

**SUPREME COURT OF WISCONSIN**

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CASE No. : 2009AP1351-CR

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COMPLETE TITLE : State of Wisconsin,  
Plaintiff-Respondent,  
v.  
Gregg B. Kandutsch,  
Defendant-Appellant-Petitioner.

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REVIEW OF A DECISION OF THE COURT OF APPEALS  
Reported at: 330 Wis. 2d 496, 792 N.W. 2d 239  
(Ct. App 2010 - Unpublished)

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OPINION FILED: July 19, 2011  
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SOURCE OF APPEAL:

COURT: Circuit  
COUNTY: Marathon  
JUDGE: Patrick M. Brady

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JUSTICES:

CONCURRED:

DISSENTED: ABRAHAMSON, C. J. dissents (Opinion filed).  
BRADLEY, J. joins dissent.

NOT PARTICIPATING:

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## ATTORNEYS:

For the defendant-appellant-petitioner there were briefs by *Eileen A. Hirsch*, assistant public defender, Madison and oral argument by *Eileen A. Hirsch*.

For the plaintiff-respondent there was a brief by *Steven P. Means*, assistant attorney general with whom on the brief was *J.B. Van Hollen*, attorney general, Madison and oral argument by *Steven P. Means*.

NOTICE

This opinion is subject to further editing and modification. The final version will appear in the bound volume of the official reports.

No. 2009AP1351-CR  
(L.C. No. 2007CF30)

STATE OF WISCONSIN

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IN SUPREME COURT

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State of Wisconsin,

Plaintiff-Respondent,

v.

Gregg B. Kandutsch,

Defendant-Appellant-Petitioner.

**FILED**

**JUL 19, 2011**

A. John Voelker  
Acting Clerk of Supreme  
Court

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REVIEW of a decision of the Court of Appeals. *Affirmed.*

¶1 DAVID T. PROSSER, J. This is a review of an unpublished decision of the court of appeals,<sup>1</sup> affirming a judgment of conviction<sup>2</sup> for operating a motor vehicle while under the influence of an intoxicant, fifth and subsequent offense, in violation of Wis. Stat. § 346.63(1)(a) (2007-08).<sup>3</sup>

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<sup>1</sup> State v. Kandutsch, No. 2009AP1351-CR, unpublished slip op. (Wis. Ct. App. Oct. 5, 2010).

<sup>2</sup> Marathon County Circuit Court Judge Patrick M. Brady presided.

<sup>3</sup> All subsequent references to the Wisconsin Statutes are to the 2007-08 version unless otherwise indicated.

¶2 The interesting feature of this case is that the defendant's conviction rests entirely on circumstantial evidence because no witness saw him operating a motor vehicle or even sitting in a motor vehicle. The evidence that Gregg Kandutsch (Kandutsch) was operating a motor vehicle after heavily drinking is based in large part upon inference from a report generated by an electronic monitoring device (EMD) that Kandutsch was wearing. The report showed that Kandutsch left a house in Rib Mountain at 10:03 p.m. That house is approximately a 15 minute drive away from a house in Wausau where he was arrested at 10:23 p.m., heavily intoxicated.

¶3 Focusing on this timeframe, the State asked a Marathon County jury to draw the inference that Kandutsch drove from one place to the other under the influence of an intoxicant.

¶4 Kandutsch admits driving but he claims the driving occurred earlier in the evening—before he began drinking. He challenges both the accuracy and admissibility of computer generated reports derived from the EMD. In this review, he presents two issues:

(A) Did the circuit court err by admitting a computer-generated report from the defendant's EMD without requiring expert testimony to establish that the EMD produced accurate and reliable time-based reports?

(B) Did the circuit court erroneously determine that the electronic monitoring report fit within the exception to the hearsay rule for records of regularly conducted activity?

¶5 We conclude the following:

(A) Neither the EMD itself nor the report derived from it is so "unusually complex or esoteric" that expert testimony was required to lay a foundation for the admission of the report as evidence. The testimony of two Department of Corrections (DOC) agents was sufficient in this case to provide a foundation for the report's accuracy and reliability.

(B) A computer-generated report is not hearsay when it is the result of an automated process free from human input or intervention. Although the EMD report was not hearsay, it was subject to the authentication requirements of Wis. Stat. § 909.015(9). The report was properly authenticated through the testimony of the two DOC agents.

#### I. BACKGROUND AND PROCEDURAL HISTORY

¶6 At 10:23 p.m. on June 19, 2006, several City of Wausau police officers and two Marathon County deputies responded to a 911 call from Kandutsch's estranged wife that someone was trying to break into her home. When the officers arrived on the scene, they discovered Kandutsch inside the home, having sustained serious injuries from breaking a glass door.

¶7 Kandutsch was transported to the hospital for treatment of his injuries, and a blood draw there revealed a blood alcohol content of .23 percent. At the hospital, he was placed under arrest for operating while intoxicated. The police concluded that Kandutsch had driven a vehicle while intoxicated because, when asked how Kandutsch arrived at her home, Kandutsch's wife explained that he would have driven a green

van, and later she identified the vehicle parked in a nearby lot.

¶8 Kandutsch was subsequently charged with operating a motor vehicle on a highway while under the influence of an intoxicant, fifth and subsequent offense, contrary to Wis. Stat. §§ 346.63(1)(a), 346.65(2)(cm)5., and 939.50(3)(h).<sup>4</sup>

¶9 At trial, the disputed issue concerned whether Kandutsch operated the vehicle before or after he consumed alcohol. At the time of the incident, Kandutsch was supervised by an electronic monitoring system through the DOC. The State relied on a computer report generated by the EMD that purported to show when Kandutsch was in and out of range of a monitor in Rib Mountain on the day in question to establish a timeframe showing that Kandutsch must have been intoxicated at the time he drove to his wife's home.

¶10 The report included a notation showing that Kandutsch was "out of range" at 22:03, or 10:03 p.m., on June 19, 2006. The distance between Kandutsch's mother's home, in Rib Mountain, to his wife's home, in Wausau, was approximately a 15-minute drive. The 911 call from Kandutsch's wife was received at 10:23 p.m. on the night in question. Because Kandutsch was highly intoxicated at the time the officers arrived on the scene,

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<sup>4</sup> Kandutsch was also charged with criminal trespass with a domestic abuse enhancer and criminal damage, contrary to Wis. Stat. §§ 943.14 and 968.075(1)(a). After a mistrial and an interlocutory appeal, Kandutsch pleaded no contest to these charges and was convicted. He does not appeal these convictions.

shortly after the 911 call, the State theorized that Kandutsch must have been intoxicated before he left his mother's home and began driving.

¶11 The theory of Kandutsch's defense, on the other hand, was that he did not become intoxicated until after he had driven to his wife's home. He testified at trial that he left his mother's home a little after 9:00 p.m., arriving at his wife's home around 9:35 p.m. When he initially knocked on his wife's door, no one answered, so he proceeded to walk to a tavern called the Cop Shop about three blocks away.

¶12 Kandutsch further testified that, once at the bar, he consumed \$20.00 worth of Southern Comfort whiskey liqueur and a pitcher of beer. After consuming the alcohol, he walked back to his wife's home, and it was at that point the break-in occurred. Kandutsch testified that, although he was in fact out of range at 10:03 p.m., the EMD report was inaccurate, because he had actually left his mother's home at 9:10 p.m. He did, however, concede on cross examination that the other times listed on the report showing when he went in or out of range were all accurate.

¶13 In laying the foundation for the EMD report to be admitted into evidence, Kandutsch's probation agent, Amy Klarkowski (Klarkowski), described the program as a system consisting of a home monitoring unit and a radio frequency device, usually attached to the person's ankle. Klarkowski testified that the monitoring unit has a range of about 150 feet

and is connected by telephone to an electronic monitoring center staffed by the DOC.

¶14 Klarkowski also testified in detail about how an EMD is set up and verified.

Q: What systems are in place to verify that this monitoring unit and the RF [radio frequency device] are working properly beginning with installation, how can you ensure they're working properly?

A: When an individual initially is hooked up on the Electronic Monitoring Program . . . I'm going to call the monitoring center and personally speak with an agent there and verify that the RF has been properly placed on the individual's ankle . . . I'm also going to verify that this home monitoring unit was properly installed and that there are no issues, which is called a good hookup.

I'm also going to receive a fax from the home monitoring unit directly to my office indicating both of those things, that there was a closed strap on the RF, and that the home monitoring unit was properly installed and there are no issues.<sup>5</sup>

¶15 Klarkowski explained that any movement by the radio frequency device in and out of the monitoring unit's range is noted on computer-generated reports at the DOC monitoring center

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<sup>5</sup> Klarkowski testified that the EMD assigned to Kandutsch was installed on April 11, 2006, and that she received a fax confirming its proper installation and functioning the same day. Klarkowski further testified that the unit was working properly the day before the incident in question, on June 18, 2006. She testified that the monitoring center sent out several "hello" signals to Kandutsch's device, but the telephone line was reported busy. A warrant did not issue, however, because the DOC and the monitoring center were aware that Kandutsch was in jail at the time, from June 15 to June 18, 2006. Her testimony was not fully developed on this subject because the circuit court had previously ordered that the subject of Kandutsch's probation was not to be introduced before the jury.

in Madison. When asked about the system's reliability, Klarkowski testified that electronic monitoring is commonly used throughout the state, and that she had never had any problems with its functioning. The system is designed to keep working despite power outages or attempts to remove the ankle bracelet. Klarkowski had been employed by the DOC for five years and had personally supervised 30-35 individuals through the electronic monitoring system. She testified that not only had she never had any problems with a unit herself, but also had never heard of a unit generating a false report.

¶16 Klarkowski's DOC supervisor, Agent Michael Williams (Williams), also testified at trial. He explained that the electronic monitoring system is a routine supervision tool and that he has used it for 20 years.<sup>6</sup> In that time, he had never heard of a faulty unit or report during his employment with the DOC. Williams further testified that the particular EMD unit used to supervise Kandutsch had been reissued to supervise another individual in Ashland County.

¶17 After the testimony by Klarkowski and Williams, the State moved to introduce into evidence the EMD report from

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<sup>6</sup> Electronic monitoring was the subject of a comprehensive report prepared by the Legislative Reference Bureau as early as 1988. Electronically Monitored Home Confinement: A New Alternative to Imprisonment, Legislative Reference Bureau Informational Bulletin 88-IB-6, December 1988. Wisconsin began using electronic monitoring in April 1987 as part of a federally funded pilot program designed to evaluate intensive supervision of offenders, id., and electronic monitoring has been used by the DOC continually since that time.

Kandutsch's unit the night of June 19. The summary reports indicated Kandutsch's RF transmitter went out of range at 10:03 p.m. Kandutsch objected to the summary reports, arguing that the State supplied an insufficient foundation for them, and that they were inadmissible hearsay. The circuit court admitted the exhibits after concluding they were properly authenticated and generated in the ordinary course of business as an exception to the hearsay rule. At the conclusion of trial, a jury convicted Kandutsch of driving while under the influence of alcohol, fifth and subsequent offense.

¶18 On appeal, Kandutsch argued that the circuit court erred by admitting the summary reports without any corresponding expert testimony establishing the accuracy and reliability of the electronic monitoring system. The court of appeals held that the system's operation is not so "unusually complex or esoteric" as to demand the assistance of expert testimony. Kandutsch, No. 2009AP1351-CR, ¶10. The court further held that the report was not hearsay because it was not made by a human declarant. Id., ¶1.

¶19 Because the report was not hearsay, the authentication requirement was satisfied by the proponent presenting proof sufficient to support a finding by the court that "the matter in question is what its proponent claims." Wis. Stat. § 909.01. The court of appeals held that the State presented sufficient evidence to authenticate the report, because Agents Klarkowski and Williams testified that the DOC has used the program since 1987, relies on it to supervise about 2,000 people on any given

day, and has never experienced a malfunction. Kandutsch, No. 2009AP1351-CR, ¶12. The court of appeals also noted that there was testimony that the DOC takes measures to verify the EMD's successful set-up and continual functioning. Id., ¶¶13-14. Klarkowski also testified to the reliability of Kandutsch's specific EMD. Id., ¶15.

¶20 The court of appeals also rejected Kandutsch's argument that the evidence presented was unreliable because neither Klarkowski nor Williams were certified in the EMD's use. Id., ¶17. The court said his argument failed because: (1) there is no certification process for electronic monitoring; (2) certification is not required to use the device; and (3) both Klarkowski and her supervisor had a great amount of experience with the system. Id.

¶21 Lastly, Kandutsch argued that the summary reports were inadmissible hearsay. Id., ¶18. The court of appeals held, however, that hearsay under Wis. Stat. § 908.01(1)-(3) can come only from a "person," and the report was merely an automated process free of human intervention. Id., ¶¶18-20. The court of appeals consequently affirmed the circuit court judgment. Id., ¶20.

¶22 Kandutsch petitioned this court for review, which we granted on January 12, 2011.

## II. STANDARD OF REVIEW

¶23 Whether expert testimony was required to establish the accuracy and reliability of the EMD report involves an evidentiary ruling by the circuit court. The circuit court has

"broad discretion to admit or exclude evidence," and its decision will be overturned only if there has been an erroneous exercise of discretion. State v. Nelis, 2007 WI 58, ¶26, 300 Wis. 2d 415, 733 N.W.2d 619 (internal citations and quotations omitted). We will uphold the circuit court's decision "to admit or exclude evidence if the circuit court examined the relevant facts, applied a proper legal standard, and, using a demonstrated rational process, reached a reasonable conclusion." Martindale v. Ripp, 2001 WI 113, ¶28, 246 Wis. 2d 67, 629 N.W.2d 698 (citing Glassey v. Cont'l Ins. Co., 176 Wis. 2d 587, 608, 500 N.W.2d 295 (1993); Loy v. Bunderson, 107 Wis. 2d 400, 414-15, 320 N.W.2d 175 (1982)).

¶24 The admissibility of alleged hearsay statements also is a discretionary decision. State v. Mayo, 2007 WI 78, ¶31, 301 Wis. 2d 642, 734 N.W.2d 115. Whether the circuit court employed the proper legal standard is a question we consider de novo. Am. Family Mut. Ins. Co. v. Golke, 2009 WI 81, ¶18, 319 Wis. 2d 397, 768 N.W.2d 729 (citing Garfoot v. Fireman's Fund Ins. Co., 228 Wis. 2d 707, 717, 599 N.W.2d 411 (Ct. App. 1999)).

### III. ANALYSIS

¶25 We consider first whether expert testimony was required to lay the foundation for the EMD report to be properly introduced into evidence. To this end, we review the circumstances in which we have adopted or rejected a requirement of expert testimony. We also consider the nature of the electronic monitoring system and the EMD itself. We next address whether the report constitutes hearsay.

## A. Expert Testimony

¶26 In Wisconsin, expert testimony is generally admissible in the circuit court's discretion if the witness is qualified to testify and the testimony would help the trier of fact understand the evidence or determine a fact at issue.<sup>7</sup> Wis. Stat. § 907.02; see also Weiss v. United Fire & Cas. Co., 197 Wis. 2d 365, 378, 541 N.W.2d 753 (1995) (citing Kerkman v. Hintz, 142 Wis. 2d 404, 422-23, 418 N.W.2d 795 (1988); State v. Friedrich, 135 Wis. 2d 1, 15, 398 N.W.2d 763 (1987)).

¶27 Courts have long recognized that certain kinds of evidence are more difficult than others for jurors to weigh and comprehend without the benefit of expert testimony. Weiss, 197 Wis. 2d at 378. In such circumstances, a circuit court may properly grant a party's motion to keep the case from the jury unless such expert testimony is provided. Id. at 378-79.

¶28 Closing down a trial is not to be taken lightly, which is why the requirement of expert testimony is an extraordinary one. Racine Cnty. v. Oracular Milwaukee, Inc., 2010 WI 25, ¶28, 323 Wis. 2d 682, 781 N.W.2d 88. A circuit court should take this "extraordinary step" only when the issues before the jury

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<sup>7</sup> This statement is consistent with the state of the law of Wisconsin at the time of Kandutsch's trial and the circuit court's evidentiary rulings at issue in this case. In late January 2011, the Wisconsin Legislature amended Wis. Stat. § 907.02 to adopt the Daubert reliability standard embodied in Federal Rule of Evidence 702. See Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579 (1993). Because we do not find expert testimony to be required, it is not necessary to consider the applicability of newly-amended § 907.02 to the facts of this case.

are "unusually complex or esoteric." Id. (quoting White v. Leeder, 149 Wis. 2d 948, 960, 440 N.W.2d 557 (1989); see also Netzels v. State Sand & Gravel Co., 51 Wis. 2d 1, 7, 186 N.W.2d 258 (1971); City of Cedarburg Light & Water Comm'n, 33 Wis. 2d 560, 567, 148 N.W.2d 13 (1967)). In other words, the circuit court must first find that the underlying issue is "not within the realm of the ordinary experience of mankind." Cramer v. Theda Clark Mem. Hosp., 45 Wis. 2d 147, 150, 172 N.W.2d 427 (1969).

¶29 In considering what constitutes the "ordinary experience of mankind"—i.e., the average juror—courts have not tailored this standard to the lowest common denominator. Rather, courts attempt to evaluate, on a case-by-case basis, whether expert testimony is required because the issue is outside the realm of lay comprehension. See, e.g., White, 149 Wis. 2d at 960. When an issue can be determined "by common knowledge" the circuit court should allow the issue to go to a jury without first requiring expert testimony. Cramer, 45 Wis. 2d at 154.

¶30 Even in the context of issues involving medical care, this court has not always required expert testimony. For example, in Kujawski v. Arbor View Health Care Ctr., 139 Wis. 2d 455, 468, 407 N.W.2d 249 (1987), the court concluded that expert testimony was not necessary to establish the standard of care in the context of a nursing home's decision not to restrain a wheelchair-bound patient. Similarly, in Trogun v. Fruchtmann, 58 Wis. 2d 569, 601, 604, 207 N.W.2d 297 (1973), the

court relied on the jury's lay comprehension of "material risk" when determining what a physician should have disclosed to his patient in order to obtain informed consent.

¶31 In White, the court was presented with the argument that technical expert testimony was required to establish causal negligence on the part of the owner of a bull that injured the plaintiff. White, 149 Wis. 2d at 960. At trial, the parties vigorously disputed whether the bull was kept or maintained in a negligent manner, including whether "ringing the bull and placing a chain in its nose" would have made the animal more docile and less likely to attack. Id. The court rejected the argument that expert testimony was required, finding this issue squarely within the realm of lay comprehension. Id. No inquiry was made as to whether the average juror would appreciate the nuances of animal psychology or behavior modification or the breeding propensities of unringed bulls. Rather, the court took a common sense approach to whether the jury could evaluate the conflicting testimony with which it was presented. See id. at 959-60.

¶32 Similarly, the court concluded in Weiss that, in the context of a bad faith tort claim, an insured is not required to present expert testimony to demonstrate what a reasonable insurer would have done under the circumstances. 197 Wis. 2d at 381-83. The plaintiff in Weiss brought suit against United Fire, his insurer, for bad faith refusal to honor his claim when his house was completely gutted by a fire. Id. at 375-76. At trial United Fire moved to dismiss the plaintiff's claim because

he had not presented expert testimony regarding the reasonableness of United Fire's denial of his claim. Id. at 376. The court rejected a categorical rule, relying instead on the circuit court's discretion as to whether the claim involved facts and circumstances beyond the ken of the average juror. Id. Under the particular facts of Weiss, the court determined:

The average juror could have determined, without the benefit of an expert witness, whether United Fire acted reasonably when its own investigator failed to report his taking of electrical wires from the scene, when it failed to consider the fire chief's conclusion that the fire was not caused by arson, when it failed to consider the electrical wiring of the house, when it failed to procure full financial information concerning the plaintiff, and when it failed to consider that the premises were underinsured.

Id. at 387.

¶33 Kandutsch argues we should reach the same result as the court of appeals did in State v. Doerr, 229 Wis. 2d 616, 599 N.W.2d 897 (Ct. App. 1999), and hold that the EMD required expert testimony to lay a foundation of accuracy and reliability.

¶34 In Doerr, the court of appeals considered a challenge regarding the use of evidence of a preliminary breath test (PBT). Id. at 619. The defendant challenged the use of PBT evidence on the grounds that the State failed to provide expert testimony to support the test. Id. at 623. The court of appeals concluded that the State should have presented evidence regarding the accuracy and reliability of the PBT because the device was not included on the Department of Transportation's

list of approved instruments, and further, the PBT was a scientific device requiring expert testimony to allow the jury to interpret the evidence. Id. at 624-25.

¶35 Significantly, the court of appeals pointed out that the testimony by one of the officers who administered the PBT provided only a conclusory explanation of the device: "It measures the amount of blood alcohol that you have in your blood system, but it measures it from your lungs . . . .[The] machine . . . will detect . . . how much alcohol there was in the blood from [the] defendant's breath." Id. at 625. This testimony was deemed insufficient to lay a proper scientific foundation for the jury because it did not establish that the PBT analysis was "accurate and achieved through an accepted scientific method." Id.

¶36 As the court of appeals noted, however, the decision in Doerr focused primarily on whether the Department of Transportation had approved the device for chemical analysis of an individual's breath, not the particular complexity of the PBT device. Id. at 624-25; see also Wis. Stat. § 343.305(6)(b).

¶37 In this case, the technology underlying the EMD and the daily summary report is well within the comprehension of the average juror.

¶38 The electronic monitoring system at issue here involves the intersection of two processes: (1) transmission of a radio signal from the radio frequency device attached to the subject's person to the receiver in the home monitoring unit; and (2) transmission of information from the receiver in the

home monitoring unit to the monitoring center in Madison through a telephone line. These technologies intersect when the home monitoring unit registers the absence of a radio signal emitted from the radio frequency device when that device—attached to the supervised individual—goes out of range. The home monitoring unit then communicates the absence of a signal to the monitoring center via telephone. At the monitoring center, the information sent via telephone is recorded by a computer. Kandutsch argues that, while radio signals and telephone connections are well-known technologies easily understood by jurors without the aid of experts, the interplay of these technologies in effect creates a "new" technology that is not so readily understood.

¶139 We do not find this argument persuasive. As the court of appeals noted:

The cordless telephone, in existence for over three decades, uses the same technologies as the electronic monitoring system. The base station of the telephone converts information it receives over a standard phone connection to an FM radio signal which is then broadcasted to a wireless handset, and vice versa. . . . Ultimately, the telephone company documents calls placed and received on a bill that, like the daily summary reports at issue in this case, is generated by computer.

Kandutsch, 2009AP1351-CR, ¶10 n.3 (citing Craig Freudenrich, Ph.D., How Cordless Telephones Work, howstuffworks.com (Dec. 11, 2000), <http://electronics.howstuffworks.com/cordless-telephone.htm>).

¶40 This analogy is directly on point and provides a common sense perspective on the evidence the State sought to introduce in this case. The intersection of radio signals and telephone connections does not convert the EMD into an issue so "unusually complex or esoteric" that the jury required the aid of expert testimony to interpret the information. Accordingly, we decline to take the extraordinary step of requiring expert testimony to introduce evidence of the EMD at issue here.

¶41 Even where expert testimony is not required, the proponent of non-testimonial evidence is usually required to lay the foundation for the admissibility of that evidence through lay witnesses. The admissibility of the EMD report is governed by Wis. Stat. §§ 909.01 and 909.015. A foundation for admissibility is laid under § 909.01 "by evidence sufficient to support a finding that the matter in question is what the proponent claims." Section 909.015 provides "[b]y way of illustration only, and not by way of limitation," examples of how to satisfy the requirements of § 909.01. Among the examples of authentication and identification, the statute suggests:

(9) Process or system. Evidence describing a process or system used to produce a result and showing that the process or system produces an accurate result.

Wis. Stat. § 909.015(9).

¶42 In State v. Hanson, 85 Wis. 2d 233, 270 N.W.2d 212 (1978), the defendant had appealed the circuit court's holding that judicial notice could be taken of the accuracy and reliability of a moving speed radar device. Id. at 237. The

court noted that moving radar was "a relatively recent innovation and at the time of the arrest in this case, moving radar had . . . been used in Wisconsin for [only] three months." Id. at 239. While many jurisdictions, including Wisconsin, had taken judicial notice of the reliability of stationary radar, the court could find only one jurisdiction that had taken judicial notice of the reliability and accuracy of a moving radar unit. Id. at 239-40.

¶43 The Hanson court concluded that judicial notice could properly be taken of the reliability of the underlying scientific principles of speed radar detection without expert testimony. Id. at 244. The State could therefore introduce a speed radar reading by laying a foundation through an operating law enforcement official who was qualified in the use and operation of the unit. Id. at 244-45. The moving radar reading itself, however, would be entitled to a prima facie presumption of accuracy only if: (1) the operating officer had adequate training and experience in operating moving radar; (2) the device had been appropriately tested, showing that it was in proper working order at the time; and (3) the device was used in an area with minimum potential for distortion in the results. Id. at 245.

¶44 In other words, the Hanson court distinguished between the widely accepted and unassailable scientific principles underlying moving radar, and the accuracy and reliability of the particular unit that produced the reading offered into evidence.

¶45 Similar to our decision in Hanson, we conclude that a court should not afford a presumption of accuracy to a particular report or EMD until the State has put forth evidence regarding the installation of the specific device and testimony as to its accuracy and reliability by a DOC employee familiar with its operation.<sup>8</sup>

¶46 Consequently, the State was permitted to authenticate and lay a foundation for the EMD report by providing testimony describing the electronic monitoring system and the process by which the daily summary reports are generated and showing that this process produces an accurate result. This is precisely what Agents Klarkowski and Williams addressed in their testimony.

¶47 Agent Klarkowski described the electronic monitoring system itself and its various components of radio frequency device, home monitoring unit, and connection via phone line to the monitoring center. She explained in detail the steps involved in setting up a system and the way the system works in

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<sup>8</sup> Our holding is in accord with a published decision of the Arizona Court of Appeals, Arizona v. Rivers, 190 Ariz. 56, 945 P.2d 367 (Ct. App. 1997). In Rivers the court held that the state provided sufficient foundation and evidence for an electronic monitoring system to allow the jurors to reasonably conclude that the system was working properly when it reported a curfew violation. Id. at 59. The testimony concerning the system's general accuracy and reliability, and that it was correctly installed and in proper working order on the day in question was sufficient to provide a foundation for the evidence. Id.

a variety of circumstances—when there is a power outage, if the subject attempts to remove the bracelet, when the subject is out of range during his authorized schedule, when the subject is out of range at an unauthorized time, when the telephone line is unplugged, and when summary reports are generated.

¶48 Both Williams and Klarkowski testified to their experience with the electronic monitoring system, emphasizing its reliability and accuracy. Both also testified to the continuing satisfactory operation of the EMD that had been assigned to Kandutsch. Their testimony was sufficient to satisfy the test we set forth today.

¶49 Kandutsch points to a dearth of case law analyzing what foundation is needed for electronic monitoring technology as an indication that the technology lacks general acceptance. We reject this argument. As Agent Williams testified, electronic monitoring has been used in Wisconsin for more than 20 years to supervise dangerous criminals and parolees as a "routine supervision tool."<sup>9</sup> The lack of traditional case law

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<sup>9</sup> See, e.g., In re Armstrong, Wis. Div. Hearings and Appeals, No. 032706-213621-A (April 26, 2006); In re Holmes, Wis. Div. Hearings and Appeals, No. 050500-325798-A (July 18, 2000); In re Robinson, Wis. Div. Hearings and Appeals, No. 051799-267616-A (Aug. 11, 1999); In re Seekins, Wis. Div. Hearings and Appeals, No. 071797-182275-A (Sept. 19, 1997).

A review of probation and parole revocation decisions demonstrates the extent to which electronic monitoring has become a fact of life in the criminal justice system—a fact of life that corrections officials, law enforcement, and administrative law judges alike take for granted. In Holmes, the administrative law judge observed:

directly on point is unsurprising when we consider that the vast majority of the time, EMD reports are used in probation and

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The client denies being out of range on his EMP [electronic monitoring program] schedule and indicates that an elderly resident who gets confused must have answered the phone telling the EMP center that he had gone to the hospital. According to the client, he never left the house on that particular day. . . . I do not find the client's explanation to be believable. Had the client not gone out of range the EMP Alert Center would not have called his residence.

Holmes, No. 050500-325798-A at 2.

Similarly, in Robinson the administrative law judge stated:

The client . . . testified that the electronic monitoring alerts were the result of a change in his work schedule. He further testified that he believed his electronic monitoring schedule had been extended to accommodate this change in his work schedule. This testimony is not consistent with the reports from the electronic monitoring program.

Robinson, No. 051799-267616-A at 3-4. The administrative law judge proceeded to discuss the various "transmitter in range" and "transmitter out of range" alerts for the given day, and concluded, "It is clear that these alerts were not the result of the client simply returning late from work. He was returning to the residence and leaving whenever he wanted." Id. at 4. These decisions confirm that electronic monitoring is a routine tool that is heavily relied upon in the criminal justice system.

parole revocation hearings, not to prove an element of a separate criminal offense, as here.<sup>10</sup>

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<sup>10</sup> This is not to say, however, that courts are unfamiliar with electronic monitoring of the type involved here. To the contrary, a review of cases referring to electronic monitoring shows the wide variety of manners in which courts have encountered this common tool of the criminal justice system. See, e.g., State v. Walker, 2008 WI 34, 308 Wis. 2d 666, 747 N.W.2d 673 (noting that the circuit court considered the defendant's lack of phone service for electronic monitoring a factor in a reconfinement hearing); State v. Taylor, 2006 WI 22, 289 Wis. 2d 34, 710 N.W.2d 466 (listing failure to comply with electronic monitoring rules as evidence of lack of rehabilitation); State v. Magnuson, 2000 WI 19, 233 Wis. 2d 40, 606 N.W.2d 536 (concluding that a defendant released to electronic monitoring was not in custody for sentence credit purposes); State ex rel. Macemon v. McReynolds, 208 Wis. 2d 594, 561 N.W.2d 779 (Ct. App. 1997) (holding that the DOC had authority to require mandatory release parolees to submit to an electronic monitoring bracelet) (cited with approval by State v. Schwarz, 2005 WI 11, 278 Wis. 2d 24, 692 N.W.2d 219); State v. Harris, 168 Wis. 2d 168, 483 N.W.2d 808 (Ct. App. 1992) (determining that an individual subject to electronic monitoring is not a "jail prisoner" under Wis. Stat. § 302.425(5)).

Moreover, we find significant the fact that the statutes are replete with references to electronic monitoring services. See, e.g., Wis. Stat. §§ 20.410(1)(gg) (appropriations for electronic monitoring); 301.046(5) (requiring the Department of Corrections to use electronic monitoring of individual released to community residential confinement); 301.048(3) (electronic monitoring as part of an intensive sanctions program); 301.135 (governing electronic monitoring, generally); 302.425(3) (allowing sheriffs to place prisoners in home detention subject to electronic monitoring); 938.21(4m) (a court may order a juvenile to submit to electronic monitoring in an order for continued custody); 938.34(3g) (a court may order electronic monitoring as a disposition in a juvenile delinquency proceeding); 973.03(4)(a) (allowing a court to place a defendant subject to electronic monitoring in lieu of a jail sentence, if the defendant agrees). These provisions demonstrate the widespread acceptance of and reliance on the integrity of electronic monitoring systems.

¶50 We conclude that the EMD report does not present an issue that is particularly complex or unusually esoteric, and additionally, that the EMD involves scientific principles that are indisputable and fully within the lay comprehension of the average juror. Expert testimony was not required to properly establish a foundation for the report's admissibility. Furthermore, the testimony provided by Agents Klarkowski and Williams fully satisfied the requirements of Wis. Stat. § 909.01.

¶51 Accordingly, the circuit court did not err when it declined to require expert testimony regarding the electronic monitoring system. It was proper to admit the report into evidence.

B. Kandutsch's Hearsay Objection and Authentication

¶52 Kandutsch contends that the electronic monitoring report was hearsay that should not have been admitted under the exception for records of regularly conducted activity. See Wis. Stat. §§ 908.01 and 908.03(6).

¶53 Wisconsin Stat. § 908.01 provides the definitions relevant to the rules of evidence on hearsay:

(1) Statement. A "statement" is (a) an oral or written assertion or (b) nonverbal conduct of a person, if it is intended by the person as an assertion.

(2) Declarant. A "declarant" is a person who makes a statement.

(3) Hearsay. "Hearsay" is a statement, 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.

Wis. Stat. § 908.01(1)-(3).

¶54 The court of appeals, in State v. Zivcic, 229 Wis. 2d 119, 598 N.W.2d 565 (Ct. App. 1999), was presented with an evidentiary challenge to a printout from an Intoxilyzer. The defendant argued that the "deficient sample" printout from the Intoxilyzer machine was hearsay. Id. at 131. Although the court of appeals did not set forth its reasoning in any great detail, it rejected the defendant's hearsay challenge on the basis of a plain reading of Wis. Stat. § 908.01: "The Intoxilyzer which produced the 'deficient sample' printout is not a declarant. Rather, the printout is the result of a process." Zivcic, 229 Wis. 2d at 131.

¶55 The State points to various treatises to support the proposition that the hearsay rule encompasses only human declarants, not machines or automatic processes. Professor Daniel Blinka notes that, in order to be considered hearsay, "The 'declarant' must be a human being; i.e., evidence automatically produced by machines (e.g., an "ATM" receipt, a car's speedometer reading) is not hearsay." 7 Daniel D. Blinka, Wisconsin Practice Series: Wisconsin Evidence § 801.1, at 644 (3rd ed. 2008) (footnotes omitted). Similarly, McCormick on Evidence classifies records that are self-generated by machine or computer as non-hearsay. 2 Kenneth S. Broun, et al., McCormick on Evidence § 294 (5th ed. 1999).

¶56 In contrast, the majority of federal courts interpreting the Federal Rules of Evidence governing hearsay have considered computer reports as hearsay. See Adam Wolfson, Note, "Electronic Fingerprints": Doing Away with the Conception of Computer-Generated Records as Hearsay, 104 Mich. L. Rev. 151 (Oct. 2005). When a computer record is admitted, it is typically justified by the business records exception. See, e.g., United States v. Salgado, 250 F.3d 438, 452 (6th Cir. 2001); Hardison v. Balboa Ins. Co., 4 Fed. Appx. 663, 669 (10th Cir. 2001); United States v. Moore, 923 F.2d 910, 914 (1st Cir. 1991); United States v. Miller, 771 F.2d 1219, 1237 (9th Cir. 1985).

¶57 A minority of jurisdictions distinguish between computer-stored records and computer-generated records. See Wolfson, "Electronic Fingerprints", supra 157 & n.46-47 (citing cases). Computer-stored records constitute hearsay because they merely store or maintain the statements and assertions of a human being. See State v. Armstead, 432 So. 2d 837, 839-40 (La. 1983).<sup>11</sup> Computer-generated records, on the other hand, are those that represent the self-generated record of a computer's operations resulting from the computer's programming, "much like a seismograph can produce a record of geophysical occurrences, a flight recorder can produce a record of physical conditions onboard an aircraft, and an electron microscope can produce a

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<sup>11</sup> See also People v. Holowko, 109 Ill. 2d 187, 486 N.E.2d 877 (1985); State v. Schuette, 273 Kan. 593, 44 P.3d 459 (2002); State v. Meeks, 867 S.W.2d 361 (Tenn. Crim. App. 1993).

micrograph, which is a photograph of things too small to be viewed by the human eye." Id. at 840 (citing scholarly authority).

¶58 The United States Department of Justice similarly distinguishes between computer-generated and computer-stored records. See Computer Crime & Intellectual Prop. Section, Criminal Div., U.S. Dep't of Justice, Searching and Seizing Computers and Obtaining Electronic Evidence in Criminal Investigations, 192-94 (3rd ed. 2009). In its manual for federal prosecutors, the Department explains:

Hearsay rules apply to statements made by persons, not to logs or records that result from computer processes. Computer-generated records that do not contain statements of persons therefore do not implicate the hearsay rules. This principle applies both to records generated by a computer without the involvement of a person (e.g., GPS tracking records) and to computer records that are the result of human conduct other than assertions (e.g., dialing a phone number or punching in a PIN at an ATM). For example, pressing "send" on an email is a command to a system (send this message to the person with this email address) and is thus non-assertive conduct. See United States v. Bellomo, 176 F.3d 580, 586 (2d Cir. 1999) ("Statements offered as evidence of commands or threats or rules . . . are not hearsay.").

Id. at 193.

¶59 This court has not previously had an opportunity to directly address the hearsay implications in the distinction between computer-stored and computer-generated records. We find it appropriate at this time to distinguish between computer-stored records, which memorialize the assertions of human

declarants, and computer-generated records, which are the result of a process free of human intervention.

¶60 The hearsay rule is designed to protect against "the four testimonial infirmities of ambiguity, insincerity, faulty perception, and erroneous memory." Laurence H. Tribe, Triangulating Hearsay, 87 Harv. L. Rev. 957, 958 (March 1974). Computer-generated records do not implicate any of these four "infirmities" when the evidence is not the product of human intervention. See, e.g., Armstead, 432 So.2d at 840 ("With a machine, however, there is no possibility of a conscious misrepresentation.").

¶61 A record created as a result of a computerized or mechanical process cannot lie. It cannot forget or misunderstand. Although data may be lost or garbled as a result of some malfunction, such a malfunction would go to the weight of the evidence, not its admissibility.<sup>12</sup> The record does not present the danger of being taken out of context, because the opposing party has a right to put it in context.<sup>13</sup> Agent Klarkowski perhaps summarized it best when she testified regarding the EMD, "It doesn't have a mind of its own, it's a

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<sup>12</sup> See U.S. v. Catabran, 836 F.2d 453, 458 (9th Cir. 1988).

<sup>13</sup> For instance, both the State and the defense elicited testimony regarding the times when Kandutsch was recorded as "out of range" prior to 10:03 p.m. on the daily summary report—that is, the times when he was authorized to be out of range. The fact that he was "out of range" shortly before he broke into his wife's home was not introduced in a vacuum, but as part of the entire daily summary.

computer device, it's a high-tech device, it reports things when they happen."

¶62 Relying on Zivcic, the court of appeals concluded that the daily summary report generated by the EMD was likewise the "result of a process, not a statement by a declarant." Kandutsch, No. 2009AP1351-CR, ¶19. Because the report was generated as "the result of an automated process free of human intervention," it was not hearsay. Id., ¶20.

¶63 We agree with the court of appeals conclusion based on the distinction we draw between computer-stored records and computer-generated records.

¶64 Because we conclude that the daily summary report was not hearsay, we do not reach Kandutsch's argument that the report does not fall within the "records of regularly conducted activity" exception to hearsay set forth in Wis. Stat. § 908.03(6). Consequently, the State had only to satisfy the general authentication requirements in Wis. Stat. §§ 909.01 and 909.015. As discussed in the previous section, these authentication requirements were satisfied through the testimony given by Agents Klarkowski and Williams. Accordingly, the circuit court did not err in admitting the evidence over Kandutsch's hearsay objection.

#### IV. CONCLUSION

¶65 We conclude that neither the EMD itself nor the report is so "unusually complex or esoteric" that expert testimony was required to lay a foundation of accuracy and reliability. The underlying technologies were clearly within the realm of lay

comprehension. Accordingly, the testimony of Agents Klarkowski and Williams was sufficient to provide a foundation for the report's accuracy and reliability under Wis. Stat. § 909.01.

¶66 We further hold that a computer-generated report is not hearsay when it is simply the result of an automated process free from human input or intervention. Because the report is not hearsay, it was subject only to the statutory authentication requirements, and was properly authenticated through the testimony of Agents Klarkowski and Williams.

*By the Court.*—The decision of the court of appeals is affirmed.

¶67 SHIRLEY S. ABRAHAMSON, C.J. (*dissenting*). Prior to the present case, neither the court of appeals nor this court has had the opportunity to determine whether a report created by this type of electronic monitoring device, specifically a BI 9000, consisting of a radio frequency bracelet, a home monitoring unit, and a computer program that stores data and generates reports, carries a prima facie presumption of accuracy at trial. There is a lack of case law in other states as well.

¶68 One commentator has tried to explain why the reported cases do not adequately reflect the serious reliability issues in computer technology. He explains that because we do not understand computers, we suspend our healthy common-sense skepticism when dealing with them. "The mere fact that computers can do some things at all tends to mask the issue of whether computers can do it well. The 'gee whiz' quality of computers may conceal the underlying frailties of the systems."<sup>1</sup>

¶69 I do not write because I believe that the underlying technology in the present case is unreliable. Indeed, I believe its reliability could have been demonstrated without a substantial burden on the State. I write because the evidence presented at trial did not demonstrate reliability, and the majority does not follow the analysis established by our case law. Our truth-finding process requires that the procedure for establishing the reliability of evidence be followed.

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<sup>1</sup> Robert Garcia, "Garbage In, Gospel Out": Criminal Discovery, Computer Reliability, and the Constitution, 38 U.C.L.A. L. Rev. 1043, 1090 (1991).

¶70 I disagree with the majority's conclusion that the testimony of the two Department of Corrections (DOC) agents was sufficient to admit the report generated by the electronic monitoring device that was admitted as evidence in the present case. Accordingly, I dissent.

I

¶71 When a party seeks to admit evidence that is based on scientific principles, the underlying scientific principles must be reliable. Professor Blinka, in his treatise on Wisconsin evidence, summarizes how a scientific principle may be demonstrated to be sufficiently reliable and accorded a prima facie presumption of reliability. In the present case, the electronic monitoring device does not fall within any of three potential avenues to reach the threshold of reliability.<sup>2</sup>

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<sup>2</sup> Daniel D. Blinka, Wisconsin Practice Series: Wisconsin Evidence 584 (3d ed. 2008), explains:

There are a number of ways in which threshold reliability may be shown. First, the legislature may provide by statute that certain tests or techniques are admissible. Various statutes provide, for example, that scientific tests involving DNA, alcohol, or speed detection are admissible upon compliance with certain conditions. Second, the trial judge may take judicial notice of scientific principles, methods, and tests based on case law (precedent) or the terms of Wis. Stat. § 902.01. Judicially noticed or statutorily approved tests and principles are accorded a prima facie presumption of accuracy. Nonetheless, the proponent must demonstrate that the test or procedure was properly carried out in the particular case. The opponent is free to attack both the reliability of the underlying principles and methodology as well as their application in the particular case.

¶72 One way the reliability of the scientific principles underlying a technology can be demonstrated is by pointing to a statute providing that certain tests are admissible. For example, Wis. Stat. § 885.235(1g) provides that evidence of the amount of alcohol in a person's blood or breath at the time in question, as shown by chemical analysis of a sample of the person's blood, urine, or breath, is admissible without expert testimony under certain circumstances set forth in the statute.

¶73 There is no statute that provides that evidence produced by the scientific technology underlying this electronic monitoring device is admissible.

¶74 A second way the reliability of the underlying scientific principles of a technology can be demonstrated is by court precedent. For example, in State v. Hanson, 85 Wis. 2d 233, 270 N.W.2d 212 (1978), the supreme court declared that the courts of this state are authorized to "take judicial notice of the reliability of the underlying principles of speed radar detection that employs the Doppler effect as a means of determining the speed of moving objects. To this end, expert testimony is not needed to determine the initial admissibility of speed radar readings."<sup>3</sup>

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Absent a statute or judicial notice, the proponent must rely on expert testimony to establish the threshold. . . .

(Footnotes omitted.)

<sup>3</sup> State v. Hanson, 85 Wis. 2d 233, 244, 279 N.W.2d 212 (1978).

¶75 No case law exists in Wisconsin, and very little case law apparently exists in the country, regarding the reliability of this kind of electronic monitoring device as evidence at trial.<sup>4</sup>

¶76 A third way the reliability of the underlying scientific principles of a technology can be demonstrated is for a court to take judicial notice of scientific principles, methods, and tests. Wisconsin Stat. § 902.01(2)(b) allows judicial notice of a fact capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned.<sup>5</sup> "Courts will take judicial notice of 'scientific facts which have been well established by

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<sup>4</sup> The State cites to three appellate decisions in support of its argument, stating: "Somewhat surprisingly, there are few legal authorities that specifically address the evidentiary foundation needed to admit evidence of electronic monitoring reports." The cases the State cites are Commonwealth v. Thissell, 928 N.E.2d 932 (Mass. 2010); State v. Rivers, 945 P.2d 367 (Ariz. Ct. App. 1997); and Ly v. State, 908 S.W.2d 598 (Tex. Ct. App. 1995).

<sup>5</sup> "Cases show that judicial notice functions in tandem with the expert witness rules, permitting courts to determine when technical ideas and information have become so generally accepted as to make evidence-gathering superfluous." Lewis W. Beilin, Comment, In Defense of Wisconsin's Judicial Notice Rule, 2003 Wis. L. Rev. 499, 508.

In State v. Hanson, 85 Wis. 2d at 244, the court concluded that the State had failed to show in the trial court that judicial notice should be taken as to the speed radar detection's reliability and accuracy.

authoritative scientists and are generally accepted as irrefutable by living scientists.'"<sup>6</sup>

¶77 The majority and the State do not point to any sources on the reliability of the scientific principles underlying this type of electronic monitoring device "whose accuracy cannot reasonably be questioned," upon which judicial notice can appropriately be supported.

¶78 In sum, the data produced by the electronic monitoring device is not admissible without adequate testimonial foundation. The underlying scientific principles have not been presumed reliable based upon a statute, in a prior determination in our case law, or by resort to sources whose accuracy cannot reasonably be questioned such that taking judicial notice is appropriate.

¶79 When scientific principles do not fall within any of the three potential avenues to demonstrate sufficient reliability and be accorded a prima facie presumption, testimony is necessary to explain the underlying scientific principles and support a determination of its reliability.

¶80 Expert testimony should be adduced when interpreting evidence involves special knowledge, skill, or experience that is not within an ordinary person's realm of experience or knowledge. Megal v. Green Bay Area Visitor & Convention Bureau, Inc., 2004 WI 98, ¶19, 274 Wis. 2d 162, 682 N.W.2d 857. The lack of expert testimony in such cases constitutes an

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<sup>6</sup> George R. Currie, Appellate Courts Use of Facts Outside of the Record by Resort to Judicial Notice and Independent Investigation, 1960 Wis. L. Rev. 39, 41 (quoted source omitted).

insufficiency of proof. State v. Johnson, 54 Wis. 2d 561, 564, 196 N.W.2d 717 (1972), cited with approval in State v. Doerr, 229 Wis. 2d 616, 623, 624, 599 N.W.2d 897 (Ct. App. 1999).

¶81 The electronic monitoring device, linking radio frequency devices to a monitoring unit that sends a signal to a computer facility, is, as one agent testified, "a high-tech device." The computer generated report introduced in evidence in the present case appears to be the output of the interaction of a number of accepted and well-known technologies. Nevertheless, accepted technologies may require expert testimony when those technologies are used in combination, for new purposes, or are used for the first time as evidence in the courts.

¶82 Neither the circuit court nor the jury was presented with testimony regarding the scientific principles underlying how the technology worked. No testimony was presented that described the computer processes involved in storing the data and producing the report. No testimony was presented regarding the reliability of the software that created the report (except for the anecdotal evidence of the DOC agents), the processes involved in creating the report, or the verification methodology for the output of the system.<sup>7</sup>

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<sup>7</sup> The monitoring center employee who created the report at the request of Agent Klarkowski was not called to testify. At oral argument, the court questioned defendant's counsel about whether the Confrontation Clause was implicated. Counsel suggested that there may be a Confrontation Clause issue in the present case.

¶83 The testimony regarding the operation of the electronic monitoring device came from two Department of Corrections agents. They testified about how to work the electronic monitoring device, but not about how it works, except at the level of the user of the device.

¶84 To demonstrate the device's reliability, the witness must be familiar with computerized records not only as a user but also as someone with some working acquaintance with the methods by which such records are made. American Oil Co. v. Valenti, 426 A.2d 305, 311 (Conn. 1979), cited with approval in State v. Polanco, 797 A.2d 523, 533 (Conn. 2002).

¶85 Agent Klarkowski, being questioned by the State, testified about how the electronic monitoring device works from the perspective of the user as follows:

Q: And how—you indicated that it [electronic monitoring device] keeps track of whether an individual's at a specific location at any specific time; how does it do that?

A: The home monitoring unit is—I'm sorry, the RF [radio frequency bracelet] is going to send a signal to the home monitoring unit indicating that a person is in range or out of range. In range means that they are 150 feet within that home monitoring unit.

Q: And this is reporting constantly?

A: 24 hours a day. Any movement in and out of that range is noted.

Q: And how is that noted?

A: It's going to be noted on a daily summary form.

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I do not address the confrontation issue because I conclude that the evidence was erroneously admitted. The briefs did not address the confrontation issue.

Q: How is that form generated?

A: The electronic monitoring center, which is staffed by the Department of Corrections, keeps those forms and that notation.

Q: How does the signal that someone has moved either in or out of range get to that monitoring center?

A: Sure. The home monitoring unit which is hooked up to the phone line, that phone cord is the bridge per se to get information from that home monitoring unit to the electronic monitoring center.

¶86 The majority opinion (and court of appeals) explain that the technology is similar to that of a cordless telephone, though no witness made such an analogy. Because of this lack of evidence in the record explaining the underlying scientific principles, the majority (and the court of appeals) resort to citing a website (howstuffworks.com) on the basic scientific principles of a cordless telephone. If the technology cannot be explained using evidence in the record or accepted scientific resources, then the record is insufficient.

¶87 Both agents testified that they had not personally had any problems with this type of device and had not heard of any problems of false reports. The agents' testimony indicated that this type of monitoring technology has been used and relied upon by the department since 1987. Agent Klarkowski testified: "We have to rely on this particular device to supervise the individuals. If it wasn't a reliable device, it wouldn't have any integrity in court, it wouldn't provide us with the supervision that we require out of it."

¶88 But reliance on a technology, even well understood technology, does not necessarily make the evidence produced

reliable for purposes of introduction at trial. For instance, statutes allow the use of polygraph technology for certain purposes but the results of a polygraph test are not ordinarily admissible in court. See State v. Dean, 103 Wis. 2d 228, 279, 307 N.W.2d 628 (1981). Statutes allowing use of a polygraph test for certain purposes, including the supervision of certain offenders, include: Wis. Stat. § 51.375(2)(a) ("The department may require, as a condition of a community placement, that a sex offender submit to a lie detector test when directed to do so by the department."); Wis. Stat. § 111.37 ("Use of honesty testing devices in employment situations."); and Wis. Stat. § 301.132(2) ("The department may require a sex offender to submit to a lie detector test when directed to do so by the department.").

¶89 Likewise, that electronic monitoring programs are a "fact of life in the criminal justice system" that is taken for granted, does not mean that the evidence produced by electronic monitoring devices should be taken for granted by the courts.

¶90 No one disputes that electronic monitoring devices are an important tool for the Department of Corrections in its role in supervising individuals. The probation revocation decisions cited by the majority,<sup>8</sup> however, do not address the reliability of the scientific principles underlying the electronic monitoring devices. Furthermore, the procedures applicable to a revocation hearing are substantially different from those applicable to a criminal trial. See Wis. Admin. Code § HA

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<sup>8</sup> Majority op., ¶49 n.9.

2.05(6) (May 2010).<sup>9</sup> That the output of electronic monitoring devices is used in probation revocation hearings does not address the fundamental issue of this case.

¶91 I do not doubt that the underlying scientific principles are widely accepted, but the evidentiary process requires that the principles be presented to the court before the evidence is determined to be reliable. The process matters. The right process was not followed here, but can easily be followed.

¶92 I conclude that expert testimony was necessary in the present case to provide the court, in evaluating this technology for the first time, with the evidence necessary to ensure the reliability of the underlying scientific principles upon which this proffered evidence is based. Absent expert testimony, there is, I believe, insufficient foundational testimony in the record for the circuit court or this court to decide that a presumption of accuracy and reliability exists for a report produced by this type of electronic monitoring device. The lack

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<sup>9</sup> See, e.g., Wis. Admin. Code § HA 2.05(6)(c) (May 2010) ("Evidence to support or rebut the allegation may be offered. Evidence gathered by means not consistent with ch. DOC 328 or in violation of the law may be admitted as evidence at the hearing."); Wis. Admin. Code § HA 2.05(6)(d) (May 2010) ("The administrative law judge may accept hearsay evidence."); Wis. Admin. Code § HA 2.05(6)(e) (May 2010) ("The rules of evidence other than ch. 905, Stats., with respect to privileges do not apply except that unduly repetitious or irrelevant questions may be excluded.").

Chapter HA 2 governs procedure and practice for corrections hearings in the Division of Hearings and Appeals.

of expert testimony therefore constitutes an insufficiency of proof in the present case.

II

¶93 Even if I were to determine that expert testimony was not needed to explain the underlying scientific principles of the electronic monitoring device, the State failed to prove that the electronic monitoring device was working properly in the present case.

¶94 The proponent of the evidence must demonstrate that the evidence is produced by an accurate, functioning device. In other words, the proponent must authenticate the device and thereby the data that it produced.<sup>10</sup> As this court explained in State v. Hanson, 85 Wis. 2d at 245: "The accuracy of the most indisputable scientific theory is subject to its application in particular conditions. The application of any virtually undisputed scientific fact to the immediate surrounding conditions must be explained in ascertaining its accuracy."

¶95 The majority appropriately recognizes that no presumption of accuracy as to the particular report or monitoring unit exists.<sup>11</sup> The State must present foundational evidence as to the production of the specific report it seeks to

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<sup>10</sup> One method of authentication is Wis. Stat. § 909.015(9): To demonstrate authenticity for process-generated records, the proponent is required to introduce "evidence describing a process or system used to produce a result and showing that the process or system produces an accurate result."

<sup>11</sup> Authentication is accomplished "by evidence sufficient to support a finding that the matter in question is what its proponent claims." Wis. Stat. § 909.01.

admit. But, instead of providing a framework for ensuring the reliability of each unit and the particular report produced, the majority concludes that the foundational requirements for the report in the present case were met by the State's putting forth evidence "regarding the installation of the specific device and testimony as to its accuracy and reliability by a DOC employee familiar with its operation." Majority op., ¶¶45-48.

¶96 In the present case, I conclude that the State failed to present sufficient foundation to authenticate the report. There was not sufficient evidence that the device was in proper working condition at the time in question and that established methods of testing the proper functioning of the device and production of the report were followed.

¶97 Agent Klarkowski described the procedures used in setting up the monitoring unit. She testified that she had received faxes from the monitoring center indicating a good "hook-up" at installation, although she did not do the installation. The installation was done by another DOC agent, Tim Glaeser, who was not called to testify. Similarly, the agent's testimony that the unit was functioning at the pertinent time was reliant upon confirmation from the system. There is no evidence that a test of the device was performed to show that it was functioning correctly at the pertinent time.

¶98 Both agents testified regarding their perceptions of the reliability of the monitoring units generally, having never personally heard of, or been made aware of, an incorrect report. There was limited testimony regarding the internal testing and

failsafe mechanisms for the type of electronic monitoring device in question. As with the underlying scientific principles of the device, the DOC agents' testimony was at the level of a user of the device. Finally, there was testimony on the particular device that was monitoring the defendant, in that it had been re-allocated to monitor another individual and the agents did not know of any problems with the device.

¶99 There was no testimony regarding the computer processes in receiving and storing the data, nor the processes for producing the reports.

¶100 Common experience suggests that the underlying technology, which the majority equates to the operation of a cordless telephone, is not free from glitches or interference under certain conditions. Modern technology has, in most instances, succeeded in isolating the reception of only the signals desired by a particular device, but anyone that has used a baby monitor, a two-way radio, a television with an antenna, or a cordless telephone likely knows from experience that reception is not perfect.

¶101 Numerous questions also arise in regard to the recorded timestamp that the State purports indicates the defendant left his home at the time in question. How is the clock set, and how is the clock maintained?<sup>12</sup> It might be that

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<sup>12</sup> For an interesting discussion on potential disruption in the accuracy of clocks, see Seth Borenstein, Power Grid Change May Disrupt Clocks, Associated Press, June 24, 2011, available at 2001 WLNR 12667232 ("A yearlong experiment with the nation's electric grid could mess up traffic lights, security systems and some computers—and make plug-in clocks and appliances like programmable coffeemakers run up to 20 minutes fast.").

the time is generated by a clock entirely within the home monitoring unit. Alternatively, the clock may be periodically updated by receiving signals from a recognized time keeper.

¶102 What tests and mechanisms are in place to ensure that the time entered for an out-of-range event is accurate? Are regular tests of the system run to ensure accuracy, and if so, are the tests based only upon internal calibrations?

¶103 Is it possible that when the radio frequency bracelet goes back into range it would not register?<sup>13</sup>

¶104 What happens if the home monitoring unit transmits data to the monitoring center but it doesn't reach its destination? E-mails are lost, phone calls and faxes are cut off. Agent Klarkowski testified that if the phone line is unplugged or busy, the home monitoring unit will store any information until the phone connection is re-established. What happens if a message is sent but not received by the monitoring center? Is there a log of information stored in the home monitoring unit that could be retrieved to ensure the accuracy of the information in the report?

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<sup>13</sup> See, for example, State v. Rivers, 945 P.2d 367 (Ariz. Ct. App. 1997), one of the few appellate cases from another jurisdiction, in which there is an indication that the monitoring device in that case may not have registered or transmitted a "late enter" alarm as the system was designed to do. "Although the defendant's ankle bracelet was still attached when he was arrested at home several days later, [the defendant's parole officer] testified that he did not recall having received a late-entry alarm. However, he was unable to ascertain whether such an alarm was received because the computer printouts concerning the defendant's curfew violation had been destroyed prior to trial." Id. at 369-70.

¶105 Some of the questions that I raise may in some cases go to the weight of evidence rather than its admissibility. In this case, defense counsel did not raise these questions. The circuit court may not have been presented with a fully developed challenge to admissibility.

¶106 In any event, this court should be looking for the right way to admit this evidence. Presumably this type of electronic monitoring device has been tested by the manufacturer, and even possibly by the Department of Corrections as well. It might be safe to assume that through the results of this testing a number of the questions regarding the technology that I present may have satisfactory answers.

¶107 I conclude that this court should provide guidance to circuit courts and litigants on the foundational requirements for admitting evidence based upon an electronic monitoring device such as the one in this case.

¶108 In the present case the report is, in large part, a result of a computerized process. Assistant United States Attorney Timothy M. O'Shea published in the Wisconsin Lawyer magazine a helpful checklist for proving the reliability of the output of a computer program, which includes:

- Ability of hardware/program to detect errors
- Whether the equipment is regularly checked
- Whether the program and equipment produce a testable result
- Whether the output is routinely verified: automatically as part of the program; by a complementary system that would not work if errors

occurred in the program or equipment producing the proposed record; or by other external controls.

Timothy M. O'Shea, Evidentiary Foundations for Computer Records, Wis. Lawyer, Feb. 2008, at 11.

¶109 These and other factors would provide appropriate guidance to circuit courts and litigants in presenting evidence resulting from a computerized process to demonstrate that the evidence is produced by an accurate, functioning device. The testimony in the present case falls short.

¶110 Requiring the State to verify the accuracy of the particular electronic monitoring device does not impose an unreasonable burden on the State. The State has seemingly done just fine complying with the requirements of State v. Hanson.

¶111 Finally, it is important to clarify that the majority's conclusion is narrow. It is limited to the technology underlying this type of electronic monitoring device. Whether expert testimony is necessary to introduce reports produced from data collected by even more technologically advanced units will necessarily have to be dealt with individually as those cases arise.

\* \* \* \*

¶112 I conclude that expert testimony was necessary to establish the reliability of the electronic monitoring device technology. I further conclude that the State failed to present a sufficient foundation to ensure the reliability and accuracy of this report as generated from data acquired by the particular electronic monitoring unit.

¶113 For the foregoing reasons, I dissent.

¶114 I am authorized to state that Justice ANN WALSH  
BRADLEY joins this opinion.

