

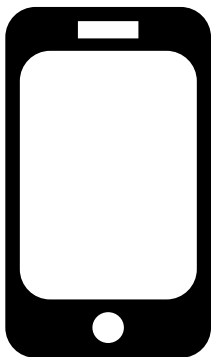
**Proximity Tracing**  
in an  
**Ecosystem**  
of  
**Surveillance Capitalism**

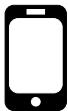
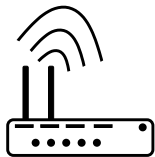
**Paul-Olivier Dehay**

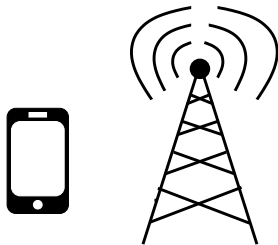
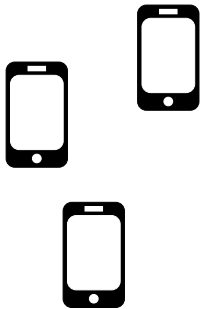
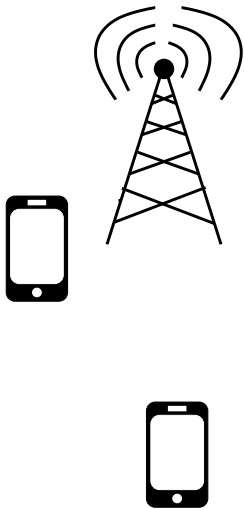
Personaldata.io  
and MyData Geneva

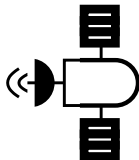
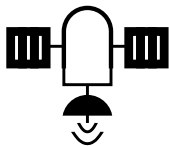
**Joel Reardon**

University of Calgary  
and AppCensus, Inc.

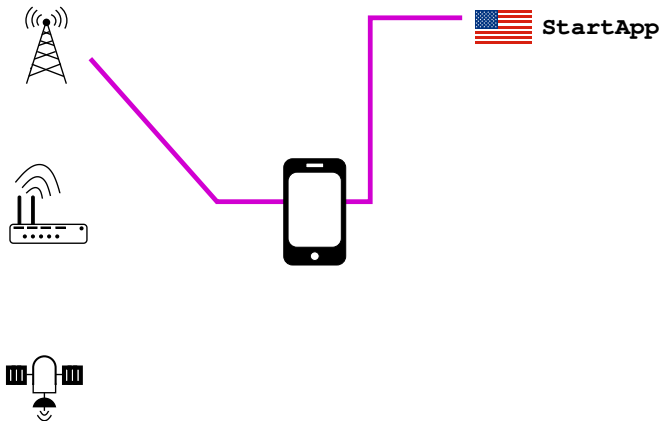


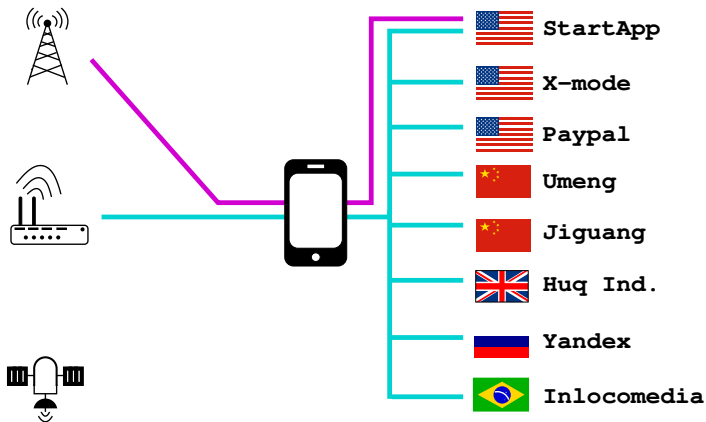




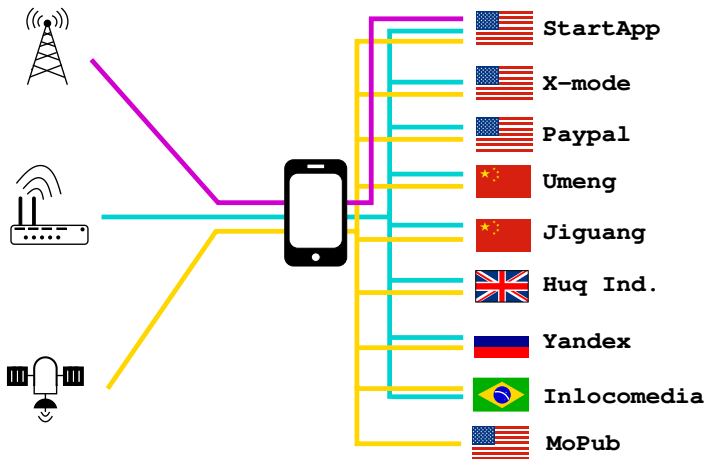


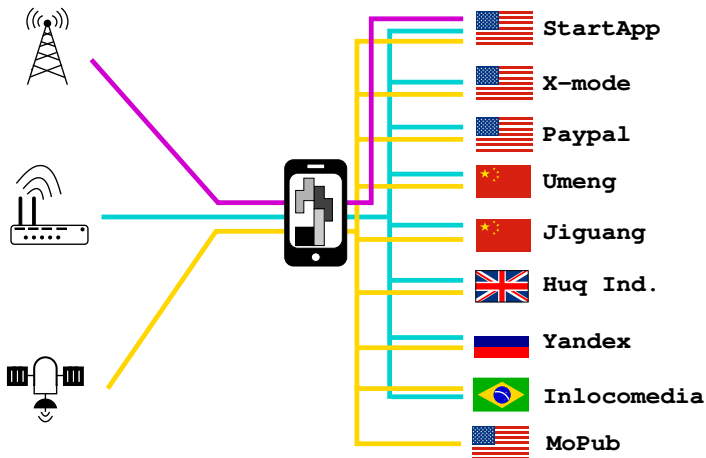












## Background Location Limits

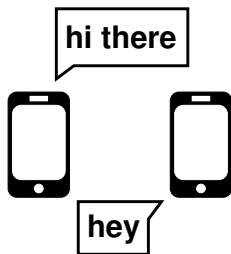
In an effort to reduce power consumption, Android 8.0 (API level 26) limits how frequently background apps can retrieve the user's current location. Apps can receive location updates only a few times each hour.

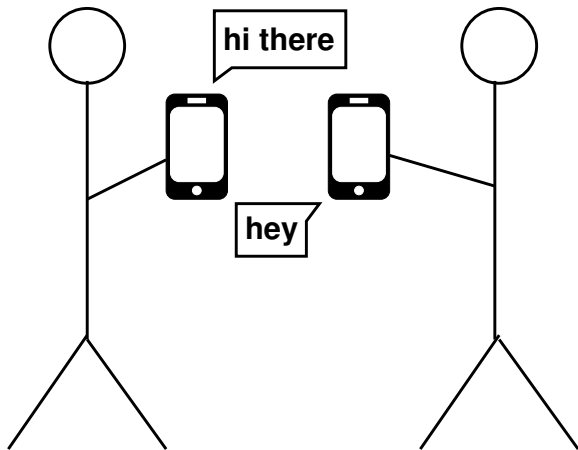
★ **Note:** These limitations apply to all apps used on devices running Android 8.0 (API level 26) or higher, **regardless of an app's target SDK version.**

**2020**



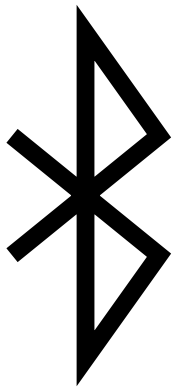


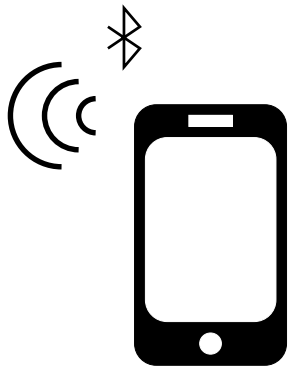
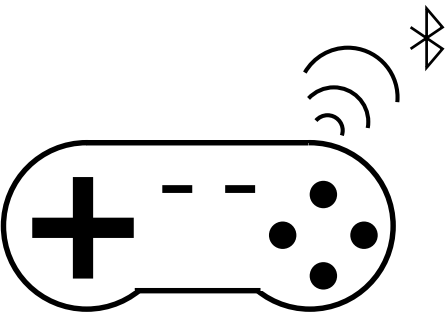




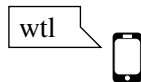
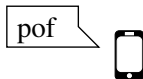
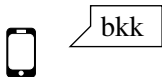
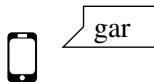
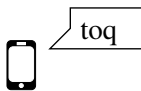


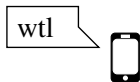
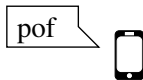
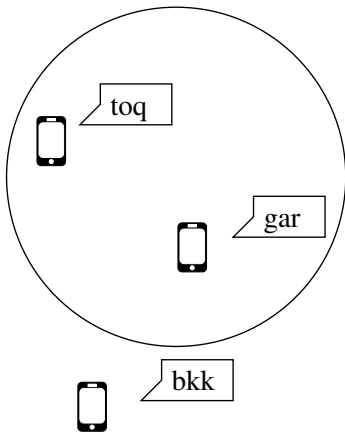


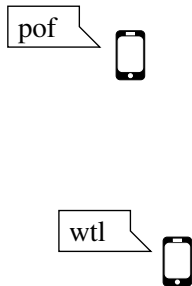
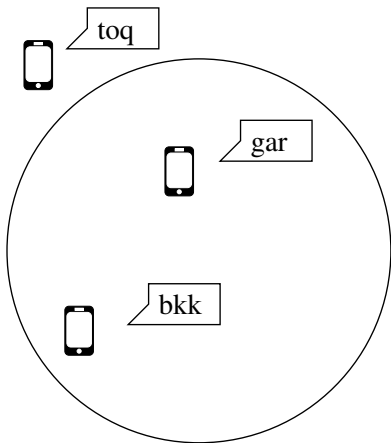


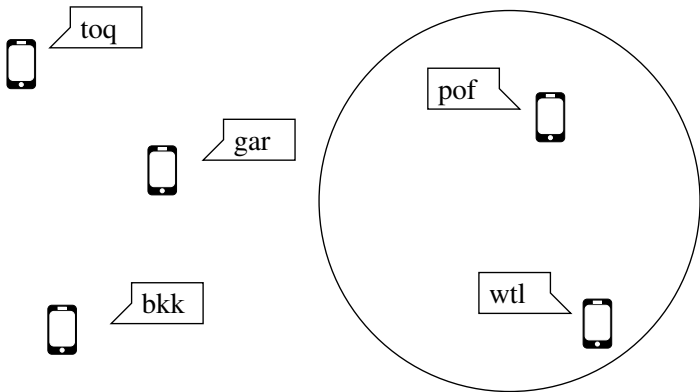


















things I've heard:

ria

ton

ggm

qpt

eom

vic

wwa

gmw

heo

hor

inf

tim

row

can

col

yye

tor

arg



things I've heard: [from +ve cases]

ria

ton

ggm

qpt

eom

vic

ada

gmw

heo

hor

inf

tim

row

can

col

yve

tor

arg

I'm 555-0966



I'm 555-2103



I'm 555-3942



```
say "tjw" @ 1000  
say "toq" @ 1015  
say "yom" @ 1030
```

....



```
say "iss" @ 1000  
say "res" @ 1015  
say "alg" @ 1030
```

....



```
say "pqk" @ 1000  
say "mab" @ 1015  
say "ole" @ 1030
```

....



RECORD

555-0966

tjw

toq

yom

555-2103

iss

res

alg

555-3942

pqk

mab

ole

say "tjw" @ 1000

say "toq" @ 1015

say "yom" @ 1030

....

say "iss" @ 1000

say "res" @ 1015

say "alg" @ 1030

say "pqk" @ 1000

say "mab" @ 1015

say "ole" @ 1030

....













I heard 'tjw'  
←  
and 'ole'



**RECORD**

555-0966

tjw

toq

yom

555-2103

iss

res

alg

555-3942

pqk

mab

ole



RECORD

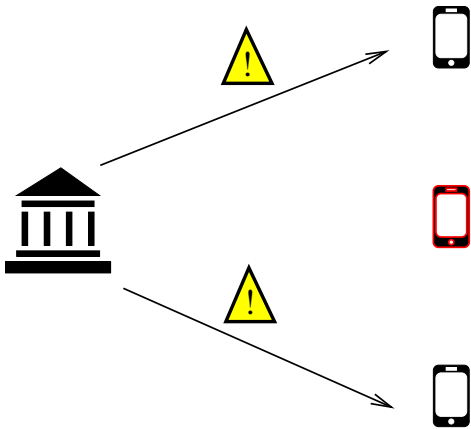
555-0966

tjw

555-3942

ole





ajh	din
owl	eqo
qoa	yyq
qpm	fgl
fwk	hlv



ajh	din
owl	eqo
qoa	yyq
qpm	fgl
fwk	hlv



ajh	din
ekj	eqo
qoa	yyq
qpm	fgl
fwk	hlv



ajh	din
owl	eqo
qoa	yyq
qpm	fgl
fwk	hlv



555-2033  
heard

ajh	din
owl	eqo
qoa	yyq
qpm	fgl
fwk	hlv



ajh	din
owl	eqo
qoa	yyq
qpm	fgl
fwk	hlv



555-2033  
heard

ajh	din
owl	eqo
qoa	yyq
qpm	fgl
fwk	hlv

code	phone number	time
abj	555-1933	1030
ajh	555-3853	1030
cda	555-3853	1045
din	555-1391	1045
eaf	555-1933	1045
eqo	555-3853	1100
fav	555-0955	1100
fgl	555-3853	1115
fue	555-1212	1115
fwk	555-1391	1115
haa	555-0952	1115
...	...	...

ajh	din
owl	eqo
qoa	yyq
qpm	fgl
fwk	hlv



555-2033  
heard

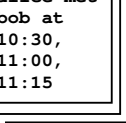
ajh	din
owl	eqo
qoa	yyq
qpm	fgl
fwk	hlv

code	phone number	time
abj	555-1933	1030
<b>ajh</b>	555-3853	1030
cda	555-3853	1045
<b>din</b>	555-1391	1045
eaf	555-1933	1045
<b>eqo</b>	555-3853	1100
fav	555-0955	1100
<b>fgl</b>	555-3853	1115
fue	555-1212	1115
<b>fwk</b>	555-1391	1115
haa	555-0952	1115
...	...	...

ajh	din
owl	eqo
qoa	yyq
qpm	fgl
fwk	hlv



alice met
bob at
10:30,
11:00,
11:15



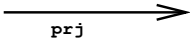




prj







prj





Alice met Bob  
at 10:00





should I  
warn Alice?

Hmm...







```
I'll say:  
akj at 10:00  
itj at 10:15  
jqn at 10:30  
kas at 10:45  
..
```



```
I'll say:  
pef at 10:00  
smq at 10:15  
qaz at 10:30  
too at 10:45  
..
```



A

I'll say:

secret  $k_a$

```
akj = HMAC( $k_a$ , "10:00")  
itj = HMAC( $k_a$ , "10:15")  
jqn = HMAC( $k_a$ , "10:30")  
kas = HMAC( $k_a$ , "10:45")  
..
```



B

I'll say:

secret  $k_b$

```
pef = HMAC( $k_b$ , "10:00")  
smq = HMAC( $k_b$ , "10:15")  
qaz = HMAC( $k_b$ , "10:30")  
too = HMAC( $k_b$ , "10:45")  
..
```



### things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii





things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii









### things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii





### things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii





things I've heard

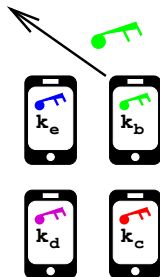
ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii





things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii





things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii



cases  
confirmed:





things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii



cases  
confirmed:











at-risk from



things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii



cases  
confirmed:





at-risk from



things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii



cases confirmed:





at-risk from



things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rkn	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii

I've had 7 risky encounters



cases confirmed:





at-risk from



things I've heard

ald	ken	qsa
etj	cse	dds
kow	ojy	rnw
rk	eoi	knn
ask	eak	omg
pfm	tnb	aza
rnw	kma	knf
ria	vic	eii

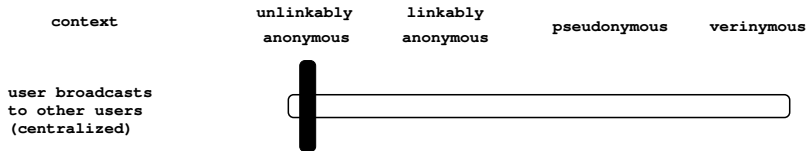
I've had 7 risky encounters  
by two individuals



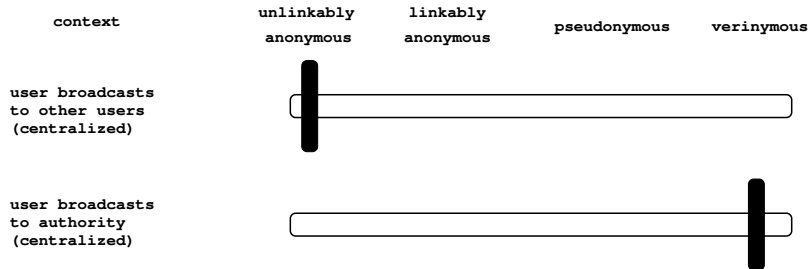
cases  
confirmed:



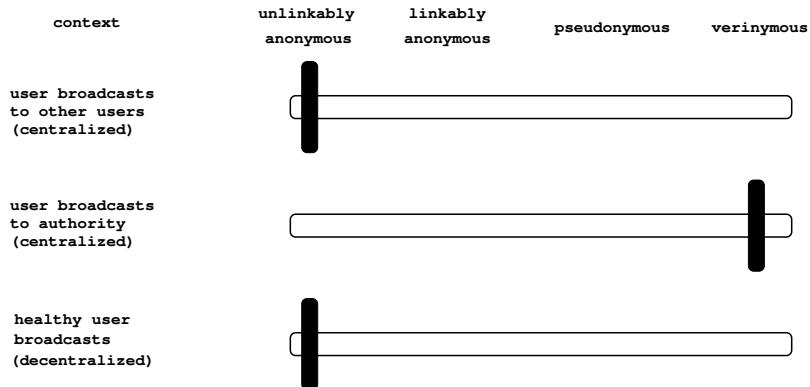
# Privacy in Contact Tracing



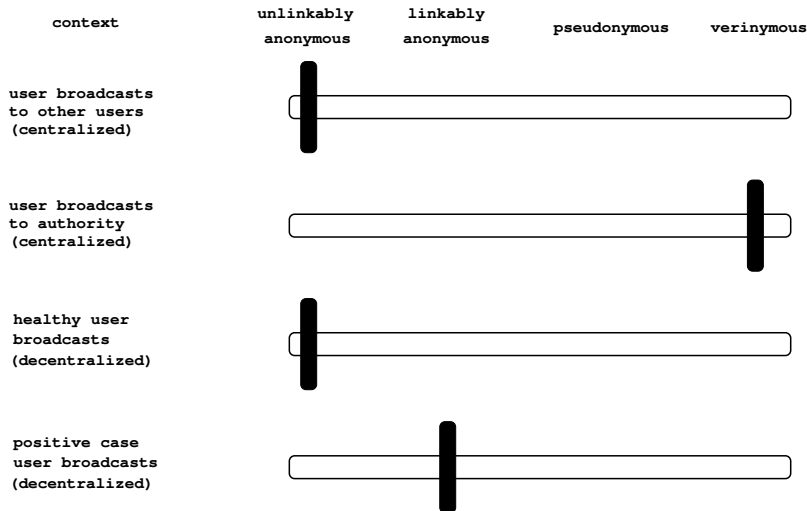
# Privacy in Contact Tracing



# Privacy in Contact Tracing

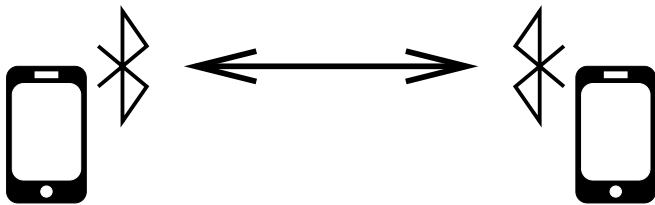


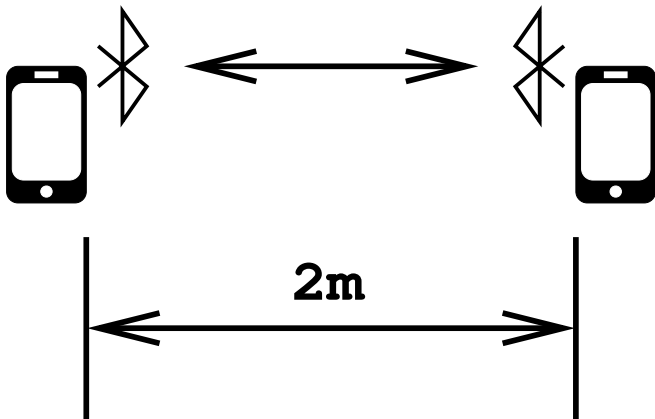
# Privacy in Contact Tracing

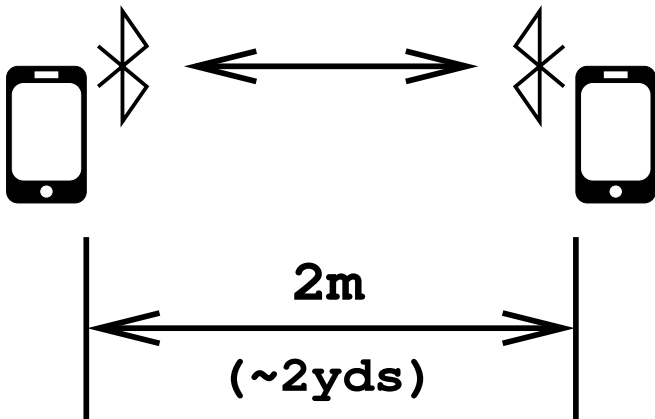
























# The Iron Curtain isn't soundproof.

And so the truth is broadcast, through the air, where it can't be stopped by walls and guards, up to 18 hours a day to millions of people in the closed countries behind the Iron Curtain.

Will you help the truth get through? Whatever you can give will mean a great deal to a great many people behind the Iron Curtain.

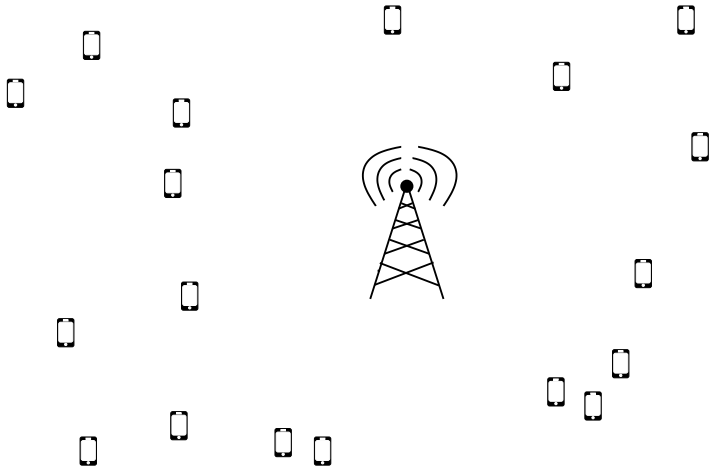
Send your contribution to:

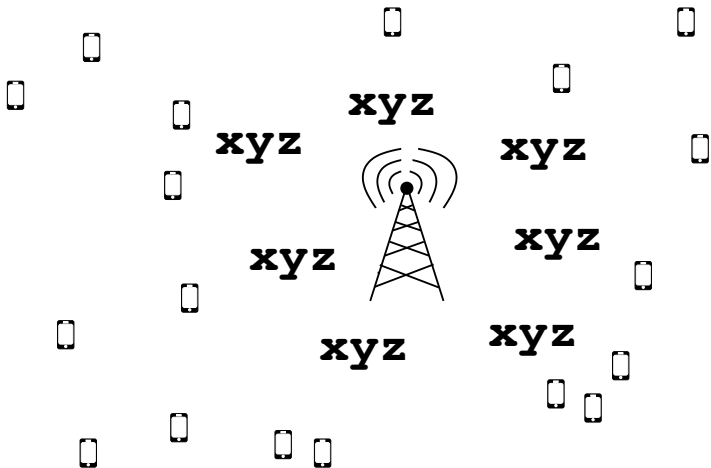
**Radio Free Europe, Box 1965, Mt. Vernon, N. Y.**

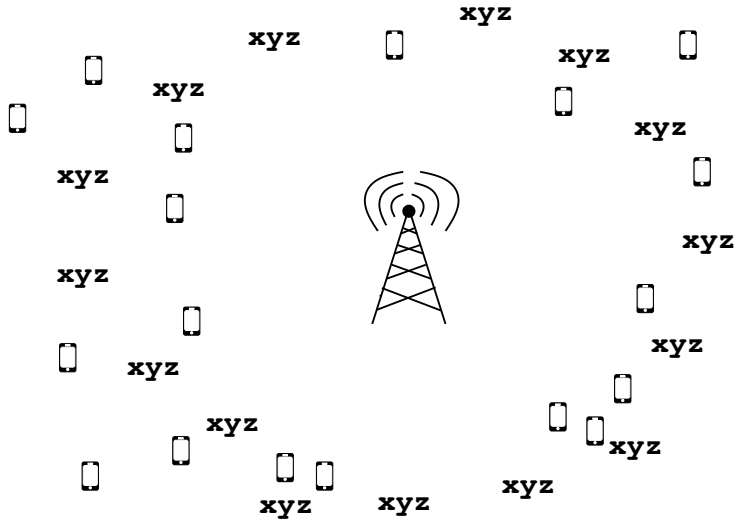


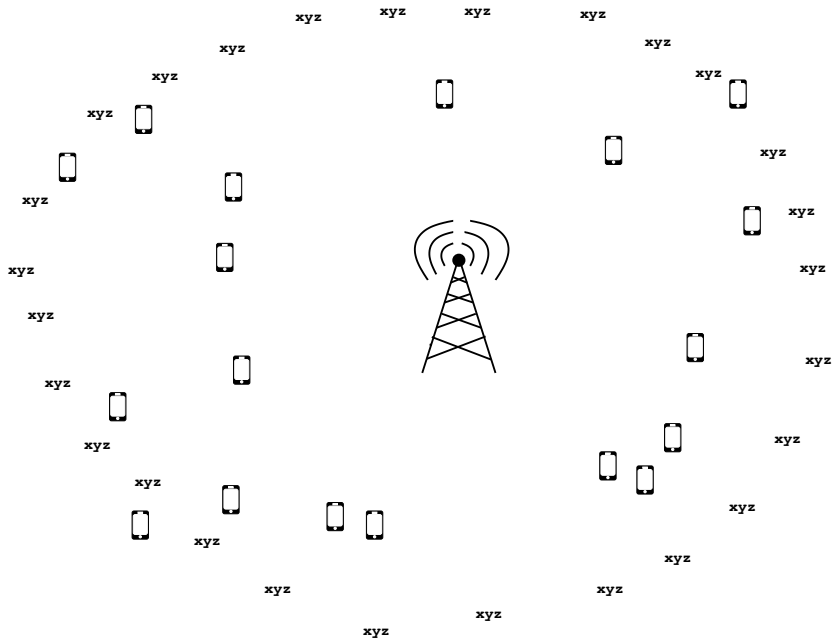


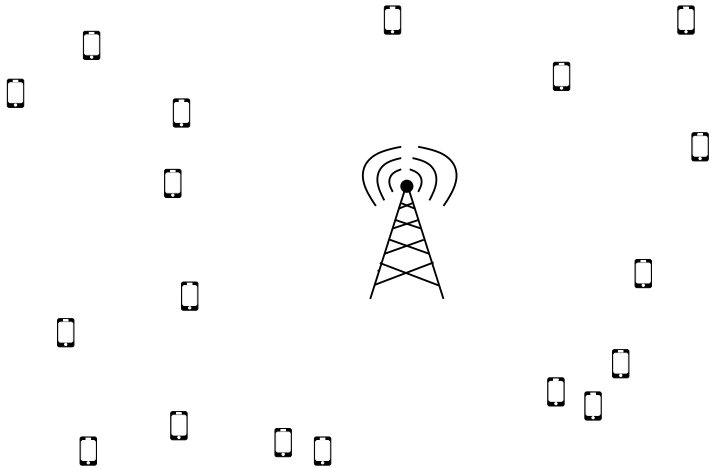




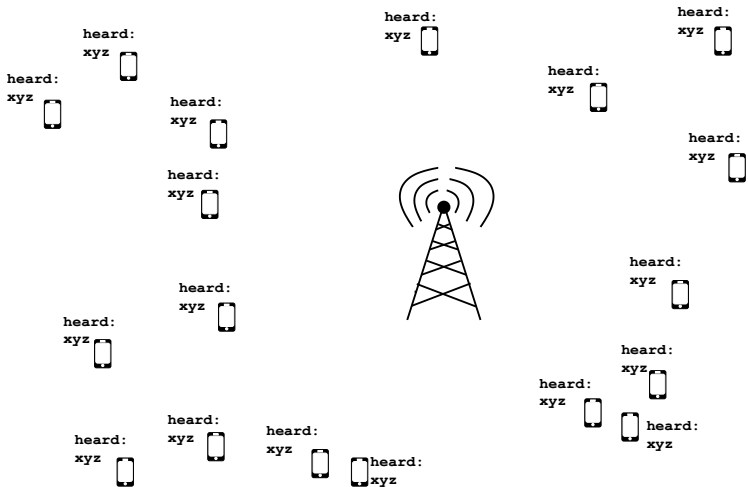




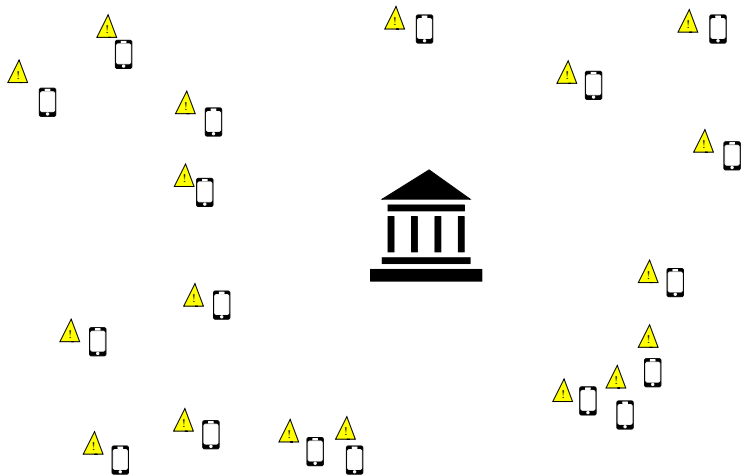


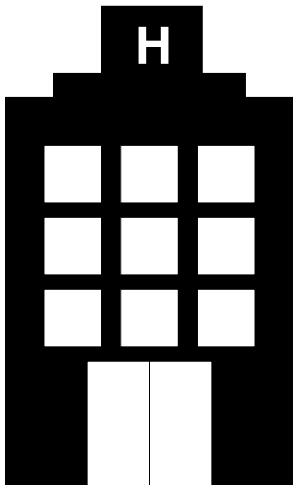


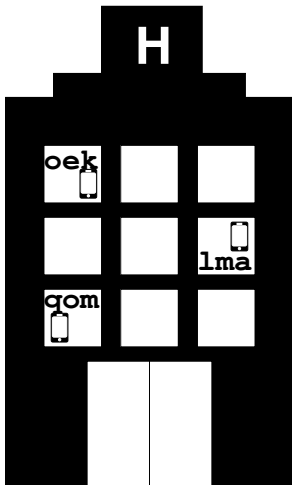


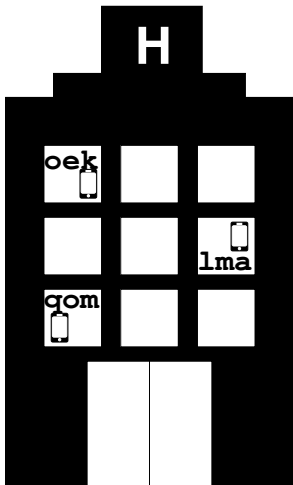


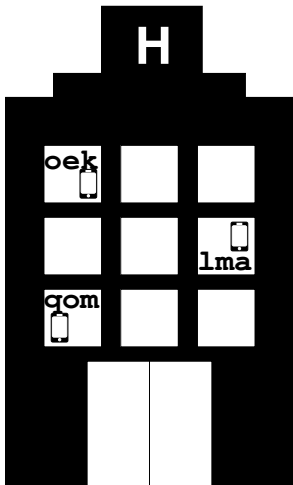


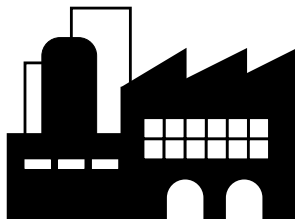




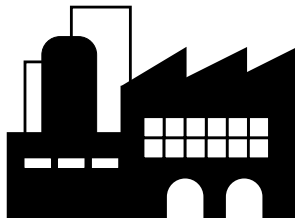


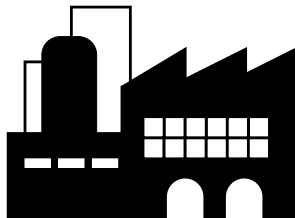


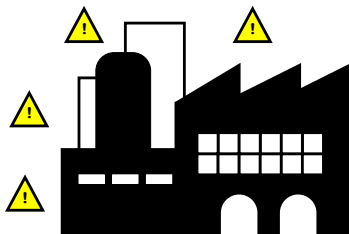




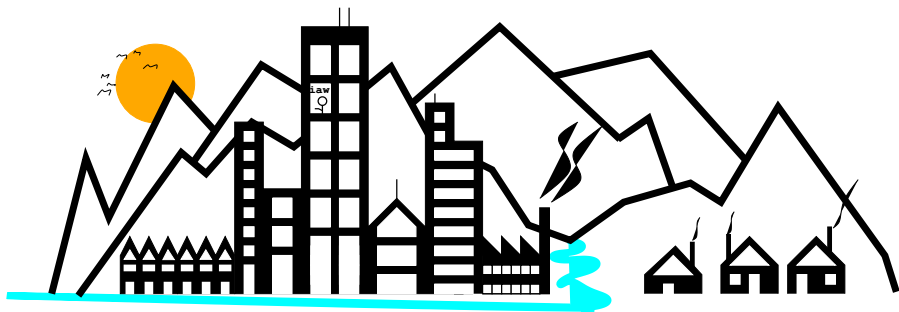












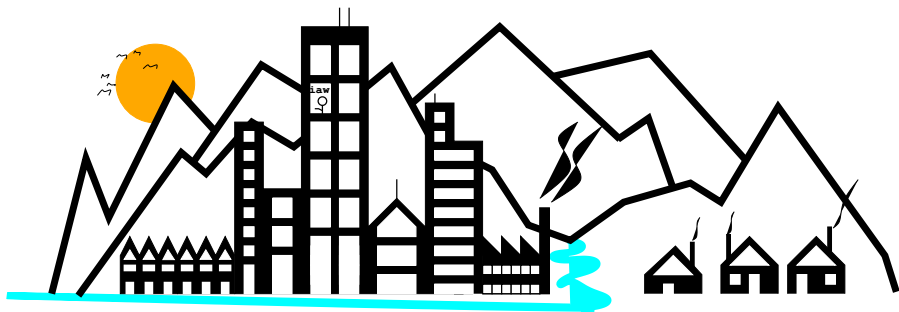












iaw at 50 5th St SW (0900)

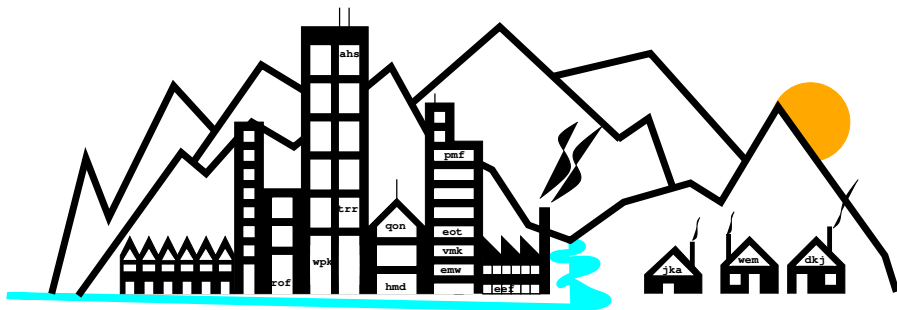




iaw at 50 5th St SW (0900)  
wzb at 25 2nd Ave NW (1715)



iaw at 50 5th St SW (0900)  
wzb at 25 2nd Ave NW (1715)  
jka at Bob's house (2030)



iaw at 50 5th St SW (0900)  
wzb at 25 2nd Ave NW (1715)  
jka at Bob's house (2030)  
trr at 50 5th St SW (2015)  
eot at 33 3rd Ave NW (1330)

...

wpk at 50 5th St SW (1300)  
pmf at 33 3rd Ave NW (1315)  
gon at 25 2nd Ave NW (1230)  
hmd at 25 2nd Ave NW (2100)  
vmk at 33 3rd Ave NW (0600)

...



iaw at 50 5th St SW (0900)  
wzb at 25 2nd Ave NW (1715)  
jka at Bob's house (2030)  
trr at 50 5th St SW (2015)  
eot at 33 3rd Ave NW (1330)

...

wpk at 50 5th St SW (1300)  
pmf at 33 3rd Ave NW (1315)  
qon at 25 2nd Ave NW (1230)  
hmd at 25 2nd Ave NW (2100)  
vmk at 33 3rd Ave NW (0600)

...



iaw at 50 5th St SW (0900)  
 wzlb at 25 2nd Ave NW (1715)  
 jka at Bob's house (2030)  
 trr at 50 5th St SW (2015)  
 eot at 33 3rd Ave NW (1330)  
 ...

wpk at 50 5th St SW (1300)  
 pmf at 33 3rd Ave NW (1315)  
 qon at 25 2nd Ave NW (1230)  
 hmd at 25 2nd Ave NW (2100)  
 vmk at 33 3rd Ave NW (0600)  
 ...

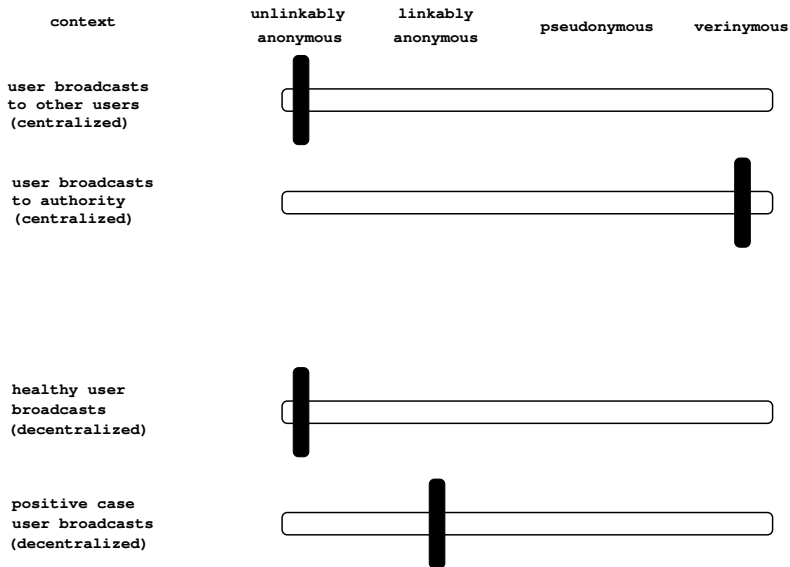


wpk at 50 5th St SW (1300)  
 pmf at 33 3rd Ave NW (1315)  
 qon at 25 2nd Ave NW (1230)  
 hmd at 25 2nd Ave NW (2100)  
 vmk at 33 3rd Ave NW (0600)

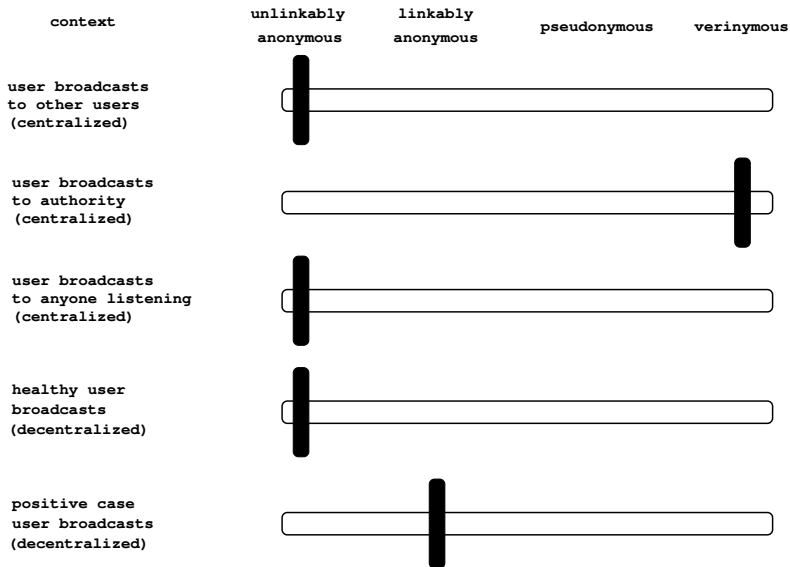
...



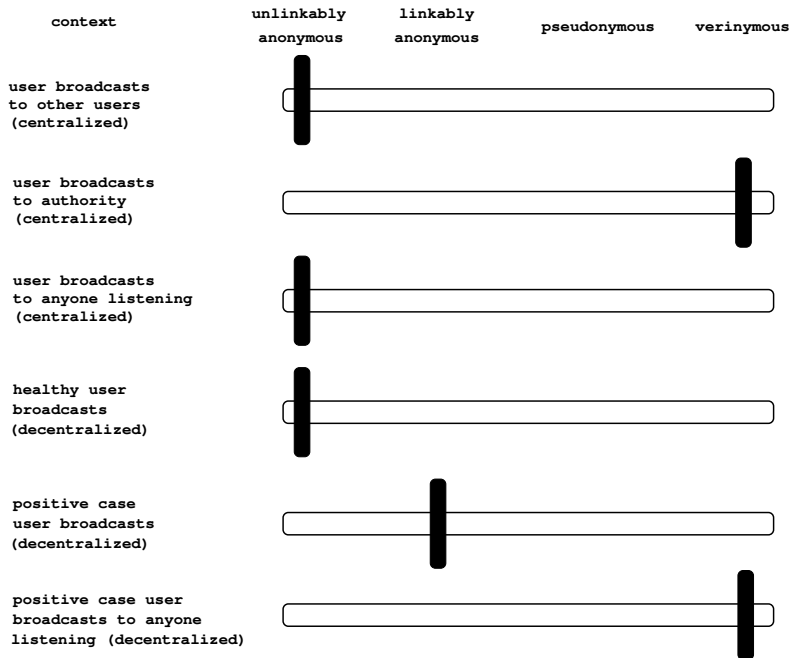
# Privacy in Contact Tracing

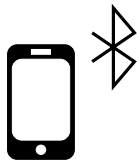


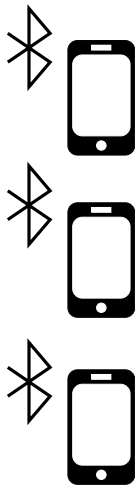
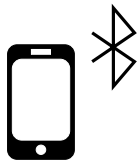
# Privacy in Contact Tracing

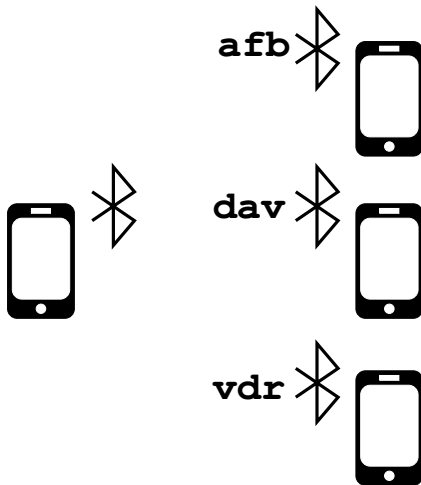


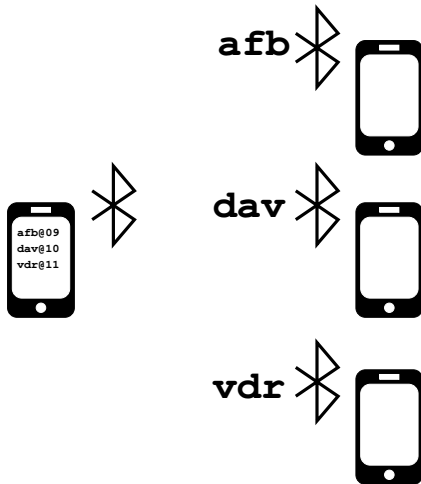
# Privacy in Contact Tracing

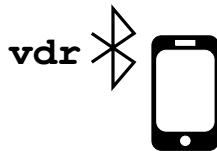
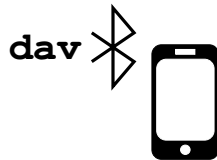
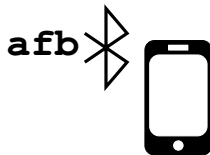
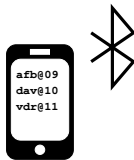




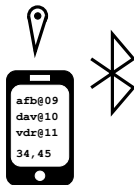






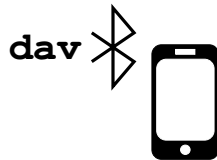
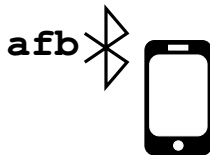


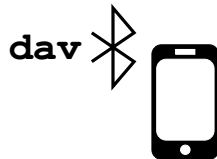
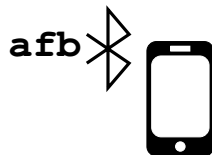


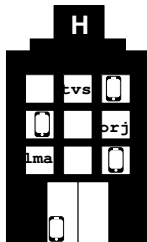


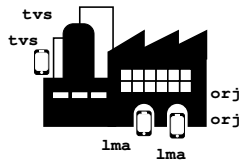
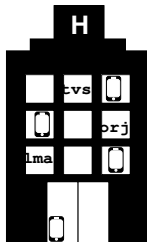


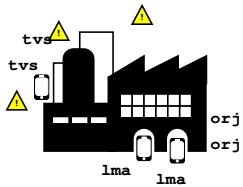
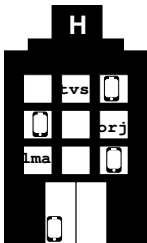
afb@09  
dav@10  
vdr@11  
34, 45

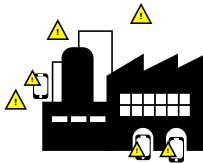
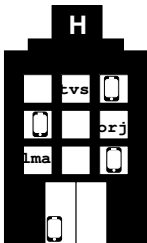


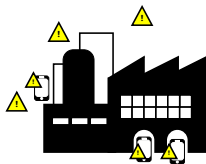
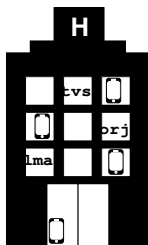
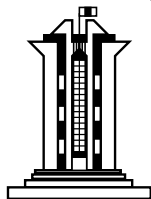








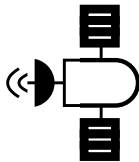
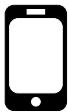
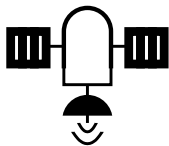


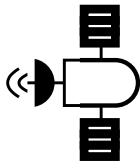
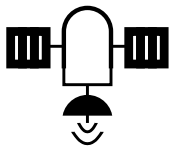


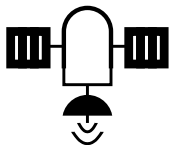




===field reports===		
sensor A:	sensor B:	sensor C:
vic @ 0900	lvd @ 2100	lmd @ 1815
com @ 1000	bur @ 2100	saz @ 1430
rca @ 1115	coq @ 2130	shj @ 1530







its 16:36

its 16:36

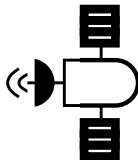
its 16:36

its 16:32

its 16:36

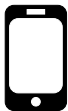
its 16:32

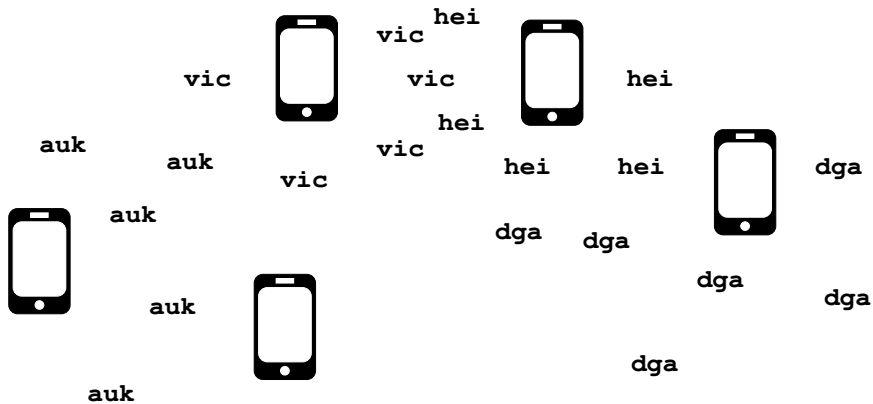
its 16:32

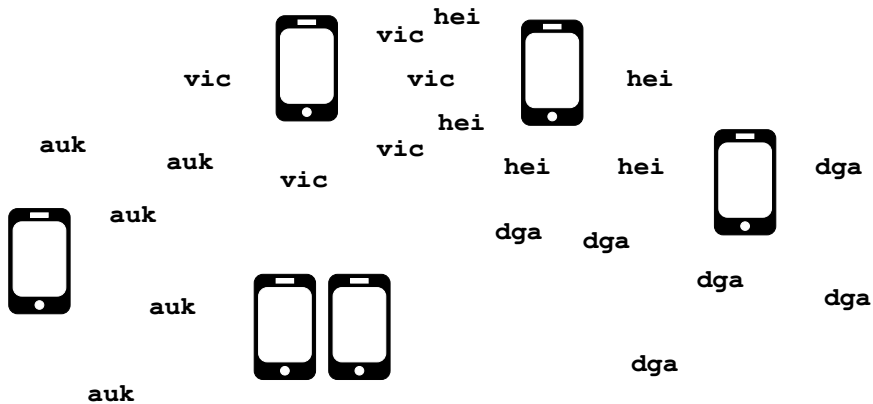


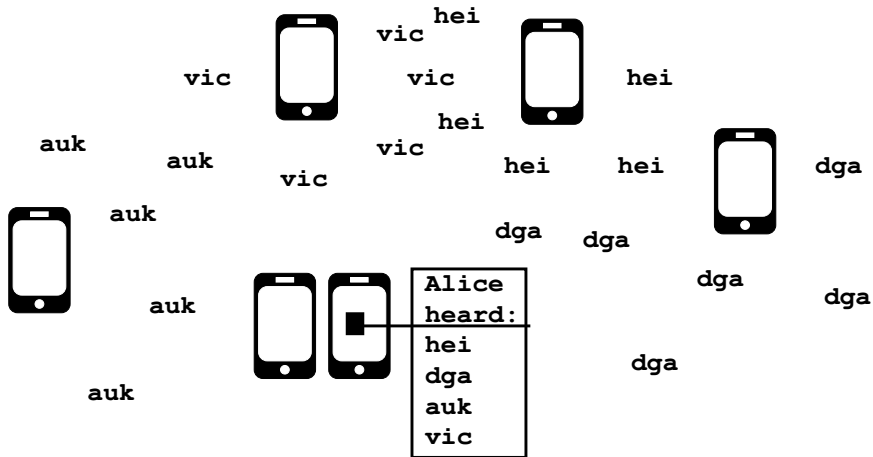
its 16:32









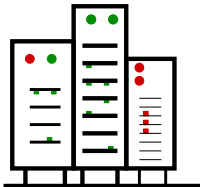






Alice  
heard:  
hei  
dga  
auk  
vic

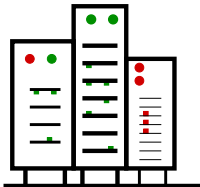
Alice  
heard:  
hei  
dga  
auk  
vic

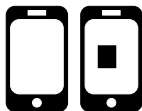
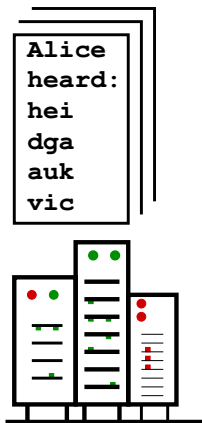


Alice  
heard:  
hei  
dga  
auk  
vic



Alice  
heard:  
hei  
dga  
auk  
vic





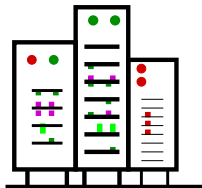
Alice  
heard:  
hei  
dga  
auk  
vic



confirmed cases:

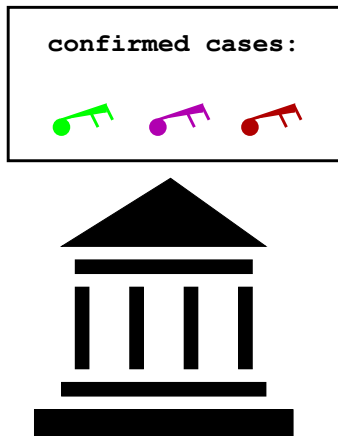
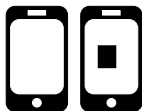


Alice  
heard:  
hei  
dga  
auk  
vic



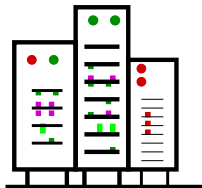
confirmed cases:







Alice  
heard:  
hei  
dga  
auk  
vic

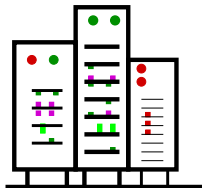


alice has 90% chance

confirmed cases:



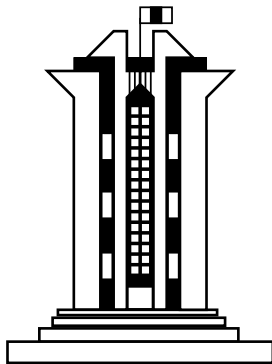
Alice  
heard:  
hei  
dga  
auk  
vic

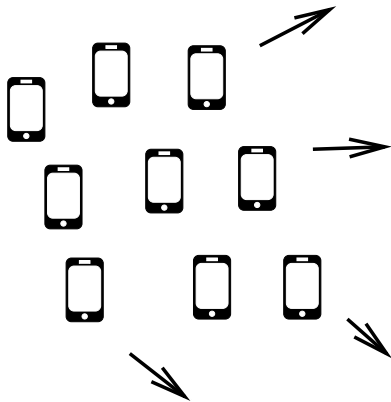
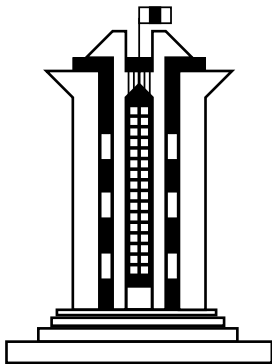


alice has 90% chance

confirmed cases:









# Video MP3 Converter

FunDevs LLC Music & Audio

★★★★★ 629,495

**E** Everyone

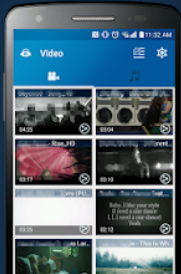
Contains Ads

 This app is compatible with your device.

 Add to Wishlist

Install

Edit your own video  
And  
keep your favorite musics!



It is easy!  
Trim and resize your video  
And convert it to audio!



Trim your music  
As you want!



## ADDITIONAL INFORMATION

### Updated

July 29, 2020

### Size

12M

### Installs

100,000,000+

### Current Version

2.5.10

### Requires Android

4.1 and up

### Content Rating

Everyone

[Learn More](#)

### Permissions

[View details](#)

### Report

[Flag as inappropriate](#)

### Offered By

FunDevs LLC

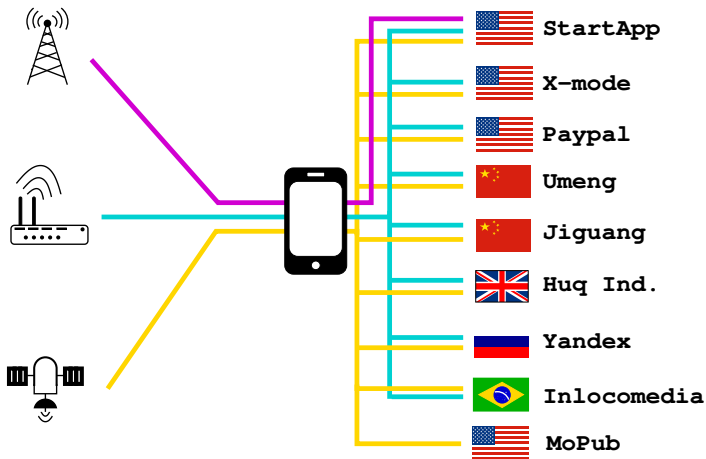
### Developer

[Visit website](#)

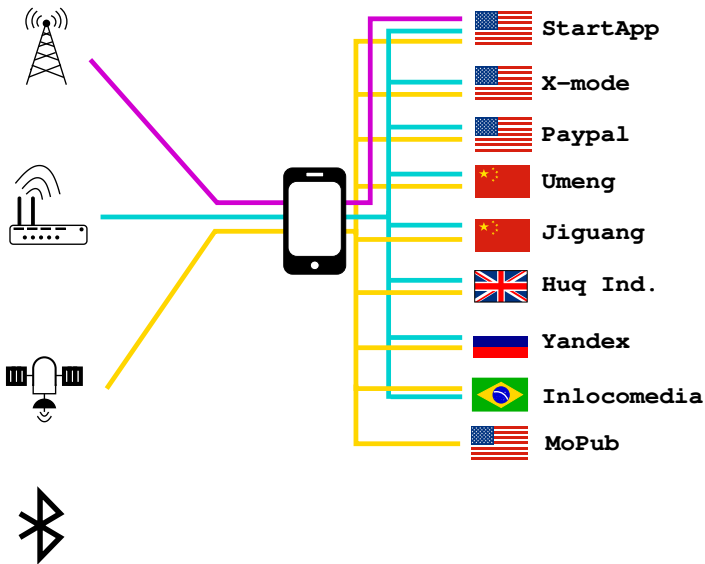
[mp3converter@fundevs.com](mailto:mp3converter@fundevs.com)

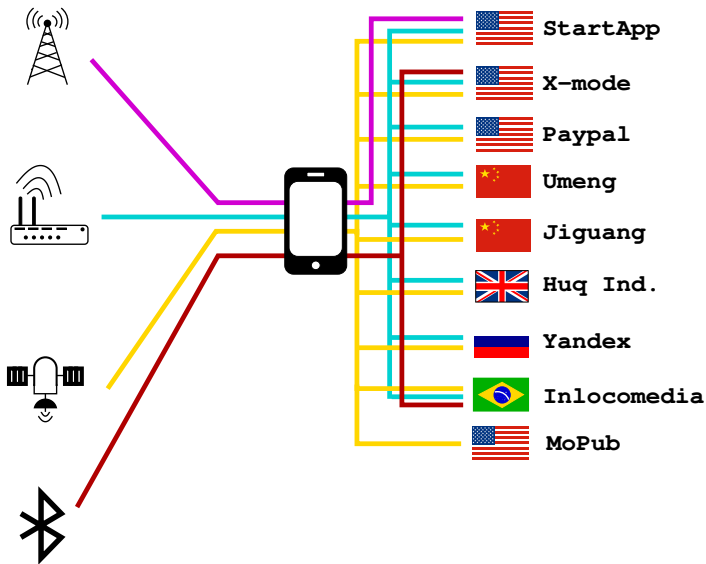
[Privacy Policy](#)

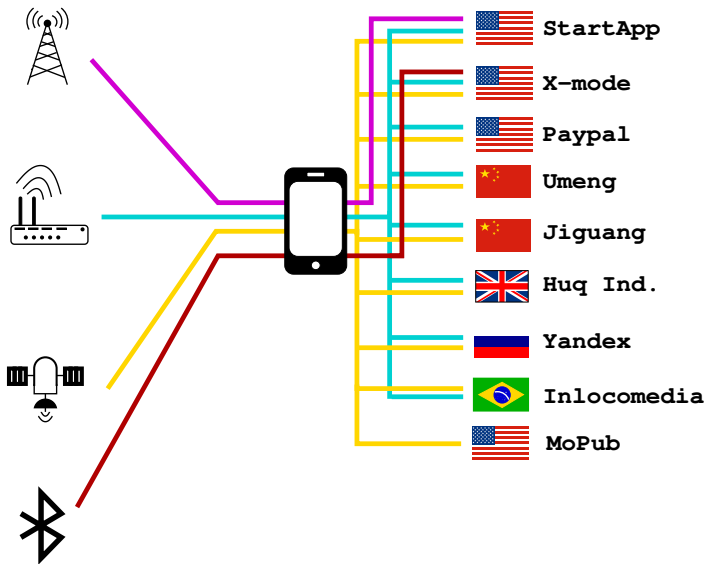
```
{ "multi_part": {},  
  "obs": [  
    { "gaid": "<AAID>",  
      "ids": ["google_aid~<AAID>"],  
      "lat": <LATITUDE>,  
      "lon": <LONGITUDE>,  
      "metadata": ["device:AOSP on BullHead",  
                   "os_version_int:25",  
                   "sdk_version:1.9.2-bcn",  
                   "app:Video MP3 Converter"],  
      "observed": [{ "mac": "AB:B1:E6:6E:1B:BA", "name": "null",  
                     "rssi": -12, "tech": "ble"},  
                    { "mac": "AB:B1:E8:8E:1B:BA", "name": "null",  
                     "rssi": -12, "tech": "ble"},  
                    { "mac": "AB:B1:E7:7E:1B:BA", "name": "null",  
                     "rssi": -12, "tech": "ble"},  
                    { "mac": "AB:B1:E9:9E:1B:BA", "name": "null",  
                     "rssi": -12, "tech": "ble"},  
                    { "mac": "<NEARBY MAC>", "name": "null",  
                     "rssi": -50, "tech": "ble"},  
                    { "mac": "<NEARBY MAC>", "name": "<NEARBY NAME>",  
                     "rssi": -43, "tech": "bluetooth"},  
                    { "mac": "<NEARBY ROUTER MAC>", "name": "<NEARBY SSID>",  
                     "rssi": -50, "tech": "wifi"},  
                    <... 7 more observations ...>],  
      "timepoint": "1592782636",  
      "token": "z1+y/FCqZ2ZD8QNldpJasF/te5KBhHqXT0Y1T5L/e0w="}]  
}
```











**X-Mode Social, Inc.** collects and passes to third parties a variety of information for use as described below:

*What's Collected:* Precise location information (such as your device GPS coordinates), relative location information (from WiFi signals or Bluetooth Low Energy devices in your proximity, for example), device-based advertising identifiers, information about your mobile device such as type of device, operating system version and type, device settings, time zone, carrier and IP address.

*When We Collect It:* When the app is in use or running in the background.

*How We Use and Share It:* We and other third parties may use the Information (a) to customize ads in this or other apps (for instance, if your device is often located at or near music venues, you might receive offers for music tickets); (b) to measure effectiveness of those ads; (c) for disease prevention and research, security, anti-crime and law enforcement; or (d) for market, civic or other research regarding aggregated traffic patterns (for instance, a company that analyzes shopping trends might want to learn whether more or fewer devices are seen near malls or in other shopping districts).

We may on occasion use, or work with business partners who use, near field communication (NFC), Bluetooth LE sensors, or Bluetooth low-energy (BLE) beacon technology to send us signals about a Device's location. We also may sometimes collect Device location data from third-party devices present at certain third-party locations, such as stores, shopping malls, stadiums, bars, restaurants, and other points of interest. This location data may be used for powering solutions in smart cities, fin-tech, real estate or advertising. (If you are interested in how we collect, use and share information about our own customers and visitors to our corporate website, please go to Section 5.)

**VICE**

IMAGE: CATHRYN VIRGINIA

**MOTHERBOARD**  
TECH BY VICE

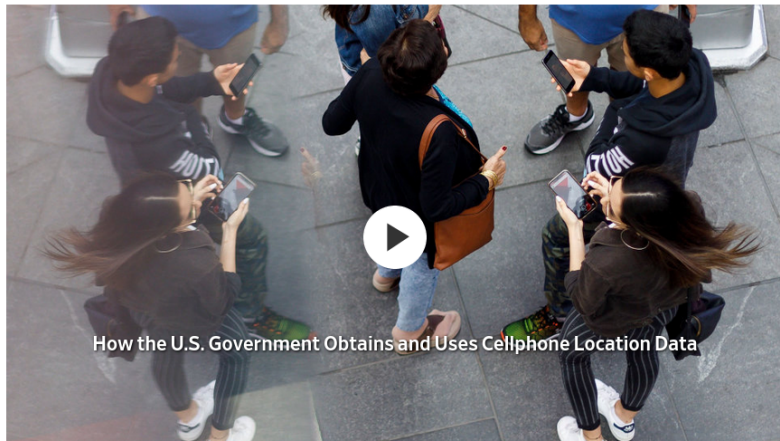
## How the U.S. Military Buys Location Data from Ordinary Apps

A Muslim prayer app with over 98 million downloads is one of the apps connected to a wide-ranging supply chain that sends ordinary people's personal data to brokers, contractors, and the military.

◆ WSJ NEWS EXCLUSIVE | [TECH](#)

## Next Step in Government Data Tracking Is the Internet of Things

U.S. Air Force experiments with monitoring peripherals—from autos to fitness trackers

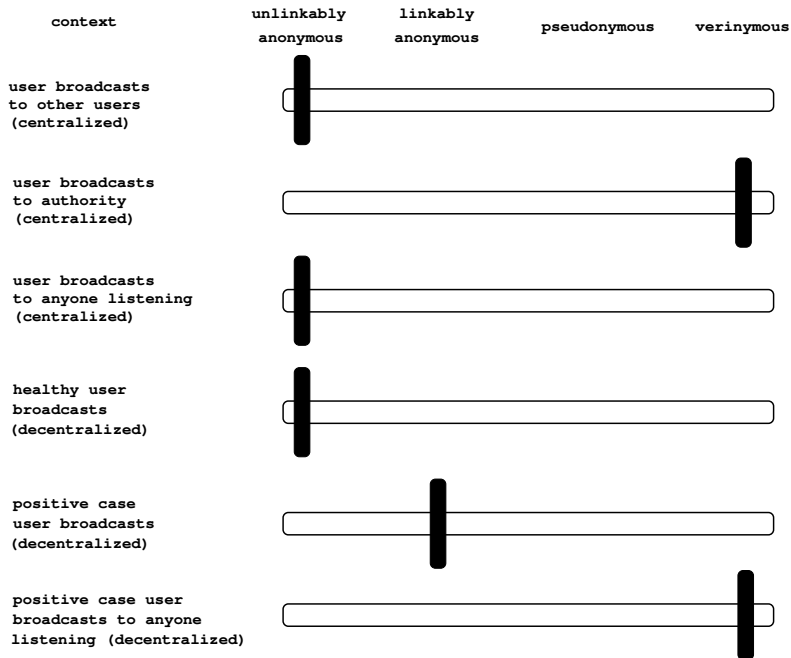


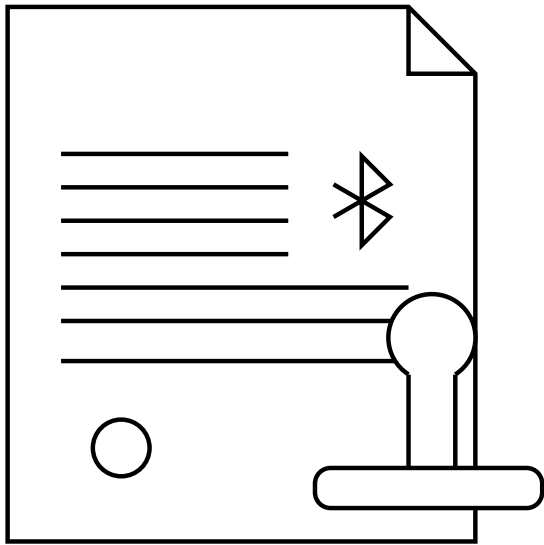
How the U.S. Government Obtains and Uses Cellphone Location Data

The U.S. government is using app-generated marketing data based on the movements of millions of cellphones around the country for some forms of law enforcement. We explain how such data is being gathered and sold. Photo: Justin Lane/Shutterstock (Originally published Feb. 7, 2020)



# Privacy in Contact Tracing





# App permissions

**Kaloer Clock - Alarm Clock** needs access to:

## In-app purchases

Make purchases within the app

---

## Your messages

Read your text messages (SMS or MMS), receive text messages (SMS)

---

## System tools

Install shortcuts

---

## Your location

Approximate location (network-based), precise location (GPS and network-based)

---

## Your personal information

Read calendar events plus confidential information

---

## Your accounts

Add or remove accounts, use accounts on the device

---

## Lock screen

**ACCEPT**

**BLUETOOTH**

# BLUETOOTH

- request connection
- accept connection
- transfer data

# BLUETOOTH

- request connection
- accept connection
- transfer data

# BLUETOOTH\_ADMIN

## **BLUETOOTH**

- request connection
- accept connection
- transfer data

## **BLUETOOTH\_ADMIN**

- initiate discovery
- manipulate settings
- perform these attacks

If you want your app to initiate device discovery or manipulate Bluetooth settings, you must declare the `BLUETOOTH_ADMIN` permission in addition to the `BLUETOOTH` permission. Most applications need this permission solely for the ability to discover local Bluetooth devices. The other abilities granted by this permission should not be used, unless the application is a "power manager" that modifies Bluetooth settings upon user request.



play store apps	43247 *
-----------------	---------

play store apps	43247 *
-----------------	---------

\*by randomly searching dictionary adjectives

play store apps	43247 *
-----------------	---------

have INTERNET

\*by randomly searching dictionary adjectives

play store apps	43247 *
have INTERNET	41166

\*by randomly searching dictionary adjectives

play store apps	43247 *
have INTERNET	41166
have BLUETOOTH	

\*by randomly searching dictionary adjectives

play store apps	43247 *
have INTERNET	41166
have BLUETOOTH	3745

\*by randomly searching dictionary adjectives

play store apps	43247 *
have INTERNET	41166
have BLUETOOTH	3745

\*by randomly searching dictionary adjectives

play store apps	43247 *
have INTERNET	41166
have BLUETOOTH	3745
have BLUETOOTH_ADMIN	2177

\*by randomly searching dictionary adjectives



play store apps		43247 *
have INTERNET		41166
	have BLUETOOTH	3745
	have BLUETOOTH_ADMIN	2177

\*by randomly searching dictionary adjectives

play store apps		43247 *
have INTERNET		41166
	have BLUETOOTH	3745
	have BLUETOOTH_ADMIN	2177 (~60% of BLUETOOTH apps)

\*by randomly searching dictionary adjectives

play store apps 43247 \*

have INTERNET 41166

have BLUETOOTH 3745

have BLUETOOTH\_ADMIN 2177 (~60% of BLUETOOTH apps)

1 in 20 random apps

\*by randomly searching dictionary adjectives



Android ...



Calculator



Calendar



Camera



Chrome



Clock



Contacts



Disney R...



Docs



Drive



Duo



Files



Gmail



Google



Google P...



Home



Keep Not...



Maps



Messages



News



Phone



Photos



Play Mov...



Play Music



Play Store



Settings



Tim Hort...



Universal...



YouTube



YT Music



# PUBG MOBILE - NEW ERA

Editors' Choice

Tencent Games Action

★★★★☆ 33,055,387

Teen

Contains Ads · Offers in-app purchases

✕ This app is incompatible with your device.

Add to Wishlist

Install



# Real Boxing – Fighting Game

**Vivid Games S.A.** Sports

★★★★☆ 510,288 

 Teen

Contains Ads · Offers in-app purchases

 This app is compatible with your device.

 Add to Wishlist

Install



# BIGO LIVE—Live Stream, Live Video, Live Chat

**BIGO TECHNOLOGY PTE. LTD.** Social

★★★★☆ 4,177,592 

 Mature 17+

Offers in-app purchases

 This app is compatible with your device.

 Add to Wishlist

Install



# MakeupPlus - Your Own Virtual Makeup Artist

Meitu (China) Limited Photography

★★★★☆ 859,851

 Everyone

Contains Ads

 This app is compatible with your device.

 Add to Wishlist

Install





# Perfect365: One-Tap Makeover

Perfect365, Inc. Beauty

★★★★☆ 778,608 

 Everyone

Contains Ads · Offers in-app purchases

✕ This app is incompatible with your device.

 Add to Wishlist

Install



# Battery Widget Percentage Charge Level (Free)

M2Catalyst, LLC. Tools

★★★★★ 79,329 

 Everyone

 This app is compatible with your device.

 Add to Wishlist

Install

# ZARA

## Zara

Inditex Lifestyle

**E** Everyone

★★★★☆ 164,767 

 This app is compatible with your device.

 Add to Wishlist

Install



# Rento - Dice Board Game Online

LAN GAMES LTD Board

★★★★★ 300,073

**E** Everyone

Contains Ads · Offers in-app purchases

**i** This app is compatible with your device.

**+** Add to Wishlist

Install



# Warlings

17th Pixel Strategy

 Everyone 10+

Contains Ads

 This app is compatible with your device.

 Add to Wishlist

★★★★★ 350,231 

Install



# Bible App by Olive Tree

**HarperCollins Christian Publishing**  
**Books & Reference**

**E** Everyone

**Offers in-app purchases**

 This app is compatible with your device.

 Add to Wishlist

★★★★★

108,736 

**Install**



# happn – Local dating app

**happn** Lifestyle

★★★★★ 1,509,755 

 Mature 17+

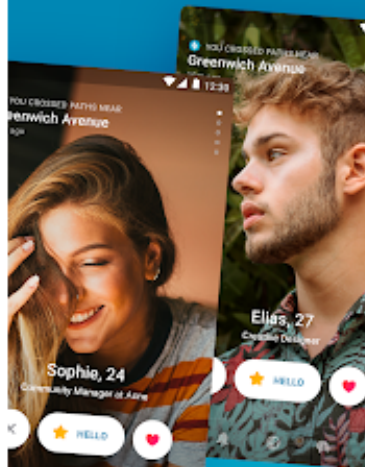
Contains Ads · Offers in-app purchases

 This app is compatible with your device.

 Add to Wishlist

Install

Find the people  
you've crossed  
paths with





## Bluetooth permissions

In order to use Bluetooth features in your application, you must declare two permissions. The first of these is `BLUETOOTH`. You need this permission to perform any Bluetooth communication, such as requesting a connection, accepting a connection, and transferring data.

The other permission that you must declare is `ACCESS_FINE_LOCATION`. Your app needs this permission because a Bluetooth scan can be used to gather information about the location of the user. This information may come from the user's own devices, as well as Bluetooth beacons in use at locations such as shops and transit facilities.



# FEDERAL TRADE COMMISSION

## PROTECTING AMERICA'S CONSUMERS

[Contact](#) | [Stay](#)

[ABOUT THE FTC](#)

[NEWS & EVENTS](#)

[ENFORCEMENT](#)

[POLICY](#)

[TIPS & ADVICE](#)

[Home](#) » [News & Events](#) » [Press Releases](#) » [Mobile Advertising Network InMobi Settles FTC Charges It Tracked Hundreds of Millions of Consumers' Locations Without Permission](#)

## Mobile Advertising Network InMobi Settles FTC Charges It Tracked Hundreds of Millions of Consumers' Locations Without Permission



aofu-prompt.png

aofu-toggle.png

update-app.png

have location

have location

coarse

fine



have location	
?	?

coarse  
fine

have location	
coarse	fine

15%

85%

have location

10657 apps

1790

have INTERNET, LOCATION, and both  
BLUETOOTH and BLUETOOTH\_ADMIN

**4% (or 1 in 25)**