

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**BOSTON SCIENTIFIC NEUROMODULATION  
CORPORATION,**  
*Appellant*

v.

**NEVRO CORP.,**  
*Appellee*

**ANDREI IANCU, UNDER SECRETARY OF  
COMMERCE FOR INTELLECTUAL PROPERTY  
AND DIRECTOR OF THE UNITED STATES  
PATENT AND TRADEMARK OFFICE,**  
*Intervenor*

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2019-1584

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. IPR2017-  
01899.

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Decided: May 18, 2020

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JON WRIGHT, Sterne Kessler Goldstein & Fox, PLLC, Washington, DC, for appellee. Also represented by CHING-LEE FUKUDA, SHARON LEE, Sidley Austin LLP, New York, NY; RYAN C. MORRIS, Washington, DC.

MAI-TRANG DUC DANG, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, for intervenor. Also represented by THOMAS W. KRAUSE, FARHEENA YASMEEN RASHEED.

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Before LOURIE, MOORE, and O'MALLEY, *Circuit Judges*.

MOORE, *Circuit Judge*.

Boston Scientific Neuromodulation Corporation appeals the final written decision of the Patent Trial and Appeal Board holding claims 1–20 of U.S. Patent No. 7,587,241 unpatentable as obvious. For the reasons discussed below, we *affirm*.

#### BACKGROUND

Boston Scientific owns the '241 patent, which discloses methods for controlling an implantable medical device by enabling or disabling certain features based on the voltage of its internal power source. '241 Patent at 13:11–54. In one embodiment, if the voltage drops below a particular threshold, the receiver continues to listen for telemetry from the external charging component, but stops listening for telemetry from other external components. *Id.* Telemetry from the external components may be transmitted via a bidirectional telemetry link “known as the FSK (Frequency Shift Key) telemetry link, or RF telemetry link.” *Id.* at 8:56–58. The external charging component may also include a forward telemetry link that “may use OOK-PWM (On/Off Keying – Pulse Width Modulation), and is typically an inductive telemetry link.” *Id.* at 8:58–61. Claim 1 recites:

1. A method for controlling an implantable medical device, comprising:

monitoring a voltage of a power source within the implantable medical device;

if the voltage is above a first threshold, enabling the following functions:

*listening for a first type of telemetry* from a first external component;

*listening for a second type of telemetry* from an external charging component, wherein the external charging component is used to wirelessly charge the power source; and

providing stimulation to device electrodes using the power source; and

if the voltage falls below the first threshold, discontinuing *listening for the first type of telemetry* from the first external component and discontinuing providing stimulation to device electrodes using the power source, while continuing *listening for the second type of telemetry*.

'241 patent at 20:28–46 (emphases added).

Nevro Corporation petitioned for *inter partes* review of claims 1–20 of the '241 patent. The Board instituted review of all challenged claims and held that: (1) claims 1, 3–8, 10–14, and 16–20 are unpatentable under 35 U.S.C. § 103 in view of U.S. Patent No. 6,453,198 (Torgerson '198), U.S. Patent No. 7,167,756 (Torgerson '756), and U.S. Patent No. 6,456,883 (Torgerson '883); and (2) claims 2, 9, and 15 are unpatentable under 35 U.S.C. § 103 in view of Torgerson '198, Torgerson '756, Torgerson '883, and U.S. Patent No. 6,647,298 (Abrahamson). Boston Scientific timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

## DISCUSSION

We review the Board’s legal determinations de novo and its factual findings for substantial evidence. *In re Van Os*, 844 F.3d 1359, 1360 (Fed. Cir. 2017). “Obviousness is a question of law based on underlying facts” such as the scope and content of the prior art. *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1358 (Fed. Cir. 2017).

## I. Claims 1, 3–8, 10–14, and 16–20

## 1. “listening for . . . telemetry”

The Board construed “telemetry” as the “transmission of data or information . . . in the form of a transmission of energy (power).” J.A. 18. It clarified that “telemetry does not include an unmodulated transmission of energy (power).” *Id.* Under this construction, the Board found that Torgerson ’883’s disclosure of a charging circuit receiving telemetry from a telemetry signal teaches the claimed step of listening for the second type of telemetry. J.A. 42–43.

Boston Scientific argues that the Board erred in construing “telemetry” and what it means to “listen[] for . . . telemetry,” and therefore that substantial evidence does not support the Board’s finding. While Boston Scientific agrees with the Board that “telemetry” means “data or information,” it contends that “listening for . . . telemetry” means that “a specialized receiver is ready to receive data or information transmitted to it from a specialized transmitter.” Appellant’s Br. 36. Boston Scientific did not propose a construction for, and the Board did not separately construe, “listening for . . . telemetry.”

Nevro contends that Boston Scientific waived any claim construction argument as to “listening for . . . telemetry” by failing to raise it before the Board. We agree. The Board construed “telemetry” in its Institution Decision, providing Boston Scientific ample opportunity to offer a

construction for the “listening for” term in its patent owner response. The Board’s Institution Decision also preliminarily determined that Torgerson ’883 discloses a “second telemetry from an external charging component . . .” under its construction. The Board’s finding in its Final Written Decision that Torgerson ’883’s charging circuit teaches “listening for a second type of telemetry” by “draw[ing] energy (power) from the modulated electromagnetic waves . . . transmitted to it” was therefore not an unexpected construction of “listening for telemetry” as Boston Scientific contends. Appellant’s Reply Br. 9 (citing J.A. 42–43, 48–49). Accordingly, we hold that Boston Scientific waived any claim construction argument as to “listening for . . . telemetry” and we do not address the parties’ arguments as to the construction of this term or whether substantial evidence supports the Board’s finding under Boston Scientific’s proposed construction.

Substantial evidence supports the Board’s finding that Torgerson ’883 discloses listening for a second type of telemetry under the Board’s construction. J.A. 41. Figure 2 of Torgerson ’883 “illustrates that a telemetry signal 10 interacts directly with a charging circuit 20 and a controller 90.” J.A. 1144 at 5:18–20. Torgerson ’883 further discloses that “[t]he telemetry signal 10 also interacts with the controller 90 to deliver and receive patient and device data.” *Id.* at 5:23–24. Thus, the signal in Torgerson ’883 meets the Board’s construction that the telemetry signal include data (e.g., modulated electromagnetic waves). J.A. 42–43. As the Board found, “[t]he fact that charging circuit 20 draws energy (power) from the modulated electromagnetic waves that make for the ‘telemetry’ signals does not change the fact that it uses the ‘telemetry’ signals transmitted to it.” J.A. 43.

## 2. “type of telemetry”

The Board found that Torgerson ’756 discloses a telemetry unit that listens for a first type of telemetry from an

external physician programmer and patient programmer. The Board further found that “Torgerson ’756 *covers* the use of a second type of telemetry for battery charging operations.” J.A. 39 (emphasis in original). Boston Scientific argues that the latter finding is not supported by substantial evidence. It contends that Torgerson ’756 discloses only one type of telemetry—inductive telemetry—and therefore Torgerson ’756 does not disclose a second type of telemetry.

Torgerson ’756 discloses a telemetry unit that listens for a first type of telemetry. Nevro argues that Torgerson ’756’s recharge module, which uses “other communication techniques” to communicate with an external charger, uses a second type of telemetry. The recharge module comprises a recharge regulation control unit that “communicates with [an] external component via telemetry unit 305.” J.A. 1129 at 7:41–45; J.A. 1130 at 9:46–47. Torgerson ’756 further discloses the implementation of “other communication techniques” where “recharge regulation control unit 525 communicates with the external component by modulating the load on the recharge coil[, which] can then be sensed in the circuitry driving the source coil of the external component.” J.A. 1130 at 9:48–53. There is nothing in the ’241 patent specification that precludes this communication technique from constituting a second “type of telemetry” merely because it is not a different type of energy transfer modality. Indeed, Boston Scientific’s expert, Dr. Ronald Berger testified that “it is the modulation of the electromagnetic wave that makes it a telemetry link.” J.A. 1416 ¶ 33. Dr. Berger also testified that “it is possible that the Torgerson ’756 may use two types of telemetry . . . for the internal device to communicate outward to the external device.” J.A. 1317 at 140:17–20. We therefore hold that substantial evidence supports the Board’s finding that the recharge regulation control unit employs a second type of telemetry to communicate the change in load to the external component. J.A. 38.

### 3. Combination of Torgerson References

Boston Scientific argues that substantial evidence does not support the Board's finding that a skilled artisan would have been motivated to modify Torgerson '198 and Torgerson '756 in view of Torgerson '883 to create a device that listens for two types of telemetry. We do not agree. As discussed above, Torgerson '756 discloses the implementation of "other communication techniques" where "recharge regulation control unit 525 communicates with the external component." J.A. 1130 at 9:48–53. It further discloses that when "the power source 315 is almost depleted of energy, the power source 315 may not have sufficient energy to provide the feedback control" and, therefore, "the external component may deliver an initial large burst of energy to 'wake up' the power source 315 and the recharge module 310." J.A. 1129 at 8:62–67. Dr. Berger stated that the wake up burst in Torgerson '756 "may be the same wake up burst" as the one in Torgerson '883. J.A. 1321 at 144:8–16. We therefore agree with the Board that "[g]iven that Torgerson '883 employs a telemetry technique to deliver a 'wake up' burst, which Torgerson '756 also discloses and is perhaps the same 'wake up' burst, . . . adequate motivation has been provided for a POSA to look to Torgerson '883 for another technique (involving telemetry) to deliver a 'wake up' burst with respect to the charging component of Torgerson '756." J.A. 50.

Accordingly, we hold that the Board did not err in holding that claims 1, 3–8, 10–14, and 16–20 would have been obvious over the combined teachings of Torgerson '198, Torgerson '756, and Torgerson '883.

### II. Claims 2, 9, and 15

Claims 2, 9, and 15 limit independent claims 1, 8, and 14, respectively by reciting: "wherein the first telemetry type comprises Frequency Shift Keying (FSK), and wherein the second telemetry type comprises On/Off Keying (OOK)." Substantial evidence supports the Board's finding

that it would have been obvious to use FSK for the first type of telemetry and OOK for the second type of telemetry. J.A. 55.

Torgerson '198 and Torgerson '756 disclose that telemetry modules, such as telemetry module 305, are “generally known in the art.” J.A. 1114 at 6:12–20, 6:28–36; J.A. 1128 at 6:50–59. Abrahamson discloses the use of FSK and OOK telemetry units. J.A. 1156 at 1:14–21 (“In RF coupled systems, . . . [t]he carrier signal is modulated with the data that are to be transmitted using an appropriate modulation scheme, such as . . . frequency shift keying (FSK) . . . .”); J.A. 1158 at 5:11–15 (“The exact duration of the time interval is dependent of the used signal modulation method . . . [such as] On Off Keying (OOK) . . . .”). Nevro’s expert, Dr. Mark Kröll, declared that “a POSA would have chosen the FSK modulation scheme for the communication between the telemetry module 305 and an external device for programming the INS 14 because FSK provides a higher bandwidth and thus a higher capacity to transmit useful information.” J.A. 1021 ¶ 181. He further testified that “a POSA would have chosen the OOK modulation scheme for communication between the recharge module 310 and an external device used for charging the INS 14 because that communication is typically simpler and can be fully achieved with the simpler OOK modulation scheme.” *Id.*

Accordingly, we conclude that the Board did not err in holding that claims 2, 9, and 15 would have been obvious in view of the combined teachings of Torgerson '198, Torgerson '756, Torgerson '883, and Abrahamson.

#### CONCLUSION

We have considered the parties’ remaining arguments and do not find them persuasive. Because the Board’s findings are supported by substantial evidence, we affirm its holding that claims 1–20 of the '241 patent are unpatentable as obvious.



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**AFFIRMED**