



Hey Siri, Find My Ex



Threat Modeling for Domestic Abuse
SecAppDev 2025



Who the Hell are you?

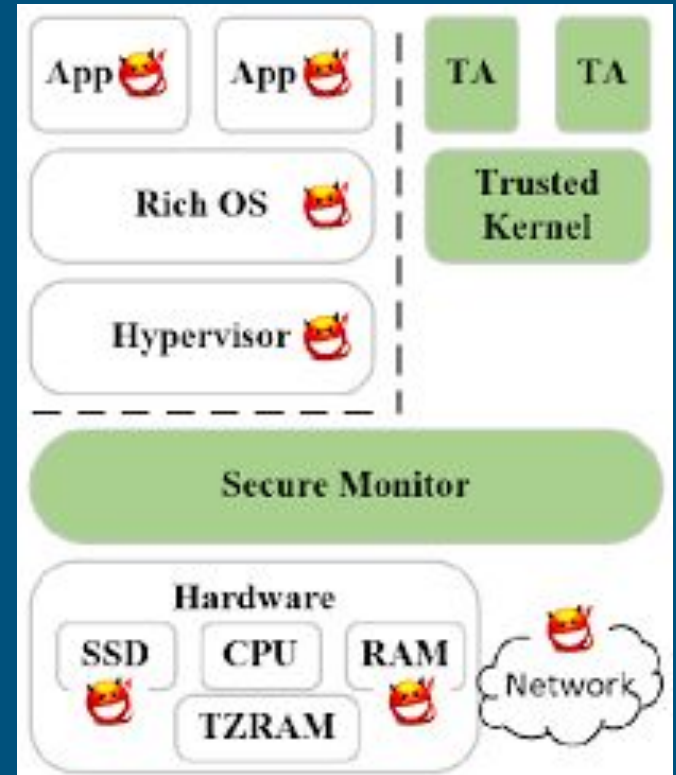
Eva Galperin, Director of
Cybersecurity at the Electronic
Frontier Foundation

Co-Founder of the Coalition
Against Stalkerware

eva@eff.org

@evacide on Twitter

What is Threat Modeling?



Threat Modeling

What do you want to protect?

Threat Modeling

What do you want to protect?

Who do you want to protect it from?

Threat Modeling

What do you want to protect?

Who do you want to protect it from?

How likely is it that you will need to protect it?

Threat Modeling

What do you want to protect?

Who do you want to protect it from?

How likely is it that you will need to protect it?

How bad are the consequences if you fail?

Threat Modeling

What do you want to protect?

Who do you want to protect it from?

How likely is it that you will need to protect it?

How bad are the consequences if you fail?

How much trouble are you willing to go through in order to prevent these consequences?

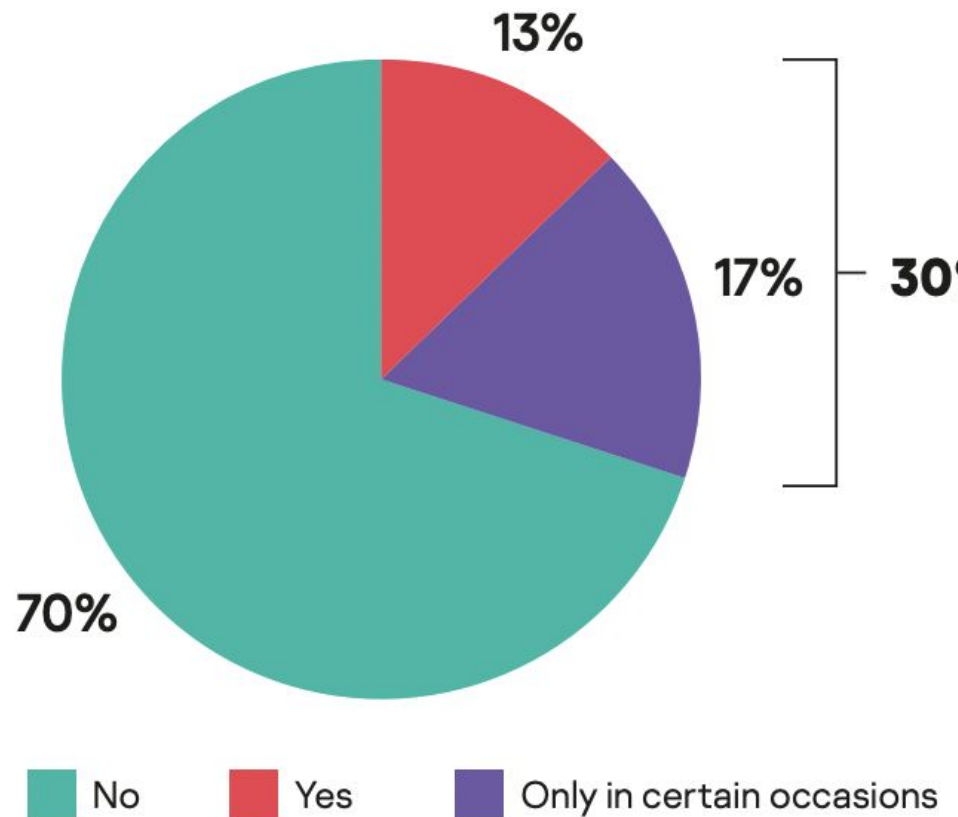
**What is
tech-enabled
intimate
partner
abuse?**

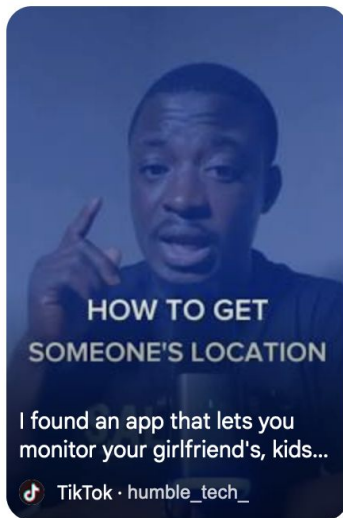
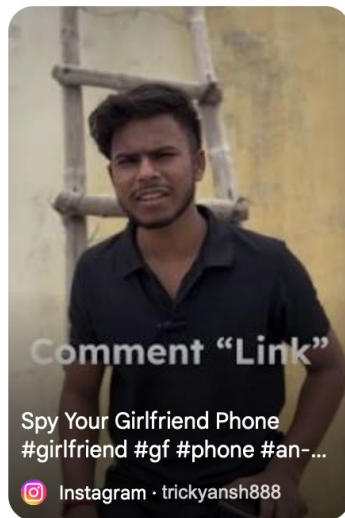
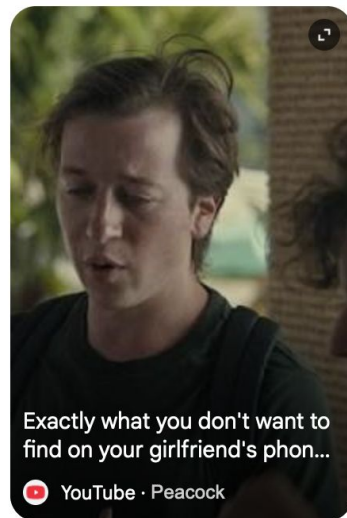


What is stalkerware?



Is it ok to monitor your partner without their knowledge?

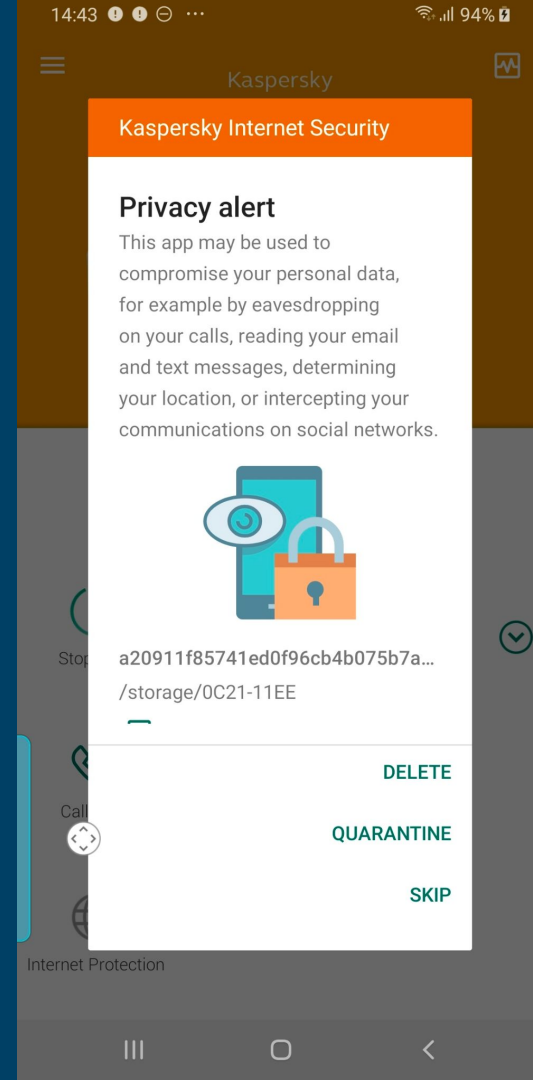




- 1. Abuser downloads APK from stalkerware website**
- 2. Abuser gets physical access to phone**
- 3. Abuser installs stalkerware**
- 4. Abuser follows instructions to delete tracks**
- 5. Abuser pays stalkerware company \$**
- 6. Abuser logs into web portal to view data**

Kaspersky

stalkerware alert



Detection of Stalkerware Apps on Android										
Testcase	Avast	Avira	Bitdefender	ESET	F-Secure	G Data	Kaspersky	Malwarebytes	NortonLifeLock	Trend Micro
Stalkerware 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stalkerware 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stalkerware 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stalkerware 4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stalkerware 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stalkerware 6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stalkerware 7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stalkerware 8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stalkerware 9	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓
Stalkerware 10	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓
Stalkerware 11	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓
Stalkerware 12	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓
Stalkerware 13	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓
Stalkerware 14	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stalkerware 15	✓	✗	✓	✓	✗	✓	✓	✓	✗	✓
Stalkerware 16	✗	✗	✓	✓	✗	✓	✓	✓	✗	✓
Stalkerware 17	✗	✗	✓	✓	✗	✓	✓	✓	✗	✗
Stalkerware 18	✓	✗	✗	✗	✗	✓	✗	✗	✗	✗
Stalkerware 19	✓	✗	✗	✗	✗	✓	✗	✗	✗	✗
Stalkerware 20	✓	✗	✗	✗	✗	✓	✗	✗	✗	✗
Detection Rate	85%	70%	85%	85%	70%	100%	85%	80%	50%	80%

<https://messagingapplab.com> › spy-on-iphone

The 3 Most Effective Ways to Spy on iPhone in 2021 [100 ...

Here are **the** three most effective and simple ways to **spy** on **iPhone**. You will access to iMessage, email, social network and live position.

[Best Ways to Spy on an iPhone in 2021](#) · [Method #1: Spy for Free with Apple ID](#)

<https://www.makingsenseofsecurity.com> › Spy

Best 4 Apps to Spy on Your Boyfriend's Phone Without the ...

Aug 7, 2021 — Hoverwatch is one of **the** leading **spying** apps that lets you see whatever **your** boyfriend, girlfriend, spouse or **partner** is doing without letting ...

<https://www.techmaish.com> › Blog › Internet

3 Ways to Track Your Wife's Phone Without Her Knowing -

Jun 16, 2021 — **Cocospy** is another great app capable of tracking **your wife's** phone. This is a great option. It is easy to use and supports **the** tracking of both ...

<https://celltrackingapps.com> › Catch a Cheater

How to Spy on Your Boyfriend's Phone Without Touching It

How to Sync **My Boyfriend's** Phone with Mine (Android & **iOS**) — If you're looking for a reliable app to **spy** on **your boyfriend's** phone, then mSpy ...

<https://spyic.com> › Phone Spy

How to Spy on Boyfriend's Phone Without Touching It - Spyic

How to **Spy on My Boyfriend's iPhone** Without Touching the Target Phone — Spyic provides a web-based monitoring solution for **spying** on **iOS** devices. **The** ...

- 1. Abuser purchases license for stalkerware**
- 2. Abuser enters target's AppleID and password into stalkerware website**
- 3. Stalkerware company uses credentials to login to target's account and downloads data from iCloud backups of devices**
- 4. Abuser logs into stalkerware web portal to view data, which is updated with every iCloud backup**

ADDING LOCKS TO THE CLOUD...



Cloudy with a chance of fraud



68

°F | °C

Precipitation: 6%

Humidity: 79%

Wind: 8 mph

Maui

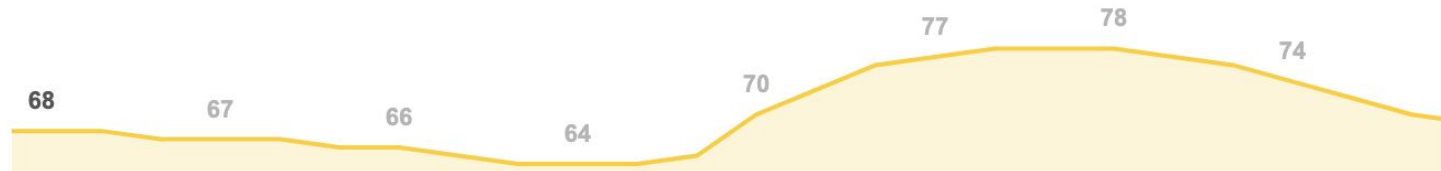
Wednesday 8:00 PM

Clear with periodic clouds

Temperature

Precipitation

Wind



9 PM

12 AM

3 AM

6 AM

9 AM

12 PM

3 PM

6 PM

Wed



79° 63°

Thu



79° 63°

Fri



80° 64°

Sat



79° 63°

Sun



78° 64°

Mon



78° 64°

Tue



79° 64°

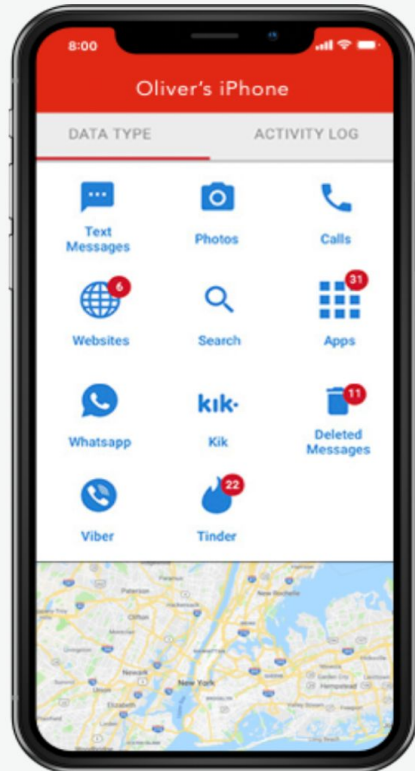
Wed



78° 63°

iOS (iPhone/iPad) Monitoring

- ✓ No Lockouts
- ✓ No Jailbreak Required
- ✓ Discrete/Tamper Proof
- ✓ View Activity Remotely
- ✓ View from iPhone App or Web UI
- ✓ Compatible with iOS 6.0 or later



See

- ✓ SMS & Texts
- ✓ Deleted Texts
- ✓ Photos (camera roll)
- ✓ Website History
- ✓ Call Log History
- ✓ GPS Location
- ✓ Tinder
- ✓ WhatsApp
- ✓ Kik
- ✓ Viber
- ✓ App Usage

*Functionality requires a PC or Mac on same Wi-Fi network as monitored iPhone.

[Try it Risk Free](#)

[Add to Cart](#)

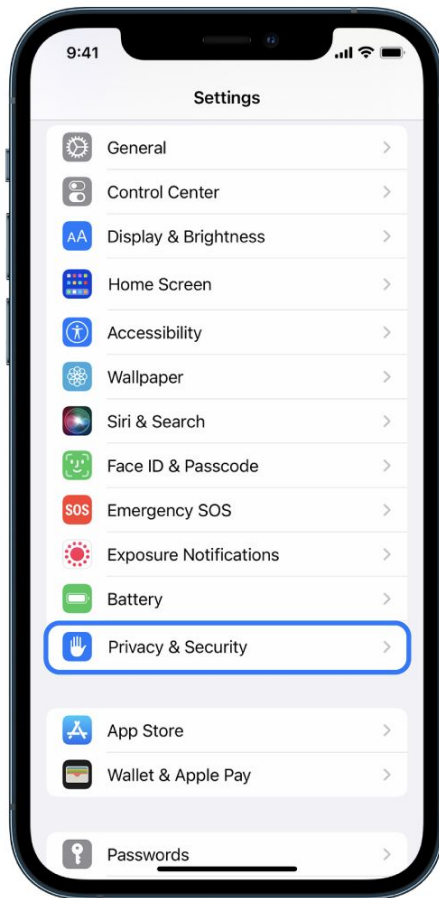
Starting at \$10.83/month

Apple writes a manual:

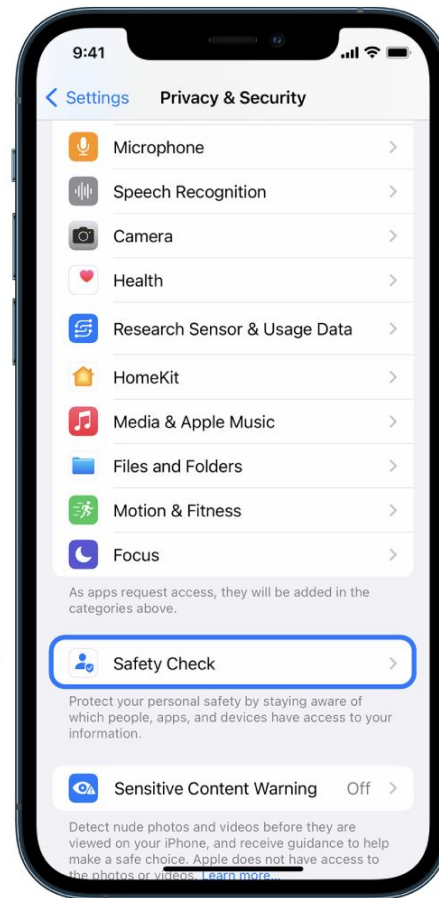
Device and Data Access When Personal Safety is At Risk:

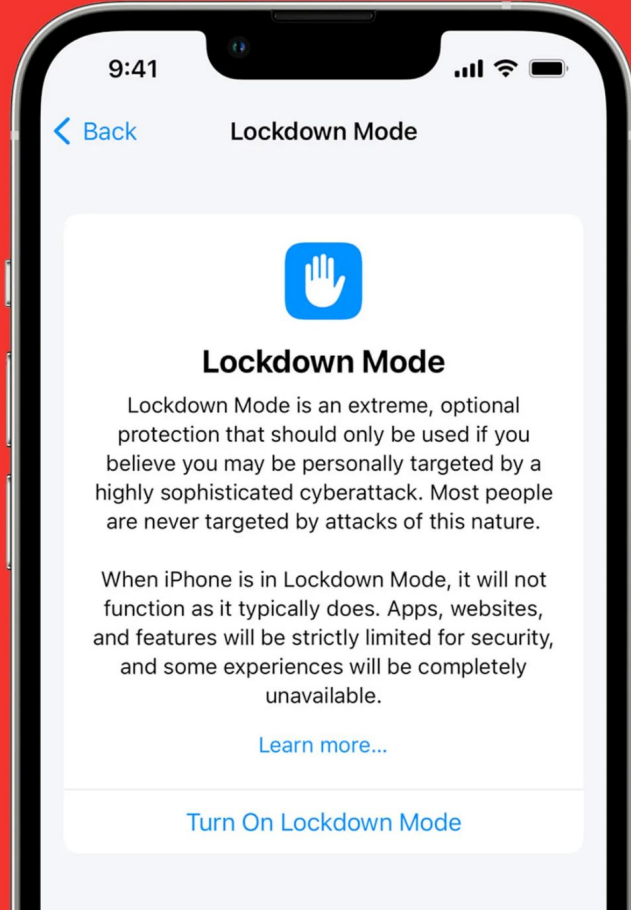
<https://manuals.info.apple.com/MANUALS/1000/MA1976/en_US/device-and-data-access-when-personal-safety-is-at-risk.pdf>

Settings



Safety Check





< Back

Lockdown Mode



Lockdown Mode

Lockdown Mode is an extreme, optional protection that should only be used if you believe you may be personally targeted by a highly sophisticated cyberattack. Most people are never targeted by attacks of this nature.

When iPhone is in Lockdown Mode, it will not function as it typically does. Apps, websites, and features will be strictly limited for security, and some experiences will be completely unavailable.

[Learn more...](#)

[Turn On Lockdown Mode](#)



**Personal Trackers Just
Went Mainstream**

The Appeal



Hey Siri,
find my
keys



Alexa, find
my bag



The Problem

CLOSE RANGE TRACKING



BLUETOOTH



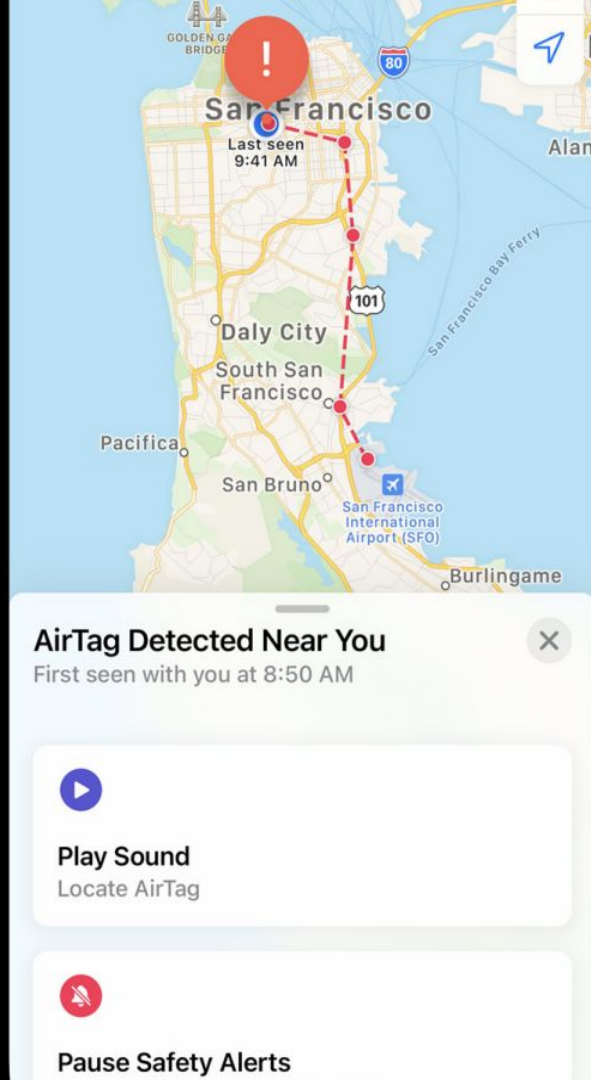
LONG RANGE TRACKING



**Get by with a little help from
hundreds of millions of friends.**

ALERTS!

- **iPhone**
 - **Pop-Up Notice**
 - **Sound Alert**
- **Android**
 - **No Pop-Up Notice**
 - **Sound Alert**



AIRTAG EXAMPLE



- APPLE
- ANDROID
- RESET
LOOPHOLE!

AIRTAG EXAMPLE



- **INSIDE JOB #1**
- **INSIDE JOB #2**
- **IPV/HT
LOOPHOLES**



Use the Find My app to locate a missing device or item

Learn the different ways you can use the Find My app to help find your missing device or personal item, like how to see its location on a map or mark it as lost.



IN THE KNOW.

Woman claims she found a bone-chilling item in her purse after a night out: 'A new thing for ... women to worry about'

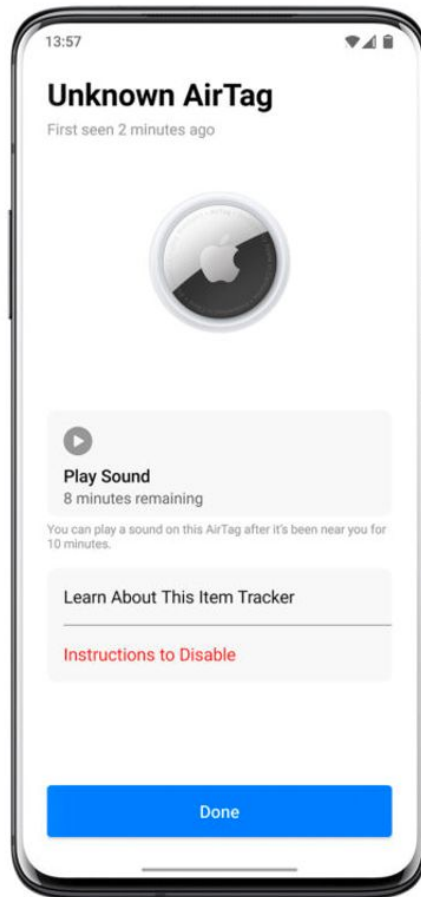
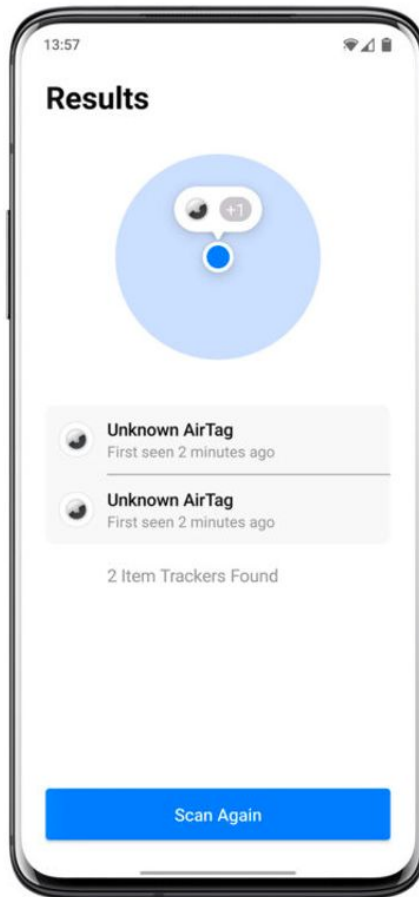
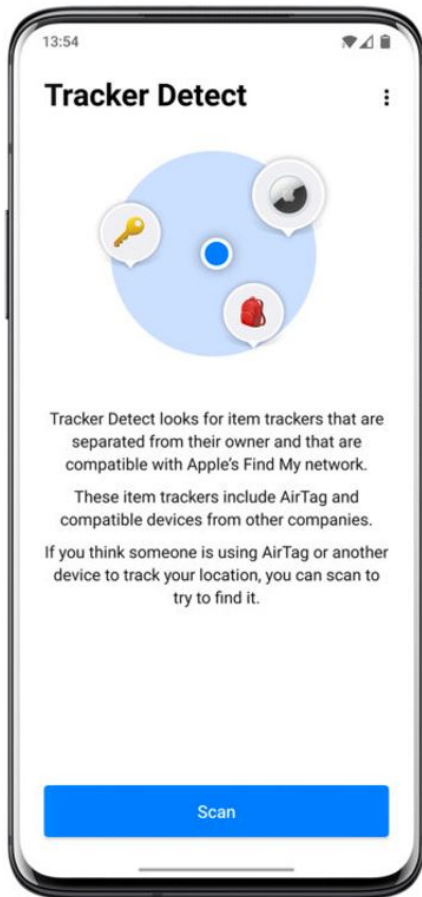
STALKING

Houston woman says ex used 'Tile' device to stalk her repeatedly

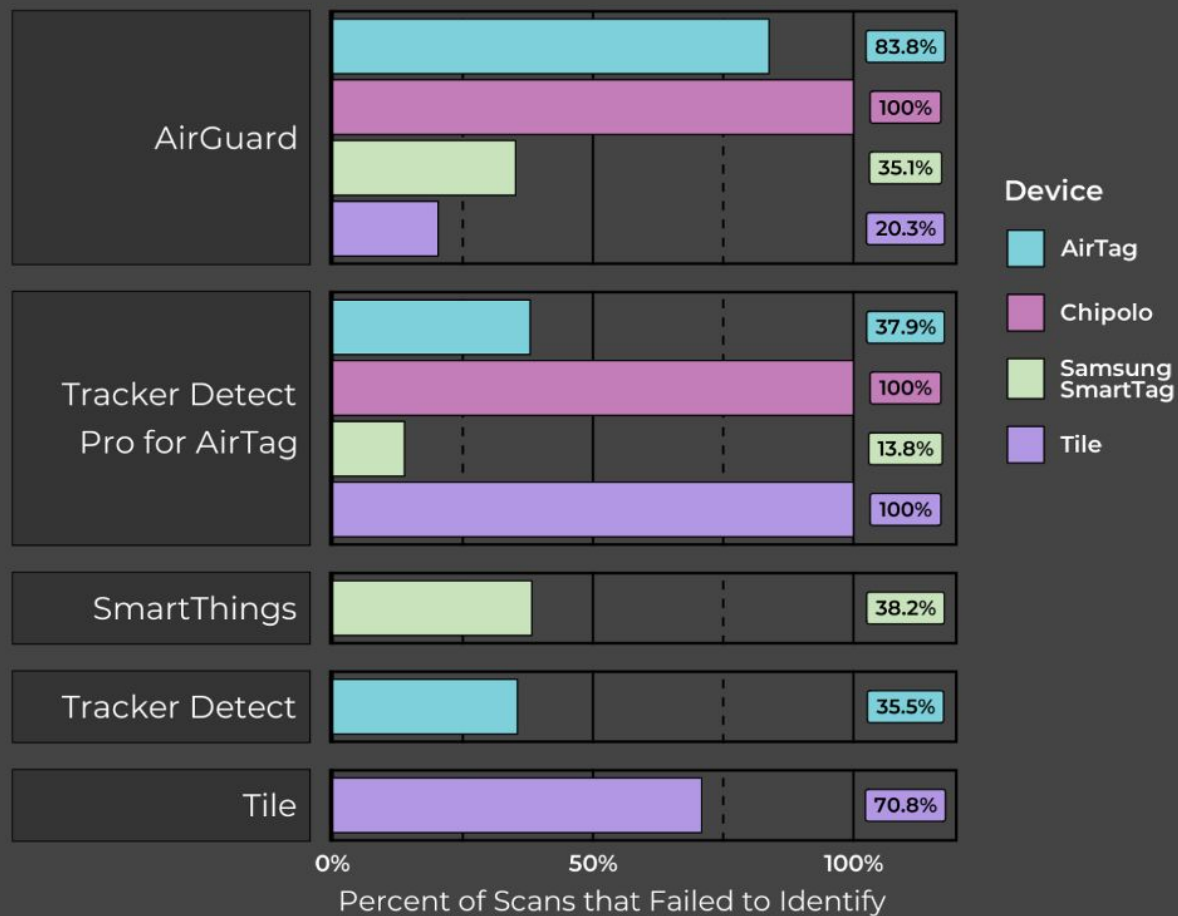


By Jessica Willey

Friday, July 6, 2018



App Performance: How Often Were Trackers Missed?



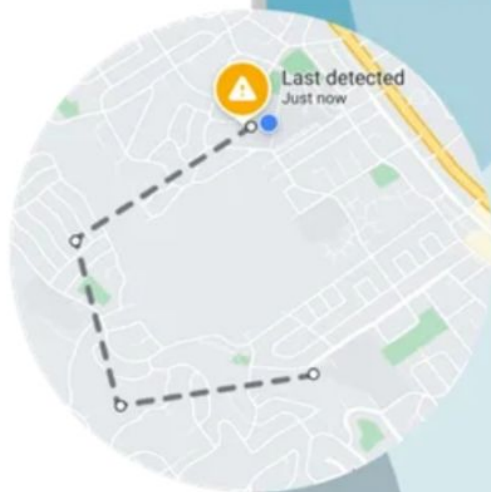


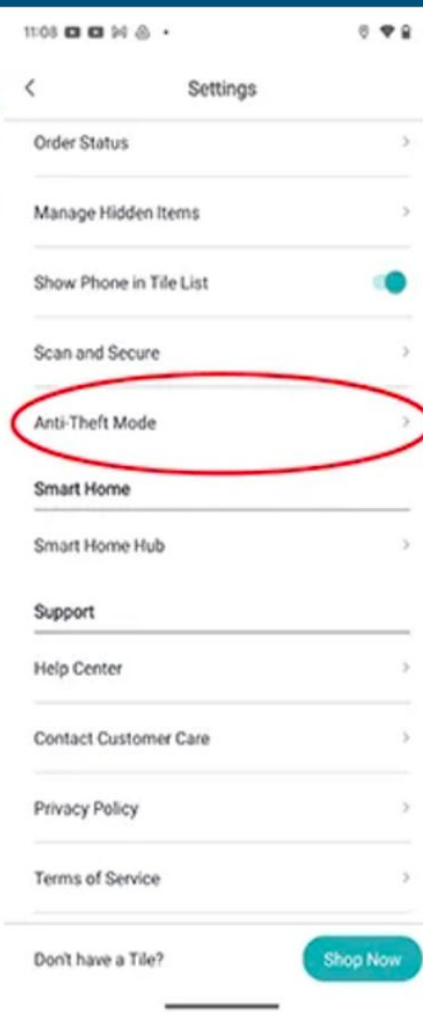
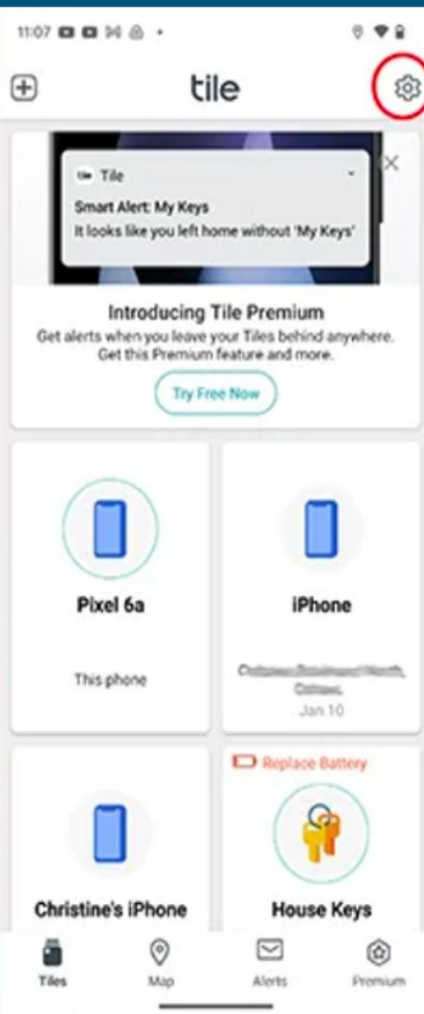
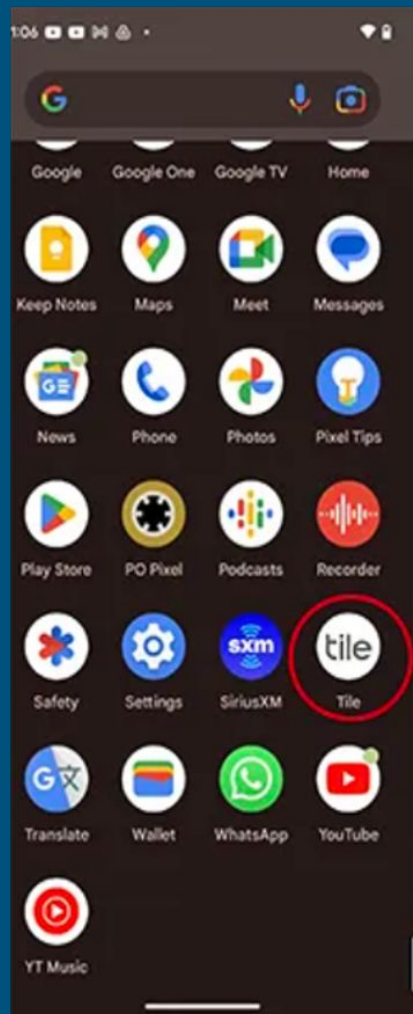
Unknown tracker alerts • now

Tracker traveling with you

Unknown tracker detected. The owner of the tracker can see its location.

[More info](#)



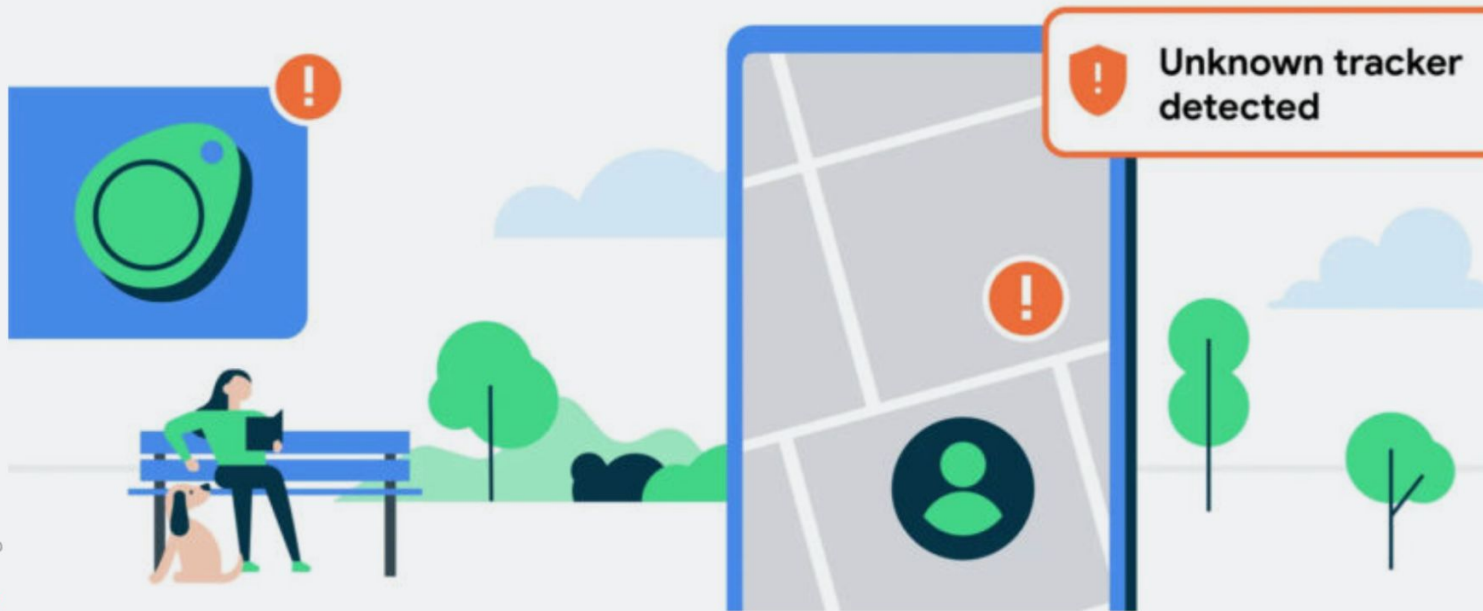


WHO TRACKS THE TRACKMEN? —

Android phones can now tell you if there's an AirTag following you

Google says its own tracker ecosystem is on hold until iOS has the same protection.

KEVIN PURDY - 7/27/2023, 12:10 PM



Detecting Unwanted Location Trackers (dult)

[About](#)[Documents](#)[Meetings](#)[History](#)[Photos](#)[Email expansions](#)[List archive »](#)

WG	Name	Detecting Unwanted Location Trackers
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	Acronym	dult
--	----------------	------

	Area	Security Area (sec)
--	-------------	-------------------------------------

	State	Active
--	--------------	--------

	Charter	charter-ietf-dult-01 Approved
--	----------------	--

	Document dependencies	Show
--	------------------------------	----------------------

	Additional resources	GitHub Repository
--	-----------------------------	-----------------------------------

Personnel	Chairs	Erica Olsen , Sean Turner
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	Area Director	Deb Cooley
--	----------------------	----------------------------

Mailing list	Address	unwanted-trackers@ietf.org
---------------------	----------------	--

	To subscribe	https://www.ietf.org/mailman/listinfo/unwanted-trackers
--	---------------------	---

	Archive	https://mailarchive.ietf.org/arch/browse/unwanted-trackers/
--	----------------	---

Chat	Room address	https://zulip.ietf.org/#narrow/stream/dult
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Abuse-Resistant Location Tracking: Balancing Privacy and Safety in the Offline Finding Ecosystem

Gabrielle Beck* Harry Eldridge* Matthew Green* Nadia Heninger† Abhishek Jain*

Abstract

Location tracking accessories (or “tracking tags”) such as those sold by Apple, Samsung, and Tile, allow owners to track the location of their property and devices via offline tracking networks. The tracking protocols have been designed to ensure some level of user privacy against surveillance by the vendor. Such privacy mechanisms, however, seem to be at odds with the phenomenon of *tracker-based stalking*, where attackers use these very tags to monitor a target’s movements. Numerous such criminal incidents have been reported, and in response, manufacturers have chosen to weaken privacy guarantees in order to allow users to detect malicious stalker tags.

In this work we show how to achieve an improved trade-off between user privacy and stalker detection within the constraints of existing tracking protocols. We implement our new protocol using families of list-decodable error-correcting codes, and give efficient algorithms for stalker detection under realistic conditions.

1 Introduction

Vendors such as Apple, Samsung, and Tile have recently begun to deploy large-scale *offline finding networks* to monitor network-disconnected devices. These systems employ short-distance communications networks such as Bluetooth Low Energy (BLE) or Ultra-Wideband (UWB) to transmit periodic advertisement messages to nearby receivers (such as smartphones). The receiving devices upload location reports to servers

WE ARE NOT THINGS





CARS



A sneak peek into the future of
tech-enabled abuse



The New York Times

Your Car Is Tracking You. Abusive Partners May Be, Too.

Apps that remotely track and control cars are being weaponized by abusive partners. Car manufacturers have been slow to respond, according to victims and experts.



Design Principles

Coercive Control Resistant Design

<https://www.ibm.com/blogs/policy/wp-content/uploads/2020/05/CoerciveControlResistantDesign.pdf>

Design Principles

Diversity

Design Principles

Diversity

Privacy and Choice

Design Principles

Diversity

Privacy and Choice

Security and Data

Design Principles

Diversity

Privacy and Choice

Security and Data

Combating Gaslighting

Design Principles

Diversity

Privacy and Choice

Security and Data

Combating Gaslighting

Technical Ability



And now..



Back to Threat Modeling



Some things are the same...

1. What do you want to protect?

ASSETS

Location, contents of communication, photos, passwords, financial info

Some things are different...

2. Who do you want to protect it from?

Abuser may live with survivor

May have intermittent or sustained access to physical devices

May be “legitimate owner” of devices/accounts

May have access to devices belonging to children that are being co-parented

Some things are difficult to judge

3. What are the attacker's capabilities?

Abusers frequently are the people who set up accounts/devices

Abusers frequently lie about their technical capabilities

Survivors are often under great psychological stress

Abusers may use systems designed to help survivors for further abuse (DARVO)

Abusers are much more persistent than most other attackers

Some things are easier to judge

4. What are the consequences if you fail?

Potential consequences are significant:

financial harm

stalking

physical harm

harm to shared children/family,

murder

Some things are not up to you

5. How much trouble are you willing to go to in order to avoid the consequences?

Survivors are the best judges of their own tolerance for risk

Risk tolerance can and will change over time

Risk tolerance is not a ratchet

It all depends on you...

“When people talk about time traveling to the past, they often worry about radically changing the present by doing something small, but nobody in the present thinks they can radically change the future by doing something small.”

showerthoughts

And now...questions.

