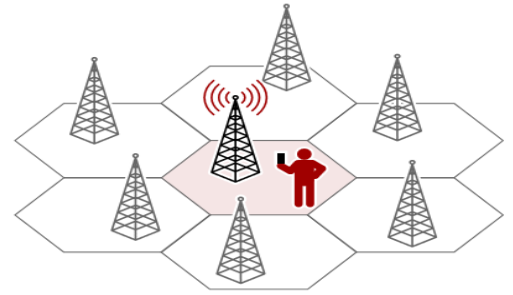


Cell Phone Location Tracking

*A National Association of Criminal Defense Lawyers (NACDL) Primer**

HOW IS A CELL PHONE'S LOCATION IDENTIFIED?

A cell phone's location can be detected through cell site location information (CSLI) or global positioning system (GPS) data. CSLI refers to the information collected as a cell phone identifies its location to nearby cell towers.¹ CSLI from nearby cell towers can indicate a cell phone's approximate location.² With information from multiple cell towers, a technique called "triangulation" is used to locate a cell phone with greater precision.³ A cell phone's GPS capabilities allow it to be tracked to within 5 to 10 feet.⁴ Cell phone location information can be "historical" or "prospective."⁵ In addition to the location information cell phones ordinarily generate, a cell phone may be "pinged" to force it to reveal its location.⁶



HOW IS CELL PHONE LOCATION INFORMATION USED?

Cell phone companies store historical and prospective CSLI and prospective GPS data,⁷ which law enforcement authorities can request from them through court processes.⁸ Historical CSLI enables law enforcement to piece together past events,⁹ for example, by connecting a suspect to the location of a past crime. Prospective location information, on the other hand, helps law enforcement trace the current whereabouts of a suspect, which can lead to arrest.¹⁰

JUDICIAL AUTHORIZATION

Law enforcement has relied on a variety of statutory regimes to obtain cell phone location information:

<i>Regime</i>	<i>Type of Information Sought</i>	<i>Legal Standard Applied by Court</i>
Order under 18 U.S.C. § 2703(d) (Stored Communications Act (SCA), 18 U.S.C. § 2701 <i>et. seq.</i>)	Historical location information ¹¹ and, more rarely, prospective location information. ¹²	"[S]pecific and articulable facts" showing that the information sought is "relevant and material to an ongoing criminal investigation." ¹³
Order under "Hybrid" authority of the SCA and the Pen / Trap Statute, 18 U.S.C. §§ 3121 - 3127. ¹⁴	Prospective location information.	The SCA standard above, combined with the the Pen / Trap Statute's requirement "that the information likely to be obtained is relevant to an ongoing criminal investigation being conducted by that agency." ¹⁵
Warrant under Fed. R. Crim. P. 41 ¹⁶	All location information.	Probable cause. ¹⁷

¹ Eric Lode, *Validity of Use of Cellular Telephone or Tower to Track Prospective, Real Time, or Historical Position of Possessor of Phone Under Fourth Amendment*, 92 A.L.R. Fed. 2d 1, *2 (2015).

² The accuracy of location information from a single tower varies from "a few blocks to several square miles." Jerry Grant, *Cell Site Analysis (Live Demo)*, Federal Public Defender's Office Training Materials, 10 (Mar. 7, 2015), <https://www.fd.org/docs/training-materials/2015/tecm2014/plenary-materials/cell-site-analysis-%28jerry-grant%29/cell-site-analysis---grant.pdf?sfvrsn=6>; see also *United States v. Davis*, 785 F.3d 498, 501-02 (11th Cir. 2015) (en banc).

³ Grant, *supra* note 2; see also *In re Tel. Info. Needed for a Crim. Investigation*, 119 F.Supp.3d 1011, 1015 (N.D. Cal. 2015).

⁴ Grant, *supra* note 2.

⁵ Historical location information refers to "records stored by the wireless service provider that detail the location of a cell phone in the past (i.e.: prior to entry of the court order authorizing government acquisition)." Prospective location information refers to "all cell site information that is generated after the government has received court permission to acquire it." You may also come across the term "real time" location information. This is a subset of prospective location information, and "refers to data used by the government to identify the location of a phone at the present moment." *In re United States ex. rel. an Order Authorizing the Installation & Use of a Pen Register*, 402 F. Supp. 2d 597, 599 (D. Md. 2005).

⁶ Stephanie K. Pell and Christopher Soghoian, *Can You See Me Now? Toward Reasonable Standards for Law Enforcement Access to Location Data That Congress Could Enact*, 27 Berkeley Tech. L.J. 117, 131-2 (2012) (explaining how cell phone companies and law enforcement can cooperate to generate ping data).

⁷ Lode, *supra* note 1, at *2, *5. It is unclear whether phone companies store historical GPS information.

⁸ See *infra* Judicial Authorization. Law enforcement can also obtain location information on its own, bypassing the phone companies, by using devices called cell site simulators. This capability is discussed in NACDL's Cell Site Simulators primer.

⁹ E.g., *Davis*, 785 F.3d at 501.

¹⁰ E.g., *United States v. Skinner*, 690 F.3d 772, 776 (6th Cir. 2012).

¹¹ E.g., *United States v. Graham*, No. 12-4659, 2016 U.S. App. LEXIS 9797 (4th Cir. May 31, 2016) (en banc); *Davis*, 785 F.3d at 500, 502.

¹² *State v. Perry*, 776 S.E.2d 528, 534 (N.C. Ct. App. 2015) (collecting cases).

¹³ 18 U.S.C. § 2703(d).

¹⁴ See *In re United States of Am. for an Order Authorizing Prospective & Continuous Release of Cell Site Location Records*, 31 F. Supp. 3d 889, 899-900 (S.D. Tex. 2014) (collecting cases); see also *In re United States for an Order Authorizing the Use of Two Pen Register & Trap & Trace Devices*, 632 F. Supp. 2d 202, 205-6 (E.D.N.Y. 2008) (explaining the hybrid theory).

¹⁵ 18 U.S.C. § 3122(b)(2).

¹⁶ Office of the Federal Public Defender - Northern District of California, *Location and Cell Phone Tracking: Technology, Law, and Defense Strategy*, 28, http://www.ndcalfpd.org/2013_CJA/cell_phone_tracking.pdf (last visited Mar. 31, 2016).

¹⁷ Fed. R. Crim. P. 41.

Order under federal (18 U.S.C. § 2510 <i>et. seq.</i>) or state wiretap statute ¹⁸	Prospective location information.	Federal law requires, among other things, full and complete statements of the facts that the officer believes justify an order, and of why other investigative techniques are not appropriate. ¹⁹
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Significantly, some states prohibit the collection of location information without a warrant.²⁰

POTENTIAL LEGAL ARGUMENTS

1. **Discovery:** If it is unclear how law enforcement located your client, or if it appears that your client's cell phone location was tracked, consider making detailed requests in discovery to ascertain the exact technique used against your client, as well as the actual data collected.
2. **Exclusion:** Consider the following arguments to exclude cell phone location information as they apply to your case:
 - a. **Fourth Amendment Suppression:**²¹
 - i. There is a reasonable expectation of privacy in information about a person's location.
 - Defendant had a subjective expectation of privacy in information about his or her location.²²
 - Courts have recognized that this subjective expectation is objectively reasonable.²³
 - Location tracking reveals a large amount of private, invasive, and precise information about a person.²⁴
 - Location tracking reveals otherwise undiscoverable facts about constitutionally protected spaces.²⁵
 - ii. The third-party doctrine does not apply.
 - Defendant did not voluntarily consent to and was unaware of the cell phone company's collection of his or her location information;²⁶
 - Cell phone data is "qualitatively different" from ordinary physical records as it reveals much more personal information than older technologies.²⁷
 - b. **State Suppression Remedies:** The collection of location information violated state statutory requirements regarding warrants and particularity.²⁸
 - c. **Admissibility:** A *Daubert/Frye*²⁹ hearing is required to ascertain the qualifications of expert witnesses and the reliability of their testimony on the location information,³⁰ especially if such testimony expresses a novel theory.³¹

SELECTED RESOURCES

1. Br. of the Electronic Frontier Foundation et al. as Amici Curiae, 2015 WL 5117969, in *Davis v. United States* (U.S. 2015) (supporting the petition for certiorari on the Fourth Amendment question, joined by NACDL and others).
2. Br. of the American Civil Liberties Union et al. as Amici Curiae, 2013 WL 3328019, in *United States v. Graham* (4th Cir. 2015) (providing a good example of the articulation of the Fourth Amendment arguments mentioned in the previous section).
3. Eric Lode, *Validity of Use of Cellular Telephone or Tower to Track Prospective, Real Time, or Historical Position of Possessor of Phone Under Fourth Amendment*, 92 A.L.R. Fed. 2d 1 (2015) (collecting and annotating cases on the topic until early 2015).
4. Office of the Federal Public Defender - Northern District of California, *Location and Cell Phone Tracking: Technology, Law, and Defense Strategy* (2013), http://www.ndcalfpd.org/2013_CJA/cell_phone_tracking.pdf.

¹⁸ E.g., *United States v. Barajas*, 710 F.3d 1102, 1107, 1111 (10th Cir. 2013).

¹⁹ 18 U.S.C. § 2518.

²⁰ 18 states have warrant requirements, but with differing thresholds and variance according to the type of cell phone location information being sought. These states are California, Colorado, Florida, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Minnesota, Montana, New Hampshire, New Jersey, Tennessee, Utah, Virginia, Washington, and Wisconsin. Peter Cihon, *Status of Location Privacy Legislation in the States: 2015*, American Civil Liberties Union (last updated Oct. 13, 2015), <https://www.aclu.org/blog/free-future/status-location-privacy-legislation-states-2015>.

²¹ *Graham*, 796 F.3d 332 at 344-345 (4th Cir. 2015), *rev'd en banc*, No. 12-4659, 2016 U.S. App. LEXIS 9797 (4th Cir. May 31, 2016) (finding a Fourth Amendment search when the government collects historical CSLI for an extended duration). See also *In re Application of U.S. for Historical Cell Site Data*, 724 F.3d at 629-30 (Dennis, J., dissenting); *Davis*, 785 F.3d at 539-41 (Martin, J., dissenting); *In re Tel. Info. Needed for a Crim. Investigation*, 119 F.Supp.3d at 1036; *United States v. Cooper*, 2015 WL 881578, at *6-8 (N.D. Cal. 2015); *In re United States ex rel. an Order Authorizing Disclosure of Location Info. of a Specified Wireless Tel.*, 849 F. Supp. 2d 526, 537-564 (D. Md. 2011). But see *United States v. Graham*, No. 12-4659, 2016 U.S. App. LEXIS 9797 (4th Cir. May 31, 2016) (en banc); *In re United States for an Order Directing Provider of Elec. Comm'n. Serv. to Disclose Records to the Gov't.*, 620 F.3d at 313; *Skinner*, 690 F.3d at 777; *In re Application of U.S. for Historical Cell Site Data*, 724 F.3d at 611-12; *Davis*, 785 F.3d at 511.

²² Br. of the Electronic Frontier Foundation as Amicus Curiae at *4-6, *United States v. Davis*, 2014 WL 7006395 (11th Cir. 2015) (en banc); Mary Madden, *Public Perceptions of Privacy and Security in the Post-Snowden Era*, Pew Research Center, 36-37 (Nov. 12, 2014), <http://www.pewinternet.org/2014/11/12/public-privacy-perceptions/> (50 percent of respondents believed location information was "very sensitive").

²³ *United States v. Jones*, 132 S.Ct. 945, 955, 964 (Sotomayor, J., and Alito, J., respectively); *United States v. Maynard*, 615 F.3d 544, 562 (D.C. Cir. 2010).

²⁴ Br. of the American Civil Liberties Union et al. as Amici Curiae at *4-10, *United States v. Davis*, 2014 WL 7006394 (11th Cir. 2015) (en banc).

²⁵ *United States v. Karo*, 468 U.S. 705, 714-715 (1984); *Kyllo v. United States*, 533 U.S. 27, 36 (2001).

²⁶ *Graham*, 796 F.3d at 354-56 (reversed en banc); *In re United States for an Order Directing Provider of Elec. Comm'n. Serv. to Disclose Records to the Gov't.*, 620 F.3d at 317 ("A cell phone customer has not "voluntarily" shared his location information with a cellular provider in any meaningful way...").

²⁷ *Riley v. California*, 134 S. Ct. 2473, 2490-2491 (2014).

²⁸ Cihon, *supra* note 20 (listing state law regulating cell phone location tracking). Some states provide specific suppression remedies for the warrantless collection of location information. See, e.g., Cal. Penal Code § 1546.4(a); Colo. Rev. Stat. §§ 16-3-303.5(5)-(6); 725 Ill. Comp. Stat. 168/20. California also provides a specific remedy for location information obtained without a particularized warrant or other legal process. Cal. Penal Code §§ 1546.1(d)(1) and 1546.4(c).

²⁹ *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993); *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).

³⁰ See *United States v. Yelley-Davis*, 632 F.3d 673, 684-85 (10th Cir. 2011); *Graham*, 796 F.3d at 365 (reversed en banc). But see *United States v. Gatson*, 2015 WL 5920931, at *5 (D.N.J. 2015) ("[a]fter reviewing the case law surrounding this type of [cell phone location] evidence, it is readily apparent that this form of testimony has been widely accepted across the country.").

³¹ See *United States v. Evans*, 892 F. Supp. 2d 949, 955-57 (N.D. Ill. 2012).