# How the NSA is tracking people right now

Documents obtained by The Washington Post indicate the National Security Agency is collecting billions of records a day to track the location of mobile phone users around the world. This bulk collection, performed under the NSA's international surveillance authority, taps into the telephony links of major telecommunications providers including some here in the United States.

The NSA collects this location and travel habit data in order to do "target development" — to find unknown associates of targets it already knows about.

To accomplish this, the NSA compiles information on a vast database of devices and their locations. Most of those collected, by definition, are suspected of no wrongdoing. Officials say they do not purposely collect U.S. phone locations in bulk, but a large number are swept up 'incidentally.'
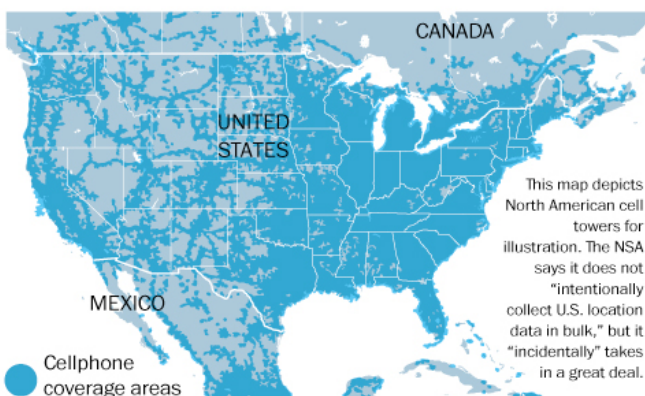
Using these vast location databases, the NSA applies sophisticated analytics techniques to identify what it calls **co-travelers** — unknown associates who might be traveling with, or meeting up with a known target.
HERE IS HOW IT WORKS

Co-traveler   Target
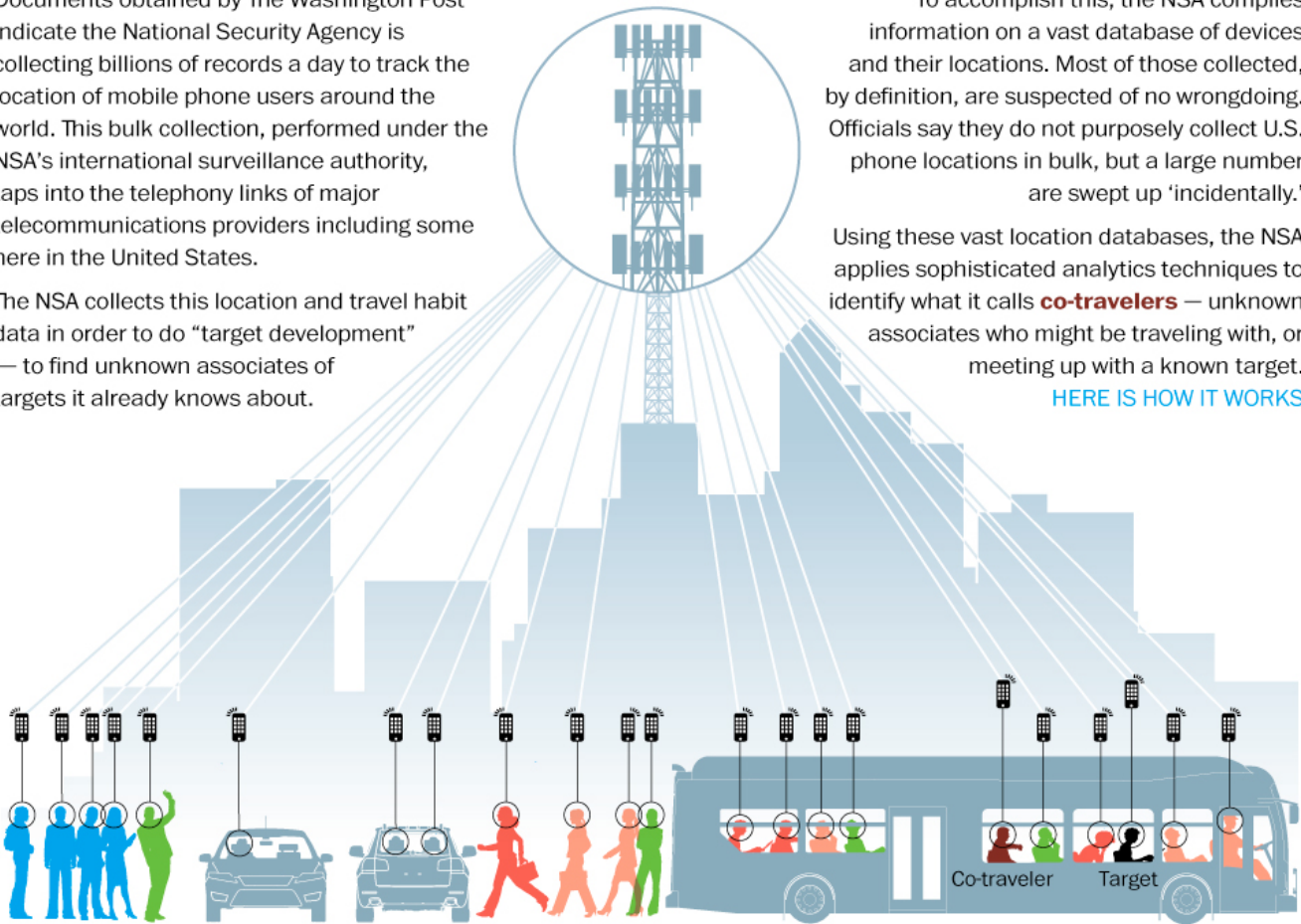
Cell tower coverage leaves few places to hide

Just by virtue of being "on," a mobile device reveals its location in multiple ways on the basic signaling pathways of the global telephone network. Much of that data crosses U.S. territory, even for foreign-registered phones. NSA collection from those links is known as "UPSTREAM."

CANADA

UNITED
STATES

This map depicts North American cell towers for illustration. The NSA says it does not "intentionally collect U.S. location data in bulk," but it "incidentally" takes in a great deal.

MEXICO

● Cellphone coverage areas

How the NSA gets locations from mobile devices

When mobile devices connect to a cellular network, they announce their presence on one or more "registers" maintained by telephone providers in order to connect and bill their counterparts for telephone calls. Registration messages often include a device's "coarse" location, at the level of a city or country, or a "finer" position based on distance from a cellular tower.

Many mobile devices and smartphones use WiFi signals as well to fix their locations, relying on databases that map millions of hot spots around the world. These signals can locate a device down to a city block.

Global Positioning Satellite receivers, built into many cellular and satellite telephones, can locate a device within a 100 meter radius or less.

Most mobile operators also track phones precisely by triangulating their distance from multiple towers, for example to provide location-based emergency services.

How the NSA tracks targets to find possible associates

"Co-Traveler Analytics" is one active operational NSA target development method. It draws on location data, such as Global Cellphone-Tower Identifiers (GCID) to compute the date, time, and location of any device in proximity to a known foreign intelligence target within a one-hour time

By tracking all phones within a cell tower area along with the target phone, co-travelers can be isolated.

Cellphone tower

Tower F

Tower E

Cellphone tower coverage area