STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

PROVIDENCE, SC. **SUPERIOR COURT**

(FILED: August 30, 2019)

STATE OF RHODE ISLAND	:	
	:	
VS.	:	**P1/16-2491 AG**
	:	
THOMAS MOSLEY	:	

DECISION

KRAUSE, J. Defendant Thomas Mosley has moved to suppress evidence of mobile device location systems which detectives utilized to track his cell phone to an alleged murder scene. He has also moved to disallow testimony of the State's digital forensic expert and to exclude Google's cell phone data, contending that it does not conform to the business records hearsay exception.

This Court considered those motions in the context of a so-called *Daubert* hearing during the week of July 22, 2019. *See Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). At the conclusion of those proceedings, the Court deferred its rulings pending preparation of a transcript of the hearing and receipt of supplemental briefs from the parties, which were delivered to the Court on August 9, 2019. After a careful review of them, together with other relevant material and authorities, the Court determined that the defendant's motions should be denied. On August 22, 2019, the Court issued a preliminary Order alerting the parties of its conclusions so that they would have sufficient time to secure their witnesses for the September 25, 2019 trial.

In that August 22, 2019 Order, the Court also assured the parties that this Court's written expatiation would follow. The within Decision fulfills that commitment.

For the reasons set forth herein, the defendant's motions are denied.

* * *

Yusef A'Vant was shot to death in an East Providence barber shop on August 13, 2014. In the course of the investigation, the police identified Mosley's cell phone, and after studying location data released by Google in response to search warrants, detectives traced Mosley's cell phone to the barbershop at the time of the shooting. Mosley was subsequently indicted on August 26, 2016. The indictment charges him, along with codefendant Evan Watson, with murdering A'Vant, conspiring with Watson to commit that murder and committing two ancillary firearm felonies. It also charges him with three counts of obstruction of justice, which he allegedly committed during the following summer.[1] Watson has pled guilty to some of those charges and is expected to testify for the prosecution at the September 25, 2019 trial.[2]

Key to the State's proximity proof in this case is the testimony of Det. Theodore Michael, a digital forensic expert, who is expected to explain the three principal methods of tracking and locating cell phones and mobile devices: (1) the global positioning system (GPS), which generally relies upon satellite signals, (2) cell-site location analysis, using results from cell tower triangulation, and (3) the newer Wi-Fi technique, which can determine the location of a cell phone by using signals from known access points, such as residential and commercial routers.

[1] Evidence related to those obstruction counts was presented at a probation violation hearing during the fall of 2015, before another Superior Court Associate Justice, who adjudged Mosley a violator and ordered him to serve six of the seven years of his previously suspended sentence. Mosley's appeal from that adverse violation hearing has been rejected. *State v. Mosley*, 173 A.3d 872 (R.I. 2017). He is presently incarcerated and serving that term of imprisonment.

[2] Trial of this case has been delayed several times because multiple lawyers have disengaged themselves from Mosley for assorted reasons, the details of which were set forth by this Court from the bench on July 23, 2019.

The defendant questions the reliability of those modalities and contends that Det. Michael's testimony, particularly with respect to the Wi-Fi system and the underlying Google data, should be disallowed. The Court disagrees.

The Absence of Privacy - *Always and Forever*[3]

The United States Supreme Court recently studied a cell phone user's Fourth Amendment privacy interests in his location history which had been automatically collected and preserved by his wireless carrier (Sprint), most likely without his knowledge, as it traced his every step and his whereabouts as he carried his cell phone in his pocket. *Carpenter v. United States*, 585 U.S. ___, 138 S. Ct. 2206 (2018). Suspecting that Mr. Carpenter had committed some criminal offenses, the Government obtained court orders, not fully supported by probable cause, and retrieved from Sprint its aggregation of Carpenter's cell-site location information spanning several previous months.

Leading up to the majority's opinion (5-4) that a court-authorized search warrant based upon probable cause should have been obtained to acquire that information, the Chief Justice offered an extended and rather disquieting assessment—essentially a reality check—of what he termed the "seismic shifts in digital technology" *Id*., *passim*, at 2211-20. It is the view, here, that some of his perusals are worth a bit of reflection.

He noted that in a nation embracing 326 million people, there are 396 million cell phone accounts, whose users generate "vast amounts of increasingly precise" histories of their locations. That data, which is collected by the carriers for their own commercial purposes, is "detailed, encyclopedic, and effortlessly compiled." And, the cell phone tracking technique "achieves near

[3] Randy Travis, *Always and Forever* album recorded in Nashville, Tennessee (Warner Bros., April 4, 1987).

perfect surveillance, as if it had attached an ankle monitor to the phone's user" and assembled "a chronicle of a person's physical presence compiled every day, every moment, over several years."

"Unlike the nosy neighbor who keeps an eye on comings and goings, [the wireless carriers] are ever alert, and their memory is nearly infallible [as they amass] an exhaustive chronicle of location information . . . Only the few without cell phones could escape this tireless and absolute surveillance . . . Apart from disconnecting the phone from the network, there is no way to avoid leaving behind a trail of location data."

Global Positioning System (GPS)

GPS is a proven Government methodology which relies on satellites for positioning, navigation and timing. GPS receiver equipment is present in a motor vehicle's navigation systems and typically included in modern mobile devices ("smart phones"). A cell phone exchanges signals with satellites, and the transmitted information is used to identify the user's location. It is generally a reliable location method so long as the user's locale is not occluded by mountains, buildings and other solid structures, or by dense forestry and various atmospheric conditions. GPS efficiency is also vulnerable to intentional tampering (*e.g.*, signal jamming) by third parties. *See generally* Kolesk, Note, *At the Intersection of Fourth and Sixth: GPS Evidence and the Constitutional Rights of Criminal Defendants*, 90 S. Cal. L. Rev. 1299 (2017); Buchok, Note, *Plotting a Course for GPS Evidence*, 28 Quinnipiac L. Rev. 1019 (2010).

Cell-Site Location

The cell-site location process is also well recognized. Smart phones connect to "cell sites," which essentially are radio antennas, typically mounted on towers, as well as on light posts, flag poles, and sides of buildings. Most modern phones tap into the wireless network several times a minute whenever their signal is on, whether or not the user knows it and regardless of whether he

or she is even using one of the phone's features. Each time the phone connects to a cell site, it generates time-stamped location information. *See Carpenter* at 2211-12. Fishman & McKenna, *Wiretapping and Eavesdropping: Surveillance in the Internet Age* (3d ed. 2009), further explain:

> "[W]hen a cell phone is in on-mode, it is constantly seeking the cell site or tower with the best reception . . . [A] cell phone is (among other things) a radio transmitter that automatically announces its presence to a cell tower via a radio signal over a dedicated control channel which does not itself carry the human voice. By using a process known as triangulation, law enforcement officials are able to track movements of the target phone, and hence locate a suspect using that phone." *Id*. § 28:2 p. 28-6 to 28-7 (footnotes omitted).

The cell phone's location can usually be located within a defined area, but not necessarily pegged with precision. *See Adams*, 161 A.3d at 1194-96 (exact location of the cell phone could not be pinpointed, only its approximate position). Location accuracy generally depends on the size of the geographic area covered by the cell site. The greater the concentration of cell sites (as in urban areas), the more compact (and better) is the coverage area.

Wi-Fi

From both the Android and, in some respects, the Apple systems, Google collects Wi-Fi positioning data. This methodology relies on Wi-Fi signals to determine the distance between the cell phone and a signal "access point," which is a device such as a router in an office or in a home, which creates a wireless local area network by projecting a Wi-Fi signal within a designated area. Collected in Google's storehouse are Wi-Fi "scans," which identify the Wi-Fi access points (the routers) which the cell phone "sees" at a certain time and location. In order for a cell phone to associate with or "see" that router, the phone needs to be fairly close to it, generally no more than 150 feet (50 yards) away.

Google stockpiles an endless list of the locations and the strength of untold numbers of routers and other access points. Because a cell phone's proximity to a router is much closer than it

is to distant tower cell sites, the Wi-Fi system generates keener location accuracy than either the cell-site or GPS location methods. And, the more access points that Google can identify, the greater the accuracy becomes in pinpointing a cell phone's location because of the cell phone's close proximity to those access points. *See Skyhook Wireless, Inc. v. Google, Inc*., 159 F. Supp. 3d 144, 163-64 (D. Mass. 2015).

Because of its accuracy, the Wi-Fi mode has become the favored cell phone tracking method of law enforcement. By specifying an area and a time period, Google can, from its enormous data cache, gather information about the cell phones which were in the area of interest to the police. It labels them with anonymous identification numbers, and detectives then review the locations and movement patterns to see if any appear relevant to their investigation. After they narrow the field to a few cell phones which they suspect belong to suspects or witnesses, Google, in response to additional search warrant(s), divulges the subscribers' names and other relevant information.

* * *

The defendant's initial *Daubert* motion was not limited to the Wi-Fi method. It sought broadly to exclude testimony which encompassed all of the cell phone location methods, *viz.*, "any cell site/cell phone data on location and time data as evidence in the within matter as being unreliable" and requested that the Court conduct a hearing "as to the science and support for such location theories." (Def.'s Mem. at 10, Feb. 7, 2019.) The Court denied that extended request and limited the *Daubert* hearing to the contemporary Wi-Fi procedure.

Daubert - a Conspectus

Before admitting expert testimony, a trial court must conclude that the evidence is "'relevant, within the witness's expertise, and based on an adequate factual foundation.'" *Kurczy v. St. Joseph Veterans Assoc.*, 820 A.2d 929, 940 (R.I. 2003) (quoting *Rodriguez v. Kennedy*, 706 A.2d 922, 923 (R.I. 1998)). Guided by the principles prescribed by *Daubert*, the Rhode Island Supreme Court, in *DiPetrillo v. Dow Chemical Co.*, 729 A.2d 677, 685-91 (R.I. 1999), directed trial judges to act as "gatekeepers" and "make certain 'that the proposed expert testimony, presented as a scientifically valid theory, is not mere 'junk science.'" *State v. Morabit*, 80 A.3d 1, 11 (R.I. 2013) (citations omitted). In performing *Daubert*'s gatekeeping function, a trial court generally considers four nonexclusive factors to assess the reliability of the expert's proposed testimony:

> "(1) [W]hether the proffered knowledge can be or has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of error; and (4) whether the theory or technique has gained general acceptance in the relevant scientific field." *DiPetrillo*, 729 A.2d at 689.

Such an assessment allows the trial judge "'to balance the reliability of the expert's opinions, the underlying principles and methodology and the potential relevance of the opinion against the dangers of unfair prejudice, confusion, misleading evidence, undue delay, waste of time and the presentation of cumulative evidence.'" *DiPetrillo*, 729 A.2d at 688 (quoting *Standards and Procedures for Determining the Admissibility of Expert Evidence after Daubert*, 157 F.R.D. 571, 580 (West 1995)). "Satisfaction of one or more of these factors may suffice to admit the proposed evidence and the trial justice need not afford each factor equal weight." *Morabit*, 80 A.3d at 12. If the proffered evidence is novel and/or has not been previously found to be reliable, the trial justice may hold a preliminary *Daubert/DiPetrillo* evidentiary hearing to

consider whether the evidence is reliable and whether the circumstances invite expert testimony. *DiPetrillo*, 729 A.2d at 685 (citing *State v. Quattrocchi*, 681 A.2d 879, 884 (R.I. 1996)).

In making that determination a "court has wide latitude in 'deciding how to test an expert's reliability,' and must be afforded 'considerable leeway in deciding . . . how to go about determining whether particular expert testimony is reliable.'" *Clark v. W & M Kraft, Inc.*, 476 F. App'x 612, 616 (6th Cir. 2012) (quoting *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999)). There is no precise avenue which the court is obliged to follow, nor must the court's decision have to be made after a preliminary hearing." *Id.; see Greenwell v. Boatwright*, 184 F.3d 492, 498 (6th Cir. 1999) (noting that "the trial court is not required to hold an actual hearing to comply with *Daubert*"). "The trial court must have the same kind of latitude in deciding *how* to test an expert's reliability, and to decide whether or when special briefing or other proceedings are needed to investigate reliability, as it enjoys when it decides *whether or not* that expert's relevant testimony is reliable." *Kumho Tire Co.*, 526 U.S. at 150, 152 (emphasis in original).

Thus, a preliminary hearing may not even be necessary if the subject matter is "so common and well understood" that the necessary foundation to testify can be just as easily laid by qualifying the witness as an expert during the trial. "If the expert's evidence is not novel, then the foundation need not be novel either." *DiPetrillo*, 729 A.2d at 688 (quoting G. Michael Fenner, *The Daubert Handbook: The Case, Its Essential Dilemma, and Its Progeny*, 29 Creighton L. Rev. 939, 948 (1996)).[4]

[4] The State relies heavily upon and cites as **precedent** the rationale, conclusions and holdings in *State v. Pierce*, 2019 WL 1077688 (Del. Super. Ct. Mar. 6, 2019), a recent Delaware Superior Court opinion which validates the Wi-Fi method. Nowhere within the text of either of its briefs, however, does the State acknowledge that *Pierce* is an **unpublished** opinion. This Court cautions counsel that our Supreme Court has repeatedly (indeed, already twice this year) signaled that neither "unpublished orders" nor "unpublished opinions" have any precedential effect or value,

Rhode Island has been "open to evidence of developments in science that would tend to assist the trier of fact. 'This court has never been hostile to the proof of fact by evidence relating to scientific tests or experiments.'" *State v. Dery*, 545 A.2d 1014, 1017 (R.I. 1988) (citations omitted). Here, however, expert testimony fixing the location of cell phones is simply not novel intellection. Such evidence has been introduced by qualified experts in Rhode Island and in numerous other forums. *Adams*, 161 A.3d at 1196 (cell-site analysis); *United States v. Jones*, 918 F. Supp. 2d 1, 5 (D.C. 2013) (cell-site method) (noting that "the use of cell phone location records to determine the general location of a cell phone has been widely accepted by numerous federal courts"); *United States. v. Espinal-Almeida*, 699 F.3d 588, 610-11 (1st Cir. 2012) (GPS mode). Accordingly, in view of the well-recognized GPS and cell-site location approaches, both of which have become commonplace at trials and are ordinary grist for evidentiary mills, this Court denied the defendant's request to convene an expansive *Daubert* hearing as to those generally accepted location systems.

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and that they should not be advanced for that purpose. *See* R.I. Supreme Court, Article I, Rule 16(j); *Nunes v. Meadowbrook Development Co., Inc*., 807 A.2d 943, 945 (R.I. 2002) (Mem.) (referencing an earlier version of Rule 16(h)); *Whitaker v. State*, 199 A.2d 1021, 1029 n.3 and 1030 n.5. (R.I. 2019); *Estate of Chen v. Ye*, 208 A.3d 1168, 1175 n.8 (R.I. 2019). Conspicuously, WESTLAW carries this caveat admonition above the *Pierce* caption: "UNPUBLISHED OPINION. CHECK COURT RULES BEFORE CITING."

The Supreme Court has, however, relaxed its directives and has itself referenced unpublished opinions, not for their precedential worth, but "by way of example," or if they are "instructive." *Whitaker*, 199 A.2d at 1029 n.3 and 1030 n.5; or "illustrative of the way in which courts have dealt with [the] issue." *Estate of Chen*, 208 A.3d at 1175 n.8. Both parties in this case, in differing degrees, have relied on *Pierce*, and this Court notes that it does include at least some straightforward, unembellished instructive descriptions of the Wi-Fi technique, as well a collection of direct and secondary authorities regarding the Wi-Fi approach. Accordingly, this Court will gauge *Pierce*, not for precedential preference, but, instead, simply for informational purposes, as sanctioned by the Supreme Court.

On the other hand, although the Wi-Fi method has attracted a fair modicum of peer dissection and media attention,[5] the number of reported cases which have addressed the Wi-Fi method is comparatively smaller than the other approaches,[6] and it has not yet been accorded

[5] *E.g.*, Pioitr Sapiezynski *et al*., *Tracking Human Mobility Using Wi-Fi Signals* 9 (2015); Paul A. Zandbergen, *Accuracy of iPhone Locations: A Comparison of Assisted GPS, Wi-Fi and Cellular Positioning,* 13 Transactions in GIS 5–25 (2009); Valentino-Devries, New York Times, *Google's Sensorvault Is a Boon for Law Enforcement,* https://www.nytimes.com/2019/04/13/technology/google-sensorvault-location-tracking.html; O'Hare, *Forget Fingerprints, Routers Could Soon Help Police Solve Crimes,* citing Dan Blackman at Edith Cowan University in Australia, technical adviser to the Western Australia Police, https://www.dailymail.co.uk/sciencetech/article-3393878/Forget-fingerprints-ROUTERS-soon-help-police-solve-crimes-Data-collected-Wi-Fi-devices-identify-criminals.html. (1/11/16).

[6] Referencing footnote 4 herein, and reiterating the limited purpose of citing unpublished opinions, which have no precedential value, this Court adverts to *Pierce*'s margin note 27 collecting the following mix of Wi-Fi-related cases, but adds its own caveat as to part of *Pierce*'s collection:

> "The State has identified state courts in Virginia, California, and Colorado, and a federal court in New York, that have permitted FBI Agents to offer testimony based on Google Wi-Fi Location Data, including where admissibility of the evidence was not challenged by the defendant, and one instance where a trial court in New York disallowed such evidence using the *Frye* standard. *United States v. Pizarro*, 17-CR-151, at 1319, 1337 (S.D.N.Y.) (TRANSCRIPT) (finding FBI CAST agent to be qualified as an expert in historical cell-site analysis and admitting Google Wi-Fi Location Data without challenge); *Commonwealth of Virginia v. Rolland Ellisworth Anderson*, Cases No. CR17-4909, 4910, 4911, 4913-00F (Va. Cir. Ct. Jan. 8, 2019) (ORDER) (denying the defendant's motion in limine to preclude the commonwealth from presenting data reports and testimony concerning Google location services); *People of the State of Colorado v. Glen Law Galloway*, Case No. 16CR2749, at 2 (Colo. Dist. Ct. Mar. 6, 2018) (ORDER) (denying motion to preclude expert opinion testimony concerning Google Wi-Fi Location Data because the defendant's objections go to the weight of the evidence and not its admissibility); *The People of the State of New York v. Johnny Oquendo*, Indictment No. 16-1154, Index No. 254831, at 2 (N.Y. Sup. Ct. Oct. 26, 2017) (citing *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923) (precluding evidence of Google Wi-Fi Location Data where the testifying witness was neither a scientist nor an engineer); *Commonwealth of Virginia v. Nathanial Howard Moone III*, CR-16000297-00, CR-16000298, at 11 (Va. Cir. Ct. June 8, 2016) (TRANSCRIPT) (admitting Google Wi-Fi Location Data without objection)."

The above-cited *Oquendo* case relied upon the anachronistic and "inflexible" test from *Frye v. United States,* 293 F.2d 1013 *(*D.C. Cir. 1923*),* which the Rhode Island Supreme Court and the Advisory Committee's comment to Rule 702 have discarded:

"uncontroverted validity" and regarded as "so well established that judicial notice of [its] reliability is appropriate." *DiPetrillo,* 729 A.2d at 688-89 (citing *In re Paoli Railroad Yard PCB Litigation,* 35 F.3d 717, 744 n.10 (3rd Cir. 1994) ("[I]f it is a technique of uncontroverted validity, this [*Daubert*] inquiry can be resolved by judicial notice."). *See Adams,* 161 A.3d at 1196 (noting that "expert testimony regarding cell phone towers [is] not novel" and that the technology "is neither new to science or the law") (citations omitted). Accordingly, this Court agreed to provide the defendant with a *Daubert* hearing, limited to the neoteric Wi-Fi methodology.

Distilled to its essence, the defendant principally complains that the State inaccurately champions the Wi-Fi methodology as "equivalent" to "the ubiquitous acceptance of GPS coordinate data." The Wi-Fi approach, he says, "is significantly different . . . Simply put [it's] an apples and oranges comparison." Def.'s Mem. at 12, Aug. 9, 2019. He is correct. The Wi-Fi system is *not* "equivalent" to the GPS or the cell-site location mode. It is *better* and *more accurate* than both of them, according to Det. Michael. (*Daubert* Hr'g Tr. at 66.)

"Prior decisions of this Court have adverted to the *Frye* 'general acceptance' standard, *see, e.g., Quattrocchi,* 681 A.2d at 884; *In re Odell,* 672 A.2d 457, 459 (R.I. 1996); *State v. Dery*, 545 A.2d 1014, 1016 (R.I. 1988); *State v. Wheeler,* 496 A.2d 1382, 1387-89 (R.I. 1985), even though this Court has not strictly adhered to that standard. Instead, we employed a more flexible relevance/helpfulness analysis. *See, e.g., State v. Morel,* 676 A.2d 1347, 1355 (R.I. 1996) (holding that the trial justice properly admitted scientific evidence that he determined was relevant and would assist the trier of fact); *In re Odell,* 672 A.2d at 459 (noting the importance of relevance in admitting scientific evidence); Advisory Committee's Note to R.I. R. Evid. 702 ('In analyzing the admissibility [of scientific evidence], the Court [in *Wheeler*] declined to apply the outdated and restrictive standard enunciated in *Frye* * * *. Instead, the Court applied a more open relevance/helpfulness approach that combine[d] the principles of Rules 401 (relevancy) and 702 (helpfulness) in a Rule 403-type of balancing.')." *DiPetrillo,* 729 A.2d at 686.

Notably, Det. Michael's opinion is not an isolated endorsement. Sources referenced in *Pierce* reached the same conclusion, ranking the three approaches in the same descending order that Det. Michael did: (1) Wi-Fi, (2) GPS, (3) cell-site location.

In addition, in its recent study *Demystifying Location Data Accuracy,* the Mobile Marketing Association, reportedly the leading global nonprofit trade association comprised of more than 800-member companies from some fifty countries, also appraised the accuracy of those three modalities in similar fashion:

> "Wi-Fi: Very accurate and precise data, particularly in signal-dense environments (*e.g.*, buildings and malls). Capable of identifying user location to within 10-100 meters when Wi-Fi signals are present.
>
> "GPS: Very accurate and precise under the right conditions, capable of identifying user location to within 10-100 meters . . . The quality of a GPS signal degrades significantly indoors or in locations that do not have an unobstructed view of multiple satellites."
>
> "Cell Triangulation: Accurate but less precise data. Typically capable of identifying user location within a zip or neighborhood area." *Id*. at 8.

Not surprisingly, law enforcement communities have uniformly celebrated the reliability and accuracy of the Wi-Fi system. In an extended April 13, 2019 piece, *Tracking Phones, Google Is a Dragnet for the Police,* the New York Times noted that "the technique illustrates a phenomenon privacy advocates have long referred to as the 'if you build it they will come' principle—anytime a technology company creates a system that could be used in surveillance, law enforcement inevitably comes knocking." The article additionally reported that notwithstanding privacy concerns and Google's difficulty meeting the constant crush of requests (sometimes 180 in a week), detectives applaud the precision of the Wi-Fi data as a certain improvement over other mobile device tracking methods. "It shows the whole pattern of life," said the deputy police chief

in Brooklyn Park, Minnesota, pronouncing it a "game changer for law enforcement." https://www.nytimes.com/interactive/2019/04/13/us/google-location-tracking-police.html

It would be a critical mistake, however, to say that Wi-Fi technology's principal purpose is to aid law enforcement. That is not at all the carriers' goal. A carrier's purpose of collecting cell-site location information [CSLI] is aimed entirely at furthering its own *commercial* interests, not to facilitate a policeman's apprehension of miscreants. Location information is a hugely lucrative business, and as reported in the above New York Times article, Google is "by far the biggest player . . . It uses the data to power advertising tailored to a person's location, part of a more than $20 billion market for location-based ads last year." *See Carpenter*, 138 S. Ct. at 2212 ("Wireless carriers collect and store CSLI for their own business purposes.").[7]

Det. Michael was closely cross-examined during the preliminary hearing, and arrestive inquiries were made during that critique. It does not follow, however, that his opinion or the Wi-Fi process is unreliable flotsam and jetsam and debarred by *Daubert*'s judicial sentry. To the contrary, the Wi-Fi process is hardly arid curriculum. It is light years, if not galaxies, beyond that, and there is no danger that Det. Michael is a "charlatan or a purveyor of junk science." *Morabit*, 80 A.3d at 14.

Whether Det. Michael's analysis and the Wi-Fi approach, along with any accompanying exposition of the GPS and/or cell-site location method, ultimately persuades a jury to accept the State's ultimate objective—to place the subject cell phone (not to mention the defendant himself)

[7] Disclosure of a subscriber's identity and location data to law enforcement is scarcely provided as a matter of course. Even in response to a judicially authorized search warrant, Google's initial response is fractional and often at a glacial pace. The initial disclosure is abridged; the data is anonymous, unaccompanied by a user's identity. No subscriber identification is divulged without additional court-approved search warrant(s).

at the murder scene—is, however, an entirely different issue, not to be determined now nor subsumed by this Decision. The narrow question before the Court is simply whether *Daubert*'s doorkeeper precludes the disquisition. It does not.

The Third Circuit, in *In re Paoli R.R. Yard PCB Litigation*, 35 F.3d at 743, has offered this instructive caveat to courts when measuring their *Daubert* rulings:

> "This does not mean that plaintiffs have to prove their case twice—they do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are *correct*, they only have to demonstrate by a preponderance of evidence that their opinions are reliable. As the Supreme Court has explained in describing the effect of the preponderance standard of Rule 104(a) generally, '[t]he inquiry made by a court . . . is not whether the proponent of the evidence wins or loses his case on the merits, but whether the evidentiary Rules have been satisfied.'" *Bourjaily v. United States*, 483 U.S. 171, 175, 107 S. Ct. 2775, 2778, 97 L. Ed. 2d 144 (1987).
>
> "The evidentiary requirement of reliability is lower than the merits standard of correctness. *Daubert* states that a judge should find an expert opinion reliable under Rule 702 if it is based on 'good grounds,' *i.e.*, if it is based on the methods and procedures of science. A judge will often think that an expert has good grounds to hold the opinion that he or she does even though the judge thinks that the opinion is incorrect. As *Daubert* indicates, '[t]he focus . . . must be solely on principles and methodology, not on the conclusions that they generate.' *Daubert*, 509 U.S. at [594], 113 S. Ct. at 2797. **The grounds for the expert's opinion merely have to be good, they do not have to be perfect**. ***
>
> "'[T]he reliability requirement must not be used as a tool by which the court excludes all questionably reliable evidence.' . . . The 'ultimate touchstone is helpfulness to the trier of fact, and with regard to reliability, helpfulness turns on whether the expert's 'technique or principle [is] sufficiently reliable so that it will aid the jury in reaching accurate results.'" *DeLuca*, 911 F.2d at 956 (quoting 3 J. Weinstein & M. Berger, *Weinstein's Evidence* 702[03], at 702-35 (1988)).

"[O]nce an expert has shown that the methodology or principle underlying his or her testimony is scientifically valid and that it 'fits' an issue in the case, the expert testimony should be put to the trier of fact to determine how much weight to accord the evidence." *DiPetrillo*, 729

A.2d at 689-90 (citing *Ambrosini v. Labarraque,* 101 F.3d 129, 134 (D.C. Cir. 1996)). "The task of assigning weight, if any, to the opinion of an expert witness, is reserved for the jury." *Beaton v. Malouin,* 845 A.2d 298, 302 (R.I. 2004). The '"jury is free to accept or reject expert testimony in whole or in part or to accord it what probative value the jury deems appropriate."' *Owens,* 838 A.2d at 890 (quoting *Morra v. Harrop,* 791 A.2d 472, 476-77 (R.I. 2002)). '"Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence."' *Id.* at 892 (quoting *Daubert,* 509 U.S. at 690). Indeed, in order for a trial court to exclude scientific evidence, "[T]here must be something *particularly* confusing about the scientific evidence at issue—something other than the general complexity of scientific evidence." *In re Paoli R.R. Yard PCB Litigation*, 35 F.3d at 747.

Such is not at all the case here. The defendant's Motion to Suppress the Google Wi-Fi Data is denied.

The State's Proffered Expert - Det. Theodore Michael

At the July hearing, the State offered Det. Michael as an expert analyst of the three major cell phone location modalities and their respective accuracy, which are plainly subjects not within the normal ken of lay jurors and which manifestly invite informative commentary by an expert. The defendant maintains, however—as he did at the *Daubert* hearing—that Det. Michael is insufficiently knowledgeable, particularly in the Wi-Fi field, because, among other things, he is unfamiliar with the manner and means by which Google collects, stores and tests the data it compiles.

Evidence Rule 702 limns the criteria for the admission of expert testimony:

> "If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue,

> a witness qualified as an expert by knowledge, skill, experience, training or education, may testify thereto in the form of fact or opinion."

Notably, the Advisory Committee's Note to Rule 702 expressly recites that "helpfulness to the trier of fact is also the standard when the basis of expert testimony is *newly* developed scientific knowledge." (Emphasis added.)

Qualifying expert witnesses is a matter entrusted to the sound discretion of the trial judge. *State v. D'Alessio*, 848 A.2d 1118, 1123 (R.I. 2004), as are "the matters to which he or she may testify." *Owens v. Payless Cashways, Inc*., 670 A.2d 1240, 1243 (R.I. 1996). Whether an individual is sufficiently credentialed to come within the scope of Rule 702 generally depends upon the witness's education, training, employment or prior experience. *State v. Villani*, 491 A.2d 976, 979 (R.I. 1985). "[I]t is the trial justice who has the final discretion to determine whether a proffered witness's qualifications are such that he or she possesses the requisite knowledge to testify as an expert in order to assist the trier of fact." *Owens,* 670 A.2d. at 1244.

A witness's lack of specialization, or particularized concentration or certification in the subject area does not ordinarily preclude the testimony; rather, it is generally admitted for whatever weight the jury may assign to it. *Leahey v. State*, 121 R.I. 200, 202, 397 A.2d 509, 510 (1979) (holding that although the surgeon was "not a specialist in the orthopedic field might bear upon the weight given to his testimony, [it] does not affect the admissibility of his testimony"); *Owens*, 670 A.2d 1243-44 (witness allowed to offer an engineering opinion without having been so licensed in this state); *Debar v. Women & Infants Hosp*., 762 A.2d 1182, 1186-89 (R.I. 2000) (witness who trained in a specialty different from that of the defendant doctor permitted to offer an opinion as to causation); *State v. Rodriguez*, 798 A.2d 435, 438 (R.I. 2002) (witness who had substantial experience in examining fingerprints allowed to testify as an expert analyst even though

not certified by the International Association of Identification because he had failed its examination: "[C]ertification was not a prerequisite for his qualification as an expert witness.").

"We have reasoned that an expert's lack of formal certification may go to the weight to be given the expert's opinion by the fact finder rather than to its admissibility and a trial justice should not bar such testimony *ab initio." Debar,* 762 A.2d at 1187-88 *(citations omitted). See Adams,* 161 A.3d at 1197 (cell phone location expert's inability to pinpoint the exact position of the cell phones did not render his testimony inadmissible; "[i]nstead, the jury was tasked with determining the weight of [his] testimony in light of that fact"); *D'Alessio*, 848 A.2d at 1123 (holding that even though the Rhode Island Medical Examiner was not a certified neuropathologist and had no prior experience with Shaken Baby Syndrome, she was nonetheless qualified to opine that the child had died from violent shaking; her lack of neuropathology training might bear on the weight of her testimony, but not on its admissibility).

Det. Michael is a major crimes investigator assigned to the Providence Police Department's Digital Forensic Unit, which analyzes all of the digital evidence submitted to the Providence Police Department. Only one other individual has qualified for appointment to that unit. Det. Michael has been assigned to it for several years, and he has been trained in, studied and utilized the GPS, cell-site and Wi-Fi location methods. His foundation has included training by Cellular Analysis Survey Team ("CAST"), the same squad of cell location experts which was represented in the *Adams* case. He has also participated in extended seminars conducted by the FBI and the Secret Service, and he is presently a task force officer in both of those federal agencies.

Det. Michael testified that during the past two years he has received particularized Wi-Fi training, has frequently participated in monthly webinars and has studied current scientific journals and peer-reviewed articles on the subject. In addition, he has testified as a digital forensic expert

on multiple occasions within the State of Rhode Island. Furthermore, the Court has earlier noted, *supra*, that his opinion as to the nature and accuracy of the three methodologies has been corroborated by other professionals.[8]

As the Supreme Court reminded us in *Morabit*, holding that the trial judge had abused her discretion by failing to permit an expert in the history of stone wall masonry to testify because of an absence of peer-reviewed studies or protocols to corroborate the witness's theories:

> "We have previously found an abuse of discretion on the part of a trial justice when his or her overly stringent application of the test for admissibility of expert testimony 'impermissibly conflate[s] [his or] her own functions with those of the jury.' *Gallucci*, 709 A.2d at 1064; *see Owens*, 838 A.2d at 899 ('In deciding whether to admit proffered expert testimony, the trial justice must take care not to interfere with the jury's role as the trier of fact.'). If the evidence presented to support the expert's proposed opinions is sufficient to allow a reasonable juror to conclude that his***methods are grounded in valid science, then cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the appropriate means of attacking the reliability of this evidence. *Owens*, 838 A.2d at 899-900 (citing *Daubert*, 509 U.S. at 596, 113 S. Ct. 2786)." *Morabit*, 80 A.3d at 13.

At the July hearing, this Court deemed Det. Michael qualified under Rule 702 to testify in the manner proposed by the State in this case. The Court renews that sentiment here. Frankly, withholding such approbation would impermissibly parallel the abuse of discretion disapproved of in *Morabit*.

Google's Wi-Fi Data – Business Records

The defendant also insists that the Court disallow the State's use of Google's Wi-Fi geolocation data. He contends that those compilations do not meet the criteria of the business

[8] The very fact that Google relies on its own records to sustain its lead in the marketplace bespeaks the inherent reliability of that data. Certainly, there is nothing in the record which in any way implies their unreliability. *See Moore*, 923 F.2d at 915.

records hearsay exception in Evidence Rule 803(6) and that they have not been adequately authenticated under Evidence Rule 901. He is mistaken.

Absent an exception, Evidence Rule 801(a) and (c) generally derogate as hearsay a written assertion, "other than one made by the declarant while testifying at the trial or hearing, offered in evidence to prove the truth of the matter asserted." Evidence Rule 803(6), however, provides such an exception to that hearsay interdiction and allows the introduction of:

> "A memorandum, report, record, or data compilation, in any form, of acts, events, conditions, opinions or diagnoses, made at or near the time by, or from information transmitted by, another person with knowledge, if kept in the course of a regularly conducted business activity, and if it was the regular practice of that business activity to make the memorandum, report, record, or data compilation, all as shown by the testimony of the custodian or other qualified witness, unless the source of information or the method or circumstances of preparation indicate lack of trustworthiness."

"Essentially, a person who is knowledgeable about the preparation of records and their use in the course of the business is capable of identifying them sufficiently to satisfy the prerequisite for their admission as business records." *State v. Calenda*, 787 A.2d 1195, 1199-200 (R.I. 2002) (citing *State v. Lemos*, 743 A.2d 558, 564 (R.I. 2000)). In *Adams*, cell phone location data from cell towers was admitted at trial as business records. Affirming the admissibility of that material, the Supreme Court reiterated its four-part test for introducing business records and included with it commentary tempering the authentication requirement in Rule 901:

> "First, the record must be regularly maintained in the course of a regularly conducted business activity. Second, the source of the information must be a person with knowledge. Third, the information must be recorded contemporaneously with the event or occurrence, and fourth, the party introducing the record must provide adequate foundation testimony. Furthermore, in order to provide an adequate foundation a party must prove the first three requirements and authenticate the document or record.

> "Rule 901 sets forth the analysis to properly authenticate evidence . . . *The burden of proof for authentication, however, is slight.*
>
> "Indeed, *authentication is not a high hurdle to clear*: Rule 901(a) merely requires evidence sufficient to support a finding that the matter in question is what its proponent claims. This Court has taken a *flexible and pragmatic approach* to Rule 901 by allowing a document's authenticity to be established in any number of different ways . . . In making Rule 901 determinations, trial justices must decide whether there is enough support in the record to conclude that it is *reasonably probable* that the evidence is what its offeror proclaims it to be . . . Thus, a trial justice need not find that the evidence is necessarily what the proponent claims, but only that there is sufficient evidence that the jury ultimately might do so." *Adams*, 161 A.3d at 1199 (all citations, ellipses and quotation marks omitted; italics added.).

The Supreme Court has advised trial courts that the rule should be "'interpreted expansively in favor of admitting hearsay records into evidence.'" *Rhode Island Managed Eye Care, Inc. v. Blue Cross & Blue Shield of Rhode Island*, 996 A.2d 684, 690-91 (R.I. 2010) (quoting *Fondile, S.A. v. C.E. Maguire, Inc.*, 610 A.2d 87, 94 (R.I. 1992)). Trial Courts "should err on the side of admitting records and thereby allow the jury to assess the evidence's probative value." *Id.* at 693.

Surmounting the pliant criteria of Rules 803(6) and 901 does not present the State with an onerous burden in this case. Chelsea Clays, a Google records custodian, identified the subject geolocation data (preserved on a disc which was presented at the hearing) and certified that it contained precise and accurate copies of the data which had been retrieved from Google's data bank. She testified that the information had been automatically (and virtually instantaneously) electronically collected by Google's servers and that numerical algorithms ("hash values") had been assigned to the data files which are unique identifiers and, in essence, digital fingerprints. In addition, Ms. Clays confirmed that Google relies on the data it collects to conduct its business.

Here, the defendant simply "attempts to load Rule 901 with more baggage than it was intended to carry." *Alexian Brothers Health Providers Ass'n, Inc. v. Humana Health*, 608 F. Supp. 2d 1018, 1023 (N.D. Ill. 2009). This Court finds competent support in the record to warrant a reasonable person to conclude that the information is what the State and Ms. Clays say it is. Rules 803(6) and 901 have been satisfied, and the weight to be assigned to the subject evidence will be left to the jury. *United States v. Paulino*, 13 F.3d 20, 23 (1st Cir. 1994). *See United States v. Arboleda*, 929 F.2d 858, 869 (1st Cir. 1991) ("If there is 'evidence sufficient to support a finding' that the evidence is what the proponent claims it to be, the preliminary threshold of authentication has been satisfied and the jury should then be permitted to consider its weight or credibility.") (citing *Kissinger v. Lofgren*, 836 F.2d 678, 683 (1st Cir. 1988)).

To the extent that the defendant harbors a belief that the Google data is somehow inaccurate (a notion for which this Court sees no basis), our Supreme Court and other jurisdictions have expressly held that the proponent "does not need to prove that business records are entirely accurate before they are admitted as evidence." *Rhode Island Managed Eye Care, Inc.*, 996 A.2d at 692 (citing *United States v. McGill*, 953 F.2d 10, 15 (1st Cir. 1992)). "Evidence need not be infallible to be admissible . . . If the evidence is of aid to the judge or jury, its deficiencies or weaknesses are a matter of defense, which affect the weight of the evidence but do not determine its admissibility." *State v. Wall*, 910 A.2d 1253, 1260 (N.H. 2006). *See also United States v. Moore*, 923 F.2d 910, 915 (1st Cir. 1991) ("[I]t is not required that computers be tested for programming errors before computer records can be admitted as business records.").

"Generally, objections that an exhibit may contain inaccuracies, ambiguities, or omissions go to the weight and not the admissibility of the evidence." *United States v. Scholl*, 166 F.3d 964, 978 (9th Cir. 1999) (quotations omitted); *see also United States v. Duncan*, 919 F.2d 981, 986 (5th

Cir. 1991). The "qualified witness" required by Rule 803(6) need only be someone who understands the system of how the document was made and need not have participated in the document's creation or know who created it. *United States v. Keplinger,* 776 F.2d 678, 693-94 (7th Cir. 1985)." *Wall*, 910 A.2d at 1260-61.

And finally, although not advanced by the defendant in the instant case, this Court makes clear that the admonitions of *Crawford v. Washington*, 541 U.S. 36 (2004), *Melendez-Diaz v. Massachusetts*, 557 U.S. 305 (2009) and their progeny are not at all implicated here. The location data materials are not in any way "testimonial" as to raise Sixth Amendment confrontation concerns. To rank as "testimonial," a statement must have a "*primary purpose*" of "establish[ing] or prov[ing] past events potentially relevant to later criminal prosecution." *Bullcoming v. New Mexico*, 564 U.S. 647, 659 n.6 (2011) (quoting *Davis v. Washington*, 547 U.S. 813, 822 (2006)). Business records "are generally admissible absent confrontation . . . because—having been *created for the administration of an entity's affairs* and not for the purpose of establishing or proving some fact at trial—they are not testimonial." *Melendez-Diaz*, 557 U.S. at 322-23. Such is precisely the case here. *See Carpenter* and the previous discussion, *supra*, noting that the carriers' collection of location data is not to assist law enforcement, but primarily to compete in a fiscal amphitheater of enormous proportions.

The defendant's motion to exclude the Google location data is denied.

RHODE ISLAND SUPERIOR COURT

Decision Cover Sheet

TITLE OF CASE:	State of Rhode Island v. Thomas Mosley
CASE NO:	P1/2016-2491AG
COURT:	Providence County Superior Court
DATE DECISION FILED:	August 30, 2019
JUSTICE/MAGISTRATE:	Krause, J.
ATTORNEYS:	
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