

**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF KENTUCKY
LOUISVILLE DIVISION**

UNITED STATES OF AMERICA

PLAINTIFF

v.

No. 3:21-cr-89-BJB

SALVADOR ABDUL JONES

DEFENDANT

**Supplemental Opinion Regarding the Partial Exclusion of Expert
Testimony**

“If highly consequential evidence emerges from what looks like an indecipherable computer program to most non-scientists, non-statisticians, and non-programmers, it is imperative that qualified individuals explain how the program works and ensure that it produces reliable information about the case.” *United States v. Gissantaner*, 990 F.3d 457, 463 (6th Cir. 2021).

That Sixth Circuit opinion addressed DNA testing in a gun case. This case concerns cell-phone data in a bank-robbery prosecution. But the reasoning applies almost directly. On more or less the same grounds articulated in *Gissantaner*, the Defendant here objected to testimony offered by a police officer regarding a computer program and presentation extrapolating from historical cell-site location information. “CSLI” is the technical and unharmonious term that lawyers and judges appear to have settled on when discussing a particular chain of evidentiary inferences: the apparent locations of people, based on the approximate locations of their mobile phones, derived from the known locations of cell towers.

The law of CSLI, however, remains less settled than the lingo. This chain of inferences—particularly when aided by software—is perhaps more contestable than it appears to many, including some who regularly confront such information. Before this trial, for example, neither side anticipated that the officer’s CSLI testimony would amount to expert opinion subject to scrutiny under Federal Rule of Evidence 702. So the Court lacked an opportunity to consider in advance a motion to limit or exclude those opinions under the principles of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993). When the testimony drew an objection at trial, the Court halted the officer’s direct examination, held a *Daubert* hearing, and substantially (but not entirely) limited the scope and content of his testimony. Given the time-sensitive nature of that mid-trial ruling from the bench, and the importance of this issue to the parties, the Court issues this supplemental

opinion explaining the reasons for its decision in more detail than was practical while a jury was waiting for proceedings to resume.¹

In short, the Government sought to question a law-enforcement witness about two types of CSLI. One was permissible; the other was not.

First, the witness testified regarding phone records maintained in the ordinary course by T-Mobile, the Defendant's cell-phone provider. Those records reported the street addresses of Louisville cell towers the Defendant's phone interacted with at specific times.

These are straightforward documents that the witness handles on a regular basis as a member of the Louisville Metro Police Department's Digital Forensics Unit. Based on them, the witness could reliably "rule out" areas where the Defendant's cell phone would *not* have been during the time periods surrounding the robberies. He could also testify that the transmission of various calls or text messages was at least consistent with the phone's presence in a particular part of town. And based on his training and experience, the witness could explain on direct- and cross-examination the basis for his inferences, confidence, and reservations. This opinion testimony was appropriate under Rule 702.

Second, and far more problematic, was the witness's attempt to show the jury a detailed map purporting to "rule in"—down to the block—the specific areas where the Defendant's phone could and could not have been when it made the calls and messages at issue. As a visual aid to his testimony, the witness planned to represent these locations using an animated illustration of the purported location of the Defendant's phone on a Google Earth Pro map.

The proposed presentation was precise and compelling. Too much so, as it turned out. That's because the sponsoring witness was not actually responsible for calculating or otherwise divining the areas where he said the Defendant's phone must've been when it transmitted a call or text message through a nearby tower. Nor could the witness explain how someone or something else charted those perimeters. The maps the Government wanted to show the jury were generated by a proprietary software program called TraX. The witness was involved in the maps' creation—but in a very limited capacity: he collected the phone-company records and uploaded them, in spreadsheet format, to the software that spat out the maps. The witness did not develop, study, or apparently even understand the algorithms or methodology that concluded a phone must've been on one side of a street, and not the other, when

¹ Nothing in this opinion is intended to expand or narrow the decision or reasoning the Court expressed in orally resolving this motion during the trial. The opinion is meant only to clarify. Should either side interpret the written order differently, it may raise any such concern with the Court at any time before the sentencing hearing and final judgment.

it transmitted a call or text message. Nor could he discuss the reliability, errors, or limitations of the software. To the witness, lawyers, and judge—like “most non-scientists, non-statisticians, and non-programmers”—the output appeared to emerge from “an indecipherable computer program,” which no one in the courtroom could examine or explain for the jury. *Gissantaner*, 990 F.3d at 463. Because this sort of testimony does not satisfy the standards for reliable expert opinion under Rule 702, the Court excluded the Government’s use of and testimony about the TraX maps.

A. Procedural Posture

A grand jury charged Salvador Jones with robbing five federally insured banks in Louisville during the spring of 2021. *See* DN 1 (citing 18 U.S.C. § 2113(a)). At trial, the Government offered surveillance videos, witness testimony, recorded confessions, and incriminating statements (among other evidence) to prove its case. It also presented the testimony of Louisville Metro Police Officer Timothy O’Daniel. As indicated by a slide deck he disclosed to the Defendant and the Court, O’Daniel planned to testify regarding the location of Jones’s phone around the time of each robbery. The deck contained maps showing shaded areas near the location of cell towers with which Jones’s phone communicated—implying that Jones (or at least his phone) must’ve been somewhere within the marked areas. The Government apparently planned to admit, as exhibits for the jury, the slide deck as well as T-Mobile records detailing Jones’s cell-tower connections.

Before trial, the Government identified O’Daniel as a witness—but not an expert witness subject to Federal Rule of Evidence 702 or Federal Rule of Criminal Procedure 16(a)(1)(G). At the final pretrial conference on September 30, the Court asked whether both sides agreed that O’Daniel should be treated as a lay witness. They did. To be sure, defense counsel expressed concern regarding the late disclosure of discovery material, including emails about O’Daniel’s use of the TraX software. But his proposed remedy was a continuance (which his client resisted and the Court denied) rather than exclusion of any related testimony.

When trial began, the Government shared with the defense the exhibits O’Daniel planned to use during his direct examination. His proposed testimony, as reflected in the presentation and other exhibits, contained two main components: T-Mobile spreadsheets and TraX maps.²

The spreadsheets contained cellphone records the Government received (by warrant) from T-Mobile. This showed the timing of calls and text messages from a cell number registered to Jones. Rows listed the phone number; the latitude, longitude, and street address of the cell tower with which the phone connected; the

² The government intended to admit both the spreadsheets and the maps as trial exhibits. The spreadsheets were ultimately admitted; the TraX maps were not.

time and duration of the connection; and whether the call or text was ingoing or outgoing from Jones's phone.

The series of maps showed the locations of those towers, each surrounded by a shaded perimeter depicting its purported coverage area. This implied that Jones's phone was located within those perimeters when it connected with the tower in question. These Google Earth Pro maps also noted the locations of the robberies—in each instance near the relevant cell tower at the relevant time. Pretty damning stuff.

The Government neither generated these maps nor received them from T-Mobile, however. Rather, O'Daniel uploaded the T-Mobile records to a software program called TraX, which produced the maps for the police department.

TraX is a proprietary program originally developed by a company called ZetX and later acquired by LexisNexis. In offering TraX to police departments and other potential customers, Lexis describes TraX as a tool that allows investigators to “[q]uickly visualize and analyze call detail records obtained through legal process ... and third-party device geolocation information, powered by identity data allowing law enforcement to find a subject's location more quickly and efficiently than ever before.” ACCURINT TRAX, <https://risk.lexisnexis.com/products/accurint-trax> (last visited Dec. 2, 2022). In this case, of course, the Government sought to use TraX not to find a subject, but to prove his proximity to a series of bank robberies.

B. Historical Cell-Site Location Information

In recent decades, historical cell-site location information has become a popular tool for law enforcement officials trying to reconstruct the movements of suspected criminals. *See generally* *Carpenter v. United States*, 138 S. Ct. 2206, 2212–13 (2018); *Torrence v. Commonwealth*, 603 S.W.3d 214, 226 (Ky. 2020). CSLI can serve as an efficient way to learn about a person's whereabouts in connection with potential criminal activity. *Carpenter*, 138 S. Ct. at 2217–18. Courts have generally allowed testimony regarding CSLI at trial. *See, e.g.,* *Torrence*, 603 S.W.3d at 226; *United States v. Hill*, 818 F.3d 289, 297 (7th Cir. 2016) (“District courts that have been called upon to decide whether to admit historical cell-site analysis have almost universally done so.”). Depending on the nature and use of the information, however, its introduction can pose evidentiary challenges. *See Hill*, 818 F.3d at 296–97.

Admission of the underlying phone-company records themselves is typically uncontroversial; if relevant, the records may be admitted consistent with the hearsay rules. Courts of appeals haven't treated automatically generated call logs as “statements” subject to Rule 801's limitation. *See United States v. Lamons*, 532 F.3d 1251, 1261–63 (11th Cir. 2008) (call reports “not ‘statements’ within the meaning of the Confrontation Clause or Federal Rule of Evidence 801(a)”; *see also Lyngaas v.*

Curaden AG, 992 F.3d 412, 431 (6th Cir. 2021) (citing *Lamons* and Rule 801 to affirm the admission of fax records).

And even if such records amounted to statements subject to the hearsay rules, Federal Rule of Evidence 803(6) exempts records made at the time of the call and kept in the course of regularly conducted activity by the cellular provider. *See United States v. Yeley-Davis*, 632 F.3d 673, 678 (10th Cir. 2011). The records typically identify the relevant phone number, the name associated with that number and account, the times or durations of calls or text messages, and the location or address of towers that the phone used to transmit specific calls and messages. *See Carpenter*, 138 S. Ct. at 2211–12 (2018) (describing regular collection of CSLI data by phone companies for business purposes). The T-Mobile records admitted in this case are typical of the genre, and weren't challenged on this basis.

This information may prove tremendously revealing, given the nearly universal relationship between Americans' cell phones and their hands, ears, and pockets. *See id.* at 2218. But the records alone say little about the specific location of a phone relative to a tower; they simply indicate which tower the phone connected to. The documents often do not provide details that might pinpoint more precise locations: for example, which face of a tower transmitted calls or messages to and from the phone, whether and how the network handed off a call between towers, or the triangulation of a phone's location relative to multiple towers. *See, e.g., United States v. Evans*, 892 F. Supp. 2d 949, 956 (N.D. Ill. 2012) (noting calls are not always routed to the nearest tower).

In other words, CSLI data doesn't equate to GPS tracking in terms of accuracy and precision, despite some similarities in its production and collection. *See Carpenter*, 138 S.Ct. at 2216. GPS is far more specific (and not at issue in this case). If GPS is the technological equivalent of Hansel and Gretel carefully marking their trail with crumbs, CSLI is more reminiscent of Johnny Appleseed sporadically tossing seeds over his shoulder: Both types of debris can help solve or prove a case, but the latter requires more cautious interpretation. *Cf. Carpenter*, 132 S. Ct. at 2218, 2232–33 (Kennedy, J., dissenting) (discussing differences in precision).

Sometimes CSLI is used to estimate a phone's location based on the (reasonable but not ironclad) assumption that a cell phone typically connects to the tower with the strongest signal—usually the closest tower. *Hill*, 818 F.3d at 295. Depending on factors like topography, environmental conditions, and the angle and direction of antennas, a phone may connect to a tower that is further away. *Id.* at 295–96. Correspondingly, each cell tower generally can reach a geographic area whose size varies depending on tower density, network traffic, weather, and terrain. Different towers will of course have overlapping coverage; otherwise our calls would drop dead far more often than they do. *Id.*

Despite this utility and popularity at trial, the reliability of CSLI remains uncertain. “[W]hile historical cell-site location evidence has been allowed into evidence routinely in criminal trials, some courts have expressed skepticism regarding aspects of its reliability.” Paul W. Grimm, *Admissibility of Historical Cell Phone Location Evidence*, 44 *Litigation* 53, 54–55 (2018). Indeed, “[n]o federal court of appeals has yet said authoritatively that historical cell-site analysis is admissible to prove the location of a cell phone user.” *Hill*, 818 F.3d at 297.

C. Expert or Lay Testimony?

Nor have courts definitively resolved an important threshold question regarding its presentation: when testimony regarding CSLI must be treated as expert opinion rather than lay testimony. Under Federal Rule of Evidence 602, a lay witness may testify only to matters within his personal knowledge. Rule 701 also limits the opinion testimony of a lay witness to statements that are “rationally based on the witness’s perception” and “not based on scientific, technical, or other specialized knowledge” that would require expert qualification. At trial, defense counsel argued that O’Daniel was offering expert opinions and had to be qualified as such. Under Rule 702, a witness must be “qualified as an expert by knowledge, skill, experience, training, or education” before he may offer opinion testimony based on his “scientific, technical, or other specialized knowledge.”

Federal and state courts have split on the question whether a witness who relies on CSLI to prove a suspect’s location must be qualified as an expert. Some have allowed officers or phone-company employees to testify as lay witnesses regarding how CSLI is generated and what it can imply about the location of an individual’s phone. The Kentucky Supreme Court recently held that the mapping of cell towers based on call records does not require expert knowledge. *See Torrence*, 603 S.W.3d at 225–26 (distinguishing expert testimony based on inferences based on tower locations). And the Fourth Circuit held that a lay witness did not improperly offer opinion testimony regarding CSLI, despite discussing the factors affecting its accuracy, because he did not “engage in any analysis comparing the factors” influencing a cell connection or show how those factors resulted in “any particular connection.” *United States v. Graham*, 796 F.3d 332, 363–65 (4th Cir. 2015); *see also United States v. Henderson*, 564 F. App’x 352, 363–64 (10th Cir. 2014) (allowing lay opinion testimony on CSLI to show that an individual was not in a particular location).

But other courts, including the Sixth Circuit, have required expert qualification for certain types of CSLI testimony because “[t]estimony ‘concerning how cell phone towers operate ... involve[s] specialized knowledge not readily accessible to any ordinary person.’” *United States v. Reynolds*, 626 F. App’x 610, 614 (6th Cir. 2015) (second alteration in original) (quoting *Yeley-Davis*, 632 F.3d at 684).

The Second and Seventh Circuits appear to agree, holding that “testimony on how cell phone towers operate constitutes expert testimony.” *United States v. Natal*, 849 F.3d 530, 533 (2d Cir. 2017); *Hill*, 818 F.3d at 295–96 (similar).

At this trial, the Government’s attempt to introduce testimony about CSLI through Detective O’Daniel drew a defense objection. Initially counsel argued the TraX maps raised a Confrontation Clause problem under *Crawford v. Washington*, 541 U.S. 36 (2004), and *Bullcoming v. New Mexico*, 564 U.S. 647 (2011), because counsel couldn’t cross-examine the technologist who generated the maps. After the Court inquired about a potentially missing witness, however, it became clear that none existed: the Government wasn’t aware of any technologist who generated the maps, at least not directly. Rather, software did the trick. O’Daniel simply uploaded the T-Mobile cell-phone data to TraX, which used its own algorithms and Google Earth Pro to produce the animated maps the Government sought to introduce.

That raised a separate but related problem. Even though O’Daniel was subject to cross-examination, did his testimony about the TraX software program and the maps it generated “involv[e] specialized knowledge not readily accessible to any ordinary person?” *Reynolds*, 626 F. App’x at 614 (quotation omitted). Surely it did: O’Daniel himself couldn’t even explain the methodology and limits of the software program. So how could a lay juror be expected to understand algorithmic CSLI? The TraX mapping is a subject beyond even the broadest construction of lay testimony. And to the Government’s credit, it eventually realized as much, conceding that testimony about the mapping fell within the purview of Rule 702 and *Daubert*.

What about testimony regarding the T-Mobile records? This is a closer call. On the one hand, these business records simply state which tower or towers connected with the phone. Linking a tower address, phone, and crime scene wouldn’t seem to stretch the reasoning and background knowledge of a lay juror. That is one reason why some courts, in some similar situations, have ruled that expert opinion is not necessarily required. *See, e.g., Graham*, 796 F.3d at 364.

The risk with this approach, at least as applied to testimony like O’Daniel’s, is that the mere fact that a call connected with a given tower is not by itself directly relevant to the factual question at hand: where was the caller? Inferring the answer requires understanding at least a bit about cellular-network technology. How and why does a phone typically connect with a particular cell tower? What is the typical range of a tower? Does the reach change based on the density of towers, buildings, and phones in a given spot? And, ultimately, what can a factfinder reasonably infer about where a particular call or message originated?

Perhaps by now most American adults understand the basics about how ubiquitous cell phones communicate through the air with ubiquitous cell towers to facilitate ubiquitous calls and text messages. We may be approaching a level of lay

understanding approaching matters courts typically expect jurors to follow without the aid of an expert—like driving a car, *Heritage Mut. Ins. Co. v. Reck*, 127 F. App’x 194, 199 (6th Cir. 2005), or understanding basic financial statements, *United States v. Madison*, 226 F. App’x 535, 544 (6th Cir. 2007).

Much less clear, however, is the proposition that “most jurors and judges” understand the geolocational byproducts of those communications. *Gissantaner*, 990 F.3d at 463. As the questions above demonstrate, CSLI relies not only on an understanding of how mobile-phone technology works, but also on an understanding of what its use does and doesn’t imply about caller locations. These issues are less like driving and more like fingerprinting: most of us recognize fingerprints and understand their investigatory value in the abstract, but that doesn’t mean we laypersons can reliably derive conclusions about particular prints and matches. See *United States v. Hatcher*, 513 F. App’x 581, 584 (6th Cir. 2013) (affirming use of expert fingerprint testimony). It’s similarly doubtful that most lay jurors could reasonably perceive the likely coverage area of a cell tower. Explaining when and why a phone may connect to different towers based on “geography and topography, the angle, number, and directions of the antennas ... the technical characteristics of the relevant phone, [or] environmental and geographical factors” is not stuff most of us should try at home. *Hill*, 818 F.3d at 295–96 (quotation omitted).

Given the technical and unfamiliar nature of location information derived from use of the cellular-telephone network, therefore, it is “imperative that qualified individuals explain how the [technology] works and ensure that it produces reliable information.” *Gissantaner*, 990 F.3d at 463. So testimony that describes the likely location of a person (or his or her phone) using CSLI should generally be presented by a witness who can draw on expertise. That is, “knowledge, skill, experience, training, or education,” FED. R. EVID. 702, that allows the witness to explain how the network operates, what locational data it produces, and the relevant limits on the precision and accuracy of that data, see, e.g., *Reynolds*, 626 F. App’x at 614.

D. O’Daniel’s Qualifications and the Reliability of his Methods

After exploring these distinctions at length following the defense objection to O’Daniel’s testimony, the Government agreed: it tendered him as an expert in historic CSLI. Did his qualifications and methods suffice under Rule 702? Only in part. He could explain the T-Mobile call records and their general implications regarding the location of Jones’s phone. He could not, however, explain how the proprietary TraX software program used those records to generate its specific radii for the location of Jones’s phone.

Rule 702 requires any expert witness addressing a technical or scientific topic to be qualified and the testimony to be both reliable and relevant. *Daubert*, 509 U.S. at 589. Once challenged, the Government must prove as much by a preponderance.

Pride v. BIC Corp., 218 F.3d 566, 578 (6th Cir. 2000). And the trial court must exercise its considerable discretion as a “gatekeeper” in making these determinations according to the facts and circumstances of the case. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 142, 145 (1999).

The Defendant argued generally that O’Daniel’s proposed CSLI testimony was not reliable. Jones also specifically challenged the reliability of O’Daniel’s planned use of the animated maps charted by the TraX program.

O’Daniel’s qualifications and the reliability of his proffered testimony both turned on two related issues: (1) his understanding of the underlying methodology and information, and (2) the degree of precision with which he proposed to convey his opinions to the jury.

1. Maps. The *Daubert* hearing addressed the TraX maps first. The Government sought to introduce the maps and his testimony about them to affirmatively prove that Jones was located near each of the five robberies at the time that they occurred. But O’Daniel’s knowledge was limited: he could not describe how TraX produces estimated location ranges for particular cell sites. He described attending some TraX-provided training on how to use the software (and, notably, how to testify effectively about it). But O’Daniel conceded that his use of the data in this investigation was limited to uploading the T-Mobile cell-site data into the TraX program. The software then generated the file that mapped estimated location ranges onto the map supplied by Google Earth Pro.

Nor did O’Daniel conduct a so-called “drive test” in this case, though he has in others. A drive test is a corroboration method used by officers to verify the connection ranges associated with a given tower. *See, e.g., United States v. Morgan*, 292 F. Supp. 3d 475, 478–82 (D.D.C. 2018) (describing the uses and mechanics of drive testing); *United States v. Reynolds*, No. 1:20-cr-24, 2021 WL 3750156, at *3 (W.D. Mich. Aug. 25, 2021) (drive testing can bolster reliability of CSLI testimony under *Daubert*). Rather than simply trusting information from a third-party’s software program or database, officers sometimes travel to the locations at issue and attempt to connect to the relevant tower. If they can, that supports their understanding of the tower’s range. But that corroboration was unavailable here.

O’Daniel’s maps and proposed testimony nevertheless purported to identify where Jones’s phone was—within a precisely marked area that ruled in or out specific blocks and streets—near in time to the robberies. This meant its proponent had to ensure that the witness was prepared to tell the jury how CSLI works and explain not only ... the technique’s potential pitfalls, but also ... the relative imprecision of the information he gleaned.” *Hill*, 818 F.3d at 299.

O'Daniel was unable to make any such showing. He testified (outside the hearing of the jury) that the tower ranges shown in his presentation were calculated and illustrated by the TraX software, rather than by LMPD or T-Mobile. But he could not demonstrate that he understood the TraX algorithm's basis for placing a phone within a particular geographic perimeter when it connected with a nearby tower. It was not at all clear, therefore, whether or how the TraX interpretation of CSLI could place a phone within the radius shown in O'Daniel's original slide deck. *See Hill*, 818 F.3d at 298–99; *Reynolds*, 626 F. App'x at 617.

But part of his maps made sense: he *could* explain why he knew Jones's phone was at least in Louisville. The tower locations and call times, O'Daniel explained, were at least consistent with—if not conclusive of—his phone's presence near the robberies. This implicitly rejected any notion that the phone was somewhere far afield.

That approach is consistent with a recent unpublished Sixth Circuit decision. *Reynolds* approved the use of CSLI to *rule out* particular locations of a phone (and therefore the user of that phone) based on the phone's connections with towers distant from a given neighborhood or area. But the Court of Appeals expressed great skepticism about the use of CSLI to *rule in*—or affirmatively establish—a person's location in a particular spot at a particular time. The *Reynolds* court affirmed the admission of CSLI to show that other potential perpetrators were not in the area of a crime, based on the connections of their phones to towers far away from the scene during the relevant times. 626 F. App'x at 617–18. The panel cast doubt, however, on the admissibility of CSLI to show that a caller *was* located in a specific sector associated with a single cell tower. *Id.* at 617.

This distinction relied on the different methodologies or deductions involved: affirmatively placing a caller in a particular location depended on the “questionable assumption that each call connected to one of the nearest towers.” *Id.* As prior decisions have recognized, a cell phone generally connects to the tower that provides the strongest signal; for a variety of reasons—including weather, obstructions, and cell-network volume—that might not be the closest tower. *Id.* at 615; *see also Hill*, 818 F.3d at 295–96. So the Sixth Circuit cautioned that a prosecution witness likely could not rely on a single cell-tower connection, without more, to show a person's phone was near that tower.

In *Hill*, the Seventh Circuit applied a similar analysis to admit CSLI to prove that an individual was in a broad area, but rejected its use to prove that the defendant was in a narrower range. 818 F.3d at 298–99. “Historical cell-site analysis can show with sufficient reliability that a phone was in a general area, especially in a well-populated one,” but testimony to that effect is admissible only if the expert makes clear “the relative imprecision of the information he gleaned.” *Id.*

In contrast, using CSLI to show that a caller is *not* in a particular area, or that a phone was likely within a broad area surrounding a tower, is generally acceptable under the reasoning of the *Reynolds* court. While a call might connect through a nearby tower that is not the nearest, it's typically implausible that a call or message would've moved through a far-away tower. "[I]t is reliable to assume that a call would not connect to a tower that was many sectors away." *Reynolds*, 626 F. App'x at 617. And the difference between near and far towers is not merely a matter of conjecture: "there are identifiable, measurable, and scientifically accepted factors that determine a cell tower's maximum coverage." *Id.*; cf. *Gissantaner*, 990 F.3d at 463 (citing *Daubert*, 509 U.S. at 593–94). This distinction also accords with the Seventh Circuit's thoughtful decision in *Hill*, 818 F.3d at 298, which described as "uncontroversial" the use of CSLI to "prov[e] where [the defendant] was not."

The Government's initial slide deck included a slick animated presentation produced not by O'Daniel but by TraX. Nor did O'Daniel understand much about *how* the software produced it. His role was to feed the software the historical cell-phone records supplied by T-Mobile (quite helpfully in a file type susceptible to uploading to TraX) and to testify about the PowerPoint display that TraX and Google Earth Pro then generated. In discussing where a phone may have been found during a particular call or message, he could not explain—even in broad strokes—why one side of a street was shaded and the other not. Correspondingly, he could not testify about how or why the shaded areas reflected any degree of uncertainty or qualification. To understand this material, a jury would've benefitted from hearing knowledgeable testimony about what the software can and can't do well—and when it's necessary to view the output in shades of gray.

Yet the map's perimeters were marked in stark black and white. This raises concerns under *Daubert*; it's the sort of technical testimony that could easily mislead jurors about the precision and accuracy of tools they don't understand. *Gissantaner*, 990 F.3d at 463. As discussed above, no established record or literature available to the Court shows that CSLI can precisely locate a user's cell phone. The Government didn't use GPS, "pinging," or triangulation—more precise and reliable methods for assessing historical geolocation data. Because the ranges were produced by the TraX software, the Court lacked any information on how the locations were generated. Other courts presented with map ranges generated by TraX have confronted similar issues. *See People v. Valdez*, C087046, 2022 WL 556833, at *19 n.24 (Cal. Ct. App. Feb. 24, 2022) ("exactly what TraX does" to map coverage areas of particular towers "was not clear"). During the hearing, O'Daniel indicated that the TraX software uses an algorithm to calculate the range—and that the algorithm relied on more than just the call and tower data obtained from the cell-phone provider. Those other factors, of course, are proprietary and (at least in this case) unavailable for scrutiny or cross-examination.

O'Daniel's proffered testimony compares unfavorably with that of a TraX developer admitted in a similar case within this circuit. See *Reynolds*, 2021 WL 3750156, at *1 (W.D. Mich. Aug. 25, 2021). The judge allowed testimony about a TraX presentation after the prosecution presented testimony from the program's creator about its testability and reliability. *Id.* Here, the Government offered no testimony on how the TraX program operates or how it has been received by the scientific community. Given the Court's inability to assess the reliability of the disputed locations and ranges produced by TraX, Rule 702 demands the exclusion of the results of an "indecipherable computer program." *Gissantaner*, 990 F.3d at 464 ("The question on the table is whether a method can be 'assessed for reliability[.]'"); cf. *Jones*, 918 F. Supp. 2d at 6 (excluding cell-phone location diagram depicting precise wedge-shaped areas that would mislead the jury regarding the precision of estimated CSLI location information).

As a result of this decision to grant in part Jones's motion to exclude the officer's testimony, the Court barred O'Daniel from testifying about TraX, explained that limitation to him outside the hearing of the jury, and required him to submit a new map based on the basic information reflected in the T-Mobile phone records.

2. T-Mobile records. O'Daniel's inferences from the T-Mobile spreadsheets, derived without the use of software, fared far better. At the *Daubert* hearing, he explained his knowledge of the cellular network, the call-log records provided by T-Mobile, and the inferences he could draw regarding a phone's location based on such records. As described above, these list the cell towers actually used by the Defendant's phone for the calls and messages in question. O'Daniel then described how these records showed the locations of cell towers to which Jones's phone connected. He also discussed how he verified the T-Mobile cell-site data, at least in part, by checking each of the cell-tower locations against a database of sites provided by the Department of Justice and the FBI. That database, however, is not publicly available, so its reliability cannot readily be assessed.

Importantly, O'Daniel also discussed the *limitations* on his use of call-report records. His methodology entailed comparing tower locations and connection times from paper call records with addresses and windows of time relevant to criminal investigations. This did not allow, he conceded, for inferences that the phone was located within an unduly precise area at a specific time. While no error rate for this technique has been calculated in the literature the parties and Court were aware of, this use of static, historical records to derive locational information has been subjected to publication and peer criticism. *Hill*, 818 F.3d at 298 (listing publications). So this testimony was admissible under Rule 702 to support the limited proposition that a cell phone was "in a general area." *Id.*

Once his testimony resumed at trial, O'Daniel and the prosecutor again took care to not overstate his conclusions. He testified that Jones's phone actually connected to the cell towers listed on the T-Mobile spreadsheet. He also spoke about his experience as a member of the LMPD's Digital Forensics Unit, the team charged with requesting and analyzing cell-phone records.

Defense counsel cross-examined O'Daniel on this evidence and testimony, effectively illustrating CSLI's limitations for the jury. Jones, moreover, took the stand and testified in a manner consistent with O'Daniel's testimony: he didn't dispute that his phone was located nearby the robberies in question, but instead laid responsibility for those calls (and indeed the robberies themselves) at the feet of his stepson Khaleel.³

Conclusion

Granting in part the Defendant's motion to exclude CSLI evidence shielded the jury from potentially misleading and prejudicial technical testimony that no witness was positioned to explain and defend. The limited CSLI that did come in, by contrast, was not manipulated or manipulable by the witness. And his methodology was consistent with O'Daniel's experience, training, and qualification.

The CSLI information, moreover, was not a huge part of the prosecution's case. The location evidence was consistent with Jones's own testimony—as well as other overwhelming evidence of his guilt. This included a lengthy recorded confession to police and multiple recorded jail calls that discussed the robberies and corroborated important aspects of the Government's proof. Once the Court sawed off the TraX information, the CSLI evidence offered and admitted here amounted to a relatively small piece of a much larger puzzle that the jury quickly solved.



Benjamin Beaton, District Judge
United States District Court

December 23, 2022

³ Khaleel Gibbs unfortunately died during the period between the robberies and the trial, preventing the jury from hearing his own narrative and deciding whether it was consistent with Jones's.