

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

AIRE TECHNOLOGY LIMITED,
Patent Owner.

IPR2022-01136
Patent 8,174,360 B2

Before MIRIAM L. QUINN, JEFFREY S. SMITH, and
BRIAN J. McNAMARA, *Administrative Patent Judges*.

McNAMARA, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. BACKGROUND

In response to a Petition (“Pet.”), on January 4, 2023, we instituted an *inter partes* review of claims 1–3, 8–11, and 15 (“the “challenged claims””) of U. S. Patent No. 8,174,360 B2 (Ex. 1001, “the ’360 Patent”). Paper 11 (“Dec. to Inst.”). Patent Owner filed a Patent Owner Response (Paper 13, “PO Resp.”), Petitioner filed a Petitioner Reply (Paper 14, “Pet. Reply”), Patent Owner filed a Sur-reply (Paper 20, “Sur-reply”), and a transcript of an oral hearing held on October 2, 2023 (Paper 32, “Hr’g Tr.”) has been entered into the record.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). We base our decision on the preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

Having reviewed the arguments of the parties and the supporting evidence, we determine that Petitioner has demonstrated by a preponderance of the evidence that challenged claim 15 is unpatentable. We also determine that Petitioner has not demonstrated by a preponderance of the evidence that challenged claims 1–3 and 8–11 are unpatentable.

II. THE ’360 PATENT

The ’360 patent concerns setting up data connections between intelligent devices, using near field communication (“NFC”) protocols when they approach each other. Ex. 1001, 1:7–20. Such intelligent devices may include a portable computer, mobile telephone, a radio frequency identification (“RFID”) transponder in a contactless chip card, a wrist watch, a garment, an electronic ticket, and a reading device. *Id.* at 3:32–43. Figure 1 of the ’360 patent, shown below, illustrates the structure of intelligent devices designed for automatic data connection set-up. *Id.* at 3:1–2.

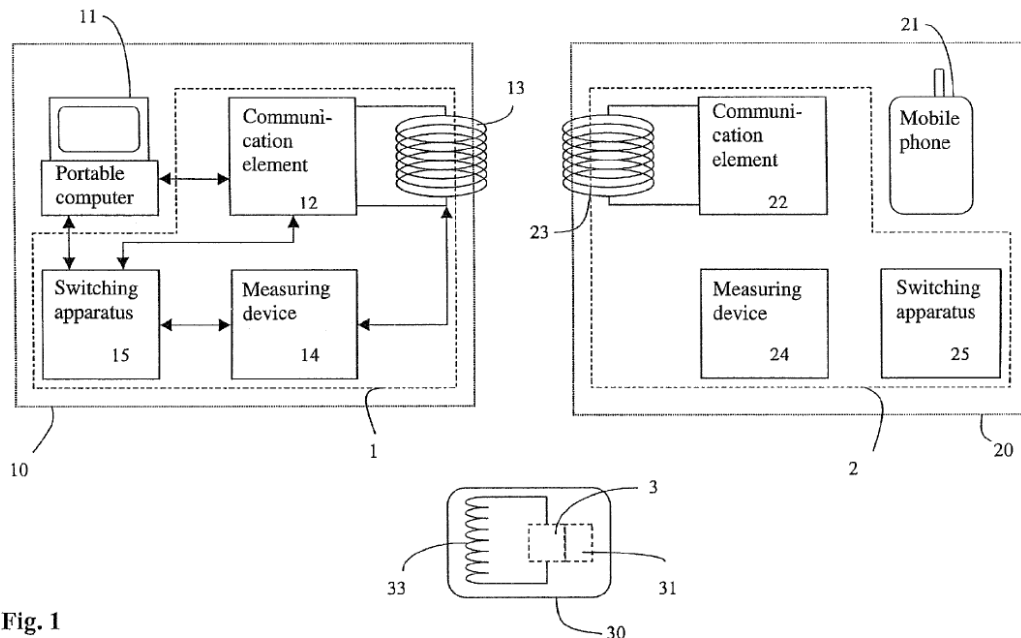


Fig. 1

Id. at Fig. 1. In Figure 1, device 10 has communication apparatus 1 that includes portable computer 11; device 20 has communication apparatus 2 that includes mobile phone 21; and contactless card device 30 has communication apparatus 3 that includes chip 31. Devices 10, 20, and 30 include coils 13, 23, 33, respectively. Communication elements 12 and 22 in devices 10 and 20 ascertain the presence of another device within the response range of their respective coils. *Id.* at 3:55–57. Upon detection of a nearby device, communication elements 12, 22 execute software to set up communication, e.g., by executing an NFC protocol. *Id.* at 3:56–4:2. Coils 13, 23, 33 carry out contactless data exchange in a conventional manner as part of a transmission oscillator with a defined resonant frequency. *Id.* at 4:3–14.

The '360 patent describes a conventional approach to detecting the presence of an intelligent device within the response range of the NFC protocol as using a “search mode” in which an initiator in one of the intelligent devices cyclically emits search queries that can be answered by a

second intelligent devices, i.e., the “target.” *Id.* at 1:17–30. Relatively high constant power consumption associated with such cyclical search queries limits the service life of battery-operated devices. *Id.* at 1:30–38. To provide automatic detection without cyclical searching, the ’360 patent incorporates a communications element with a coil that commences search mode only when a measuring device determines that a property in the transmission oscillator set up by the same coil, e.g., the resonant frequency, changes. *See, id.* at 2:10–30, 6:54–62.

Figure 2 of the ’360 patent, shown below, illustrates a simplified equivalent circuit diagram of device 10, 20, 30. *Id.* at 3:3–4, 4:26–27.

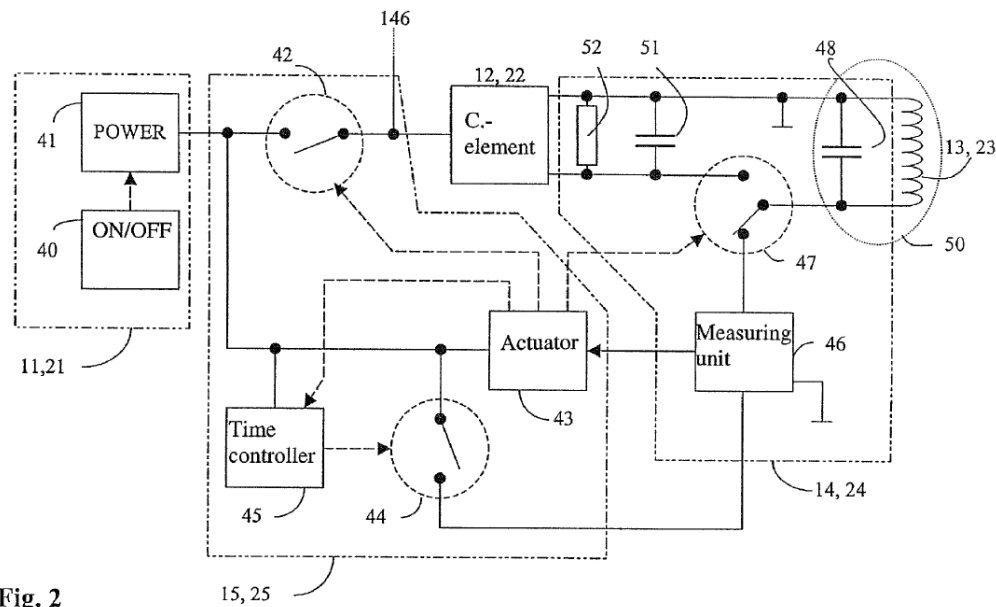


Fig. 2

Id. at Fig. 2. Data processing components 11, 21 of Figure 1 are shown in Figure 2 as including on-off switch 40 and energy supply 41. *Id.* at 4:27–38. Switching apparatus 15, 25 of Figure 1 are shown in Figure 2 as including switches 42, 44, driven by actuator 43, and optional time controller 45, which are both connected to power supply 41. *Id.* at 4:39–42. Switch 42 placed between main power supply 41 and communication element 12, 22 switches communications element 12, 22 (as well as other devices through

connection 146) on and off. *Id.* at 4:42–44. Measuring device 14, 24 includes measuring unit 46. Measuring unit 46 can be switched on and off by switch 44, which is activated by optional time controller 45 in switching apparatus 15, 25. *Id.* at 4:46–48, 4:57–59. Actuator 43 controls switch 47 to connect coil 13, 23 of transmission oscillator 50 (formed by coils 13, 23 in parallel with capacitor 48) to either communication element 12, 22 or measuring unit 46. *Id.* at 4:60–64, 5:9–13. When actuator 43 sets switch 47 to connect transmission oscillator 50 to communication element 12, 22, resistor 52 and capacitor 51 are engaged in parallel with transmission oscillator 50—this reduces the resonant frequency of transmission oscillator 50 to a frequency suitable for data transmission and increases the bandwidth available for data transmission, while reducing the quality factor. *Id.* at 5:13–21, 5:44–57.

The '360 patent describes three operational modes: the search mode, the data transmission mode, and the detection mode. *Id.* at 5:31–6:1, Fig. 3. In the first mode, i.e., the search mode, apparatus 10, 20, 30 is switched on using switch 42 to energy supply 41. *Id.* at 5:35–37. Actuator 43 sets switch 47, so that coil 13, 23 is connected to communication element 12, 22, thereby engaging capacitor 51 and resistor 52 to set the transmission oscillator resonant frequency and bandwidth for transmission. *Id.* at 5:35–57. Communications element 12, 22 then cyclically emits a search signal. *See id.* at 5:58–63. Upon observing the presence of another device within its response range, communication element 12, 22 puts the apparatus in the second mode, i.e., the data transmission mode, by setting up and executing a data exchange according to a known protocol. *Id.* at 5:64–6:18. When the data exchange is finished, the apparatus enters the third mode, i.e., the detection mode. *Id.* at 6:19–20. In the detection mode actuator 43 reduces

power consumption by disconnecting communication element 12, 22 from power supply 41 via switch 42, and sets switch 47 to connect passive transmission oscillator 50 to measuring unit 46. *Id.* at 6:19–25. As a result, resistor 52 and capacitor 51 are switched out of transmission oscillator 50, increasing the resonant frequency, improving the quality factor, and increasing the range for detection of other devices, while preventing interference with communications of other nearby devices already in the data transmission mode. *Id.* at 6:36–49. Actuator 43 also turns on measuring unit 46, which is equipped with software to monitor a property of transmission oscillator 50. *Id.* at 5:1–3, 6:54–55. For example, measuring unit 46 monitors the resonant frequency or the impedance of its apparatus's transmission oscillator 50, because the resonant frequency or impedance will be changed when the coil of another apparatus is brought within the detection range. *Id.* at 6:53–63. Measuring unit 46 reports changes in monitored properties to actuator 43, which responds by initiating a search mode. *Id.* at 6:64–67.

The '360 patent also discloses an embodiment in which the measuring unit stores and averages measurements of the monitored property, identifies the presence of another device by determining whether a measured value exceeds the average value, and a time controller executes a waiting loop during which the measuring unit is switched off for a predetermined time period after no other device is detected. *Id.* at 7:12–8:10, Fig. 4. The predetermined off period may be set to exceed the time in which the measuring unit performs a measurement. *Id.* at 7:53–55.

III. ILLUSTRATIVE CLAIM

Claim 1, reproduced below with paragraph designations used in the Petition, is illustrative of the subject matter of the '360 patent.

- [1.0] A communication apparatus for setting up a data connection between intelligent devices, comprising:
- [1.1] a transmission oscillator for carrying out a contactless data exchange, said oscillator including a coil;
- [1.2a] a communication element which is connected to the coil and to a data processing component of an intelligent device and
- [1.2b] which emits search signals via the coil to receive a response from another intelligent device,
- [1.3] a measuring device for monitoring a property of the transmission oscillator which outputs a control signal when ascertaining a change of the monitored property,
- [1.3b] the monitored property of the transmission oscillator includes the frequency or impedance of the transmission oscillator in resonance,
- [1.4] and a switching apparatus which is connected to the measuring device and the communication element and which switches on the communication element when it has received the control signal from the measuring device by connecting the communication element to an energy source.

IV. GROUNDS OF INSTITUTION

Trial was instituted on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 15	103 ¹	Tobergte ² , Cole ³
2, 3	103	Tobergte, Cole, Schuermann ⁴
8, 9	103	Tobergte, Cole, O'Toole ⁵
10, 11	103	Tobergte, Cole, O'Toole, Plonsky ⁶

¹ As the application for the '360 patent was filed prior to March 16, 2013, we apply the pre-AIA provisions of the statute.

² U.S. Patent No. 5,519,386 (Ex. 1005)

³ U.S. Patent No. 6,144,299 (Ex. 1006)

⁴ U.S. Patent No. 5,287,112 (Ex. 1007)

⁵ U.S. Patent No. 6,384,648 (Ex. 1008)

⁶ U.S. Patent No. 5,049,857 (Ex. 1009)

V. LEVEL OF ORDINARY SKILL

In the Decision to Institute we applied Petitioner’s proposed description of a person of ordinary skill (POSITA or “ordinarily skilled artisan”) as a person who “would have a bachelor’s degree in electrical engineering, computer engineering, computer science, or equivalent training, and approximately two years of experience working in the electrical engineering field. Lack of work experience can be remedied by additional education, and vice versa.” Dec. to Inst. 14 (citing Pet. 13). Patent Owner does not dispute this description of an ordinarily skilled artisan and we apply it for purposes of this Decision.

VI. CLAIM CONSTRUCTION

In the Decision to Institute we determined that no terms required construction. Dec. to Inst. 15–16. Neither party proposes any further claim construction.

As discussed further in connection with our analysis, a significant issue in this proceeding is whether Petitioner has demonstrated the references disclose a communication element that emits search signals, as that term is used in the claims and in the context of the ’360 patent. The claims state that the communication element of the intelligent device emits search signals “to receive a response from another intelligent device.” *See* claim element 1.2b. Further, referencing standards ISO/TEC 14443 and ISO/IEC 15693 as describing “a method in which a reading device tries to produce a data connection with another intelligent device (contactless chip card/RFID transponder),” the ’360 patent states “[f]or this purpose the reading device emits a search signal—REQUEST—periodically with high field strength . . . until an intelligent device comes into the response range of the reading device.” Ex. 1001, 1:45–52. This text from the ’360 patent, and

the patent’s reference to the ISO/TEC14443 standard provide context for the claim language by indicating that a “search signal” has at least the following characteristics: first, a search signal is a periodic, high field strength signal, according to ISO/TEC 14443; and second, consistent with the Specification’s description of ISO/TEC14443 and ISO/TEC 15693, we understand a search signal functions to try to produce a data connection between a reading device and another intelligent device. As neither party proposes a construction, we address the plain and ordinary meaning of these features in the ’360 patent in our analysis of the parties’ arguments.

VII. ANALYSIS OF PRIOR ART CHALLENGES

A. *Legal Standards*

“In an [inter partes review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring inter partes review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in

the fashion claimed by the patent at issue.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)); see *In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

An obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; accord *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Instead, Petitioner must articulate a reason why a person of ordinary skill in the art would have combined the prior art references. *In re NuVasive*, 842 F.3d 1376, 1382 (Fed. Cir. 2016).

A reason to combine or modify the prior art may be found explicitly or implicitly in market forces; design incentives; the “interrelated teachings of multiple patents”; “any need or problem known in the field of endeavor at the time of invention and addressed by the patent”; and the background knowledge, creativity, and common sense of the person of ordinary skill. *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1328–29 (Fed. Cir. 2009) (quoting *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–21 (2007)).

In determining whether a claim is obvious in light of the prior art, when in evidence, we consider any relevant objective evidence of non-obviousness. See *Graham*, 383 U.S. at 17. Notwithstanding what the

teachings of the prior art would have suggested to one of ordinary skill in the art at the time of the invention, the totality of the evidence submitted, including objective evidence of non-obviousness, may lead to a conclusion that the challenged claims would not have been obvious to one of ordinary skill. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). Patent Owner does not present evidence of such objective considerations.

B. Claims 1 and 15 As Obvious Over Tobergte and Cole

1. Tobergte – Exhibit 1005

Tobergte discloses a data exchange system having a fixed station and a portable data carrier. Ex. 1005, code (57). Although both the fixed station and the data carrier operate in an active and passive mode, the data carrier operates in the active mode only when energy transfer is required. *Id.*

A block diagram of Tobergte's data exchange system is shown in Figure 1, reproduced below. *Id.* at 3:8–10.

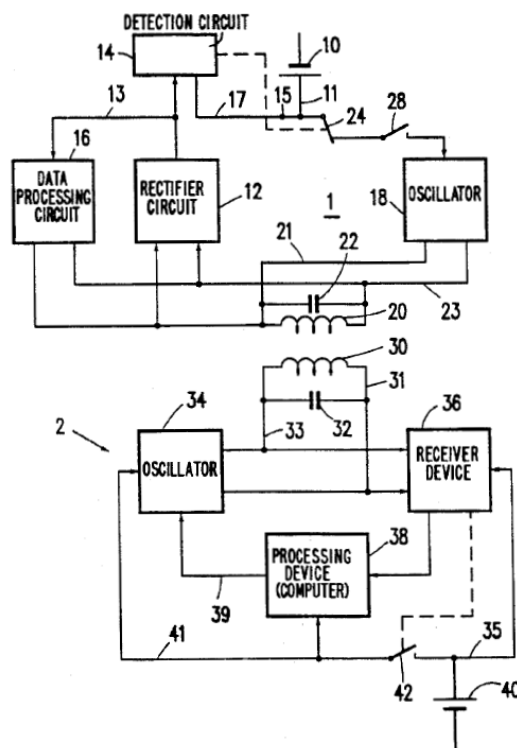


Figure 1 of Tobergte

Id. at Fig. 1. In Figure 1, coil 20 and capacitor 22 of data carrier 1 constitute a resonant circuit that connects via leads 21, 23 to rectifier circuit 12 and data processing circuit 16. *Id.* at 3:16–20. In data carrier 1's passive mode, when coil 20 receives a high frequency magnetic field, e.g., as transmitted from a resonant circuit connected to oscillator 34 in fixed station 2, rectifier circuit 12 in data carrier 1 generates a direct voltage on lead 13, causing data processing circuit 16 to retrieve and transfer binary data stored in a memory for transmission by the data carrier's resonant circuit. *Id.* at 3:21–31, 3:46–52. This data transfer configuration requires that an interrogation device, i.e., fixed station 2, continually operate in an active mode by transmitting an electromagnetic field. *See id.* at 1:15–41.

Figure 1 also shows energy source 10, switch 28, and oscillator 18 in data carrier 1. These components allow Tobergte's system to maintain fixed station 2 in a passive mode that does not continually transmit a high-frequency magnetic field, but instead, transmits the high frequency magnetic field only when the user wants to transfer information from data carrier 1. *Id.* at 3:52–58. A user wishing to commence data exchange places the data carrier in an active mode by closing switch 28, so that power is delivered to oscillator 18 from energy source 10—this triggers the data carrier's resonant circuit and rectifier to deliver a voltage to circuit 16 that, in turn, supplies data to be transmitted by the resonant circuit, in the same manner as discussed above. *Id.* at 3:55–4:3. When coil 30 in fixed station 2 detects the transmission from data carrier 1, fixed station 2 is placed in the active mode—the resonant circuit in fixed station 2 (coil 30 and capacitor 32) generates voltage on leads 31, 33, activating switch 42 so that lead 41 is connected to power source 40 and computer 38 and oscillator 34 are switched on. *Id.* at 4:12–17. When high frequency power from fixed station

2 exceeds that produced by oscillator 18 in data carrier 1, detection circuit 14 in data carrier 1 opens switch 24, disconnecting oscillator 18 from power source 10, causing data carrier 1 to operate in the passive mode and to transmit data to the fixed station as discussed above based on high frequency energy transmitted from fixed station 2. *Id.* at 4:17–26.

2. *Cole – Exhibit 1006*

Cole discloses a system for detecting the presence of labels as they create disturbances when passing through an interrogator-generated electromagnetic field and for automatically inputting or extracting data from such labels. *See* Ex. 1006, 1:4–48. Figure 1A of Cole, shown below, illustrates such a system. *Id.* at 3:39–41.

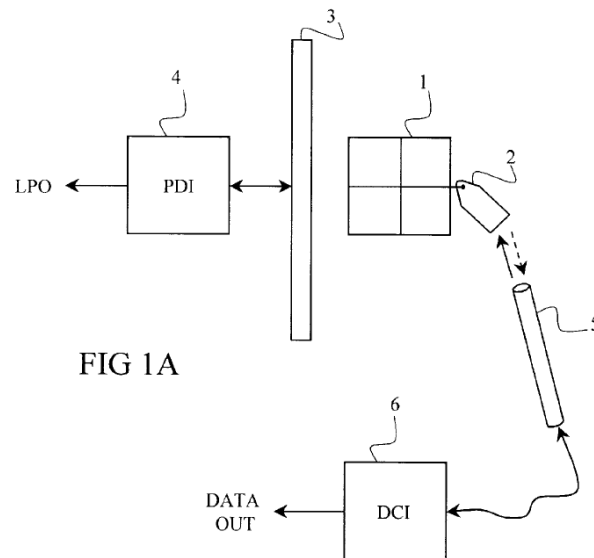


Figure 1A of Cole

In Figure 1A, label 2 is attached to item 1. Label 2 signals its presence by disturbing a field created by presence sensing antenna 3 that receives and transmits signals to presence detector 4. *Id.* at 4:10–11, 4:32–35, *see also* Fig. 2. Label 2 has no energy source—instead, from data interrogator antenna (DIA) 5, label 2 receives energy to transmit and receive data

communications between the label and data communication interrogator (DCI) 6. *Id.* at 1:49–56; 4:35–45. The “[p]resence of label 2 is indicated by means of a high quality factor (“Q-factor”) resonant circuit which, when it is exposed to the field of presence sensing antenna 3, produces a frequency sensitive modification of the impedance of antenna 3.” *Id.* at 4:12–16. This change in impedance signals presence detector 4 to explore the impedance of sensing antenna 3 over an expected range of frequencies resonant with label 2. *Id.* at 4:16–19. When the impedance change in sensing antenna 3 exceeds a threshold, presence detector 4 provides a label presence output (LPO) signal. *Id.* at 4:20–22; *see also id.* at 9:35–10:50, Figs. 11–12.

3. *Reasons to Combine the Teachings of Tobergte and Cole*

Petitioner contends that a person of ordinary skill would have had reason to combine the teachings of Tobergte and Cole because both references concern well-known techniques of contactless communication using resonant circuits, and the combination would make Tobergte easier to operate by replacing user initiated detection with fully automatic switching. Pet. 25–26, 30–31 (citing Ex. 1003, Phinney Decl. ¶¶ 46–48, 57–58). According to Petitioner, a person of ordinary skill would have understood that automatic operation of Tobergte’s system would have been particularly advantageous in applications that require monitoring access to a secured area. *Id.* at 29 (citing Ex. 1005, 1:15–33; Ex. 1003, Phinney Decl. ¶ 55). Petitioner further notes that an ordinarily skilled artisan reasonably would have expected the combination to be successful because using Cole to automate detection of electronic devices like Tobergte’s data carrier employs Cole to carry out its established function in Tobergte’s known system. *Id.* at 29–30 (citing Ex. 1003, Phinney Decl. ¶ 56; Ex. 1006, 1:43–48 (stating that Cole can be applied in object identification applications generally)).

According to Patent Owner, Petitioner's reason to combine is based on a flawed premise that both Tobergte and Cole detect the presence of a nearby data carrier. PO Resp. 20–21. Patent Owner notes that in Tobergte the signal that generates the voltage on leads 31 and 33 of the fixed station's resonant circuit results from a user flipping a switch in the data carrier that activates the data carrier to transmit a signal to the fixed station. *Id.* Thus, according to Patent Owner, Tobergte detects transmissions from a carrier, not the presence of a carrier. *Id.* at 21. We are persuaded by Petitioner's contention that this is a distinction without a difference because Tobergte's fixed station detects the presence of the data carrier by detecting a signal transmitted from the data carrier. Pet. Reply 16 (“when the user does activate the data carrier switch to transmit a signal, the fixed station will detect the data carrier (via an induced voltage) and awake from its rest state”) (citing Ex. 1005, 3:55–62, 4:4–14) (emphasis omitted).

Patent Owner further argues that Petitioner misapplies Cole and that Cole teaches away from Tobergte. PO Resp. 23. Patent Owner states that Cole detects presence of an unpowered data carrier by sweeping a comparatively large amplitude magnetic field over a narrow frequency band and detecting field disturbances. *Id.* at 22 (citing Ex. 1006, 6:1–8, 6:32–38). Patent Owner argues that Petitioner's proposed combination with Cole requires modifying Tobergte to transmit a high frequency magnetic field continuously, thereby increasing power consumption—a result that Tobergte seeks to avoid and one that works to “undo the essential changes that Tobergte advocated over the prior art.” *Id.* at 23; Sur-reply 22 (citing Ex. 1005, 1:37–46).

Petitioner contends that its combination with Cole merely automates the mechanism by which the fixed station is awakened from its rest state,

and does not undo the lower power rest state goals achieved when Tobergte's computer 38 and oscillator 34 are disconnected from energy source 40. Pet. Reply 14–15. Petitioner acknowledges that Tobergte improves upon prior art systems, in which the fixed station emits the high frequency magnetic field continuously, by emitting the high frequency magnetic field “only upon awakening from a low power rest state.” Petitioner points to the testimony of Dr. Phinney concluding that Cole's presence detector is at a power level too low to fully power the data carrier, but sufficient to allow the data carrier to change the impedance of the field. *Id.* at 21 (citing Ex. 1003, Phinney Decl. ¶ 53, commenting on Ex. 1006, 6:1–8 cited by Patent Owner); *id.* at 2 (citing Ex. 1005, 1:21–35).

Even a small amount of power that may be consumed by incorporating Cole into Tobergte likely exceeds the power consumed by Tobergte's configuration in which the computer and oscillator are disconnected from power. Nevertheless, neither party provides a specific power consumption analysis. On this issue, we weigh Dr. Phinney's testimony over Patent Owner's attorney arguments and determine that Patent Owner has not sufficiently supported its contention that Cole teaches away from Tobergte on this basis. We determine that a person of ordinary skill would have had reason to combine the teachings of Tobergte with those of Cole to provide a system that detects the presence of data carriers automatically without the need for the user to activate the data carrier with a switch.

4. *Claim 1*

a) *Claim Limitation 1.0*

Petitioner identifies the preamble of claim 1, which recites “[a] communication apparatus for setting up a data connection between

intelligent devices,” as claim limitation 1.0. Pet. 31. Petitioner cites Tobergte as disclosing such a system in the form of a fixed station and portable data carrier that establish a wireless connection for transmitting high frequency energy and data. *Id.* (citing Ex. 1005, 1:7–10). Noting that in Tobergte the fixed station includes a processing device and the data carrier includes a data processing circuit, Petitioner asserts that Tobergte discloses the claimed communication apparatus setting up a connection between intelligent devices. *Id.* at 31–32 (citing Ex. 1005, 3:33–37, 3:19–26, Fig. 1; Ex. 1003, Phinney Decl. ¶¶ 59–60).

Patent Owner does not expressly dispute that Tobergte discloses the features recited in the preamble of claim 1. *See generally* PO Resp. We note, however, that the preamble of claim 1 is limited to a “communication apparatus” that performs the function of “setting up a data connection between intelligent devices.” Tobergte “relates to a data exchange system” in which a fixed station and a portable data carrier are coupled to one another by means of a wireless connection for the transmission of high-frequency energy and data. Ex. 1005, 1:6–10. In Tobergte, communication between the fixed station and the data carrier is set up, at least initially, when the user activates a switch causing the data carrier to briefly transmit energy and data to a fixed station that responds by transmitting high strength energy that powers the data carrier to continue the communication. *See, e.g., id.* at 1:60–2:6, 4:24–26. We address this issue more completely in our discussion of a communication element emitting search signals via a coil, as recited in claim limitation 1.2b.

b) Claim Limitation 1.1

Petitioner identifies as claim limitation 1.1 the recitation “a transmission oscillator for carrying out a contactless data exchange, said

oscillator including a coil.” Pet. 33. Petitioner notes Tobergte’s teaching that an oscillator has an active element and one or more frequency determining elements. *Id.* (citing Ex. 1005, 2:8–9). Petitioner identifies the frequency determining element in Tobergte as coil 30 and capacitor 32 (connected to oscillator 34) in fixed station 2, noting that these components form the claimed transmission oscillator shown in the ’360 patent formed by coil 13, 23 in parallel with capacitor 48. *Id.* at 33–34 (citing Ex. 1005, Fig. 1; Ex. 1003, Phinney Decl. ¶¶ 62–63 (comparing cropped and annotated versions of Ex. 1005, Fig. 1 and Ex. 1001, Fig. 2)), *see also* Ex. 1003, Phinney Decl. ¶ 61. Petitioner further cites to Tobergte’s resonant circuit with coil 30 as carrying out contactless data communication because coil 30 in fixed station 2 receives the signal transmitted by data carrier 1, generates a voltage on leads 31, 33, and supplies data to be transmitted to the resonant circuit for transmission. *Id.* at 34–35 (citing Ex. 1005, 3:34–41; Ex. 1003, Phinney Decl. ¶ 63).

Patent Owner does not expressly dispute that Tobergte discloses the features of limitation 1.1. We determine that Petitioner has demonstrated Tobergte teaches the features of limitation 1.1.

c) Claim Limitation 1.2a

Petitioner identifies as claim limitation 1.2a the recitation “a communication element which is connected to the coil and to a data processing component of an intelligent device.” Pet. 35. Petitioner maps Tobergte’s oscillator 34 in fixed station 2 to the claimed communication element. *Id.* at 35–36. Petitioner notes that Tobergte’s oscillator 34 is connected to coil 30 and processing device 38, as claimed. *Id.* (citing Ex. 1005, 3:32–41, Fig. 1; Ex. 1003, Phinney Decl. ¶ 65). Patent Owner does not expressly dispute that Tobergte discloses limitation 1.2a.

d) *Claim Limitation 1.2b*

Petitioner identifies as claim limitation 1.2b the recitation “which emits search signals via the coil to receive a response from another intelligent device.” Pet. 36. Petitioner cites Tobergte as disclosing a system in which fixed station 2 detects a voltage indicative of the presence of data carrier 1 and responds by causing the coil to output a search signal in the form of a high frequency magnetic field that prompts data carrier 1 to respond with its identification. *Id.* at 37–38 (citing Ex. 1005, 1:15–33, 3:16–30, 1:23–33, 3:46–52; Ex. 1003, Phinney Decl. ¶¶ 69–70). Petitioner further states that Tobergte’s oscillator 34 generates and modulates the search signal. *Id.* (citing Ex. 1005, 3:34–41).

Patent Owner contends that “Tobergte cannot satisfy this limitation because it does not teach an interrogation device or fixed station that emits search signals or a data carrier that communicates in response to a search signal.” PO Resp. 14. According to Patent Owner, Petitioner fails to explain how the high frequency magnetic field generated by Tobergte’s fixed station qualifies as a search signal that receives a response from another intelligent device, and “none of Petitioner’s citations to Tobergte say that the *data carrier* is responsive to the ‘high frequency magnetic field’ generated by the fixed station.” *Id.*

Patent Owner recognizes the distinctions between the system that Tobergte describes as prior art and Tobergte’s improvement of that prior art system. Patent Owner first contends that, in the system Tobergte describes as prior art, transmissions of very short, encoded information blocks that identify the data carrier are made *periodically* from the data carrier and are not in response to a search signal, e.g., a high frequency magnetic field. *Id.* at 15 (citing Ex. 1005, 1:18–20 (“the data carrier periodically transmits very

short, encoded information blocks which identify the data carrier and which are intercepted by an aerial and processed in a receiver”)). Patent Owner further argues that Tobergte’s improvement over the prior art does not employ “a communication element” that “emits search signals via the coil to receive a response from another intelligent device,” as claimed; instead because Tobergte’s improvement requires a user to activate the data carrier’s switch to initiate data transmission from the carrier to the fixed station, that “data transmission is made under the independent control of the data carrier.” *Id.* at 15–16 (citing Ex. 1005, 3:55–4:3).

Patent Owner characterizes Tobergte as a system in which a user switches the data carrier to an “active mode,” causing the data carrier to generate high frequency energy that the fixed station’s continually operating receiver circuit detects; in response, the fixed station transmits high frequency energy to supply energy to the data carrier, allowing the data carrier to terminate its active mode. *Id.* at 16 (citing Ex. 1005, 1:58–61, 1:63–65, 3:55–62, 4:4–17); *see also* Ex. 1005, 1:60–2:6 (“the data carrier can be operated in the active mode, preferably by a manually operated switch . . . [c]onsequently the energy source in the data carrier is loaded only briefly, and only if necessary . . . the remainder of the circuit can have a construction exactly like that of a data carrier operating in the passive mode only”); *id.* at 4:24–26 (“[t]he data carrier 1 then operates only in the passive mode on the basis of the high-frequency energy transmitted by the fixed stations 2.”). Patent Owner acknowledges that Tobergte discloses passively powering the data carrier using the high frequency energy transmitted from the fixed station, but argues that Tobergte does not describe data transmissions from the data carrier as being responsive to a high frequency magnetic field from the fixed station. PO Resp. 17. Thus, according to

Patent Owner, Tobergte does not satisfy the requirement in limitation 1.2b that the communication element emits search signals. *Id.*

Petitioner states that Patent Owner's assertion Tobergte is not responsive to the high frequency magnetic field is attorney argument, not supported by expert testimony, and fundamentally misunderstands Tobergte. Pet. Reply 1–2. According to Petitioner, Tobergte explicitly teaches that, when in the presence of a high frequency electromagnetic field, the data carrier takes up the energy of the field and “returns its identification” (to interrogation device). *Id.* at 2 (citing Ex. 1005, 1:21–35); *see also* Ex. 1005, 2:4–26. Petitioner argues that the return of the data carrier identification occurs regardless of whether Tobergte's operation is according to the prior art or the improved mode in which the fixed station emits the high frequency magnetic field “only upon awakening from a low power rest state.” Pet. Reply 2. According to Petitioner, the purpose of the high frequency in Tobergte and in the technology Tobergte describes as well-known prior art “is the same—to determine which data carriers are nearby by eliciting an identification response.” *Id.* at 2–8; *see also* Ex. 1005, 1:14–21 (describing as “known” a system in which “the data carrier periodically maintains very short, encoded information blocks which identify the carrier.”).

The parties dispute centers on whether Tobergte discloses the claimed “search signals.” Petitioner cites Tobergte as explaining that a user activates the data carrier to transmit a signal that causes the fixed station to wake up from its rest state, causing the fixed station to generate a high frequency magnetic field for the same reason the prior art interrogation device generates a continuous high frequency magnetic field, i.e., to determine which carrier is nearby. Pet. Reply 7–8 (citing Pet. 37–38; Ex. 1003, Phinney Decl. ¶¶ 69–70). Petitioner characterizes this high frequency

magnetic field as the claimed “search signal that prompts the data carrier to respond with its identification.” *Id.* at 8 (citing Pet. 37–38; Ex. 1003, Phinney Decl. ¶¶ 69–70).

Patent Owner maintains that in Tobergte’s improvement over the prior art, there is no search signal because the data carrier uses its on-board power source to begin transmitting its identification information as soon as the user activates the data carrier and the transmission of high frequency energy by the fixed station serves to recharge the data carrier’s energy source. Hr’g Tr. 17:19–18:2, 26:13–27:10, 29:21–30:8, *see also* Ex. 1005, 4:31–39 (explaining that “[a]s a result of the charging, the loss of energy occurring in the energy source 10 during the initial active mode of operation of the data carrier 1 can be readily compensated for again.”).

Petitioner responds by arguing Patent Owner does not recognize that, when Tobergte’s fixed station wakes up, the fixed station knows only that a data carrier *may* be present, but, because it does not know whether a data carrier is *actually* present or which data carrier is present, the fixed station must ask the data carrier to identify itself. Pet. Reply 8 (citing Ex. 1018, Phinney Supp. Decl. ¶¶ 16–17). Petitioner maintains that the detected voltage from the data carrier that wakes up the fixed station does not identify the carrier. *Id.* (citing Ex. 1005, 4:11–14; Ex. 1018, Phinney Supp. Decl. ¶¶ 16–17). According to Petitioner, the fixed station’s receiver detects the data carrier’s signal and generates a voltage on leads 31, 33, thereby activating switch 42 so that computer 38 and oscillator 34 are switched on, causing the fixed station to transmit the high frequency electromagnetic signal, i.e., the search signal, that interrogates the data carrier(s). *Id.* at 8–9 (citing Ex. 1005, 3:42–45, 4:13–16, 1:24–33; Ex. 1018, Phinney Supp. Decl. ¶¶ 17–18).

Patent Owner contends that “Tobergte **does not** describe that the data carrier transmits its identification in direct response to the high frequency magnetic field . . . the ***only*** mode of operation for data carrier transmission described in Tobergte is ‘periodically transmit[ting] very short encoded information blocks which identify the carrier.’” Sur-reply 8 (citing Ex. 1005, 1:18–21) (second alteration in original). Patent Owner is correct that, according to Tobergte, known battery powered data carriers transmitted short encoded blocks of identification information. Ex. 1005, 1:15–21. These signals were intercepted by aerials that were separate from the interrogation devices that responded by transmitting electromagnetic fields. *Id.* at 1:15–43. Nevertheless, in the presence of an interrogation device (i.e., at entrances to a security area), Tobergte discloses that the data carriers were powered to transmit their identification data when the data carrier up takes up the interrogator’s high frequency energy and turns off the battery. *Id.* at 1:15–33.

Tobergte describes that it was known for a data carrier to take up the energy from a continuously transmitting interrogation device and for the data carrier to return its identification data to the interrogation device. *Id.* at 1:15–42. Tobergte discloses an improvement in which a data carrier is switched manually to load an energy source, thereby triggering the fixed station to transmit high frequency energy that provides energy back to the data carrier permitting the data carrier to identify itself. *See id.* at 3:55–16:3. Tobergte describes this improvement as follows,

When a user of the data carrier 1 wishes to commence a data exchange with a fixed station 2 which is in the rest state and does not transmit a high frequency magnetic field, a switch 28 in the data carrier is closed so that the oscillator 18 [in the data carrier]

is [fed] by energy source 10 and . . . triggers the resonant circuit 20, 22.

Id. at 3:55–62. The voltage arising in the resonant circuit is processed by the rectifier circuit in the same way as voltage in the resonant circuit produced by a high frequency magnetic field from a fixed station. *Id.* at 3:62–66. In the data carrier, a direct voltage is formed on lead 13, which “triggers circuit 16 to supply data which are modulated in a customary manner on the oscillation produced therein, for example by damping the resonant circuits 10, 22.” *Id.* at 3:66–4:3.

Search signals in the context of the ’360 patent are high field strength signals. *See* Ex. 1001, 1:48–52. As in Tobergte, in the ’360 patent, “the output of search signals for detecting the presence of the corresponding intelligent devices must only be effected when a further intelligent device is possibly located within the response range of the coil.” *Id.* at 2:16–20. Just as in Tobergte, in the ’360 patent “[i]t is particularly advantageous that an intelligent device equipped with an inventive communication apparatus can be handled just the same as if the device permanently emitted search queries.” *Id.* at 2:24–27.

Our understanding of Tobergte’s disclosure is informed by what Tobergte claims. We turn first to independent claim 1 of Tobergte. Ex. 1005, 4:62–6:9. Claim 1 recites that in Tobergte’s active mode a supply device on the data carrier generates its operating voltage from an energy source on the data carrier (*id.* at 5:12–13, 5:26–30). In this active mode, the data carrier is operative to transmit high-frequency energy *and data*. *Id.* at 5:4–5. In response to receipt of this high frequency energy *and data*, the fixed station begins transmitting high frequency energy and data to the data carrier. *Id.* at 5:30–38. This high frequency energy from the fixed station is

sufficient for the data carrier to switch to passive mode. *Id.* at 6:1–5. When the data carrier is switched into passive mode, the data carrier’s supply device generates the operating voltage for the electric circuit from the received high frequency energy. *Id.* at 6:5–9. Claim 1 of Tobergte does not suggest that the fixed station performs any search function. Instead, Tobergte’s fixed station receives both energy *and data* from the data carrier for the brief period that the data carrier is in the active mode. There is no indication that Tobergte’s fixed station is emitting signals to search for the data carrier. Instead, Tobergte claims a system in which the data carrier that “wakes up” the fixed station is then powered by the energy of the high frequency field transmitted by the fixed station. None of Tobergte’s other claims explicitly recites a search limitation. In other words, Tobergte describes and claims changing a conventional data carrier that transmits data only when interrogated (*id.* at 3:48–52) into a data carrier that begins transmitting energy *and data* first, when activated by a user (*id.* at 3:55–58, 3:65–67).

The distinction between Tobergte and the ’360 patent is subtle. In both systems, the data carrier is powered by a high field strength signal emitted by another device. In the ’360 patent, the station’s measuring device detects a change in a monitored property, e.g., resonance or impedance, and responds by commencing a “search signal mode” in which the communication element is connected to an energy source and emits search signals via the coil to receive a response. Ex. 1001, 2:10–21; 12:3–18 (claim 1). In the search mode, the initiator sends a search query, i.e., a high field strength signal, that is answered by a second intelligent device, referred to as the target. *Id.* at 1:21–23, 1:48–52. “When another device . . . has

been detected the communication element automatically sets up a data connection thereto and produces the data transmission mode for subsequent data exchange between the particular data-processing components” according to known NFC protocols and standards. *Id.* at 3:60–4:2. In the ’360 patent “[t]he function of the communication element . . . is to ascertain the presence of another device within the response range of the coil.” *Id.* at 3:55–57.

Tobergte does not describe the communications element as ascertaining the presence of another device (the data carrier) because there is no need to ascertain the presence of another device. As Tobergte’s user switched that other device (the data carrier) into the active mode to cause an initial transmission of energy and data that wakes up the fixed station, the presence of a data carrier is already established, even if the data carrier’s identification information has not been completely transmitted. As a practical matter by powering the data carrier, Tobergte facilitates continued communication between the fixed station and a particular data carrier, i.e., a communication that began when the user caused that data carrier to enter the active mode and transmit energy. Tobergte is unlike the system of the ’360 patent, which detects a property change, e.g., change in impedance or resonance frequency, and must first ascertain if the changing physical parameter is the result of an intelligent device coming into range. This difference is reflected in the claim 1’s recitation of a communication element that “emits search signals via the coil to receive a response from another intelligent device.” *See* Ex. 1001, 3:55–57 (“[T]he function of the communication device 12, 22, is to ascertain the presence of another device 10, 20, 30 within the response range of the coil 13, 23, 33.”). Although the distinction is a narrow one, in view of the different functions Tobergte and

the '360 patent ascribe to the high energy magnetic field transmitted to the data carrier, we are not persuaded that Tobergte discloses the claimed communications element that emits search signals via the coil to receive a response from another intelligent device, as recited in claim limitation 1.2b.

In view of these differences, we determine that Petitioner has not demonstrated by a preponderance of the evidence that Tobergte would have disclosed or suggested claim limitation 1.2b to a person of ordinary skill in the art.

e) Conclusion As to Claim 1

Having considered the arguments and evidence of record, we determine that Petitioner has not demonstrated by a preponderance of the evidence that challenged claim 1 would have been unpatentable as obvious over the combined teachings of Tobergte and Cole.

5. Claim 15

The preamble of claim 15 (identified by Petitioner as limitation 15.0) is limiting and recites a “method for” (1) “switching on a communication element configured to use a coil, which is part of a transmission oscillator,” and (2) “for automatically setting up a data connection with an intelligent device likewise having a communication element and a coil.” Method claim 15 differs from apparatus claim 1, as claim 15 does not recite a distinguishing feature of claim 1, i.e., “a communication element” that “emits search signals via the coil to receive a response from another intelligent device.”

Citing its discussion of claim limitations 1.0, 1.1, 1.2a, and 1.2b, Petitioner cites Tobergte as disclosing a fixed station (an intelligent device) with an oscillator (the claimed communication element) configured to use a coil of a resonant circuit (the claimed transmission oscillator) to establish a

wireless connection (transmitting high frequency energy and data) with a data carrier (another intelligent device) having a communications element in the form of an oscillator and coil 20. Pet. 47–48.

The preamble of claim 15 explicitly limits claim 15 to a method of “switching on a communication element” and “automatically setting up a data connection.” As our discussion of limitation 1.2b notes, Tobergte sets up a data connection when the user activates a switch on the data carrier causing the data carrier to send energy and data to the fixed station. Thus, Tobergte teaches that the data carrier “switches on” the communication element in the fixed station by transmitting a signal to the fixed station.

As discussed further below, Petitioner cites Cole as automatically switching on the communication element of Tobergte’s fixed station when the data carrier comes within range to disturb the magnetic field. Pet. 38–46, 49–50. As discussed above, we agree that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Tobergte and Cole in order to automate communication between the data carrier and the fixed station and eliminate the need for the user to initiate communication by activating a switch. *See* Section VII.B.3 herein.

Claim 15 recites the steps of the method for “switching on” the communication element include: monitoring a property of the transmission oscillator, i.e., the frequency or impedance of the transmission oscillator in resonance (limitation 15.1), producing a control signal in response to a change in the monitored property (limitation 15.2) and in response to the control signal “switching on” the communication element by connecting it to an energy source (limitation 15.3).

Citing its discussion of claim limitation 1.4, Petitioner notes that Tobergte discloses receiver device 36 in the fixed station detects a change in

voltage in the resonant circuit due to the presence of data carrier 1 (limitation 15.1) and outputs a signal (the claimed control signal recited in claim limitation 15.2) to activate a switch that connects oscillator 34 (the claimed communication element) to generate the high frequency magnetic field (limitation 15.3). Pet. 48, 50.

Petitioner identifies as claim limitation 1.4 the recitation “a switching apparatus which is connected to the measuring device and the communication element and which switches on the communication element when it has received the control signal from the measuring device by connecting the communication element to an energy source.” *Id.* at 44. Petitioner cites Tobergte’s disclosure of switch 42, connected to receiver 36 (the claimed measuring device), and oscillator 34 (the claimed communication element), and notes that in the “on” position switch 42 connects energy source 40 to computer 38 and oscillator 34. *Id.* at 44–45 (citing Ex. 1005, 4:11–14, Fig. 1; Ex. 1003, Phinney Decl. ¶ 80). According to Petitioner, as modified by Cole, Tobergte’s receiver device 36 generates a signal to activate switch 42 when the receiver detects a change in impedance of the resonance circuit induced by the presence of a label. *Id.* at 45–46.

Petitioner cites its discussion of claim limitations 1.3a and 1.3b as disclosing claim limitations 15.1 and 15.2 that are drawn to monitoring a change in the frequency or impedance of the transmission oscillator. *Id.* at 49–50. Petitioner identifies as claim limitation 1.3a the recitation “a measuring device for monitoring a property of the transmission oscillator which outputs a control signal when ascertaining a change of the monitored property.” *Id.* at 38. Petitioner identifies as claim limitation 1.3b the recitation “the monitored property of the transmission oscillator includes the

frequency or impedance of the transmission oscillator in resonance.” *Id.* at 42.

Petitioner notes that Tobergte’s coil 30 of the resonant circuit in fixed station 2 generates on leads 31, 32 a voltage that is evaluated by receiver circuit 36. *Id.* at 38–39 (citing Ex. 1005, 4:4–7). Upon detecting a change in the monitored voltage, receiver circuit 36 activates switch 42 to connect oscillator 34 to energy source 40 and computer 38. *Id.* at 39 (citing Ex. 1005, 4:11–14; Ex. 1003, Phinney Decl. ¶ 72).

Petitioner cites Cole as disclosing automatic merchandise label detection using a high quality factor resonant circuit that produces a frequency sensitive modification of antenna impedance. *Id.* at 40 (citing Ex. 1006, 4:15–16 (disclosing the “change of impedance of antenna 3 is signaled by presence detector 4”)). Noting the “the inductor (coil) forms the presence sensing antenna,” Petitioner quotes Cole’s disclosure that “the presence of label 2 provides a disturbance to the impedance of inductor 35 seen by presence detector 4,” resulting in presence detector 4 outputting a signal (LPO). *Id.* at 40–44 (citing Ex. 1006, 9:45–49, 6:12–18, 10:44–50; Figs. 11–12). Further noting that Tobergte’s receiver device monitors a voltage from the resonant circuit and outputs a control signal when ascertaining a change in the voltage, Petitioner relies on the combined teachings of Tobergte and Cole as disclosing the measuring device recited in claim limitation 1.3a. *Id.* at 41–42. Noting Tobergte’s teaching of monitoring a property of a resonant circuit and Cole’s technique of detecting the presence of a label by monitoring impedance of a resonant circuit in a reader, Petitioner contends that the combination of the disclosures in Tobergte and Cole teach monitored property limitation 1.3b.

Patent Owner does not present arguments explicitly drawn to claim 15. The scope of claim 15 is different from the scope of claim 1 because claim 15 is not limited to a system that emits search signals. Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated by a preponderance of the evidence that a person of ordinary skill would have had reason to combine the teachings of Tobergte and Cole and that their combined teachings would have suggested the limitations of claim 15 to such an ordinarily skilled artisan.

C. Remaining Challenges to Claim 2, 3, and 8–11

Petitioner challenges claims 2 and 3 as obvious over Tobergte in view of Cole and Schuerman. Pet. 50. Petitioner argues that a person of ordinary skill would have recognized frequency shift keying discussed by Schuermann as providing advantages over other modulation techniques. *Id.* at 53 (citing Ex. 1003, Phinney Decl. ¶ 95). According to Petitioner, a person of ordinary skill would have recognized from Schuermann that optimizing power transfer and data communications in Tobergte could be achieved using Schuermann's switching technique and implementing such techniques would have been a straightforward application of known principles and techniques that are within the capability of an ordinarily skilled artisan. *Id.* at 53–55 (citing Ex. 1007, 2:55–65; Ex. 1003, Phinney Decl. ¶¶ 95–97). The Petition does not argue that Schuerman discloses the search signals not found in the combined teachings of Tobergte and Cole.

Petitioner challenges claims 8 and 9 as obvious over Tobergte in view of Cole and in further view of O'Toole. Pet. 59. According to Petitioner, a person of ordinary skill would have had reason to implement O'Toole's wake up timer and logic circuit in Tobergte's fixed station in order to reduce power consumption. *Id.* at 60–61 (citing Ex. 1003, Phinney Decl. ¶ 111).

The Petition does not argue that O’Toole discloses the search signals not found in the combined teachings of Tobergte and Cole.

Petitioner challenges claims 10 and 11 as obvious over Tobergte, Cole, O’Toole, and Plonsky. Pet. 68. Petitioner cites (i) Tobergte as disclosing a measuring device that determines a change in a monitored property, (ii) Cole as disclosing that the monitored property can be an impedance, and (iii) Plonsky as describing a technique for determining a proper threshold value for the monitored property. *Id.* at 69. The Petition does not argue that Plonsky discloses the search signals not found in the combined teachings of Tobergte and Cole.

As Petitioner has not demonstrated that any of the references cited against claims 2, 3 and 8–11 discloses the features of independent claim 1 not taught in the combination of Tobergte and Cole, we determine that Petitioner has not demonstrated by a preponderance of the evidence that challenged claims 2, 3 and 8–11 are unpatentable.

VIII. CONCLUSION⁷

Having fully considered the arguments and evidence of record, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1–3 and 8–11 are unpatentable. We further determine

⁷ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

that Petitioner has demonstrated by a preponderance of the evidence that claim 15 is unpatentable.

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1, 15	103	Tobertgte, Cole	15	1
2, 3	103	Tobertgte, Cole, Schuermann		2, 3
8, 9	103	Tobertgte, Cole, O'Toole		8, 9
10, 11	103	Tobertgte, Cole, O'Toole, Plonsky		10, 11
Overall Outcome			15	1–3, 8–11

IX. ORDER

In consideration of the above it is:

ORDERED that claim 15 of the '360 patent is unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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