Mapping and Tracking
Mobile Device Investigations Program
Technical Operations Division
OBJECTIVE

Given a hypothetical investigative scenario involving cellular telephones and location information provided by the Cellular Service Provider, the learner will map the location of the subject on specific dates and times in order successfully complete the assigned investigation.
“Cell Phone Mapping” is the process of reviewing Call Detail Records to determine the specific location of a cell phone at a given date and time.
“Cell phone tracking” is the process of using cell technology to identify the current and immediate location of a specific cell phone. Unlike “mapping”, which coordinates historical data, “tracking” is done in real-time.
Tower Technology
But There Is More...

- A cell phone that is powered on is always communicating.
- Every few minutes, it sends out a signal:
  - The signal is received by the nearest cell tower which reads the ESN and SID:
    - Your personal identifier and your service provider
  - The MTSO forwards that information to the appropriate service provider who will know...
    - Where the subscriber (or at least the phone) is physically located.
- When someone calls, the service provider knows where to find you.

How can law enforcement apply this information?
Applying Wireless Technology in ‘Real Time’
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What you have seen is a less-than-outlandish application of ‘Cell Phone Mapping’.

It is an available tool for you to use in a number of crisis situations.
Mapping v. Tracking

- ‘Mapping’ is the analysis of historical detail records, applying GPS mapping to associated user tower locations.

- ‘Tracking’ is the real-time location, via triangulation, of the source of cell phone transmissions.
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Tracking

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Some Basic, Up-Front Information
Where Did That Call Come From?

http://www.fonefinder.net/

From Primeris, this site can provide the following information regarding any cell phone number:

- Home Cell Location
- Cell Service Provider
- Area Code Maps
- Census Data
- International Cell Phone Data
Where’s The Nearest Tower

www.cellreception.com

- Select a tower in any city (or by zip):
  - GPA Coordinates
  - Owner
  - Contact Information
  - Google.Earth Graphic
Keep Up With The Industry…

www.ctia.org

- Cellular Technology Industry Association
  - State of the Industry
  - Virtually all carriers are members
  - Statistics, pending legislation
  - Emerging technologies
Legal Issues?

- The Dept. of Justice Guidelines for Electronic Search and Seizure
- Still the best legal resource for electronic evidentiary issues
- Thorough discussion of ECPA
- Sample warrants, subpoenas, letters, etc.

http://www.cybercrime.gov