



Basic Historical Cell Site Analysis Course

Presented by the FBI Cellular Analysis Survey Team (CAST)



The CAST Basic Historical Cell Site Analysis Course is designed to be an introduction to basic cellular analysis and geospatial mapping.* The class provides instruction in the basic principles of cellular networks, how call detail records provided by the major cellular providers are created, how to read and understand call detail records, and how to utilize call detail records in law enforcement investigations to illustrate a cellular phone's general location.

At the conclusion of the course, students will be able to:

- Understand the basic principles and concepts of a cellular network and how a cellular device connects with a cell tower
- Interpret and analyze the call detail records obtained from the major cellular providers (AT&T, T-Mobile, and Verizon)
- Utilize mapping software to accurately depict the general location of a cellular device at the time it connected to the cellular network
- Understand the capabilities and limitations of cellular record analysis
- Interpret and analyze tower dump records from all major cellular providers
- Be familiar with the resources available through CAST

September 25-26, 2025 9:00AM to 5:00PM

Maricopa County Attorney's Office Training Room

225 W. Madison St., Phoenix, AZ 85003

To successfully complete the course, attendance is required every day.

To register for the course, email Special Agent Justin Swartz, FBI Phoenix CAST, at jtswartz@fbi.gov. Please include your name, agency, position, email, and a contact phone number.

Prerequisites:

- Students need to bring their own laptop to class
- Laptop needs to have the current version of CASTViz installed. CASTviz is free software developed by the FBI to assist with historical cell site analysis. Go to <https://castviz.com/> to get the current version of CASTViz. Please ensure you can open the program prior to attending the class.
- Laptop needs to have any version of Microsoft Excel installed. It is recommended students familiarize themselves with basic operations in Excel, such as filtering, sorting, and using formulas.
- Laptop needs to have Google Earth Pro installed. Google Earth Pro can be downloaded at <https://www.google.com/earth/versions/>
- Students should have access to the NDCAC Cell Site database at <https://portal-ndcac.fbi.gov/>. Click "Request Access" and when you get access make sure you can access the "Cell Site Database" (will be on left panel or in upper right). For any questions contact NDCAC at (855) 306-3222 or AskNDCAC@fbi.gov



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***The Basic Historical Cell Site Analysis Course does not provide the requisite knowledge or experience to qualify students as experts in historical call detail record analysis. The course is designed to provide a foundation for understanding the records.**

Course Lesson Plan:

- The CAST Basic Historical Cell Site Analysis Course provides instruction through the use of instruction slides and practical exercises conducted by the students, with instructor guidance. The goal of the course is to provide each student with the **BASIC SKILLS** necessary to request, understand, and map (either by hand or with software) a cellular phone's cell site activity during a specific period for the most common cellular providers (AT&T, Verizon, T-Mobile, and U.S. Cellular).
- The course is comprised of the following blocks of instruction:
 1. CAST program background
 2. Basic Cellular Theory
 3. Data/Record Types
 4. Legal Process
 5. Sample Analysis
 6. NDCAC – Cell Site Database
 7. CDR Record Correlation Practical
 8. Introduction to CASTviz
 9. Provider Overviews
 10. Call Detail Records by Provider
 11. Data Records Overview
 12. Operating System Developer Overview – Apple/Google
 13. Lead Generation – Tower Dumps and Area Searches
 14. Vehicle Infotainment and Telematics
 15. Timing Advance
 16. Clear Batch Search
 17. Digital Investigations – VoIP/Social Media