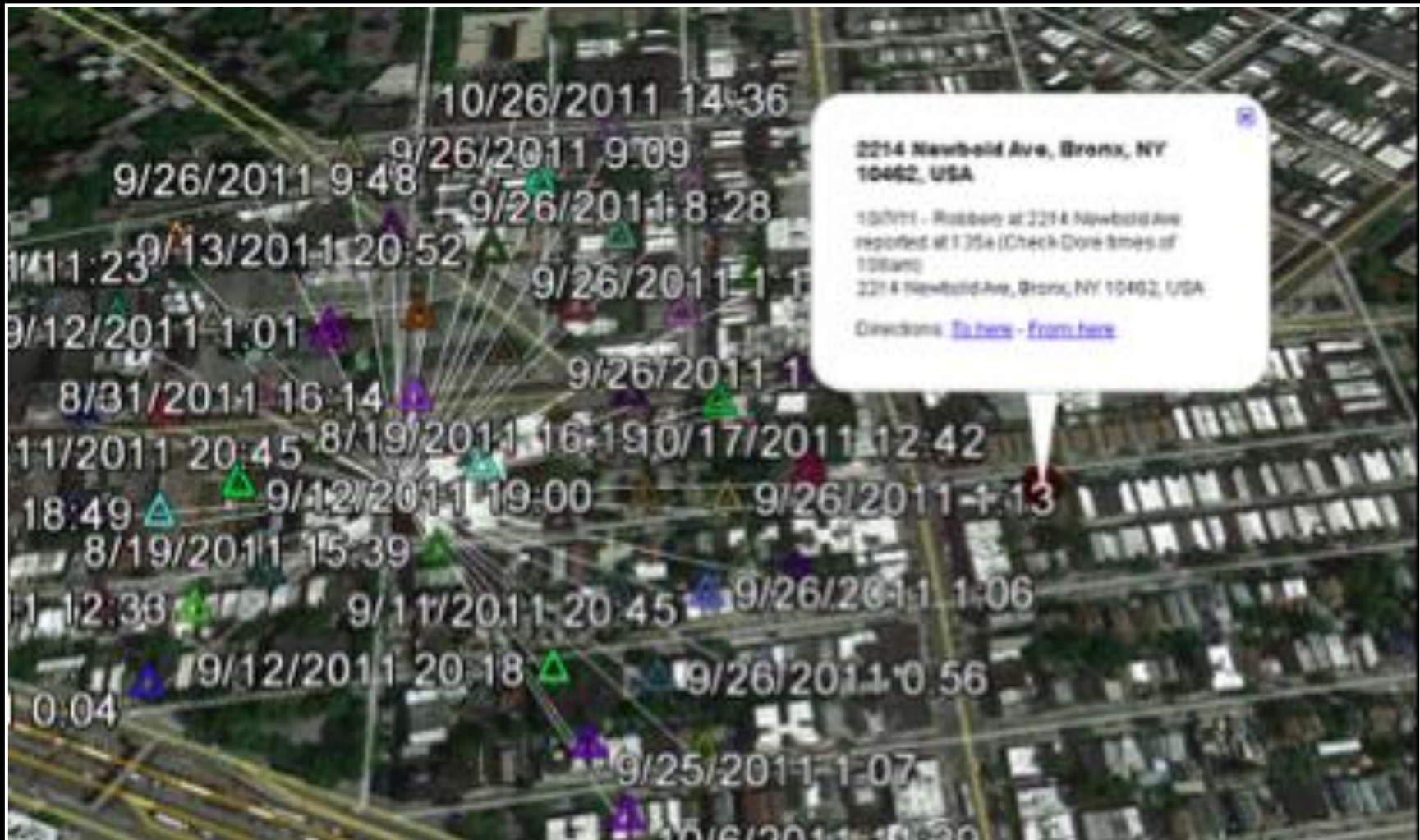


# Location: Stingray Tracking

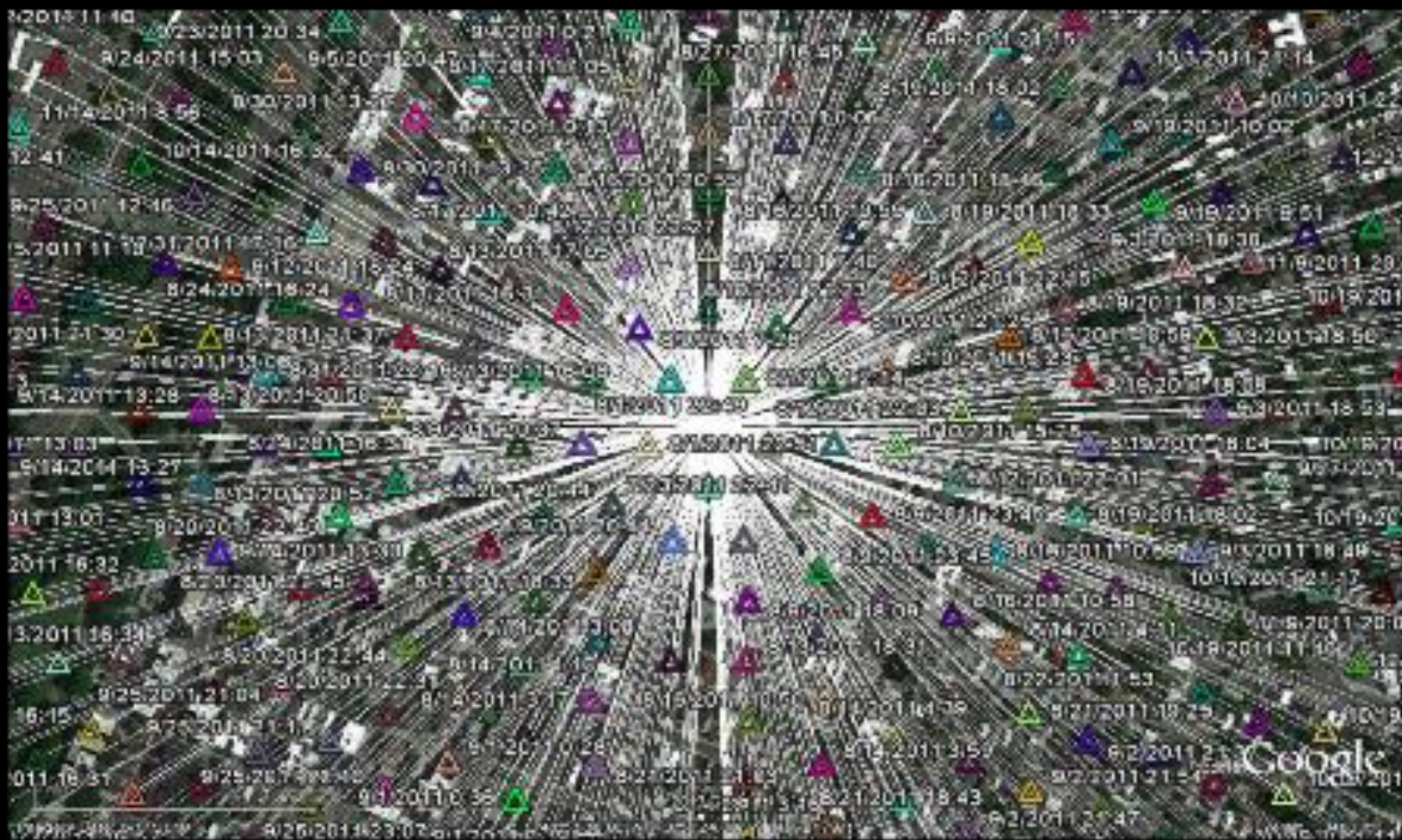


# Cell Site Location Data: Prosecution

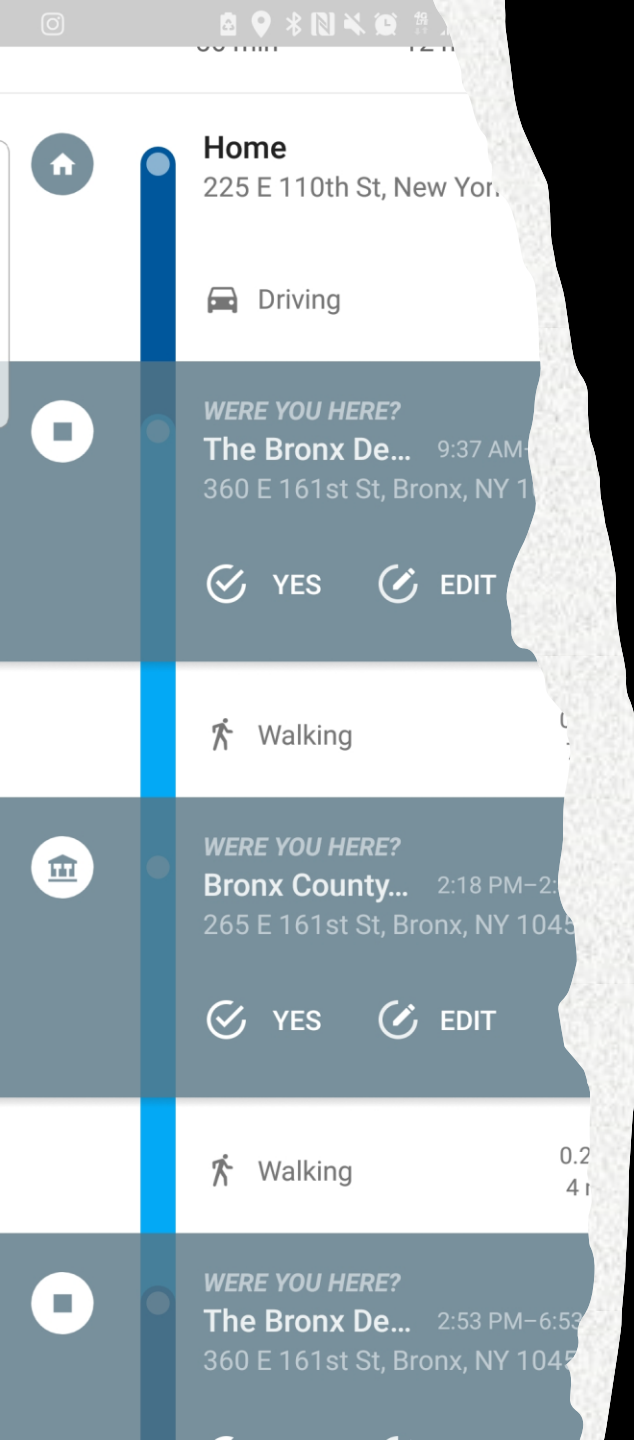




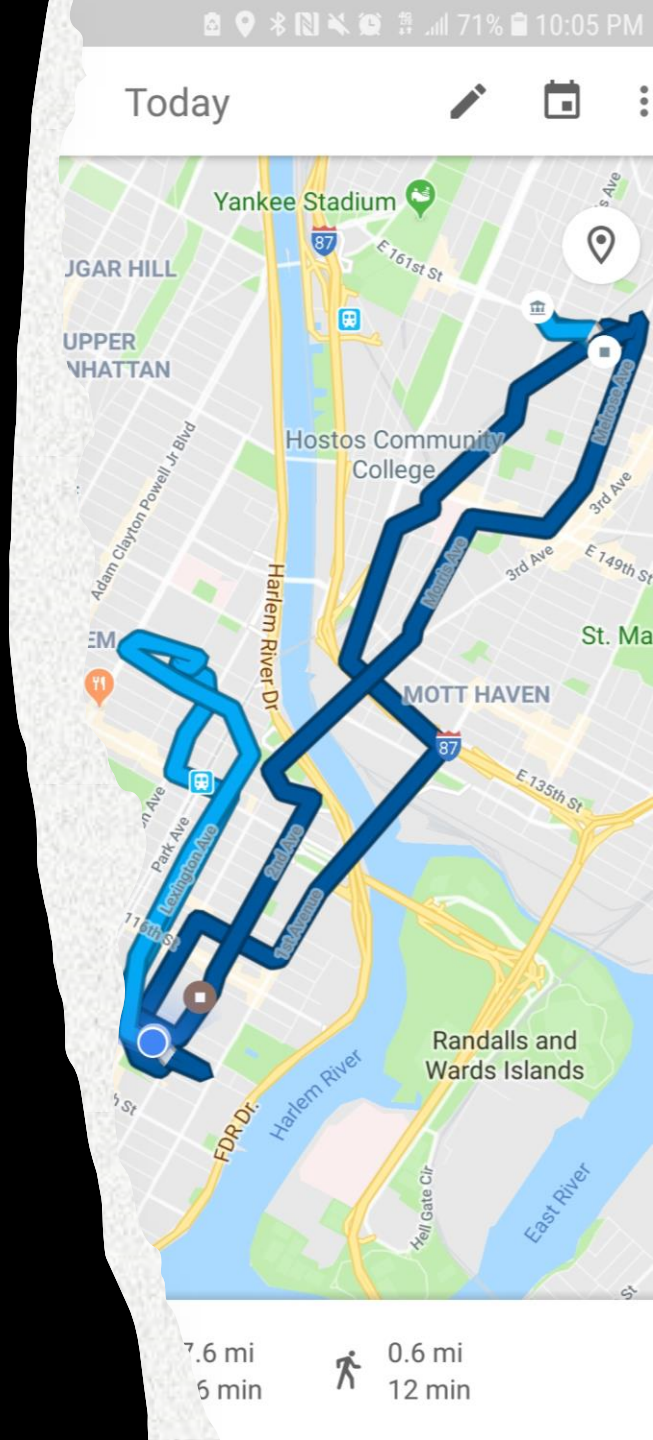
## Cell Site Location Data: Defense

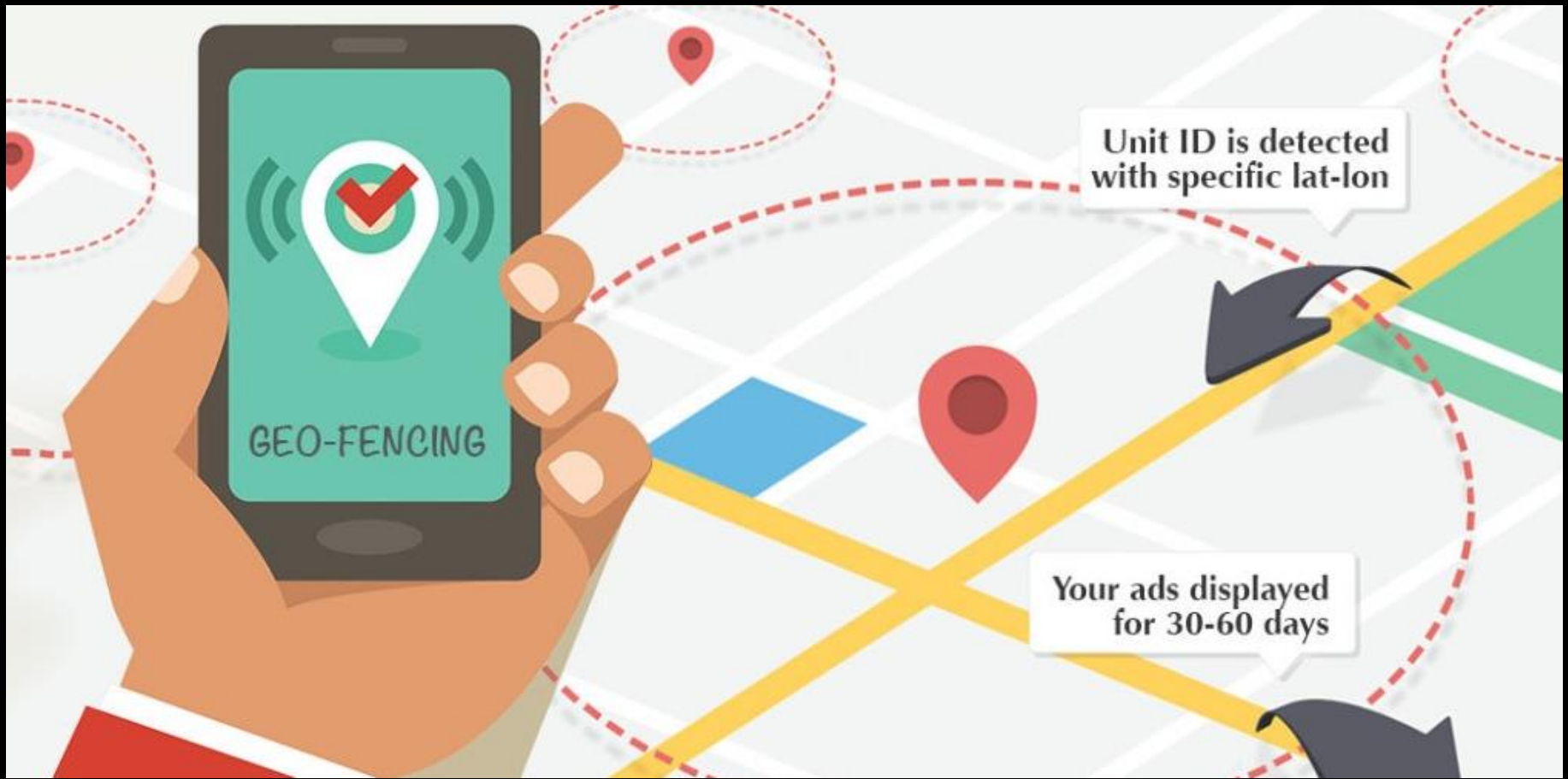


## Cell Site Location Data: Defense



# Google Maps Location





## Geofence Tracking

- In widespread use for advertising purposes
- Accessible to law enforcement
- Google has said they receive ~180 requests by police per week

# Social Media



# Body Worn Cameras





# Body Worn Cameras

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## ACLU:

Of the 65 law enforcement policies reviewed, zero require individuals to be notified that they are being recorded; less than 20% require officers deactivate the camera when entering a home if the resident requests the camera be turned off; no policies provide provisions to protect victims of domestic violence; and most do not lift the activation of BWCs in school settings.

BODY-WORN CAMERA POLICIES SHOULD STRIKE THE RIGHT BALANCE OF

- ✘ PRIVACY,
- ✘ PUBLIC ACCESS &
- ✘ ACCOUNTABILITY.

IN MISSISSIPPI, POLICIES LARGELY FAIL TO COMPLY WITH THESE PRINCIPLES.

#BODYCAMSPOLICY

**ACLU**  
Mississippi

**FAIL**



# Facial Recognition Technology



# Prevalence of U.S. law enforcement face recognition



The Mississippi Department of Public Safety (MDPS) has selected FACES composite image technology from IQ Biometrix for its state investigators.

The ID code generated by the software allows composite evidence to be easily transmitted between authorities in the state's 82 counties, its regional district offices and the MDPS headquarters in Jackson.

# Facial Recognition Technology






Identifier: 1400    Add Probe    Search    Refresh Session    Show Last Removed

Description:    Add Data Filter    Search All    Share Session    Show All Removed    Print

Save Description    Remove    New Session    Delete Session    Close

Combined Results:    Side By Side Comparison









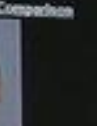
500ms Minimum Threshold

				
827.000	841.000	815.000	758.000	796.000
Compare	Compare	Compare	Compare	Compare
Chart Compare	Chart Compare	Chart Compare	Chart Compare	Chart Compare
Data and Images	Data and Images	Data and Images	Data and Images	Data and Images
Linked Images	Linked Images	Linked Images	Linked Images	Linked Images
Mark for Review	Mark for Review	Mark for Review	Mark for Review	Mark for Review

1 of 5

Searches:     Display Probe Beside Each Row    Search Type:     Side By Side Comparison

Probe(s)

									
827.000	841.000	815.000	758.000	796.000	641.000	658.000	580.000		
Compare	Compare	Compare	Compare	Compare	Compare	Compare	Compare	Compare	Compare
Chart Compare	Chart Compare	Chart Compare	Chart Compare	Chart Compare	Chart Compare	Chart Compare	Chart Compare	Chart Compare	Chart Compare
Data and Images	Data and Images	Data and Images	Data and Images	Data and Images	Data and Images	Data and Images	Data and Images	Data and Images	Data and Images
Linked Images	Linked Images	Linked Images	Linked Images	Linked Images	Linked Images	Linked Images	Linked Images	Linked Images	Linked Images
Mark for Review	Mark for Review	Mark for Review	Mark for Review	Mark for Review	Mark for Review	Mark for Review	Mark for Review	Mark for Review	Mark for Review
Remove	Remove	Remove	Remove	Remove	Remove	Remove	Remove	Remove	Remove

1 of 243

Probe    Edit and Add    Edit and Replace    Delete    Add Link Comment



# Big Data

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Predictive policing and  
digital surveillance



# Gang Database

- Total number of people: 42,433 (as of February 2018)
- Since 2014 (when NYPD's stop-and-frisk practices ruled illegal) grew 70%, 342 new people per month
- 99% of people on gang database are nonwhite
- No way to know if you're on it

# How real-time 911 analytics works

Location of 911 call



RECORD PRIORITIZATION

Interactive Report



## 911 Analytics

- Address; Caller name and phone number;
- Linked to full database
- Screen shots from NYPD video at: [\(98\) 2016 Edelman Finalist NYPD - YouTube](#)



# 911 Analytics

All 911 calls routed to all officer's phones



# 911 Analytics

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- Information for specific location linked to each call:
  - 911 EDP
  - Domestic Incidents
  - Arrests
  - Complaints
  - Warrants
  - Icards



A hand holding a smartphone against a dark background. The phone screen shows a social media profile page with a 'Location' section. The text '911 Analytics' is overlaid on the left side of the image.

# 911 Analytics

Information and **photographs** of people connected to specific addresses

---

# PATTERNIZR

- Algorithmically finds “patterns” linking complaints
  - Initially just burglary, robbery, and grand larceny
  - Built in-house by the NYPD
  - NYPD boasts it’s no more discriminatory than random pair of NYPD arrests
-

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## Criteria

ntain the integrity of the Gang Division's Membership data base, the following is the criteria which will be adhered to for an individual to be qual.  
D.S. data base as an identified gang member:

- An individual will be entered if he/she admits to membership during a debriefing
- Or**
- Through the course of an investigation an individual is reasonably believed to belong to a gang and is identified as such by two independent sources. (Ex. Pct. Personnel, Intell, School Safety, Dept. of Correction, Outside Agency) Sources: \_\_\_\_\_
- Or**
- Meets any **Two** below mentioned Criteria:

<b>IDS</b>
<input type="checkbox"/> N
<input type="checkbox"/> P

- Known Gang Location*
  - Scars/Tattoos Associated W/Gangs*
  - Gang Related Documents*
  - Colors Associated W/Gangs*
  - Association W/ Known Gang members*
  - Hand Signs Associated W/Gangs*
- 
- 

# Gang Database

Over inclusive and  
vague criteria

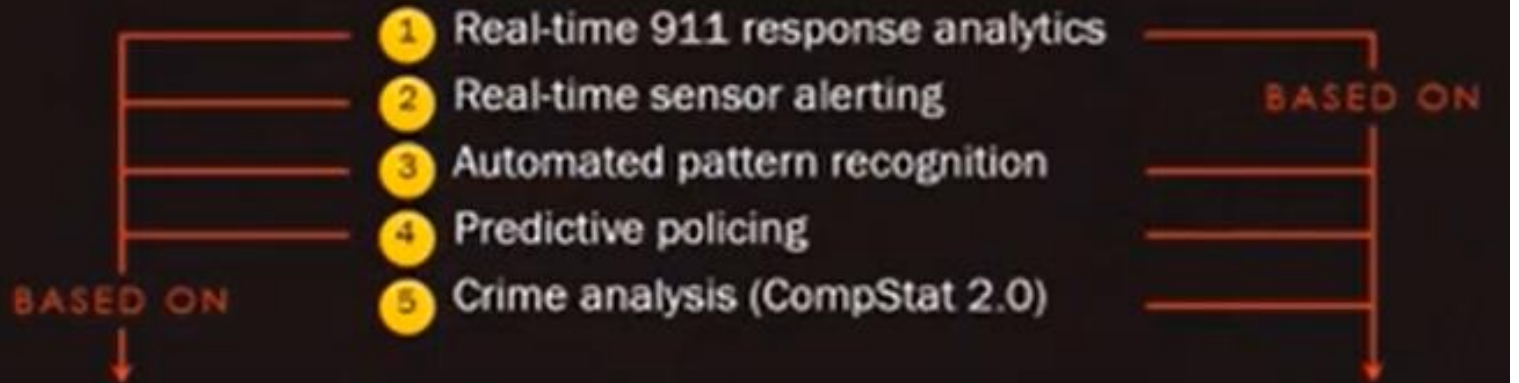


**DOMAIN**  
**AWARENESS**  
**SYSTEM**  
**(DAS)**

DAS can “track where a car associated with a suspect is located, and where it has been in past days, weeks or months,” or “if a suspicious package is left at a location, the NYPD can immediately . . . look back in time and see who left it there” and where that person went

- Former NYPD Commissioner Ray Kelly

# Analytic Techniques Delivered Through DAS



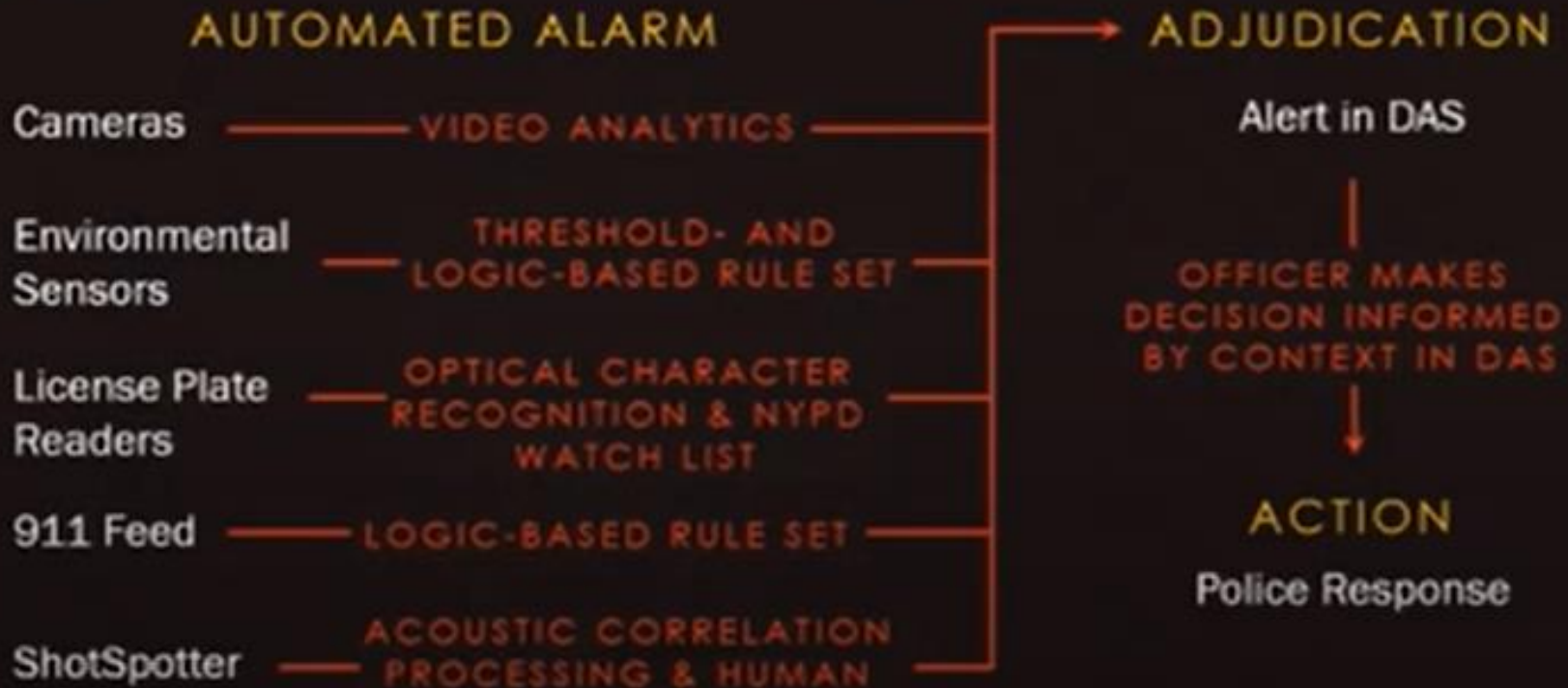
## Real-time Sensor Data

Closed-circuit television cameras  
License plate readers  
Radiation and chemical sensors  
Audio gunshot detectors  
911 calls

## Geo-coded Records Data

Arrests  
Warrants  
Complaints  
Domestic incident reports  
Etc...

# Real-time sensor alerting is a three-step process





# NYPD's Big Data is for sale

NYPD often develops systems to  
roll out elsewhere

Domain Awareness System =  
NYPD/Microsoft joint initiative

Licensed out to other cities with  
30% cut to New York



# NDSS

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