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Paper 59
Entered: May 5, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AUTEL U.S. INC., and
AUTEL INTELLIGENT TECHNOLOGY CO. LTD,
Petitioner,

v.

BOSCH AUTOMOTIVE SERVICE SOLUTIONS LLC,
Patent Owner.

Case IPR2014-00183
Patent 6,904,796 B2

Before JOSIAH C. COCKS, SHERIDAN K. SNEDDEN, and SCOTT A. DANIELS, *Administrative Patent Judges.*

DANIELS, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

Autel U.S. Inc. and Autel Intelligent Technology Co. Ltd. (collectively, "Autel") filed a Petition to institute an *inter partes* review of claims 1, 4–16, and 20–22 of U.S. Patent No. 6,904,796 ("the '796 patent"). Paper 1 ("Pet."). We instituted trial for all the challenged claims

of the '796 patent on certain grounds of unpatentability alleged in the Petition. Paper 17 ("Decision to Institute" or "Inst. Dec."). Specifically, we instituted on the grounds that: claims 1 and 4–14 would have been obvious over McClelland, Kranz, Dixit, and Howell, claim 15 would have been obvious over McClelland, Kranz, Dixit, Howell, and further in view of Pascai '476 and Gaborit, claim 16 is anticipated by, and would have been obvious over McClelland, and claims 20–22 would have been obvious over McClelland.

After institution of trial, Patent Owner, Bosch Automotive Service Solutions LLC ("Bosch"), filed a Patent Owner Response, along with Declarations by Bosch's Declarants, Michael Nranian ("Nranian Declaration") and Patrick Pierce ("Pierce Declaration"). Autel filed a Reply to the Patent Owner Response. Paper 37 ("Pet. Reply"). On July 11, 2014, Bosch filed a Motion to Amend the claims in this proceeding ("Mot. to Amend" Paper 26). Subsequently, Autel filed an opposition ("Opp. Mot. to Amend" Paper 38), and Bosch filed a Reply ("Reply. Opp. Mot. to Amend" Paper 42) to the opposition.[1] Also, Autel filed a Motion to Exclude Patent Owner's Exhibit 2031, Second Declaration of Michael Nranian (Paper 45), Bosch filed a Response (Paper 48), and Autel a Reply (Paper 50). Bosch has filed a Motion to Seal certain exhibits. Paper 24. A hearing for this proceeding was held on January 20, 2015. The transcript of the hearing has been entered into the record. Paper 58 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6(c). This final written decision is issued pursuant to 35 U.S.C. § 318(a).

[1] We refer to Autel's Corrected Reply to Petitioner's Opposition (Paper 42), filed Oct. 8, 2014.

Autel has shown by a preponderance of the evidence that claims 1, 4–15, and 20–22 of the '796 patent are unpatentable.

For the reasons below, we determine that Bosch has not met its burden with respect to proposed substitute claims 23–38. The Motion to Amend, therefore, is *denied*.

B. Additional Proceedings

Autel indicates that the '796 patent is the subject of a district court proceeding in *Service Solutions U.S. LLC v. Autel U.S. Inc.*, Case No. 4:15-10534-TGB-LJM in the U.S. District Court for the Eastern District of Michigan.[2] Pet. 2; Paper 14, 1.

C. The '796 Patent

The '796 patent (Ex. 1001), titled "Remote Tire Monitoring Systems Tool," generally relates to a tool, i.e., a tire positioning tool, for activating remote tire monitoring system ("RTMS") tire sensors by a plurality of methods, and receiving data from the activated RTMS tire sensors at various different radio frequency signals. Ex. 1001, Abst., 2:38–48. The tool also is capable of communicating with a vehicle's RTMS receiving unit. *Id.* at 1:22–23. Vehicles can be equipped with an onboard RTMS receiving unit, which receives data from the tire sensors and indicates, via a visual or audible alarm to a driver, a specific tire characteristic, such as low air pressure. *Id.* at 1:29–32. The tool also is intended to transmit/receive information from a variety of RTMS receiving units using one of a plurality

[2] Service Solutions U.S. LLC transferred the '796 patent to Bosch Automotive Service Solutions LLC, by way of assignment recorded December 6, 2013, with the U.S. Patent and Trademark Office. Reel and Frame No: 031770/0167. http://assignments.uspto.gov/assignments/q?db=pat&pat=6904796, last visited May 6, 2014.

of signal frequencies. *Id.* at 2:56–60. The ’796 patent describes that “[i]n this manner a technician tasked to install a new tire or to rotate tires can utilize a single tool to work with remote tire monitoring systems made by different manufacturers.” *Id.* at 2:60–63.

Figure 1 of the ’796 patent, reproduced below, illustrates a preferred embodiment of the tire positioning tool. *Id.* at 10:14–15.

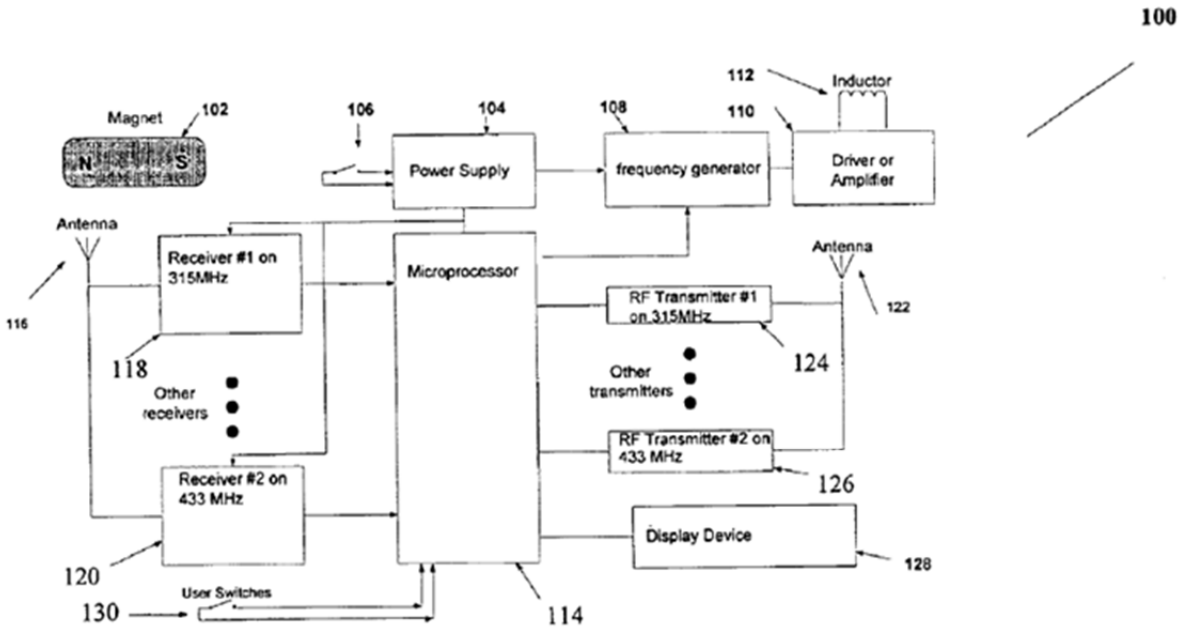

FIG. 1

As depicted by the diagrammatic circuit in Figure 1 of the ’796 patent above, tool 100 includes several different approaches for activating a tire sensor: magnet 102 can generate a magnetic field to activate the tire sensor; frequency generator 108, driver 110, and inductor 112 may send a signal to activate the tire sensor; and antenna 122 allows different transmitters 124,

126 to transmit signals at various frequencies to activate a tire sensor. Ex. 1001, 10:14–50.

The tool can receive signals from either an RTMS tire sensor, or a RTMS receiving unit (not shown) via antenna 116. *Id*. at 10:34–35. Moreover, antenna 116 is connected to different receivers 118, 120, each capable of receiving a different frequency. *Id*. at 10:35–40. The tool has display 128 for displaying information to a technician. *Id*. at 10:60–63. The technician can switch between different modes of operation of the tool via user switches 130. *Id*. at 10:66, 11:2. One mode of operation could activate a tire sensor and display data received from the activated sensor on display 128. Another mode could involve input of data to the tool for transmission to an RTMS receiving unit, for example, inputting a desired tire pressure level that would trigger the receiving unit to warn a driver of low tire pressure. *Id*. at 11:2–15.

The '796 patent Specification states that the electronics for the tool can all be "fit in a casing that is sufficiently small to be easily carried and handled by a technician." *Id*. at 12:48–51.

D. Illustrative Claims

Of the challenged claims, the independent claims are 1, 7, 9, 11, 13, 15, 16, and 20. Claims 1, 7, 9, 11, 13, 15, and 16 are apparatus claims drawn to "a tool," and claim 20 recites a method of using the tool. Claim 1 illustrates the claimed subject matter and is reproduced below:

> 1. A tool comprising a plurality of means for activating remote tire monitoring system tire sensors, the plurality of means selected from the group consisting of a magnet, a valve core depressor, means for generating continuous wave signals, and means for generating modulated signals, wherein the

> tool is capable of activating a plurality of tire sensors, each of the plurality of tire sensors utilizing a different method for activating the said tire sensor.

E. The Prior Art References Supporting Alleged Unpatentability

Autel relies upon the following prior art references:

McClelland et al., EP 1 026 015 A2 (published Aug. 9, 2000) ("McClelland," Ex. 1002).

Kranz, U.S. 2003/0080862 A1 (published May 1, 2003) ("Kranz," Ex. 1003).

Dixit, U.S. 6,414,592 B1 (issued July 2, 2002) ("Dixit," Ex. 1005).

Howell et al., GB 2 305 074 A (published Mar. 26, 1997) ("Howell," Ex. 1006).

Pacsai, U.S. 6,438,467 B1 (issued Aug. 20, 2002) ("Pacsai '467," Ex. 1007).[3]

Gaborit, WO 02/36368 (published May 10, 2002) ("Gaborit," Ex. 1008).

F. The Pending Grounds of Unpatentability

Autel contends that the challenged claims are unpatentable under 35 U.S.C. §§ 102 and/or 103 on the following specific grounds.[4]

[3] The inventor of the '796 patent, Ernest Pacsai, is the same inventor named on the face of the prior art reference Pacsai '467 (Ex. 1007).
[4] Autel supports its challenge with a Declaration of Dr. Valdis Liepa, Ph.D. (Ex. 1009) ("Liepa Decl."). *See infra*.

Reference(s)	Basis	Claims Challenged
McClelland, Kranz, Dixit, and Howell	§ 103	1 and 4–14
McClelland, Kranz, Dixit, and Howell, Pacsai '467, and Gaborit	§ 103	15
McClelland[5]	§ 102	16, 20–22
McClelland	§ 103	16, 20–22

II. CLAIM CONSTRUCTION

A. Legal Standard

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 778 F.3d 1271, 1279–83 (Fed. Cir. 2015) ("Congress implicitly adopted the broadest reasonable interpretation standard in enacting the AIA," and "the standard was properly adopted by PTO regulation."). Claim terms are given their ordinary and customary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). If the specification "reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess[,] . . . the inventor's lexicography governs." *Phillips v. AWH Corp.*, 415 F.3d 1303,

[5] Bosch expressed its desire to cancel claim 16. PO Resp. 1. We construe Bosch's statement of cancellation as an implicit motion to amend that cancels claim 16. We grant this motion. Accordingly, we do not address Autel's arguments with respect to anticipation and obviousness of claim 16.

1316 (Fed. Cir. 2005) (en banc) (citing *CCS Fitness, Inc. v. Brunswick Corp*., 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Also, we must be careful not to read a particular embodiment appearing in the written description into the claim, if the claim language is broader than the embodiment. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) ("[L]imitations are not to be read into the claims from the specification."). We apply this standard to the claims of the '796 patent.

B. Overview of the Parties' Positions

Autel contends that certain of the claims challenged invoke means-plus-function claiming and provided a chart referring to portions of the specification which allegedly describe the structure corresponding to the claimed "means." Pet. 6–7. Autel provided also claim constructions for numerous other claim terms and phrases, including "tool," "activating remote tire monitoring system tire sensors," and "a plurality of means," for example. *Id.* at 7–11. In the Decision to Institute, we provided constructions for certain terms and phrases. Inst. Dec. 8–12. Our constructions in the Decision to Institute are set forth in the table below.

Claim Term or Phrase	Construction in the Decision to Institute
"means for activating remote tire monitoring system tire sensors"	"[W]e determine that the structures for activating the tire sensors are: (1) a magnet, (2) a valve core depressor, (3) the frequency generating circuitry and microprocessor for generating and transmitting continuous wave signals, and (4) modulated signals as described in, and shown in Figure 1 of, the '796 patent." Inst. Dec. 9.
"means for receiving tire sensor signals," and "means for receiving	The corresponding structure for the receiving function is "the signal receiving circuitry antenna 116, receivers 118, 120, and

signals transmitted by remote tire monitoring system receiving units"	microprocessor 114 as shown and described in Figure 1." *Id.* at 10.
"a plurality of means"	"[T]wo or more means." *Id.*
"means for transmitting signals to remote tire monitoring system receiving units"	The corresponding structure for the transmitting function is "an antenna connected to transmitting circuitry for transmitting signals and a microprocessor for encoding signals, as shown and described in the '796 patent." *Id.* at 11.
"tool"	"[W]e construe 'tool' as a handheld device that aids in accomplishing a task." *Id.* at 12.

We also determined that no express construction was needed for the following terms and phrases: "wherein the tool is capable of adding data to a received tire sensor signal and transmitting the added data to a remote tire monitoring system receiving unit," "wherein the tool is capable of activating a plurality of tire sensors, each of the plurality of tire sensors utilizing a different method for activating the said tire sensor," "activating remote tire monitoring system tire sensors," and "display apparatus for displaying data received from tire sensor signals." Inst. Dec. 12.

In its Patent Owner Response, Bosch did not contest the constructions in the Decision to Institute, but argued that the phrase "activating remote tire monitoring system tire sensors" should be construed because "it is a term of art as used in the '796 Patent and in the RTMS industry." PO Resp. 10–11.

Based on the complete record now before us, we discern no reason to change the constructions set forth above. Further, we construe the phrase "activating remote tire monitoring system tire sensors," as set forth in detail below.

C. Analysis of the Parties' Claim Construction Positions

1. Activating remote tire monitoring system tire sensors

Independent claims 1, 7, 9, 11, 13, 15, and 20 include the limitation "activating [a] remote tire monitoring system tire sensor[s]." Autel proposes that, under the broadest reasonable interpretation, this limitation "require[s] that the tire sensors in an RTMS are provided with a signal that causes the sensors to respond and to transmit signals or information to an RTMS receiving unit and/or to an RTMS tool." Pet. 7 (citing Ex. 1001, 1:63–64, 7:6–10, 8:37–52, 11:3–6, 11:16–24, 12:3–9; Liepa Decl. ¶¶ 29, 42). In support of this construction Dr. Liepa testified that a person of skill in the art would understand that "[s]ome tire sensors do not transmit continuously, to reduce power consumption. When the sensors receive an appropriate activation signal, they can begin or resume specified functions, such as signal transmission to the receiving unit." Liepa Decl. ¶ 29.

As noted above, Bosch essentially agrees with this construction and argues that construction is necessary because it "is a term of art." PO Resp. 11. Our review of the Specification of the '796 patent reveals that in each instance of "activation" the tire sensor responds to a signal by transmitting data or information to a receiving unit. *See* Ex. 1001, 1:63–64, 7:6–10, 8:37–52, 11:3–6, 11:16–24, 12:3–9. This is consistent with the constructions advanced by Autel and Bosch.

We, therefore, determine that "activating [a] remote tire monitoring system tire sensor[s]" means that the tire sensors in an RTMS are provided with a signal that causes the sensors to respond and to transmit signals or information to an RTMS receiving unit and/or to an RTMS tool.

III. ANALYSIS

A. Relevant Legal Principles

To prevail in its challenges to the patentability of claims, the Petitioner must establish facts supporting its challenges by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). A claim is anticipated, and, thus, unpatentable, if a single prior art reference discloses each and every element of the claimed invention. *See Schering Corp. v. Geneva Pharms.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). 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 skill in the art; and, (4) where in evidence, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966) ("the Graham factors"). The level of ordinary skill in the art usually is evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

For an obviousness analysis, prior art references must be "considered together with the knowledge of one of ordinary skill in the pertinent art." *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*,

571 F.2d 559, 562 (CCPA 1978)). Moreover, "it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). That is because 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; *see also In re Translogic Tech., Inc.*, 504 F.3d at 1259.

Regarding secondary considerations of nonobviousness and commercial success, this factor "may have relevancy" to the overall obviousness determination (*Graham*, 383 U.S. at 18), but a nexus must exist between the commercial success and the claimed invention. *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006) ("Evidence of commercial success . . . is only significant if there is a nexus between the claimed invention and the commercial success."). If commercial success is due to an element in the prior art, no nexus exists. *Id.* at 1312; *see also Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1580 (Fed. Cir. 1983) (holding claimed invention obvious where patent holder "failed to show that such commercial success . . . was due to anything disclosed in the patent in suit which was not readily available in the prior art"). We analyze the instituted grounds of unpatentability in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

Because our decision reaches at least one ground of unpatentability based on obviousness, we first determine the level of ordinary skill in the art in accordance with *Graham*.

Autel has stated the level of ordinary skill in the art, for this case, in April 2003 would have been at least BS in electrical engineering, an understanding of radio frequency principals and components used in radio frequency identification ("RFID") technology and 2–3 years of experience in the RFID field. Pet. 22. Autel asserts that the person of ordinary skill would have been familiar with the communication protocols and the transmitting and receiving components disclosed in the '796 patent, including remote tire monitoring system ("RTMS") components such as an RTMS "tools." *Id.* Bosch contends that a person of skill in the art would have had a BS in electrical engineering and 2–3 years of automotive product design experience, including RTMS design. PO Resp. 16. Relying on its Declarant, Bosch states that such a person would have had "practical design experience in automotive sensing and electrical/electronic systems and diagnostic data communication, which includes specifically dealing with service issues and procedures, including aftermarket, of these systems." *Id.* at 17 (citing Nranian Decl. ¶¶ 40–41).

To determine the level of ordinary skill in the art in this case we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, and the sophistication of the technology. *Custom Accessories v. Jeffrey-Allan Indus. Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986). Also, we are guided by the level of ordinary skill in the art reflected by the prior art of record. *Okajima*,

261 F.3d. at 1355 (the prior art itself can reflect the appropriate level of skill in the art).

Autel and Bosch essentially are in accord as to the level of experience in the field of automotive sensing and diagnostic data communications, including RFID and RTMS communications protocols and electronic components. *See* Pet. 22; PO Resp. 16–17. RTMS's are described as "known in the art" in the '796 patent. Ex. 1001, 1:14–15. To the extent there is any difference in the proposed levels of ordinary skill, Bosch contends specifically that such a person would have "practical design experience." PO Resp. 17.

The background description in the '796 patent explains known RTMS systems, including wireless radio frequency data communication and components. *See* Ex. 1001, 1:15–24. In the prior art references, such as McClelland, remote radio frequency data transmissions and RTMS systems developed for trucks and cars are taught utilizing pressure sensors on a vehicle wheel. *See* Ex. 1002 ¶¶ 1–2. Also shown is that the pressure sensor is coupled to a transceiver for communicating tire characteristic data to a central vehicle receiving unit. *Id.* ¶ 12. Further, a separate hand-held "exciter" tool for initiating the transmission of data from the sensor and transceiver to the receiving unit is taught by McClelland. *See* Ex. 1002 ¶¶ 1–2. With this background in mind, we are persuaded that the level of ordinary skill in the art at the time of filing of the '796 patent would have included knowledge of various RFID communications protocols, including continuous wave low frequency and radio frequency signals to activate a sensor, as well as modulated low frequency and radio frequency signals to encode data for transmission from a tire condition sensor to a central vehicle

receiving unit. In addition, we are persuaded that an electrical engineer with at least 1–3 years of automotive sensing and diagnostic design experience, including RFID and RTMS, would have known that a hand-held RTMS "tool" could be used, for example, during vehicle service by an automotive technician to initiate sensor position or location identification transmission, as well as other tire condition data and information, to the receiving unit, or the tool, by activating the RTMS sensor.

With these considerations in mind, we now turn to determining any differences between the prior art and the claims at issue.

C. Alleged Obviousness of Claims 1 and 4–14 over McClelland, Kranz, Dixit, and Howell

For the reasons given below, despite the counter-arguments in Bosch's Patent Owner Response, and the evidence cited therein, Autel has shown, by a preponderance of the evidence, that each of claims 1 and 4–14 is unpatentable as obvious over McClelland, Kranz, Dixit, and Howell.

1. McClelland

McClelland describes a method and apparatus for monitoring tire pressure of the 4 tires of a vehicle and transmitting tire pressures P(1)–(4) via radio frequency transmission to receiving unit 14. Ex. 1002 ¶ 9. Figure 1 of McClelland is reproduced below:

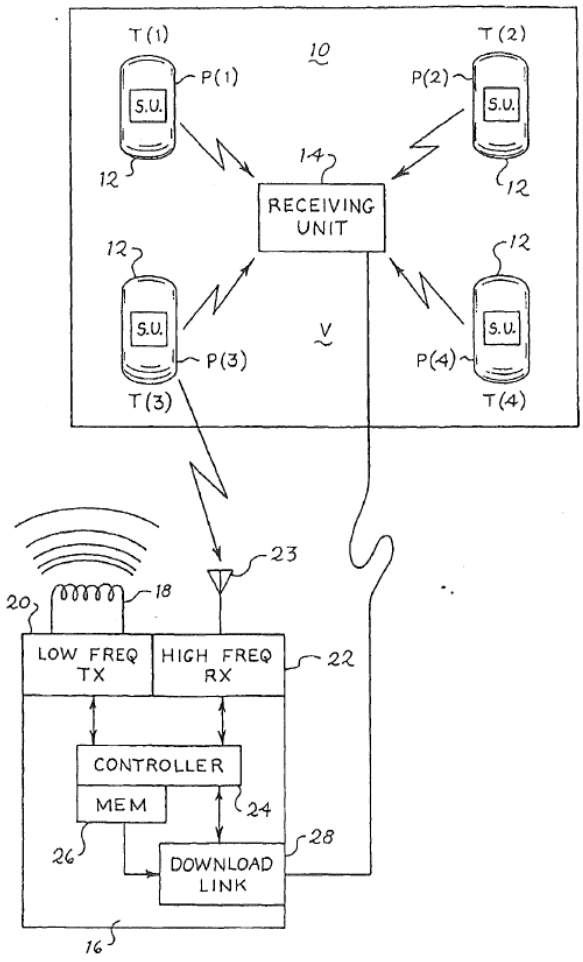

Figure 1 depicts each tire T(1)–(T4) having sending unit (S.U.) 12 that includes a radio frequency transmitter for transmitting tire pressures P(1)–(4) to receiving unit 14. During operation of the vehicle, receiving unit 14 in the vehicle "provides a warning to the operator of the vehicle V when the indicated tire pressure of any of the tires is outside a predetermined range." *Id.*

To provide relevant information to a vehicle operator, receiving unit 14 needs to be able to identify which tire sensor is transmitting a low pressure warning for example, and its location on the vehicle. To calibrate sensor identification and location information, the sending unit is prompted

by exciter 16 having low frequency transmitter circuit 20, high frequency receiver circuit 22, and memory 26. *Id.* at 2:43–47. When a low frequency signal from the exciter also is detected by an adjacent sending unit, the sending unit responds by transmitting tire characteristic data, including tire identification and position information, to the exciter. *Id.* ¶ 12. The data is received by antenna 23 of the exciter, then, tire identification and position information is extracted from the data and stored in memory 26. *Id.* ¶ 13. Subsequently, "[a]fter collecting identification and position information for each of the tire monitors, the exciter 16 communicates the information to the receiving unit 14." *Id.* ¶ 14.

The calibrated receiving unit 14 stores the communicated tire identification and position information, so that, upon receipt of new tire characteristic data in the future, the receiving unit can associate the new data with the appropriate tire. *Id.* ¶ 38. If the new tire characteristic data indicates, for example, low pressure in a certain tire, the receiving unit can identify to the vehicle operator which specific tire has been compromised. *Id.*

2. Kranz

Kranz also discloses a tire pressure monitoring system using radio frequency identification ("RFID") to identify which tire on a vehicle has encountered a low pressure condition. Ex. 1003 ¶¶ 9, 18. A reader generates a modulated frequency signal intended to activate RF tag 200, essentially requesting information, i.e. a tire pressure, from the RF tag. *Id.* ¶ 24. The reader can use different modulation schemes to activate the RF tag, a preferred scheme being bi-phase modulation. *Id.*

According to Kranz, any known pressure sensor can be used such as a piezo-electric pressure sensor mounted on, or in the tire itself. *Id.* ¶¶ 42–43. The pressure sensor can be an integral part of the RF tag, or it may be separate, and in communication with the RF tag. *Id.* ¶ 41. In either case, the RF tag receives an electrical signal indicative of the tire pressure from the pressure sensor. *Id.* When the reader broadcasts a request for information, the RF tag transmits the tire pressure data and other information if necessary, including identification of the RF tag itself, so the reader can discern to which tire on the vehicle the received pressure data belongs. *Id.* ¶ 29.

3. Dixit

Dixit's tire condition sensing system provides battery powered sensor 18 for transmitting a radio frequency signal conveying sensed tire conditions, such as temperature and pressure, and a tire location identifier to a vehicle based central unit 28. Ex. 1005, 2:60–67. Antenna 30 on the central unit receives the tire condition signal from the sensor and processes the information. *Id.* at 3:1–3. Figure 2 of Dixit, reproduced below, illustrates hand-held transmitter tool 44 for manually inputting a tire location identifier through RF receiver 46 to controller 62 of tire conditions sensor 60. *Id.* at 4:30–37.

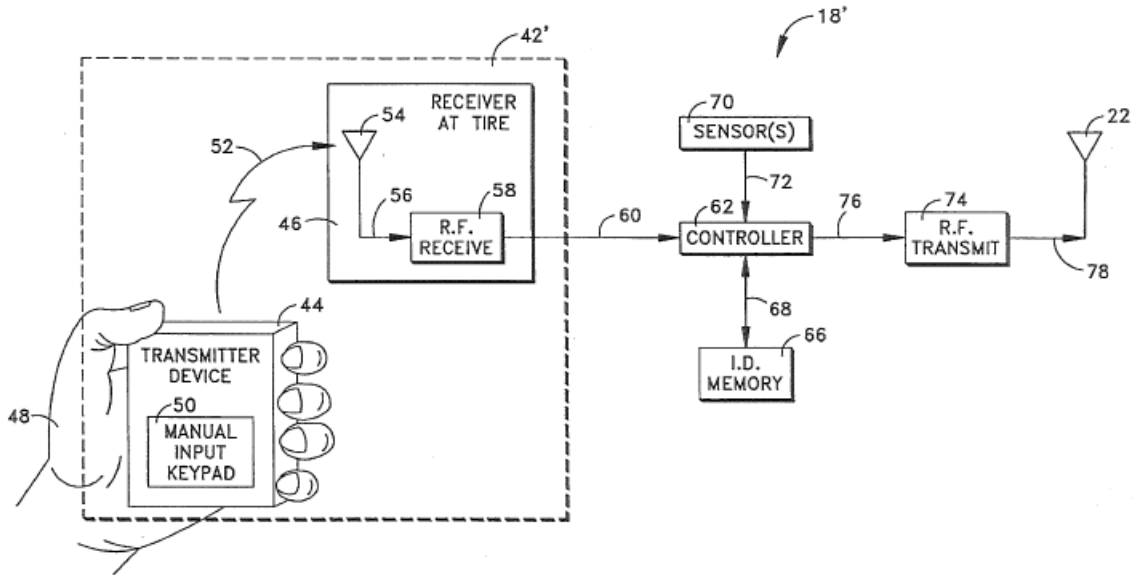

Fig.2

Figure 2 of Dixit, shown above, depicts hand-held transmitter 44 having manual input keypad 50 for inputting specific tire location identification to each sensor. Dixit explains that the hand-held transmitter can communicate with each of the different tire condition sensors in the system located on a particular vehicle. *Id.* at 4:55–59. Further, Dixit states "[m]oreover, the hand-held transmitter device 44 may be utilized to communicate with tire condition sensor units within different tire condition communication systems at different vehicles. In other words, the transmitter device may be a generic or universal tool used to program location identification to various tire condition sensor units." *Id.* at 4:60–65.

4. Howell

Howell describes an RFID system, and explains that there is no consistency between manufacturers of tags and readers, such that "a reader made by one manufacturer for reading a particular type of tag or transponder will not normally be able to read tags or transponders manufactured by

another supplier." Ex. 1006, 4:8–11. To overcome this drawback Howell teaches a hand-held reader apparatus for determining "the modulation system and/or data transmission system of a data storage device thereby allowing data stored by different manufacturer's data storage devices to be read." *Id.* at 5:13–16. The reader includes an antenna having one or more RF transmission coils selected by switches controlled by a microprocessor, and a memory. *Id*. at 15:1–4. The memory stores carrier modulation and data transmission information corresponding to different tags from different manufacturer's systems. *Id.* at 13:16–22. The antenna is capable of both sending, and receiving data. *Id.* at 15:21–25. In one embodiment, the reader transmits a selected RF signal to the tag via the antenna. *Id.* at 29:14–25. If a return signal is transmitted by the tag and received by the antenna, the microprocessor evaluates the signal to determine a specific manufacturer of the tag, or recognized modulation scheme such that the reader can determine a data format and coherently read the data. *Id.* at 30:4–39:24.

5. Claim 1

We have reviewed Autel's obviousness arguments and supporting evidence presented in the Petition. Autel has presented evidence showing that McClelland teaches the following structures and functions:

i. an RTMS "*tool*" (McClelland's exciter 16 is a tool that "activates RTMS tire sensors" that are in close proximity.) (Pet. 18 (citing Ex. 1002 ¶¶9–11)).

ii. "*activating* remote tire monitoring system tire sensors" ("When activated by the exciter tool, the tire sensors transmit data such as tire sensor ID and sensed data (e.g. tire pressure) back to the exciter tool.") (*Id.* (citing Ex. 1002 ¶ 48.))

iii. "means for generating continuous wave signals" (The exciter tool has a low frequency transmitter that activates the tire sensors "using a continuous wave activation signal.") (*Id.* (citing Ex. 1002 ¶¶ 9–11)).

Autel argues that the only difference between McClelland and the claimed tool is "that [McClelland] uses only one activation method (continuous wave)," whereas claim 1 calls for "a plurality of means for activating remote tire monitoring system tire sensors." Pet. 18–19 (citing Liepa Decl. ¶ 56). In the '796 patent, another activation means, besides continuous wave signals, is "modulated signals" as recited in claim 1, and Autel relies on an RTMS system taught by Kranz for evidence that it was known in the art to use an RFID reader tool "which activates tire sensors using modulated signals and at different frequencies." Pet. 19 (citing Ex. 1003 ¶¶ 13, 32). According to Autel, Kranz discloses a RFID reader tool transmitting a modulated activation signal to an RFID tag as a tire sensor and "[i]nformation (e.g. tire pressure readings) is sent back to the tool by the tire sensors and can be displayed on the tool." Pet. 19 (citing Ex. 1003 ¶ 30).

Autel relies mainly upon McClelland and Kranz for all the limitations of claim 1, but, to emphasize that it was further known in the art to make a *single* RTMS tool that could interact with different sensors in different ways, Autel turns to Dixit to show that a hand-held transmitter "may be a generic or universal tool used to program location identification to various tire condition sensor units." Pet. 20 (citing Ex. 1001, 4:55–56). Similarly, Autel argues that Howell recognized that transponder tags from different manufacturers used different carrier modulation schemes. *Id.* at 20–21.

Autel asserts that for different transponder tags, Howell discloses a reader tool that "can determine the modulation system and/or the data transmission system of a data storage device (tag), to allow the tag to be read." *Id.* at 21 (citing Ex. 1006, 4: 3–16, 5:2–16, 7:7–16).

Bosch does not dispute that the prior art discloses the structure and function that Autel contends it does for McClelland and Kranz. PO Resp. 11 ("Patent Owner does not dispute that the four methods of activation of tire sensors were known in the art. The inventors said so in the specification of the patent.") Bosch, instead, argues that the asserted prior art does not render claim 1 unpatentable because (1) there was no design need or market pressure to combine the references; and (2) the third reference, Dixit, does not disclose a tool which "activates" tire sensors, and thus a person of ordinary skill in the art would not have been motivated to combine the references. *Id.* at 18–20, 12–16, 18–25.

a. Design need and market pressure

Bosch argues that the use of RTMS systems prior to 2005 was rare in the automotive industry, hence there was no market pressure or design need to provide an incentive to combine the known tools into a single tool. PO Resp. 19. Bosch contends specifically that Autel has failed to present any evidence "that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims." *Id.* (citing *KSR*, 550 U.S. at 419–20). Bosch argues that, in *KSR*, the Supreme Court determined that developments in the field of vehicle accelerator pedal design, had, at the time of the invention, created needs such that a person of ordinary skill in the art would have seen a benefit to upgrading the prior art pedal with a sensor. *Id.* at 19–20 (citing *KSR*, 550

U.S. at 424). Bosch asserts, specifically, that here, although "[o]ne may conclude that there is a wide range of needs now, [] the question relates to the time of invention. In April 2003, an activation tool designer would not have seen a need for a combination tool." *Id.* at 20. Bosch's counsel emphasized at oral hearing that the novelty of the combination of the known "means for activating" was based at least in part, on "convenience" to the user:

> The fact that they're in one tool and what that gets the user of the tool is convenience. We're not saying -- we don't claim synergy. We don't claim that there's any extra benefit you get. We just claim that it's more convenient to the user and that is the solution that the inventors came up with is convenience to the user of what used to be separate tools and is now a single tool.

Tr. 18:12–17. Bosch contends that "convenience" is sufficient "because it's a solution to a problem, a problem that was not recognized in the prior art." *Id.* at 18:23–24.

We are not persuaded by Bosch's evidence that "convenience" is sufficient to support a finding of nonobviousness. According to the Supreme Court, "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp." *KSR*, 550 U.S. at 421. In this case, we are persuaded by Autel's evidence that at the time of invention there was a design need to solve a problem. *See* Pet. 21 (citing Ex. 1006, 4:3–16, 5:2–16; 7:7–16; Ex. 1009 ¶ 51). Howell provides evidence that at least by its publication date of March 1997, its RFID reader tool was designed to interrogate and discern between different carrier modulation and data

transmission systems because "transponders and the systems chosen by different manufacturers of tags and readers vary widely and are generally incompatible with one another." Ex. 1006, 4:5–7. Indicating at least some measure of market pressure, Howell remarked that "[t]his incompatibility is hindering the widespread adoption of the technology because, currently, it is necessary for a customer who wishes to incorporate the tags or transponders into his products to rely on a single source for the transponders and readers." *Id.*

There are also well known, predictable solutions, e.g. a low frequency continuous wave signals as taught by McClelland, and modulated carrier signals as taught by Kranz. McClelland, Kranz, Dixit, and Howell provide persuasive evidence that prior to the filing of the '796 patent one of ordinary skill in the art would have known that there is not a sole signal transmission frequency or scheme for activating sensors or for relying data between sensors and a reader tool or vehicle central unit. Dixit and Howell, however, show sufficiently that there are a limited number of possible frequency ranges in RFID systems so that a reader tool could be optimized to transmit and receive signals from different sensors, or tags. *See* Ex. 1003, 4:55–65; Ex. 1006, 36. A person of ordinary skill in the art would have understood the implementation of RFID communications protocols and signal processing in an RTMS system as discussed above in section III.B. As such, because the evidence indicates that was there was no industry standard communication protocol or consistent interrogation frequency, we are persuaded that an ordinarily skilled artisan would have had good reason to pursue known options for including recognized RFID and other data communication protocols when contemplating design of a tool for activation

and reading of a tire sensor in an RTMS system that is compatible to send and receive signals from different sensors.

b. Whether Dixit activates tire sensors and is indicative of hindsight reasoning

Bosch argues that Dixit does not "activate" a tire sensor as called for in the claims and in accordance with the appropriate claim construction. PO Resp. 12–14. Bosch contends that Dixit's tool 44 merely "sends data bits to a receiver 46 on the tire" which are stored in a memory there without any responsive action from the sensor. *Id.* at 13 (citing Ex. 1005, 4:21–28). The evidence in Dixit supports this position. Dixit, however, is relied upon in the combination of references specifically to show that a generic or universal tool was known to communicate with sensors in different RTMS's. Pet. Reply 3. We are not persuaded by Bosch's argument here that essentially attacks one aspect of Dixit's functionality in isolation, because the asserted combination is predicated on a combination of the teachings of the four references. *See In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) ("Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.").

Bosch also asks that we reconsider our determination from the Decision to Institute that Dixit teaches "a universal tool for communication with tire sensors in different RTMS systems." PO Resp. 23. More specifically, Bosch argues that it is hindsight reasoning to apply Dixit to the problem solved by the '796 patent, because "no one defined the problem until the inventors of the '796 Patent defined the problem and solved it." *Id.* at 24. Bosch asserts that the "adoption of a universal tool to activate sensors

is using the invention of the '796 Patent itself to define the problem." *Id.* at 23. We are not persuaded by this argument because Dixit recognized that at least by 2002 different sensors and tire condition communication systems existed which would benefit from a "universal" transmitter device:

> [m]oreover, the handheld transmitter device 44 may be utilized to communicate with tire condition sensor units within different tire condition communication systems at different vehicles. In other words, the transmitter device may be a generic or *universal tool* used to program location identification to various tire condition sensor units.

Ex. 1005, 4:59–65. Contrary to Bosch's position, we are persuaded by Autel's evidence that prior to filing of the '796 patent there was a recognized problem with different incompatible transmitter, sensor, and RTMS communications systems. Even though Dixit itself addressed the issue of only transmitting a data signal to a transponder for storage in an associated memory, as opposed to transmitting *and receiving* a response signal, we are persuaded that the general problem of disparate RTMS communication components and protocols was known and defined in the prior art at the time of the invention of the '796 patent. Moreover, Bosch's assertion that the problem of dissimilar sensors and transponders was not defined at the time of the filing of the '796 patent, does not address Autel's evidence that this concern also is expressed in the Howell reference. Bosch's Declarant, Dr. Nranian stated that the '796 patent involved an RTMS application of RFID technology and that "[t]he person of ordinary skill in April, 2003 would have had a working understanding of automotive sensing and electronic system design including RTMS applications, and the parameters and data communication associated therewith." Nranian Decl. ¶¶ 40–41. Although it may have different functionality from the claimed invention, Howell relates

specifically to RFID technology, addressing the problem that "there is no common carrier modulation and data transmission system agreed between manufacturers for such transponders." Ex. 1006, 4. In addition, the hypothetical person of ordinary skill in the art is attributed with knowledge "of all prior art in the field of the inventor's endeavor and of prior art solutions for a common problem even if outside that field." *In re Nilssen*, 851 F.2d 1401, 1403 (Fed. Cir. 1988).

In considering the entirety of the record, we are persuaded that McClelland's RTMS tool activates a sensor by continuous wave signals, and in accordance with our claim construction, causes the sensor to respond and to transmit signals or information to the RTMS tool. We also are persuaded that one of ordinary skill in the art would have appreciated reasonably that modulated signals could have been used similarly to activate the sensor, for example as described in Kranz's RTMS tool. Further, Howell and Dixit describe the problem that was known at least in 2002 that various manufacturers used different sensors that were not compatible with a single transmitter or transponder, tool. In that respect, instead of presenting reasoning that is speculative or impermissible hindsight, as argued by Bosch, Autel has articulated reasoning with rational underpinnings in urging that an ordinarily skilled artisan, understanding the compatibility problems defined by Dixit and Howell, would have incorporated McClelland's continuous wave signal, and Kranz's modulated signal into a single tool "to provide the obvious benefit and convenience of reducing the number of tools that a technician needs to use with existing systems of different manufacturers." Pet. 25.

6. Conclusion of Unpatentability Regarding Claim 1

Having considered the evidence and arguments presented regarding Autel's assertion of unpatentability of independent claim 1, together with the evidence and arguments presented by Bosch to challenge the assertion, we conclude that Autel has proven by a preponderance of the evidence that claim 1 is unpatentable over McClelland, Kranz, Dixit, and Howell.

7. Claims 4–14 – Obviousness over McClelland, Kranz, Dixit, and Howell

We also are persuaded that Autel has shown that the features of claims 4–14 also are taught by the combination of those references. For example, Autel has shown sufficiently that the asserted combination teaches a single tool having both a continuous wave signal (from McClelland) and a modulated signal (from Kranz) for activating a sensor as recited in claim 4. Pet. 23–35. Autel also has shown by a preponderance of the evidence that McClelland and Kranz disclose the activation tool using not only a single frequency to activate the sensor, but also a *plurality of means* for generating "a continuous wave signal," and "a modulated signal" as called for in claims 5 and 6. Pet. 35–36. A portion of Kranz which Autel relies upon, reads:

> The reader hops from one frequency to another throughout the spectrum. If one frequency results in a nullified signal, a different frequency traveling the same distance will likely result in a processable signal.

Id. (citing Ex. 1003 ¶¶ 24, 32; Liepa Decl. ¶¶ 49, 70). Kranz discloses using multiple frequencies, thus encompassing the "plurality of means" recited in claims 5 and 6. Also, Dr. Liepa testified that Kranz discloses RFID signals that are known to be either modulated (claim 6) or unmodulated (claim 5). Liepa Decl. ¶ 49. We credit Dr. Liepa's testimony in this regard and are

persuaded by this evidence that Kranz discloses that the activation tool can send modulated or unmodulated activation signals at different frequencies. Further, Dr. Liepa testified that one of skill in the art would understand McClelland's transmitter circuit generates different frequencies of continuous wave signals at least because McClelland's transmitter can generate "ranges of frequencies" *Id.* ¶ 69.

Autel also has shown that the combination of McClelland and Kranz discloses sufficiently the limitations recited in claims 7 and 8. Pet. 37. Specifically, independent claim 7 differs from claim 1 in that it recites "a means for receiving the tire sensor signals." Autel's evidence is persuasive that the tool disclosed in both references, e.g. high frequency receiver 22 in McClelland's tool 16 (Ex. 1002, Fig. 1), and I/Q receiver demodulator 170 in Kranz's reader 100 (Ex. 1003, Fig. 1), receive transmission signals, including being capable of receiving the specific frequencies recited in claims 8, from the tire sensors. Pet. 37 (citing Liepa Dec. ¶¶ 71–75; Ex. 1001, 5:37–42; Ex. 1002 ¶ 19).

Claims 9 and 10 recite that the tool comprises "a *plurality of* means for receiving the tire sensor signals." (Emphasis added). Autel's evidence that McClelland's tool 16 is capable of receiving a plurality of different frequencies from the high frequency transmitter circuit 36 in the tire, with the pressure sensor, is persuasive. Pet. 38 (citing Ex. 1002 ¶ 19, Liepa Decl. ¶ 81).

Claims 11 and 12 include the additional limitation of a "display apparatus for displaying data received from the tire sensor signals." Autel's evidence that Kranz teaches hand-held reader tool 100 having a visual display as called for in claim 11, and the display being an LED, LCD or VF

device is persuasive. Pet. 39 (citing Ex. 1003 ¶¶ 20, 35, 37; Liepa Decl. ¶¶ 85–86).

Claims 13 and 14 differ from claims 7 and 8 only in that independent claim 13 recites the additional limitation of "a means for transmitting signals to remote tire monitoring system receiving units." We are persuaded by Autel's evidence relying on McClelland to teach that data pertaining to the tire is received by exciter tool 16 and communicated to vehicle receiving unit 14 accounts for the above-noted limitatin. Pet. 39 (citing Ex. 1002 ¶¶ 14, 38).

Bosch did not challenge substantively Autel's assertions of unpatentability with regard to the additional limitations found in claims 4–14. *See* PO Resp. 12–25. Having reviewed Autel's evidence of unpatentability for these claims, we conclude that Autel has proven by a preponderance of the evidence that claims 4–14 are unpatentable over McClelland, Kranz, Dixit, and Howell.

8. Claim 15 – Obviousness over McClelland, Kranz, Dixit, Howell, Pacsai, and Gaborit

Claim 15 differs from claim 1 by including in the tool:

i. means for receiving tire sensor signals;

ii. means for transmitting signals to RTMS receiving units; and

iii. means for receiving signals transmitted by RTMS receiving units.

Bosch contends that independent claim 15 recites the same means limitation requiring at least two of the four described means for "activating remote tire monitoring system tire sensors," as called for in independent claims 1, 7, 9, 11, and 13. PO Resp. 7. Bosch states that claim 15 is non-

obvious for the same reasons as discussed with respect to claims 1 and 4–14, and presents no additional arguments for the further combination of Pacsai '467, and Gaborit.

Autel argues that, (a) means for receiving tire sensor signals, and (b) means for transmitting signals to RTMS receiving units are disclosed by McClelland. Pet. 40 (citing Liepa Decl. ¶¶ 91–92). Pointing out that McClelland does not provide "express disclosure [] of signals being transmitted *from the receiving unit back to the tool*," Autel contends that both Pacsai '467 and Gaborit expressly disclose two-way communication between a hand-held RTMS tool and the vehicle's receiving unit such that the tool receives signals from the vehicle receiving unit as called for in (c) means for receiving signals transmitted by RTMS receiving units. Pet. 40–41 (emphasis added). Autel reasons that one of ordinary skill in the art would have combined the two-way communication between the tool and vehicle receiving unit as described in Pacsai '467 and Gaborit, with McClelland, Kranz, Dixit, and Howell so that "any information stored in the receiving unit could be accessed and viewed (and updated as necessary) directly at the hand-held tool by a technician using the tool." *Id.* at 41. Autel supports this reasoning with the evidentiary underpinnings of Dr. Liepa who testifies that one of skill in art would have understood the benefits of two-way communication and "simply combine[d] this additional function, known from Pa[cs]ai '467 and Gaborit, into the tool to provide this further known function." Liepa Decl. ¶ 98.

Autel has shown sufficiently that the additional limitations of claim 15 would have been obvious over McClelland, Pacsai and Gaborit, as we see no reason why the proposed modification is more than the predictable use of

prior art elements according to their established functions. *See KSR*, 550 U.S. at 417 ("[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.").

9. Claims 20–22 – Anticipation by McClelland

Claims 20–22 are the only method claims challenged in the '796 patent.

Autel alleges that McClelland discloses each limitation, and thus anticipates claim 20. Pet. 43–45. Autel asserts that McClelland's exciter 16 is a single tool that sends an RF signal to activate the tire sensors; receives a signal containing data from the activated tire sensors; and transmits the data from exciter 16 by wireless, or hard wire link, to a vehicle receiving unit. Pet. 44 (citing Liepa Decl. ¶ 107). Besides these initial limitations, Autel asserts specifically that the '796 patent contemplates activation by a continuous wave signal and "a tool which can activate using more than one frequency comprises a 'plurality of means' for activation." *Id.* (citing Ex. 1001, 5:27–30). Based on this, Autel argues that McClelland anticipates because it discloses a continuous wave signal, and that "ranges of frequencies" are generated by exciter 16 as to be "a plurality of means for activating remote tire monitoring system tire sensors," called for in claim 20. *Id.* (citing Liepa Decl. ¶¶ 48, 109).

Bosch does not address substantively the "activating," "receiving," and "transmitting" steps recited in claim 20. *See* PO Resp. 25–27. Bosch, however, argues that McClelland does not anticipate because claim 20 recites "a plurality of means for activating remote tire monitoring system tire

sensors" not taught by McClelland. *See id*. at 25–26. Bosch specifically contends that the statement relied upon by Autel from McClelland, that "other frequencies *or ranges of frequencies* may be suitable" would not be understood by a person of skill in the art as teaching to modify McClelland's tool to use more than one frequency. *Id*. at 27 (emphasis added).

Bosch provides several arguments as to why the phrase "ranges of frequencies" does not disclose using more than one frequency. PO Resp. 25–27. Bosch first argues that McClelland's disclosure would have been clear that it was using more than one frequency had it stated, "the low frequency signal has a frequency of approximately 125 KHz, but additional frequencies may be suitable." *Id*. at 26. Bosch also asserts that McClelland would have received a written description rejection if he "tried to claim his tool to activate using a plurality of frequencies in the Unites States Patent and Trademark Office." *Id.* Further, Bosch's declarant alleges that the disclosure relied upon by Autel "are very vague statements, and a person of ordinary skill in the art would not learn anything from these statement[s]." Nranian Decl. ¶ 43. We are not persuaded by these assertions. First, Bosch's initial argument does not address or analyze the phrase "ranges of frequencies" relied upon from McClelland and, thus, is unpersuasive. Bosch's second argument is merely attorney argument predicated on hypothetical claims and speculation as to patent prosecution positions and is, therefore, also not persuasive. Mr. Nranian testifies that the phrase including "ranges of frequencies" is "very vague," but provides no explanation as to why it is vague or why a person of ordinary skill in the art of RTMS design would not understand a range of frequencies to include a

plurality of frequencies. *See* Nranian Decl. ¶ 43. Accordingly, we give little weight to the witness's testimony.

We are persuaded, as discussed previously that McClelland discloses a single tool, i.e. exciter 16, for activating a tire sensor in accordance with our claim construction. Pet. 18–19, 44 (citing Ex. 1002 ¶¶ 9–14, 24, 37, 38; Liepa Decl. ¶¶ 107–108). We also are persuaded that McClelland discloses that exciter 16 receives a tire sensor signal from the activated tire sensor and transmits the received data to a vehicle receiving unit. *Id.*

Turning to the specific limitation in dispute for claim 20, we are persuaded by Autel's evidence that the '796 patent contains explicit disclosure indicating that "a plurality of means" for activating RTMS tire sensors includes different frequencies of continuous wave signals. *See* Ex. 1001, 5:27–30 ("Different makes of RTMS tire sensors may require different frequencies of CW signal to be activated. Thus, each different frequency of CW signal generated constitutes a different means for activating RTMS tire sensors."). Next, in order to find anticipation we must determine that McClelland discloses that exciter 16 can generate not only a single frequency, but a plurality of, or multiple, frequencies. Relying on its witness, Dr. Liepa, Autel points to McClelland's specification alleging that exciter 16 is "a tool which activates using 'ranges of frequencies' generated by the tool (more than one activation frequency of continuous wave)." Pet. 44 (citing Liepa Decl. ¶ 48). In support of this conclusion, Dr. Liepa refers on the portion of McClelland's specification that states:

> [i]n one embodiment, the low frequency signal has a frequency of approximately 125 KHz, but other frequencies *or ranges of frequencies may be suitable*.

Liepa Decl. ¶ 48 (citing Ex. 1002 ¶ 11) (emphasis added). This sentence initially explains that 125 KHz is just one frequency, "but other frequencies" could be used to activate the tire sensors. We understand the plain meaning of the sentence, initially, to be that the exciter could be designed to transmit other, or different individual frequencies besides 125 KHz. The sentence, however, also includes an alternative, using the word "or," stating "or ranges of frequencies may be suitable." The plain and ordinary meaning of the word *ranges* is, "a series of things in a line." MERRIAM-WEBSTER ONLINE DICTIONARY, http://www.merriam-webster.com/dictionary/ranges (last visited April 17, 2015). A "series" of things is an aggregate of individual things, and for the described alternative not to be redundant to individual frequencies, must be read as a plurality of, or multiple, frequencies. Accordingly, we agree that the evidence best supports Autel's position that McClelland discloses that exciter 16 can be designed so as to transmit a single frequency, or alternatively, one of a plurality of frequencies in a frequency range.

With respect to claims 21 and 22, Autel argues that McClelland discloses adding tire position data to data received from the tire sensors and sending the combined data to the vehicle receiving unit. Pet. 45 (citing Ex. 1002 ¶¶ 12–14, 24, 37). Bosch provides no arguments with respect to claims 21 and 22, asserting only that they are allowable because claim 20 is allowable. PO Resp. 27.

Autel has shown by a preponderance of the evidence that McClelland anticipates the limitations of claim 20. Autel also has demonstrated by a preponderance of the evidence that McClelland anticipates all the additional features of dependent claims 21 and 22. *See* Pet. 45. Accordingly, we

conclude that Autel has shown by a preponderance of the evidence that claims 20–22 are anticipated by McClelland.

10. Claims 20–22 – Obviousness over McClelland

Autel argues that claims 20–22 would have been obvious because "[a] disclosure that anticipates a claim also renders a claim invalid under 35 U.S.C. [§] 103, because 'anticipation is the epitome of obviousness.'" Pet. 46 (citing *Connell v. Sears, Roebuck and Co.*,722 F. 2d 1542 (Fed. Cir. 1983), *Johns Hopkins Univ. v. Cellpro, Inc.*,152 F. 3d 1342 (Fed. Cir. 1998)). We agree, but for purposes of completeness, also provide the following analysis with respect to obviousness over McClelland.

As discussed above with respect to anticipation, Bosch argues specifically that McClelland's tool uses only a single frequency, and not a plurality of frequencies, and thus does not disclose the specific feature of a single tool comprising "*a plurality of means* for activating remote tire monitoring system tire sensors" recited in claim 20. PO Resp. 26 (emphasis added). We are persuaded that McClelland clearly discloses the use of a single tool, exciter 16, using a single frequency, for example 125 KHz, for communicating with a tire sensor. Pet. 18–19, 44 (citing Ex. 1002 ¶¶ 9–14, 24, 37, 38; Liepa Decl. ¶¶ 107–108). Also, we credit Dr. Liepa's testimony alleging that "the state of prior art RTMS also included separate 'tools' used with RTMS that communicated with the tire sensor and receiver components of the system." Liepa Decl. ¶ 47. Further, Bosch asserted that besides 125 KHz, "928 MHz would work, 433 MHz would work, or some other frequency would work." PO Resp. 26. One of skill in the art, understanding the problems presented by incompatible sensors necessitating separate and different "tools" to communicate with each different sensor, reasonably

would have looked to construct a single tool which could use more than one frequency to communicate with sensors requiring different frequencies. *Perfect Web Tech., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009) ("while an analysis of obviousness always depends on evidence . . . it also may include recourse to logic, judgment, and common sense available to the person of ordinary skill that do not necessarily require explication in any reference"). Indeed, Bosch contends nowhere that it was beyond the capabilities of a person of ordinary skill in the art to design and construct a single RTMS tool which could use a plurality of frequencies, or that combining any other of the known prior art "means for activing" was an unsolved or difficult problem. "When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp." *KSR*, 550 U.S. at 421. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. *See id.* ("If [pursuing known options] leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.").

Accordingly, a preponderance of the evidence establishes that claim 20 also is obvious in view of McClelland. As discussed above, because Autel has also demonstrated that McClelland anticipates all the additional features of dependent claims 21 and 22, these dependent claims also are obvious in view of McClelland. *See* Pet. 45.

D. Secondary Considerations

The factual inquiries for obviousness include secondary considerations based on evaluation and crediting of objective evidence.

Graham, 383 U.S. at 17. However, to accord substantial weight to objective evidence requires the finding of a nexus between the evidence and the merits of the claimed invention. *GPAC Inc.*, 57 F.3d at 1580; *see also In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996) ("success is relevant in the obviousness context only if there is proof that the sales were a direct result of the unique characteristics of the claimed invention").

Bosch makes essentially three arguments: first, Bosh argues that it has enjoyed significant commercial success, where sales of its patented tools in combination with sales of licensed tools "reached 89 percent of the United States market for tire pressure reset tools" (PO Resp. 28); second, Bosch relies upon licenses entered into with ATEQ and Bartec as evidence of non-obviousness. *Id.* at 29–31; third, Bosch asserts evidence of industry praise for their reset tools, specifically awards from a magazine, allegedly aimed at the novel features for sensor activation as recited in the '796 patent. *Id.* at 32–33.

1. Commercial success

We are not persuaded by Bosch's asserted secondary considerations here because Bosch has not shown a nexus between any of the success and accolades it says occurred, and the "plurality of means for activating" tire sensors using different methods of activation as recited in the claims of the '796 patent. Initially, Bosch relies upon the declaration of Patrick Pierce. *Id.* at 28–29 (citing Ex. 2007 ¶¶ 13, 16–18). Mr. Pierce asserts that there are several models of Bosch reset tools, also referred to as "OTC Tire Pressure Monitoring System Reset Tool":

a. The OTC Tire Pressure Monitoring System Reset Tool (Bosch part no. 3834);

b. The OTC Tire Pressure Monitoring System Reset Tool with EZ-sensor™ Programming (Bosch part no. 3834EZ);

c. The OTC Tire Pressure Monitoring System Reset Tool (Bosch part no. 3833).

Pierce Decl. ¶¶ 9–10. There is also apparently a "Genesis automotive scan tool, some of which come with a tire pressure reset tool." *Id.* ¶ 10. Mr. Pierce then states that "I understand that all of Bosch's reset tools are covered by the '796 Patent." Pierce Decl. ¶ 12. Besides this, we are directed to no other explanation or analysis in Mr. Pierce's testimony that corroborates the relationship between any of the noted Bosch reset tools, and the claims of the '796 patent. Bosch argues in its Patent Owner Response that the "Bosch [OTC] device is [] a tool with a plurality of means of activating tire sensors. The '796 Patent covers Bosch's basic reset tool." PO Resp. 29. Bosch asserts that a claim chart (Ex. 2023), reproduced below in its entirety, applies the features of claim 1 to the Bosch reset tool. *Id.*

Claims Chart
Bosch Tire Pressure Monitor (TPM) System Tester
Part No. 3833

United States Patent No. 6,904,796	**Quick Start Guide**
1. A tool comprising	
a plurality of means for activating remote tire monitoring system tire sensors, the plurality of means selected from the group consisting of a magnet, a valve core depressor, means for generating continuous wave signals, and means for generating modulated signals,	The tool activates tire sensors using at least two methods. The tool generates low frequency signals to activate tire sensors. The tool includes a magnet to activate tire sensors.
wherein the tool is capable of activating a plurality of tire sensors, each of the plurality of tire sensors utilizing a different method for activating the said tire sensor.	The tool is capable of activating a plurality of tire sensors, each of which utilizes a different method for activating.

With claim 1 from the ’796 patent shown on the left, what is compared on the right hand side, is apparently an excerpt from a “Quick Start Guide” for Bosch tire pressure monitor Part No. 3833. The Quick Start Guide, however, was not filed as an exhibit; and neither are we directed to any witness testimony to validate what apparently is shown by the “Quick Start Guide” in this claims chart. The evidence in Exhibit 2023, such as it is, is uncorroborated by any witness, is not self-authenticating, nor explained in any detail in Bosch’s Response.[6] This evidence violates the rule against hearsay and lacks foundation (FRE 802–807). The “Quick Start Guide” itself has not been produced as an exhibit in this proceeding, nor authenticated by any witness. Indeed, none of the other Bosch products used by Mr. Pierce in determining market share, e.g. Part Nos. 3843, 3843 EZ, and the Genesis tool, are compared to the claims of the ’796 patent. *See* Pierce Decl. ¶ 9. Similarly, Exhibits 2024 and 2025 which purport to compare Bartec’s “AirAware 21240” and ATEQ’s “VT 55” licensed products to claim 1 of the ’796 patent similarly violate the hearsay rule and lack foundation. Bosch’s evidence, based on Mr. Pierce’s determination of an 89 percent market share, is tied to Bosch products and licensed products which are not shown to include the novel aspects of the claims in the ’796

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[6] Fed. R. Evid. 902. Evidence that Is Self-Authenticating
The following items of evidence are self-authenticating; they require no extrinsic evidence of authenticity in order to be admitted:

> . . . .
> (6) Newspapers and Periodicals. Printed material purporting to be a newspaper or periodical.
> (7) Trade Inscriptions and the Like. An inscription, sign, tag, or label purporting to have been affixed in the course of business and indicating origin, ownership, or control.

patent. As a result, we can determine no causal relationship between the claimed subject matter and the alleged evidence to support a showing of commercial success.

2. Licenses

Bosch directs our attention to licensing agreements to third parties ATEQ and Bartec, and argues that although each license granted to each party was for the purpose of settling a patent suit, ATEQ and Bartec controlled 71 percent of the market in 2011, and it was the strength of the ’796 patent, rather than desire to avoid litigation, that caused the parties to enter into a license. PO Resp. 30. Bosch argues that with such a dominant market position it was most likely the strength of the ’796 patent that drove the parties to enter into a license. *Id.* at 31 (“In the present case, however, the two market leaders, Bartec and ATEQ, with over two-thirds of the market, they still entered into license agreements, indicating nonobviousness of the subject matter of the ‘796 Patent.”)

In its Reply, Autel contends that Bosch has failed to establish a sufficient nexus between claim 1 of the ’796 patent and the identified license agreements. Pet. Reply 13–14. Autel argues that the Bartec license also relates to a business collaboration between the parties and that the ATEQ license covers two patents, the ’796 patent as well as U.S. Patent No. 7,639,122, and related patent applications. *Id.* (citing Ex. 2019 ¶ 1). We agree with Autel that Bosch has failed to establish the requisite nexus between the licensing agreements and the claims.

A party relying on licensing activities as evidence of non-obviousness must demonstrate a nexus between those activities and the subject matter of the claims at issue. *GPAC*, 57 F.3d at 1580. Further, without a showing of

nexus, "the mere existence of . . . licenses is insufficient to overcome the conclusion of obviousness" when there is a strong ground of unpatentability based on obviousness. *SIBIA Neurosciences, Inc. v. Cadus Pharm. Corp.*, 225 F.3d 1349, 1358 (Fed. Cir. 2000); *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1324 (Fed. Cir. 2004).

The evidence of non-obviousness presented by Bosch falls short of demonstrating the required nexus. Bosch has not established that the licensing agreements (Exs. 2019, 2021), which admittedly arose from litigation between Bosch and the third parties, are directed to any particular aspect of the claimed subject matter in the '796 patent. *See* PO Resp. 30. For instance, Bosch does not present credible or sufficient evidence that the two licensing agreements arose out of recognition and acceptance of the novelty of any feature, or features, such as activating disparate sensors by different methods, as recited in the claims of the '796 patent. In the absence of an established nexus with the claimed invention, secondary consideration factors are entitled little weight, and generally have no bearing on the legal issue of obviousness. *See In re Vamco Machine & Tool, Inc.*, 752 F.2d 1564, 1577 (Fed. Cir. 1985). Furthermore, even if we assume that above-identified licenses establish some degree of industry respect for the claimed subject matter recited in claim 1, that success is outweighed by the strong evidence of obviousness over McClelland, Kranz, Dixit, and Howell, discussed above.

3. Industry Praise

Bosch argues that its TPMS reset tool garnered industry praise and awards from MOTOR MAGAZINE, achieving the award for "Top 20 Tool" in 2010 and 2011. PO Resp. 32 (citing Pierce Decl. ¶ 21, Ex. 2016, 14, Ex.

2017, 7). Bosch contends that "[t]hese awards are for the patented invention. As noted in the 2010 award, the praised tool resets tire pressure sensors and 'covers all systems up through late 2009,' which it manifestly does by providing a plurality of means of activation of the tire sensors." *Id.* (citing Ex. 2016, 14). As with commercial success, however, evidence of industry praise is only relevant when it is directed to the merits of the invention claimed. *See Ormco Corp.*, 463 F.3d at 1311–12. As discussed above, Bosch has not tied either the 3834, or the 3834 EZ tool, as the subjects of the 2010 and 2011 awards, to the claims of the '796 patent.

4. Conclusion

Because Bosch has not shown nexus persuasively to support the evidence of secondary considerations, such as it is, of commercial success, licensing, and industry praise, and because Bosch has not provided sufficient evidence that the licenses with ATEQ and Bartec were entered into apart from avoidance of litigation costs, the evidence does not persuade us that the alleged success of these products can be traced to the claimed invention. When we balance Autel's strong evidence of obviousness against the objective evidence of nonobviousness, we determine that a preponderance of the evidence supports Autel's argument that it would have been obvious to combine McClelland, Kranz, Dixit, and Howell to reach the subject matter of the challenged claims.

Accordingly, we conclude that Autel has demonstrated the unpatentability of claims 1, 4–15, and 20–22.

E. Bosch's Contingent Motion to Amend

1. Claims 23–38

Bosch moves to substitute claims 23–38 for challenged claims 1 and 4–15, and 20–22, respectively, if we find original claims 1, 4–15, and 20–22 unpatentable. Mot. to Amend 1–8. As stated above, we determine that Autel has demonstrated by a preponderance of evidence that all of the challenged claims are unpatentable. Therefore, Bosch's Motion to Amend is before us for consideration. For the reasons set forth below, Bosch's Contingent Motion to Amend is *denied*.

Proposed substitute claim 23 is an independent claim intended to supplant claim 1. The added limitations to claim 23 have also been added to the other challenged independent apparatus claims: 23, 27, 29, 31, 33, and 35. Claim 23 is reproduced below with the added limitations to the claims shown by underline:

> 23. (Proposed Substitute for Original Claim 1) A tool comprising:
>
> a plurality of means for activating remote tire monitoring system tire sensors, the plurality of means selected from the group consisting of a magnet, a valve core depressor, means for generating continuous wave signals, and means for generating modulated signals,
>
> <u>means for recording a most recent means for activating signal that was utilized to successfully activate a tire sensor, and</u>
>
> <u>means for selecting the recorded means for activating as the first means for activating to be used,</u>

> wherein the tool is capable of activating a plurality of tire sensors, each of the plurality of tire sensors utilizing a different method for activating the said tire sensor.

Mot. to Amend 1. Additionally, proposed substitute method claim 36 is intended to take the place of claim 20. Substitute claim 36 is shown below with added limitations indicated by underline:

> 36. (Proposed Substitute for Original Claim 20) A method, comprising the steps:
>
> activating a first remote tire monitoring system tire sensor using a one of a plurality of means for activating remote tire monitoring system tire sensors, the plurality of means selected from the group consisting of a magnet, a valve core depressor, means for generating continuous wave signals, and means for generating modulated signals;
>
> receiving a tire sensor signal containing data from the activated first tire sensor;
>
> recording the one of the plurality of means for activating; and
>
> transmitting some or all of the data received from the first tire sensor to a remote tire monitoring system receiving unit, and
>
> activating a second remote tire monitoring system tire sensor using the recorded means for activating;
>
> wherein the activating step, the receiving step, the recording steps, and the transmitting step are all performed by a single tool, and wherein the tool comprises a plurality of means for activating remote tire monitoring system tire sensors.

A motion to amend claims in an *inter partes* review is not, itself, an amendment. As the moving party, Bosch bears the burden of proof to

establish that it is entitled to the relief requested. 37 C.F.R. § 42.20(c). Therefore, Bosch's proposed substitute claims are not entered automatically, but only upon Bosch having demonstrated by a preponderance of the evidence the patentability of those substitute claims. *See, e.g.,* 37 C.F.R. § 42.1(d) (noting that the "default evidentiary standard [in proceedings before the Board] is a preponderance of the evidence").

2. Claim Construction

Claim construction is an important step in a patentability determination. *Oakley, Inc. v. Sunglass Hut Int'l.*, 316 F.3d 1331, 1339 (Fed. Cir. 2003); *Medichem, S.A. v. Rolabo, S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003) ("Both anticipation under § 102 and obviousness under § 103 are two-step inquiries. The first step in both analyses is a proper construction of the claims. . . . The second step in the analyses requires a comparison of the properly construed claim to the prior art." (internal citations omitted)). A motion to amend claims must identify how the proposed substitute claims are to be construed, especially when the proposed substitute claims introduce new claim terms. *See Idle Free Sys., Inc. v. Bergstrom, Inc.*, Case IPR2012-00027 ("*Idle Free"*), slip op. at 7 (PTAB June 11, 2013) (Paper 26).

Bosch identifies the added limitations as means-plus-function limitations subject to 35 U.S.C. § 112, sixth paragraph. Mot. to Amend 9. Autel does not dispute this position. Opp. Mot. to Amend. 2. The Office interprets limitations arising under 35 U.S.C. § 112, sixth paragraph, in light of the corresponding structure, material or acts described in the specification. *In re Donaldson Co., Inc.*, 16 F.3d 1189, 1193 (Fed. Cir. 1994). ("[P]aragraph six applies regardless of the context in which the interpretation of means-plus-function language arises, i.e., whether as part of

a patentability determination in the PTO or as part of a validity or infringement determination in a court.")

a. Means for recording a most recent means for activating signal that was utilized to successfully activate a tire sensor

Independent claim 23 includes the limitation "means for recording a most recent means for activating signal that was utilized to successfully activate a tire sensor." Bosch proposes that the function for this limitation "is to record a most recent means for activating signal that was utilized to successfully activate a tire sensor." Mot. to Amend. 9. Bosch further asserts that the corresponding structure is a "microprocessor," specifically microprocessor 114 shown in Figure 1 of the '796 patent. *Id.*

It is well settled that any claim construction of a means-plus-function limitation must set forth the corresponding structure disclosed in the specification that performs the claimed function, including any computer or microprocessor, computer program, and algorithm. *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999) (In a means-plus-function claim "in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm."). "[T]he corresponding structure for a § 112 ¶ 6 claim for a computer-implemented function is the algorithm disclosed in the specification." *Aristocrat Techs. Austl. Party. Ltd. vs. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008) (quoting *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1249 (Fed. Cir. 2005)).

Bosch argues that microprocessor 114 (Ex. 1001, Fig. 1, 10:25–33) is "linked" to the function of recording the activation signal that successfully activates a tire sensor. Mot. to Amend. 9. Bosch identifies a portion of the '796 patent Specification at page 17, lines 2–5, that allegedly links the microprocessor to the function of "recording the last successful activation signal." *Id.* (citing Ex. 1001, 11: 46–61. Bosch's claim construction, however, fails to identify specific portions of the specification that describe the corresponding structure, including a computer program or algorithm. *Blackboard, Inc. v. Desire2Learn Inc.*, 574 F. 3d 1371, 1383–85 (Fed. Cir. 2009) (holding that merely referencing the "access control manager" that was essentially a black box designed to perform the recited function was not sufficient). Our review of the Motion to Amend fails to reveal any reference by Bosch to the specification of the '796 patent that indicates what steps are involved in "recording a most recent means for activating signal" in the proposed amendment. Bosch states, and shows in a chart, that the proposed limitations are "nearly the same words in the original disclosure," this however, does not explain what algorithmic steps define the "means for recording." Mot. to Amend 10.

In its Reply to Petitioner's Opposition to Patent Owner's Motion to Amend, Bosch states that the algorithm for "recording means" is described at page 17, line 2 to page 18, line 4, in conjunction with Figure 2. Reply Opp. Mot. to Amend. 1. Bosch provides no discussion of a specific algorithm, beyond the statement that "the '796 Patent describes the algorithm in detail." *Id.* The specification describes Figure 2 generally as "a flowchart representing an embodiment of a method 200 according to the present invention." Ex. 1001, 11:25–26. Further, the specification does

explain that the tire positioning tool "records" and "can store" the most recent means of activation signal. *See id.* at 11:46–50, 12:29–31. The specification does not, however, provide an algorithm, or a series of steps, detailing *how* the microprocessor stores or records successful activation means. The specification broadly states that "[m]ethods such as the method 200 illustrated in FIG. 2 can be implemented in a tire positioning tool's microprocessor by one of ordinary skill in the art of computer programming." Ex. 1001, 11:26–29. This is not sufficient for a computer implemented invention under 35 U.S.C. § 112, sixth paragraph. We are not persuaded that the specification provides an algorithm for the "means for recording." Rather than merely relying on the microprocessor, Bosch had to identify an algorithm that the processor can execute, which it did not. And, it had to do more than parrot the recited function; it had to describe a means for achieving a particular outcome, not merely the outcome itself. *Blackboard, Inc.*, 574 F. 3d at 1382–85. Bosch points only to the outcome itself, i.e., "recording" and "storing" as the algorithm. The remaining disclosure relating to Figure 2 discusses other functions and structure of the tool apart from the "means for recording."

Because we conclude that the '796 patent Specification portions identified by Bosch do not describe an algorithm for recording a "most recent means for activating signal that was utilized to successfully activate a tire sensor," we determine that Bosch has not met its burden with respect to proposed substitute claim 23. *See Aristocrat*, 521 F.3d 1333, *see also* 37 C.F.R. § 42.304(b)(3) ("How the challenged claim is to be construed. Where the claim to be construed contains a means-plus-function or step-plus-function limitation as permitted under 35 U.S.C. 112(f), the

construction of the claim must identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function.") As explained in *BlackBerry Corp. v. Mobile Media Ideas, LLC*, Case IPR2013-00036 (PTAB Mar. 7, 2014) (Paper 65), the specification must disclose enough of a specific algorithm to provide the necessary structure under § 112, sixth paragraph. In the circumstance here, when the specification of the challenged patent lacks sufficient disclosure of structure under 35 U.S.C. § 112, sixth paragraph, the scope of the claims cannot be determined without speculation and, consequently, the differences between the claimed invention and the prior art cannot be ascertained. *Id.* For the reasons given, we determine that proposed independent claim 23 is not amenable to construction and, thus, Bosch's Motion to Amend is denied with respect to claim 23.

Claims 24–26 depend directly from claim 23 and thus, in view of our determination above, are also not amenable to construction. Additionally, each of independent claims 27, 29, 31, 33, and 35 include the same "means for recording" limitation as claim 23, and, thus, along with their respective substitute dependent claims, claims 28, 30, 32, and 34, are not amendable to construction for the reasons discussed above.

b. Means for selecting the recorded means for activating as the first means for activating to be used

Because we determine that the substitute claims in the Motion to Amend are not amendable to construction in connection with the '796 patent for the reasons discussed above, we need not construe other means-plus-function terms appearing in those claims for the purposes of this Final Written Decision.

3. Patentability over the Prior Art

Besides the 112 sixth paragraph issue discussed above, we are also not persuaded that proposed apparatus claims 23–35, or newly proposed method claims 36–38, are patentable over the prior art. The patent owner bears the burden of proof in demonstrating patentability of the proposed substitute claims over the prior art in general, and, thus, entitlement to add these claims to its patent. *Idle Free*, Paper 26, slip op. at 7. In a motion to amend, the patent owner must show that the conditions for novelty and non-obviousness are met for the prior art available to one of ordinary skill in the art at the time of the invention. With regard to obviousness as the basis of potential unpatentability of the proposed substitute claims, the patent owner should present and discuss facts which are pertinent to the first three underlying *Graham* factors: (1) the scope and content of the prior art, (2) differences between the claimed subject matter and the prior art, and (3) the level of ordinary skill in the art, with special focus on the new claim features added by the proposed substitute claims. The patent owner should identify each new claim feature, and come forward with technical facts and reasoning about that particular feature. Some discussion and analysis should be made about the specific technical disclosure of the closest prior art as to each particular feature, and the level of ordinary skill in the art, in terms of ordinary creativity and the basic skill set of a person of ordinary skill in the art, regarding the feature.

Even if the scope of the claims could be ascertained, here, we are unpersuaded that Bosch has demonstrated that the proposed substitute claims are patentable. In its Motion to amend Bosch does not address, in any meaningful way, what was previously known in the art, much less the level

of ordinary skill in the art, regarding each new claim feature added by its proposed substitute claims.

First, Bosch argues that McClelland, Kranz, Dixit, and Howell do not disclose the new claimed features. Mot. to Amend 10–13. These references are not necessarily the closest known prior art with respect to the "means for recording" feature. Although they may be the closest known prior art as to the claim feature recited in the original claims, the "means for recording" feature was not presented in the original claims. Further, Bosch merely states that it is unware of any prior art in the RTMS field that "also has means for recording a most recent means for activating signal that was utilized to successfully activate a tire sensor and means for using that successful activation signal first." Mot. to Amend. 13. "Distinguishing the proposed substitute claims only from the prior art references applied to the original patent claims, however, is insufficient to demonstrate general patentability over prior art." *Idle Free* slip op. at 33 (PTAB Jan. 7, 2014) (Paper 66).

With respect to the level of ordinary skill in the art, Bosch states in its Motion to Amend that the added limitations are features "useful to users of the tool, from the perspective of a person of ordinary skill in the art," and points us to the Nranian declaration for the level of skill in the art. Mot. to Amend 13 (citing Nranian Decl. ¶¶ 40–41). Mr. Nranian's testimony defining a person of ordinary skill in the art in the field of RTMS does not address the newly added limitations. The only testimony relating to the new features by Mr. Nranian, alleges that "[a] person of ordinary skill in the art, as previously defined by me, will find these features significant and useful." Nranian Decl. ¶ 68. Addressing only references that are not the closest

known prior art with respect to the "recording means" and failing to ascertain the level of ordinary skill in the art with respect to the newly claimed features is insufficient to establish that proposed substitute claim 23 is patentable over prior art. Therefore, we give little weight to the witnesses testimony in this regard.

4. Conclusion

For the reasons discussed above, we are not persuaded that proposed independent claims 23, 27, 29, 31, 33, 35, and 36 (corresponding to independent claims 1, 7, 9, 11, 13, 15, and 20), and their respective dependent claims are patentable over the prior art. Bosch has not, in its Motion to Amend, set forth a prima facie case for the relief requested or satisfied its burden of proof. Consequently, Bosch's Motion to Amend is *denied*.

F. Autel's Motion to Exclude

Autel seeks to exclude Exhibit 2031 (Sec. Nranian Decl.) (testimony in a second declaration from Michael Nranian and executed October 8, 2014), under 37 C.F.R. § 42.53(a) because it did not contain the requirements of an affidavit, specifically a sworn oath or affirmation before an officer having the authority to administer such oath. Paper 45. Specifically, Autel argues that, without such an oath or affirmation, the second Nranian Declaration is inadmissible hearsay under Federal Rule of Evidence 802. *Id.*

Bosch, however, timely filed Patent Owner's Response to Motion to Exclude, including an attached a sworn statement by Mr. Nranian "under penalty of perjury under the laws of the United States of America that the statements ma[de] *sic* in my Second Declaration, executed by me on October

8, 2014, are true and correct." Paper 48. We determine that this statement satisfies the requirements of 37 C.F.R. § 42.53(a) that the second Nranian Declaration is in appropriate affidavit form, and accordingly *deny* Autel's Motion to Exclude.

G. Bosch's Motions to Seal and Supplement the Declaration of Patrick Pierce

Bosch filed a Motion to Seal, an Amended Motion to Seal, and a Supplement to the Amended Motion to Seal ("motions to seal") requesting certain portions of Bosch's Exhibits 2007, 2018, 2019, 2020, 2021, and 2022 be sealed pursuant to the Protective Order (Exhibit 2026) submitted with the Amended Motion to Seal. Papers 24, 28, 36. Bosch filed Exhibit 2027 with its Amended Motion to Seal, the exhibit showing the specific information it desired to redact in the exhibits subject to the motion. Paper 28. Bosch explained in its Supplement to the Amended Motion to Seal the portions of Exhibit 2028 desired to be redacted. Paper 36. No opposition to the motions has been filed.

There is a strong public policy in favor of making information filed in an *inter partes* review open to the public, especially because the proceeding determines the patentability of claims in an issued patent and, therefore, affects the rights of the public. Under 35 U.S.C. § 316(a)(1) and 37 C.F.R. § 42.14, the default rule is that all papers filed in an *inter partes* review are open and available for access by the public; however, a party may file a concurrent motion to seal and the information at issue is sealed pending the outcome of the motion. It is only "confidential information" that is protected from disclosure. 35 U.S.C. § 316(a)(7); *see* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,760 (Aug. 14, 2012). The standard

for granting a motion to seal is "for good cause." 37 C.F.R. § 42.54(a). The party moving to seal bears the burden of proof in showing entitlement to the requested relief, and must explain why the information sought to be sealed constitutes confidential information. 37 C.F.R. § 42.20(c). As set forth in the Office Patent Trial Practice Guide, there is an expectation that information will be made public if identified in this Final Written Decision. 77 Fed. Reg. at 48,761.

We have reviewed the unredacted versions of Exhibits 2007, 2018, 2019, 2020, 2021, 2022, and 2028. We conclude that they contain confidential business information. In considering Bosch's Exhibit 2027, showing the specific information it desired to redact in Exhibits 2007, 2018, 2019, 2020, 2021, and 2022, we conclude that this final written decision does not rely on any information that Bosch seeks to have redacted. Bosch's motions to seal are *granted*. As set for the below, Bosch is ordered to file each of Exhibits 2007, 2018, 2019, 2020, 2021, 2022, and 2028 in redacted form. Bosch may request original Exhibits 2007, 2018, 2019, 2020, 2021, 2022, and 2028 be expunged from the record in accordance with 37 C.F.R. § 42.56.

Bosch also filed a Motion to Supplement the Declaration of Patrick Pierce to authenticate Exhibit 2028. Paper 35. No opposition to the motion has been filed. The motion is *granted*.

IV. CONCLUSION

We conclude that Autel has demonstrated by a preponderance of the evidence that (1) claims 1 and 4–14 of the '796 patent would have been obvious over McClelland, Kranz, Dixit, and Howell, (2) claim 15 of the '796 patent is unpatentable as obvious over the combination of McClelland,

Kranz, Dixit, Howell, Pacsai ’467, and Gaborit, (3) claims 20–22 of the ’796 patent are unpatentable as anticipated by McClelland, and (4) claims 20–22 of the ’796 patent would have been obvious over McClelland.

V. ORDER

For the reasons given, it is

ORDERED that claims 1, 4–15, and 20–22 of U.S. Patent No. 6,904,796 are determined by a preponderance of the evidence to be unpatentable;

FURTHER ORDERED that Bosch’s implicit motion to amend is granted, claim 16 is canceled;

FURTHER ORDERED that, in accordance with its Amended Motion to Seal and Supplement to the Amended Motion to Seal, Bosch shall file in this proceeding redacted copies of Exhibits 2007, 2018, 2019, 2020, 2021, 2022, and 2028;

FURTHER ORDERED that Bosch’s Motion to Seal, Amended Motion to Seal, and Supplement to the Amended Motion to Seal, as well as its Motion to Supplement the Declaration of Patrick Pierce, are *granted*;

FURTHER ORDERED that Autel’s Motion to Exclude is *dismissed*;

FURTHER ORDERED that Bosch’s Motion to Amend is *denied*; and

FURTHER ORDERED that because this is a final written decision of the Board under 35 U.S.C. § 318(a), 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.

IPR2014-00183
Patent 6,904,796 B2

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