

Cell Site Simulators (“CSSs”)

What they are & how they work:

- CSSs are devices that law enforcement uses to locate and identify suspects.



- CSSs masquerade as legitimate cell phone towers, tricking all phones nearby into connecting to the device instead of the tower.

Cell Site Simulators (“CSSs”)

Also Known as:

- IMSI catchers

- digital analyzers

- Brand names include:

- Stingrays

- Hailstorm

- Triggerfish

- Kingfish

- Arrow-Head

- Amberjack

- Harpoon

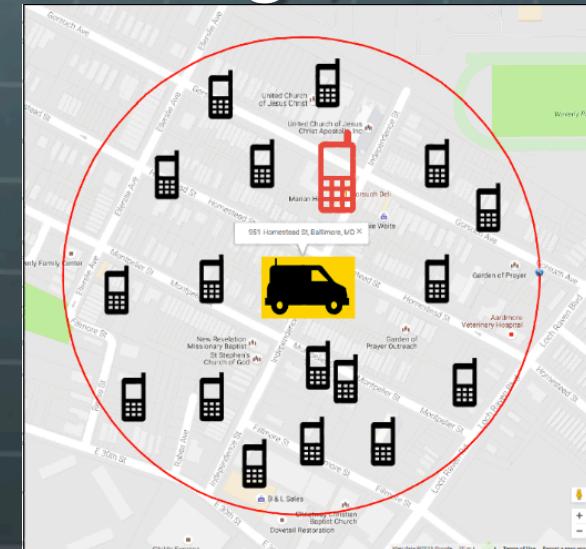
- WITT (FBI’s “Wireless Intercept Tracking Team”) devices



Cell Site Simulators (“CSSs”)

What they are & how they work:

- CSSs log the IMSI numbers (a unique identifying number) of all mobile phones within range, including non-target data.
- CSSs can pinpoint a phone's location in real time with much greater precision than CSLI from the phone company.
- Helpful video from Vocativ: <https://eff.org/CSSvideo>



Cell Site Simulators (“CSSs”)

How they work:



Cell Site Simulators (“CSSs”)

In the Wild – What to Look for:



CSSs come in many shapes and sizes.



SECRET SPY PROGRAM TARGETS HOW IT WORKS

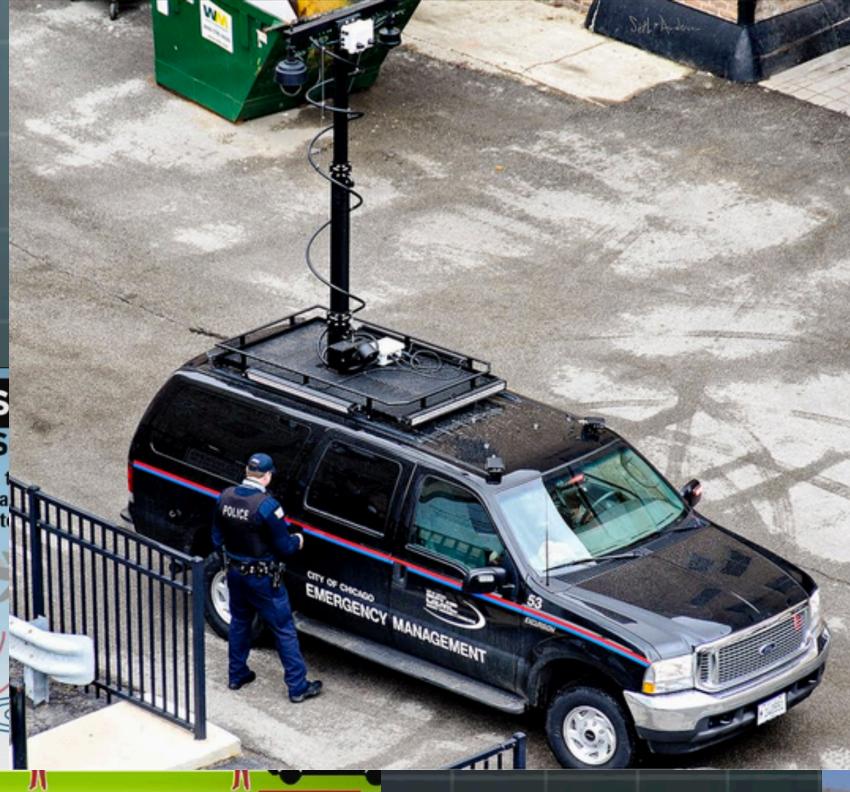
1 Planes equipped with “dirtbox” devices pick up cellphone signals to track criminal suspects

2 Track and locate suspect phones; “lets go” of non-suspect phones

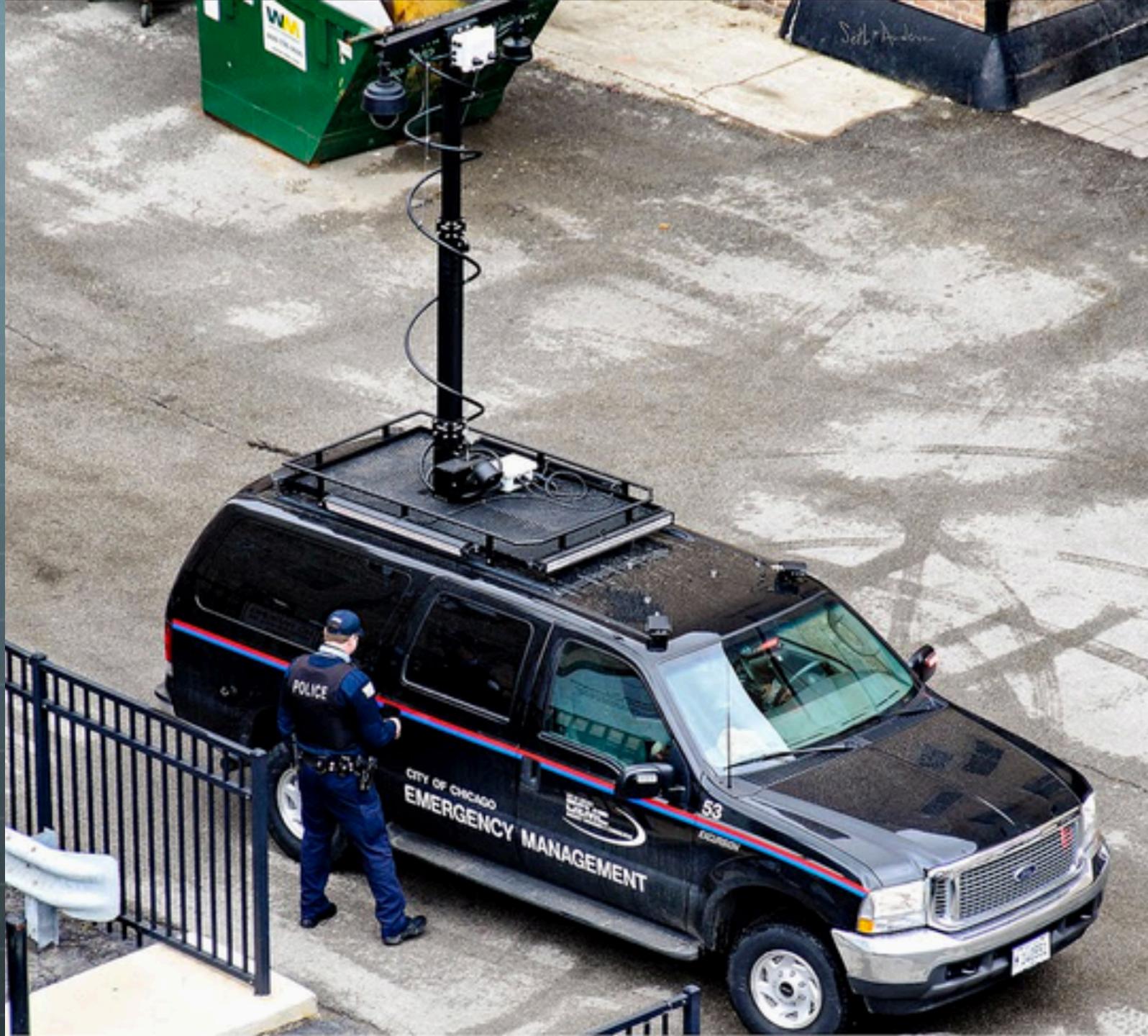
3 Find the signal location



WSJ: CELLPHONES TARGETED BY U.S. SPY PROGRAM







SECRET SPY PROGRAM TARGETS U.S. CELLPHONES

HOW IT WORKS:

SOURCE: WSJ

1 Planes equipped with "dirtbox" devices pick up cellphone signals to track criminal suspects

2 Track and locate suspect phones; "lets go" of non-suspect phones

3 Find the strongest signals to help locate a suspect

4 Use data collected to catch suspect



WSJ: CELLPHONES TARGETED BY U.S. SPY PROGRAM

CNN

10:36 AM ET

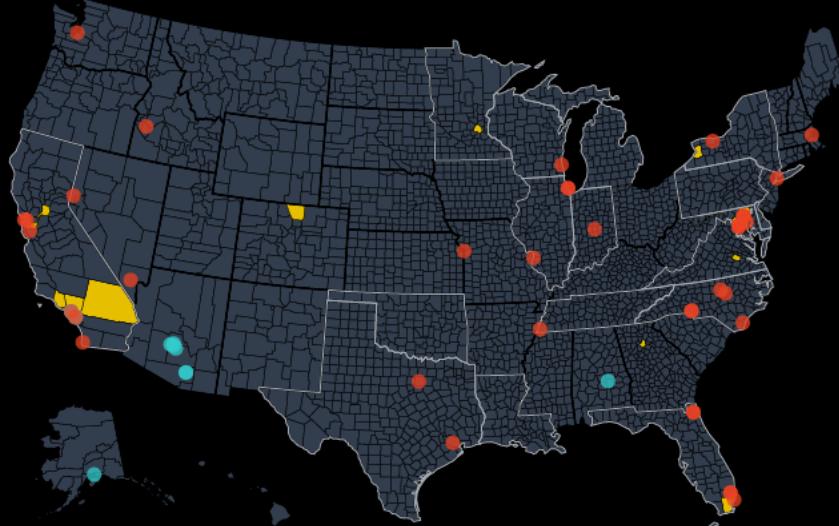


Who Can Track Your Phone?

Police departments known to have purchased stingrays

● City police ● Local police ■ County police □ State police

KAITLYN KELLY / VARIOUS SOURCES



City police
(17 states, 32 cities)

CA 7 TX 2
FL 5 ID 1
NC 5 IN 1
MD 4 MA 1
DC 2 TN 1
IL 2 VA 1
MO 2 WA 1
NV 2 WI 1
NY 2

Local police:
(4 states, 9 cities)

AZ 6
CA 4
AK 1
AL 1

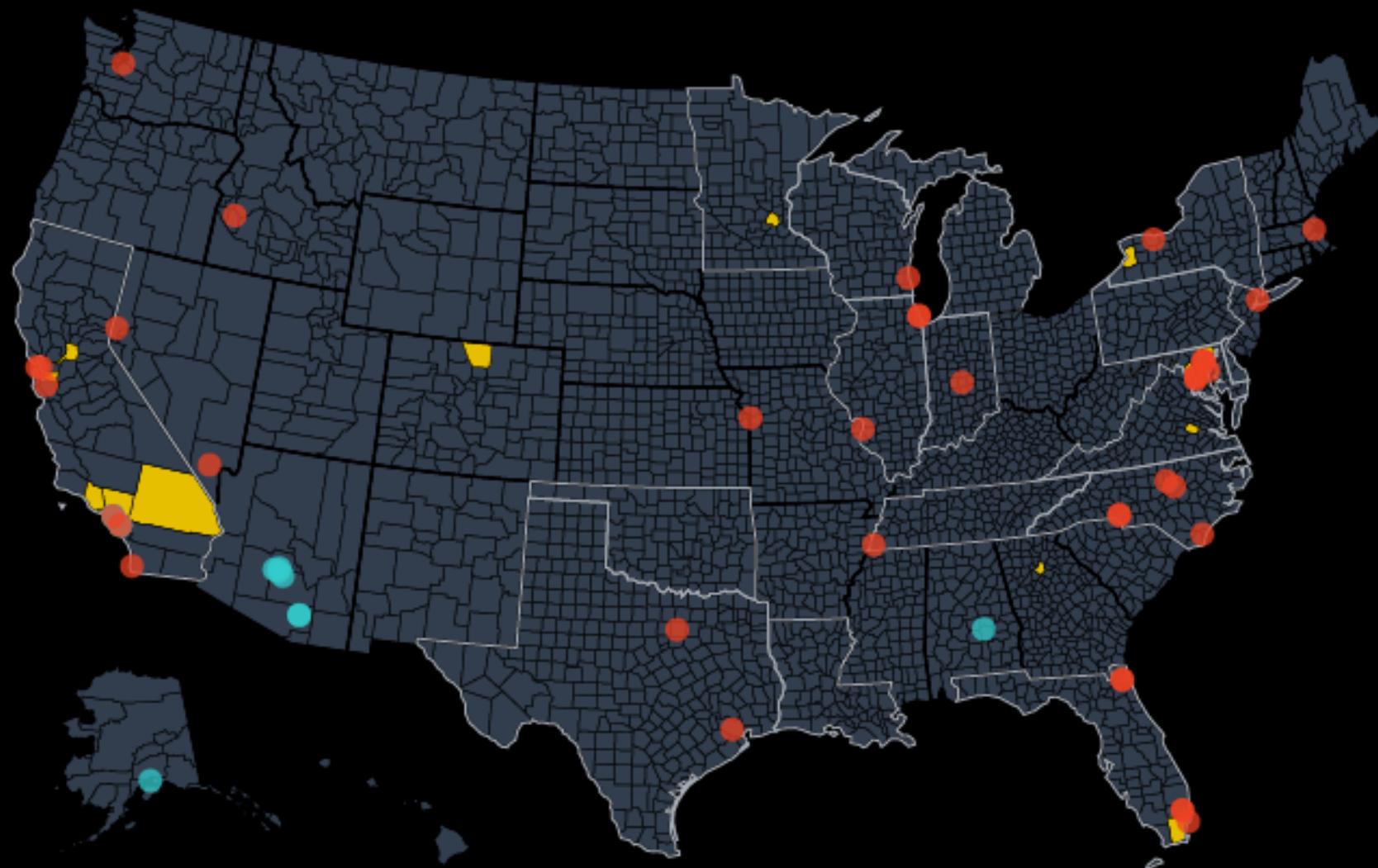
County police:
(8 states, 17 counties)

CA 13
MD 6
GA 2
MN 2
NY 2
CO 1
FL 1
VA 1

State police:
(17 states)

CA 2 NY 3
DE 3 NC 3
FL 3 OK 2
IL 2 PA 3
IN 2 TN 2
LA 2 TX 2
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MI 4 WI 2
MN 3

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Who Has The Most Stingrays?

Number of purchased devices per agency or local police

■ Federal agencies ■ State, city, local, and county police

DOJ: FBI 194

DOJ: USMS 70

DHS: ICE 55

DOJ: DEA 40

DHS: CBP 40

DHS: USSS 40

DOJ: ATF 15

DOT: IRS 5

DOT: TIGTA 5

California 25

Maryland 15

Florida 10

North Carolina 10

Arizona 10

New York 10

Minnesota 10

Virginia 10

Illinois 10

Michigan 10

Texas 10

50

100

150

200

2 stingrays:

DC, Delaware, Georgia, Indiana, Missouri, Nevada, Pennsylvania, Tennessee, and Wisconsin

1 stingray:

Alabama, Alaska, Colorado, Idaho, Louisiana, Massachusetts, Oklahoma, Washington

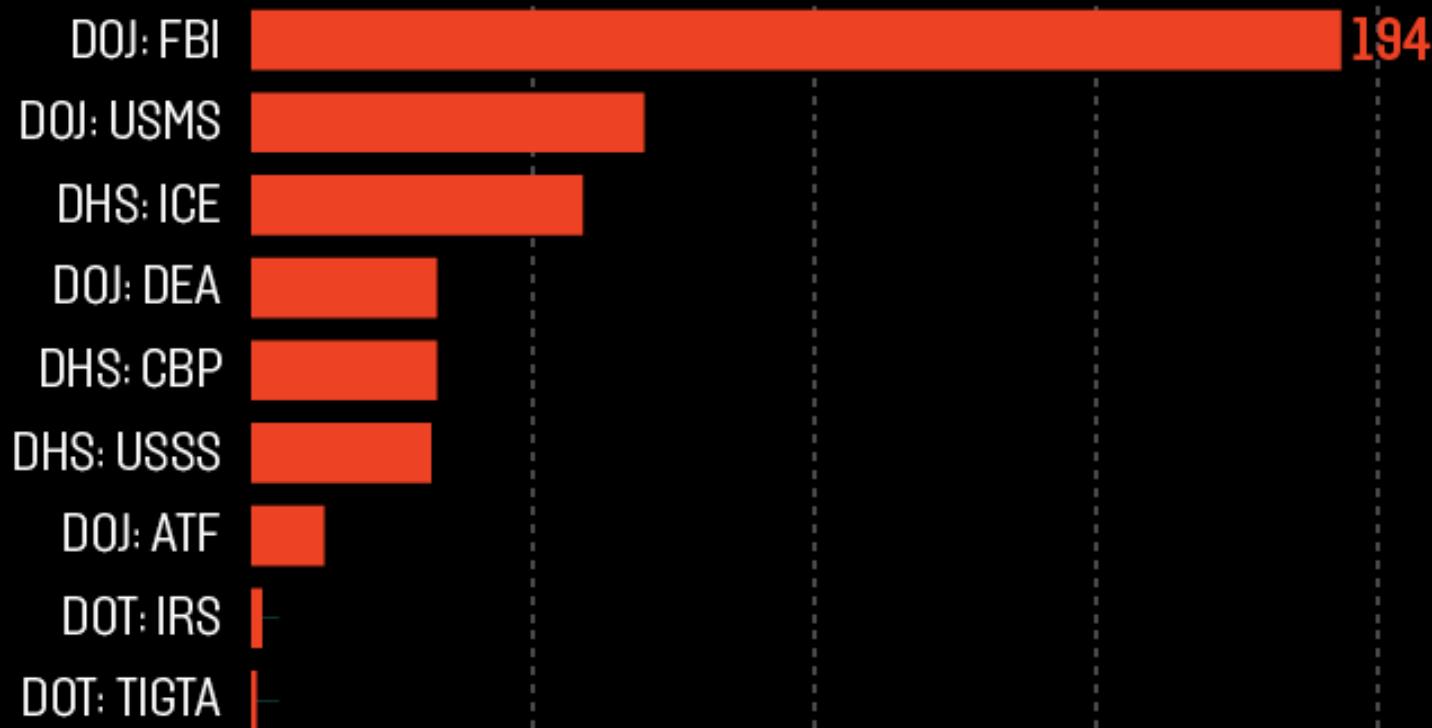
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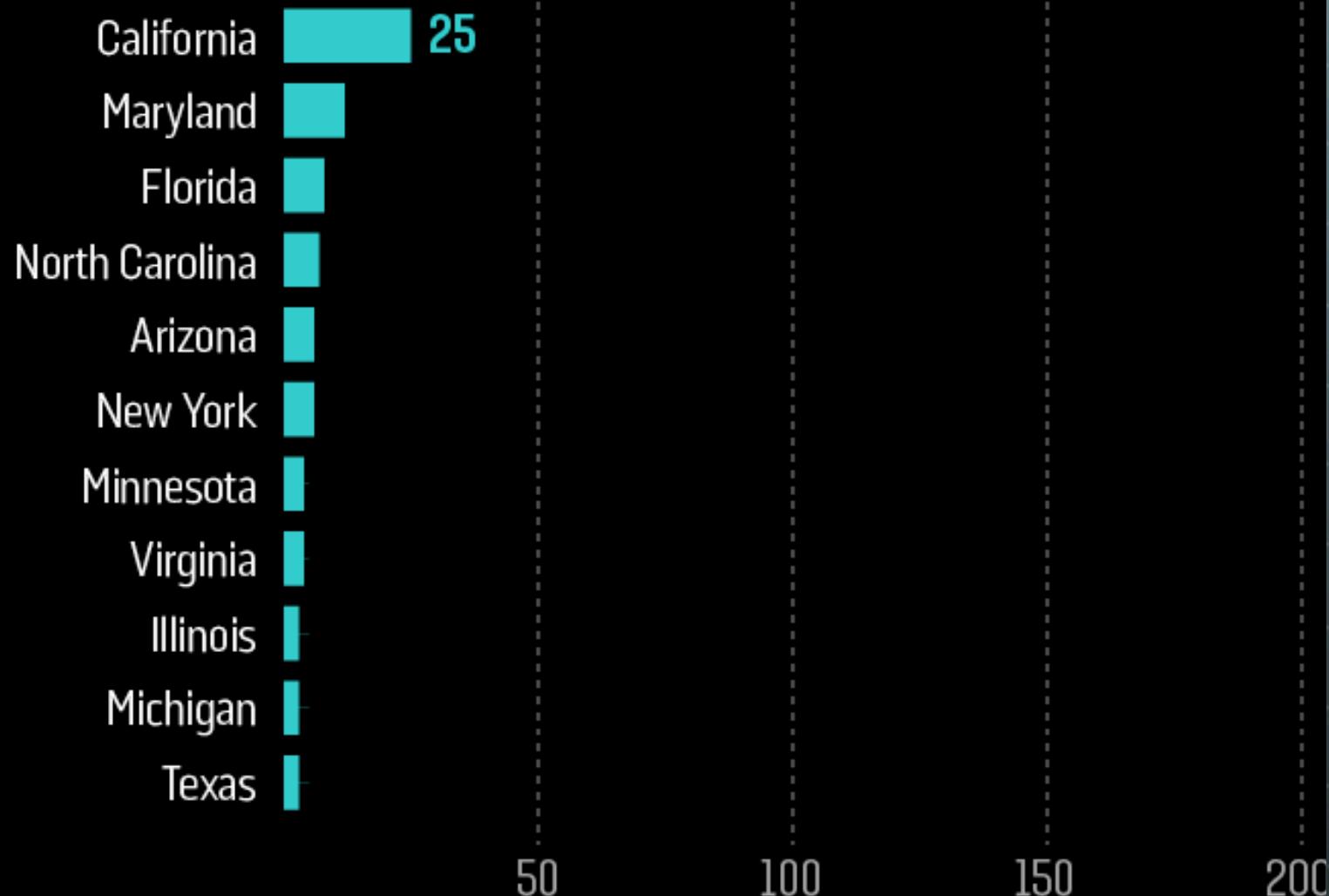
KAITLYN KELLY / VARIOUS SOURCES

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■ Federal agencies

■ State, city, local, and county police





2 stingrays:

DC, Delaware, Georgia, Indiana, Missouri, Nevada, Pennsylvania, Tennessee, and Wisconsin

1 stingray:

Alabama, Alaska, Colorado, Idaho, Louisiana, Massachusetts, Oklahoma, Washington

Cell Site Simulators

What can CSSs do?

- Capture metadata like phone numbers dialed or received, identity of sender or receiver, or date, time and frequency of communications.
- Pinpoint location within a few meters.
- May be configured to capture some content such as texts, calls, and unencrypted communications.

Cell Site Simulators

How do I know if cops used a CSS in my case ?

- Be on the lookout for search warrants referring to a “confidential informant” for information on a suspect’s location.
- Lookout for any of the device brand names.
- Beware of police apprehending your client at an unusual location.
- Look for language that tracks the DOJ’s model warrant application, which uses terms like: “target cell phone”, “pen register” and “trap and trace.” (See the DOJ handout)

Cell Site Simulators

How do I challenge CSS evidence?

- File an MTS – most CSS use was without a warrant prior to the change in DOJ and DHS policy in September 2015: eff.org/CSSDOJ
- File motion to compel discovery on the CSS technology specs – many LEAs will dismiss the case rather than reveal how it works
- Review the scathing House Oversight Committee report : eff.org/CSSHOGR

Cell Site Simulators Cases

- 7th Cir.: US v. Damian Patrick (842 F.3d 540 (2016)): Rejected MTS argument that CSS use required a warrant. Rehearing en banc denied May 2017. eff.org/CSSPatrick
- SDNY: US v. Raymond Lambis (197 F.Supp.3d 606 (2016)): Granted MTS for warrantless use of CSS and rejected govt's attenuation and third party doctrine arguments. eff.org/CSSLambis

Cell Site Simulators Cases

-  Court of Special Appeals of MD: *State of Maryland v. Kerron Andrews* (227 Md.App. 350 (2015)): Granted MTS for warrantless CSS use, rejected TPD, and rejected pen register and trap & trace order as substitute for warrant. eff.org/CSSAndrews
-  ND IL: *Matter of the Application of the US* (2015): District Court order re: minimization of CSS use. eff.org/CSSNDIL

Cell Site Simulators

How do I protect myself and my clients?

- There's no way for a phone to be configured to avoid sharing its unique identifying number with a CSS.
- It's very difficult to know from the phone itself whether its info has been captured by a CSS, and there's no notice if the phone's encryption is no longer operating.
- However end-to-end encrypted apps should still provide some protection.
- Use Full Disk Encryption and alphanumeric PWs!!
- Log out of apps and put on airplane mode or turn off.

Cell Site Simulators

Where do I learn more?

- eff.org/CSSFAQ
- eff.org/CSSACLU – guide for Crim Defense Attys
- eff.org/CSSmanuals – from Intercept article
- eff.org/CSSBaltimore – racially biased CSS use
- eff.org/CSSFCC – FCC complaint filed in Baltimore, PA, against cop use of CSSs



Stephanie Lacambra
Criminal Defense
Staff Attorney
415-436-9333 x130
stephanie@eff.org

