Trials@uspto.gov
Tel: 571-272-7822

Paper 30
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SCHRADER-BRIDGEPORT INTERNATIONAL,
SENSATA TECHNOLOGIES HOLDING N.V., and
SI INTERNATIONAL (TOPCO), INC.,
Petitioner,

v.

WASICA FINANCE GMBH & BLUEARC FINANCE AG,
Patent Owner.

Case IPR2014-00476
Patent 5,602,524

Before RAMA G. ELLURU, SCOTT A. DANIELS, and
JEREMY M. PLENZLER, *Administrative Patent Judges*.

PLENZLER, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Schrader-Bridgeport International, Inc., Sensata Technologies Holding N.V., and SI International (Topco), Inc. (collectively, "Petitioner") filed a Petition to institute an *inter partes* review of claims 1–6, 9–19, and 21 of U.S. Patent No. 5,602,524 (Ex. 1001, "the '524 patent"). Paper 1 ("Pet."). The Petition was not accompanied by an expert declaration. Wasica Finance GmbH and BlueArc Finance AG (collectively, "Patent Owner") did not file a Preliminary Response. In our Decision on Institution (Paper 7, "Dec."), we instituted a trial to review the patentability of claims 1–6, 9, 10, 12–19, and 21 based on the following grounds:

References	**Basis**	**Claims**
Oselin[1]	§ 102	1, 2, 5, 6, 9, 10, 13, 15, 17–19, and 21
Oselin	§ 103	1, 2, 5, 6, 9, 10, 13–15, 17–19, and 21
Oselin and Schultz[2]	§ 103	4, 12, and 16
Oselin and Nowicki[3]	§ 103	3 and 10
Oselin and Barabino[4]	§ 103	14

Id. at 28.

During trial, Patent Owner filed a Patent Owner Response (Paper 16, "PO Resp."), which was accompanied by an expert declaration from Scott

[1] Italian Patent No. 1219753, published May 24, 1990 (Ex. 1004, "Oselin"). Citations to this reference refer to its English translation (Ex. 1003).
[2] U.S. Patent No. 5,083,457, issued Jan. 28, 1992 (Ex. 1005, "Schultz").
[3] U.S. Patent No. 5,285,189, issued Feb. 8, 1994 (Ex. 1006, "Nowicki").
[4] U.S. Patent No. 4,067,376, issued Jan. 10, 1978 (Ex. 1007, "Barabino").

Andrews (Ex. 2004, "Andrews Declaration"). Petitioner filed a Reply to the Patent Owner Response. Paper 21 ("Pet. Reply"). An oral hearing was held on April 13, 2015. A transcript of the hearing has been entered into the record. Paper 29 ("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).

We determine that Petitioner has established, by a preponderance of the evidence, that claims 1–5, 10, 12–19, and 21 of the '524 patent are unpatentable. Petitioner, however, has not established, by a preponderance of the evidence, that claims 6 and 9 of the '524 patent are unpatentable.

B. Related Proceedings

The '524 patent is the subject of the following co-pending federal district court cases: *Wasica Finance GmbH v. Continental Automotive Systems US, Inc.*, Case No. 1-13-cv-01356 (D. Del.); and *Wasica Finance GmbH v. Schrader International, Inc.*, Case No. 1-13-cv-01353 (D. Del.). Pet. 1; Paper 9, 2.

The '524 patent was also the subject of a related *inter partes* review (IPR2014-00295). We entered a final written decision in that case on June 17, 2015, concluding that claims 1–3, 5, 10–19, and 21 of the '524 patent are unpatentable. IPR2014-00295, Paper 41.

C. The '524 Patent

The '524 patent is titled "Device for Monitoring the Air-Pressure in Pneumatic Tires Fitted on Vehicle Wheels." Figure 1 of the '524 patent, reproduced below, illustrates a vehicle including an exemplary monitoring device.

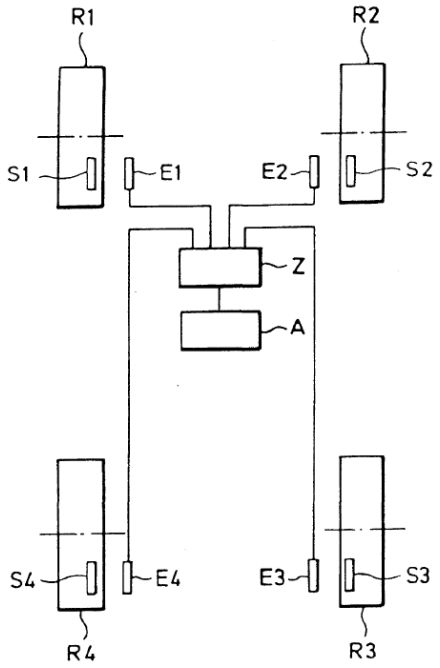

FIG.1

Figure 1 is a schematic illustration of a vehicle including wheels R1–R4; transmitting devices S1–S4, fixed to wheels R1–R4, respectively; a receiving device, including receivers E1–E4, fixed on the vehicle body; central control device Z; and display device A.

Transmitting devices S1–S4 send signals corresponding to each of wheels R1–R4, respectively, to the receiving device. Ex. 1001, 6:63–64, 8:42–43. Figure 3 illustrates the composition of the signals and is reproduced below.

PREAMBLE	IDENTIFICATION-SIGNAL	DATA	POST-AMBEL
16 BIT	32 BIT	24 BIT	4 BIT

FIG.3

Figure 3, above, is an example of the signals sent by transmitting devices S1–S4 in the form of a table depicting the portions of the signals (preamble, identification-signal, data, post-amble). *Id*. at Fig. 3. In the example provided, the preamble has 16 bits that enable receiving parts E1–E4 to synchronize with the signals. *Id.* at 6:65–7:9. Each identification signal is a binary number having 32 bits that contains an identification characteristic specific to corresponding transmitting device S1–S4. *Id.* Each data signal has 24 bits that contains the measured pressure value in binary form, and each post-amble is 4 bits that completes the signal. *Id*.

As illustrated in Figure 1, the receiving device may include receivers E1–E4 near each wheel R1–R4, respectively, for each transmitting device S1–S4, respectively. *Id.* at 7:64-66, Fig. 5. Alternatively, the receiving device may be common to all transmitting devices S1–S4 and may be accommodated in a transportable housing. *Id.* at 11:29–35, Fig. 6. In either embodiment, the receiving device can be switched between a normal operating mode and a pairing mode. *Id.* at 9:57–60, 12:16–18. During the pairing mode, the receiving device stores the identification signal from each transmitting device S1–S4. *Id.* at 10:1–27, 11:7–15, 12:16–27.

During operation, the receiving device evaluates the signals provided by transmitting devices S1–S4 and determines whether the identification-signal portion matches the identification signal stored in the receiving device. *Id.* at 8:42–47. The ’524 patent explains that the matching can include the identification signal and the stored reference signal being identical or having another predetermined mathematical relationship. *Id.* at 8:55–57. If the receiving device determines that the signals match, the data

portion of the signals provided by transmitting devices S1–S4 are evaluated. *Id.* at 8:47–49.

Claim 1 is independent, with claims 2–6, 9, 10, 12–19, and 21 depending from claim 1. Claim 1 illustrates the claimed subject matter and is reproduced below:

> 1. A device for monitoring the air pressure in the air chamber of pneumatic tires fitted on vehicle wheels comprising:
>
> a pressure measuring device mounted on a vehicle wheel which measures the air pressure in the air chamber of the wheel [a]nd outputs an electrical pressure signal representative of the air pressure in the vehicle wheel;
>
> a transmitter mounted to the vehicle wheel which receives the electrical pressure signal output from the pressure measuring device and sends out a pressure transmitting signal corresponding to said air pressure;
>
> a receiver associated with the transmitter and mounted at a distance to the vehicle wheel which receives the pressure transmitting signal transmitted from the associated transmitters
>
> a display device which is connected with the receiver and displays data as numbers or symbols which have been taken from the pressure transmitting signal received from the receiver;
>
> wherein the transmitter comprises an emitter-control device which controls the emittance of the pressure transmitting signal and a signal-generating device which generates an identification signal which is unique for the transmitter and clearly identifies same;

> the emitter-control device works such that the identification signal is transmitted at least once before or after the emittance of the pressure transmitting signal;
>
> the receiver comprises at least a memory in which is stored an identification reference signal related to the associated transmitter in accordance with a predetermined relationship criteria;
>
> the receiver comprises a comparison device which checks if an identification signal transmitted from a transmitter has the relationship criteria to identification reference signal stored in the receiver, and that further processing of the pressure transmission signal taken from the receiver only takes places if the identification signal received by the receiver and the identification reference signal stored in the receiver fulfill the relationship criteria;
>
> the identification reference signal stored in the receiver is changeable in order that the identification signal from the associated transmitter matches the identification reference signal of the receiver; and
>
> the receiver is connected with a switching device which enables the receiver to switch over from normal operating mode, in which the air pressure is monitored, to pairing mode, in which the receiver collects the identification signal of the transmitter and stores this as an identification signal.

Id. at 13:19–14:3.

D. Claim Construction

The ’524 patent is expired. *See* Pet. 6, 8; PO Resp. 1. “[T]he Board’s review of the claims of an expired patent is similar to that of a district

court's review." *In re Rambus, Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012). Specifically, because the expired claims of the patent are not subject to amendment, we apply the principle set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)), that "words of a claim 'are generally given their ordinary and customary meaning,'" as understood by a person of ordinary skill in the art in question at the time of the invention. "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

1. "pressure measuring device"

Claim 1 requires "a pressure measuring device . . . which measures the air pressure . . . [a]nd outputs an electrical pressure signal representative of the air pressure in the vehicle wheel." Petitioner did not offer an explicit construction for this limitation. *See* Pet. 8–14.

Patent Owner contends that the limitation "requires that the pressure measuring device mounted on a vehicle wheel outputs an electrical signal that portrays or symbolizes a quantitative value of the measured air pressure (i.e., an absolute pressure value or another numeric value in units of force per area) in the wheel." PO Resp. 7 (citing Ex. 2004 ¶¶ 40–42). Patent Owner contends that the limitation, therefore, requires the pressure sensor to output "a numeric value of the pressure, not merely an on/off switch for an alarm/no-alarm category indicator" (i.e., the pressure sensor cannot be a switch-based pressure sensor). *Id.* Patent Owner alleges that "[e]very

embodiment described in the ’524 patent includes measuring a quantitative value of the pressure and outputting an electrical signal that portrays or symbolizes that measured quantitative value . . . not merely an on/off switch for an alarm/no-alarm category indicator.” *Id.* At oral hearing, however, Patent Owner acknowledged that a switch-based device measures pressure when addressing the ’524 patent’s discussion of DE-3930479 A1 (i.e., Patent Owner acknowledged that a switch-based pressure sensor is a “pressure measuring device.”). *See* Tr. 43:12–13 (“Internally, that membrane is responsive to the air pressure that is happening. It is measuring it.”).

Indeed, the ’524 patent expressly discusses “measuring” with a switch-based pressure sensor when describing “*measur[ing]* the tire air-pressure by way of *pressure sensors* arranged on the vehicle wheels, which *measurement signal* is then displayed in a suitable way to the driver . . . for example, in DE-3930479 A1.” Ex. 1001, 1:45–49 (emphasis added). Thus, the ’524 patent describes a “pressure measuring device” as including either a device outputting a numeric value of air pressure or a switch-based device that indicates an anomalous pressure condition (e.g., high or low pressure).

Consistent with the specification of the ’524 patent, we determine that the “pressure measuring device” recited in the claims can include a switch-based pressure sensor or a pressure sensor that outputs a numeric value of pressure.

2. “bit sequence”

Claim 9 requires “a transmission of at least a 4 bit sequence” including a first bit sequence, a second bit sequence, a third bit sequence, and a fourth bit sequence. Petitioner did not offer an explicit construction for this limitation. *See* Pet. 8–14.

Patent Owner contends that the term "sequence" means a string of *multiple* bits. PO Resp. 11 (emphasis added). Patent Owner notes that "[e]very embodiment described in the '524 patent refers to bit sequences as including a series of multiple bits." *Id.* Patent Owner additionally notes that "[t]his interpretation of 'bit sequence' is also supported by the dictionary definition of the word 'sequence' as 'a series of items that have been sequenced.'" *Id.* (citing Ex. 2003, 468–69).

Petitioner contends that "[e]ven though the term 'sequence' out of context might suggest multiple bits, the claim as a whole was drafted to allow for the entire transmission to be 'completed' with as few as 4 bits." Pet. Reply 13. We are not persuaded by Petitioner's contentions.

Petitioner acknowledges that the plain meaning of "sequence" is more than one. *See* Tr. 28:10–12 ("there is no contest here that normally, you go pick up a dictionary, the word sequence means more than one"). The plain language of claim 9 requires eight or more bits (i.e., at least two bits for each of a first bit sequence, a second bit sequence, a third bit sequence, and a fourth bit sequence), which would be "at least a 4 bit sequence," as required by the claim. Petitioner has failed to apprise us of any disclosure in the '524 patent that provides a meaning for "sequence" where a single item, such as a single bit, would constitute a sequence. As Patent Owner notes, the specification of the '524 patent consistently uses the term "sequence" to refer to multiple bits. *See, e.g.*, Ex. 1001, 4:27–29.

Accordingly, we construe a "bit sequence" as requiring two or more bits, which is consistent with its plain meaning and use in the specification of the '524 patent.

3. "emittance"

Claim 17 recites that "each transmitter comprises a detector device which recognizes emittance of a predetermined switching signal." Petitioner did not offer an explicit construction for this claim term. *See* Pet. 8–14.

Patent Owner contends that "emittance" "means energy that is radiated or sent out representative of a predetermined switching signal." PO Resp. 12. More specifically, Patent Owner contends that "emit" requires wireless transmission, and that this construction is consistent with both the plain and ordinary meaning of "emit" and its use in the specification of the '524 patent. *Id.* Petitioner responds that "there is no requirement that the 'signal' or its 'emittance' be wireless in claim 17." Pet. Reply 11.

Although Patent Owner identifies several examples in the specification of the '524 patent that discuss emitting a wireless signal, Patent Owner fails to identify anything that requires "emit" to be a transmission of a wireless signal. *See* PO Resp. 12 (citing Ex. 1001, 3:12–14, 8:42–44, 10:60–62). Patent Owner's contention that "[t]he ordinary and customary meaning of 'emit' ('send out (heat, light, vapour, etc.)') and 'emissive' ('having the power to radiate light, heat, etc.') are also consistent with the above-mentioned usage in the '524 patent" is unpersuasive. *Id.* at 12–13 (citing Ex. 2003, 383; Ex. 2006 ¶ 92). The cited testimony from Mr. Andrews generally reiterates Patent Owner's contentions, which we find unpersuasive. Ex. 2004 ¶ 92.

The dictionary definition of "emit" cited by Patent Owner defines the term as "send out," and provides non-limiting examples of sending out "heat, light, vapour, etc." Ex. 2001, 383. Patent Owner fails to identify, and

we do not find, anything further in the record that would limit "emit" to sending out wireless transmissions.

Accordingly, we construe "emittance" as something sent out, such as a signal, which may be sent by a wired or wireless transmission.

II. ANALYSIS

A. Anticipation by Oselin

We have reviewed the Petition, the Patent Owner Response, and Petitioner's Reply, as well as the relevant evidence discussed in those papers. We are persuaded that Petitioner has established, by a preponderance of the evidence, that claims 1, 2, 5, 10, 13, 15, 18, 19, and 21 are anticipated by Oselin. Petitioner has failed to establish, however, that claims 6 and 9 are anticipated by Oselin.

1. Overview of Oselin

Oselin describes a system for transmitting tire pressure signals from transmitters on a vehicle's wheels to a receiver. Ex. 1003, 2.[5] Oselin explains that "[e]ach of the tires of the motor vehicle is associated with a pressure sensor P (figure 2), and a related transmitter 10" that sends a signal to "the radiofrequency stage of a receiver 20." *Id.* at 5–6. Oselin discusses "a signaling group 300, the function of which is to notify the driver of the motor vehicle that certain operating conditions have arisen," and explains that the driver notifications "can include both visual units and acoustic units (buzzers)." *Id.* at 18–19.

[5] The page numbers of Exhibit 1003 referenced in this decision are the original page numbers of Exhibit 1003 found on the bottom center of the page.

Oselin describes the transmitted signals from the transmitters to the receiver as coded signals. *Id.* at 6. In the example provided in Oselin, the coded signal is a binary code including twenty symbols S_1–S_{20}. *Id.* The symbols allow the receiver to distinguish between transmissions from the receiver's vehicle and transmissions from other vehicles. *Id.* at 8.

Symbols S_1–S_4 include data associated with the transmitter issuing the coded signal to identify the sensor and associated tire from which the message is generated. *Id.* Symbols S_5–S_{16} include data associated with the receiver to identify the receiver and the central unit to which the message is sent. *Id.* Symbols S_{17}–S_{20} include data specifying the nature of the message. *Id.* at 9. In an example provided in Oselin, symbol S_{17} identifies a test procedure, such as a learning phase; symbol S_{18} identifies an anomalous tire pressure level; symbol S_{19} identifies a low battery charge; and symbol S_{20} indicates that the transmitter is functioning normally. *Id.* at 9, 17, 18. Symbols S_1–S_{20} may be preceded by an initial symbol, S_0, which is used as a synchronization signal between the transmitters and the receiver. *Id*. at 6.

Oselin explains that symbols S_1–S_4 can be coded manually in each transmitter using a dip switch. *Id.* at 10, 22. Symbols S_5–S_{16}, however, are generated as a pseudorandom string of values by each transmitter during the learning phase. *Id.* at 21–22. The learning phase is an initial phase where the receiver stores identifying characteristics of the transmitters, including symbols S_5–S_{16}. *Id.* Oselin explains that due to the pseudorandom nature of symbols S_5–S_{16}, it is extremely unlikely that two transmitters have the same string of values associated with symbols S_5–S_{16}. *Id.* at 22, 24. During the learning phase, the transmitters send the string of symbols S_1–S_{20} to the receiver, with symbol S_{17} indicating the learning phase, and symbols S_1–S_{16}

being stored in memory of the receiver. *Id.* at 23. After the learning phase is complete, the receiver only recognizes messages from transmitters when the string of symbols S_5–S_{16} matches the corresponding string stored in the receiver's memory.

2. Claim 1

As discussed above, claim 1 is directed to "[a] device for monitoring the air pressure in . . . tires" including "a pressure measuring device," "a transmitter," "a receiver," and "a display." We have reviewed, and are persuaded by, Petitioner's contentions regarding the disclosure of Oselin relative to this claim.

For example, Oselin discloses that "[e]ach of the tires of the motor vehicle is associated with a pressure sensor P" (Ex. 1003, 5), which Petitioner contends corresponds to the "pressure measuring device" recited in claim 1 (Pet. 18). Specifically, Oselin discloses that pressure "sensor P detects the air pressure in the tire, and depending on the pressure level detected, orders the movement of a switch I." Ex. 1003, 5. Oselin explains that,

> sensor P can be configured as to keep the switch I in a "floating" position while the pressure detected remains within an acceptable range, and to bring one of the two ends of the switch into contact with the ground M of transmitter 10 when the air pressure inside the tire reaches an anomalous level, that is, a lower threshold (insufficient pressure) or an upper threshold (excessive pressure).

Id.

Patent Owner responds that Oselin's "sensor P" does not constitute a "pressure measuring device" as required by the claim because it "does not output a quantitative value of an air pressure in the tire; instead, it

incorporates a traditional contact switch I to communicate either an 'acceptable' category or an 'anomalous' category." PO Resp. 15. At the oral hearing, however, Patent Owner acknowledged that "[t]he missing limitation is not the measurement of the air pressure." Tr. 38:6–7. As noted above, we determine that the recited "pressure measuring device" can include a switch-based pressure sensor, which Patent Owner acknowledges is disclosed by Oselin. *See* PO Resp. 15–17.

Patent Owner contends that "[t]he missing limitation[s] are the outputting and transmitting of the actual value of the air pressure." Tr. 38:8–9. Patent Owner argues that "Oselin's pressure sensor P does not output an electrical pressure signal representative of the air pressure because its output cannot distinguish between anomalous pressures that are too high and anomalous pressures that are too low." PO Resp. 18. The claim, however, does not require any sort of resolution for the pressure signal that is outputted and transmitted. As Patent Owner acknowledges (*id.*), Oselin's "pressure sensor P" outputs a signal indicating an anomalous *pressure* event (i.e., pressure is too low or too high) (Ex. 1003, 5) (emphasis added). Thus, Oselin's "pressure sensor P" outputs a signal representative of air pressure (i.e., representing that *air pressure* is either too low or too high).

Patent Owner offers similar arguments in response to Petitioner's contentions regarding the "transmitter" recited in claim 1. Claim 1 requires that the "transmitter . . . receives the electrical pressure signal output from the pressure measuring device and sends out a pressure transmitting signal corresponding to said air pressure." Petitioner contends that Oselin's transmitter 10 satisfies this limitation by receiving the signal indicating anomalous air pressure from "pressure sensor P" and sending a signal

indicating the anomalous air pressure. Pet. 18. Patent Owner does not dispute that Oselin discloses a transmitter that receives a signal indicating an anomalous air pressure. *See* PO Resp. 19–23. Rather, Patent Owner contends that Oselin does not meet this limitation because the "pressure transmitting signal corresponding to said air pressure" recited by the claim requires a specific air pressure value, not "'an alarm message'—a simple on/off alarm flag" provided by the signal indicating the anomalous air pressure condition. *Id.* at 19–20. This argument is unpersuasive for the reasons set forth above (i.e., "pressure measuring device" can include a switch-based pressure sensor and Oselin's "pressure sensor P" outputs a signal representative of air pressure). We are persuaded that the alarm message transmitted in Oselin is "a pressure transmitting signal corresponding to said air pressure" because it corresponds to air pressure being too low or too high, as indicated by the signal from "pressure sensor P."

Patent Owner does not dispute Petitioner's contentions regarding the other limitations of claim 1, which we find persuasive, as noted above.

For these reasons, Petitioner has established, by a preponderance of the evidence, claim 1 is anticipated by Oselin.

3. Claims 2, 5, 13, 15, 19, and 21

Claims 2, 5, 13, 15, 19, and 21 depend from claim 1, and Patent Owner does not dispute Petitioner's contentions regarding these claims specifically. Based on our review of Petitioner's contentions regarding these claims (*see* Pet. 29–38), we are also persuaded that Petitioner has established, by a preponderance of the evidence, that claims 2, 5, 13, 15, 19, and 21 are anticipated by Oselin.

4. Claim 6

Claim 6 depends from claim 1 and further recites that "transmission of the signals from the transmitter to the receiver is carried out with electromagnetic waves of constant frequency acting as carrier waves." Petitioner contends that Oselin discloses transmitters 10 using a constant frequency. Pet. 24 (citing Ex. 1003, 8). The cited portion of Oselin explains that "the transmissions from the sensors 10 use structurally analogous signals, on a frequency that is the working frequency common to the oscillators 11 of all transmitters 10 of the group of the receiver 20." Ex. 1003, 8.

Patent Owner argues that Oselin's "common" frequency does not correspond to the "constant frequency" recited in claim 6 and, instead, "describes how multiple transmitters on a vehicle are tuned to the same frequency or frequencies (e.g., which would vary in the case of frequency shift keying)." PO Resp. 24. Patent Owner contends that "the claimed 'constant' frequency carrier waves refer to a characteristic of individual transmissions rather than a shared frequency to which multiple transmitters are tuned" and that "the claimed 'constant' frequency carrier waves . . . are constant, for example, when using phase shift keying." *Id.*

Petitioner responds that "Oselin states 'the transmissions from the sensors use structurally analogous signals, on a frequency that is the working frequency common to the oscillators 11 of all the transmitters of the group of the receiver 20,'" which "unambigiously refers to the frequency in the singular, clearly meaning it is a single and thus constant frequency." Pet. Reply 11. Petitioner fails to explain persuasively, however, why the "common" frequency discussed in Oselin would not be the frequency shift

keying arrangement discussed by Patent Owner. Instead, as noted above, Petitioner simply relies on the discussion of "*a* frequency" in Oselin. When asked at oral hearing why the cited portion of Oselin (Ex. 1003, 8) is not related to a frequency shift keying arrangement, Petitioner replied that "[i]f [Oselin] wanted to talk about [frequency shift keying] and talk about frequencies that jump around, it would not be the common working frequency. It would be the common working frequencies." Tr. 91:12–14. As noted above, Petitioner has no expert testimony supporting its contentions. At best, it is unclear whether Oselin uses a "constant" frequency, as required by claim 6. As such, the disclosure cited by Petitioner does not support the contention that Oselin explicitly discloses this feature by a preponderance of evidence.

Accordingly, Petitioner has failed to establish, by a preponderance of the evidence, that Oselin anticipates claim 6.

5. Claim 9

Claim 9 depends from claim 1 and further recites "every transmission from transmitter to receiver is completed with a transmission of at least a 4 bit sequence" that includes a first bit sequence, a second bit sequence, a third bit sequence, and a fourth bit sequence. Petitioner contends that the claimed "bit sequence" may be a single bit. Pet. Reply 12–13. For example, Petitioner contends the "the second, or third bit sequence" (i.e., the "data sequence which represents the measured pressure signal") recited in claim 1 is met by Oselin's symbol S_{18}. Pet. 30. Patent Owner responds that Oselin's symbol S_{18} is not a bit sequence because it only transmits a single bit. PO Resp. 25. We agree with Patent Owner.

As noted above, we construe "bit sequence" as requiring two or more bits. Oselin explains that "symbols S_1 . . . S_{20}, each . . . may assume two different values (the logic positions '0' and '1')," each of which is "a logical binary symbol associated with *one bit* of data." Ex. 1003, 6 (emphasis added).

In its Reply, Petitioner argues that even if a "bit sequence" requires two or more bits, "the claim language relating to the pressure data requires that 'data sequence' to include both the pressure data and the identification signal, so the sequence of Oselin's bits S_5-S_{18}, for example, would meet that claim language anyways." Pet. Reply 13. We disagree. The limitation to which Petitioner refers states that "the second, or third bit sequence is a data sequence which represents the measured pressure signal and respectively contains the identification signal." Reading this limitation in view of the specification, we determine it to require that the second or third bit sequence "represents the measured pressure signal" and the other of the second or third bit sequence "contains the identification signal." *See, e.g.*, Ex. 1001, 6:65–7:9 ("The signal sequence comprises of a preamble . . . . Then follows on the identification signal . . . in this embodiment a binary number having 32 or more bits . . . . To the identification signal follows on a data block which, for example, comprises of 24 bits and contains the measured pressure value in binary form. From this follows a post-amble.").

Even if Petitioner's contention that "the claim language relating to the pressure data requires that 'data sequence' to include both the pressure data and the identification signal, so the sequence of Oselin's bits S_5-S_{18}, for example, would meet that claim language anyways" (Pet. Reply 13) were correct, Petitioner offers no persuasive explanation as to how Oselin meets

the claimed "first bit sequence," which "is a preamble." Petitioner contends that in Oselin, "S_0 is the preamble." Pet. 34. As Patent Owner notes, however, symbol S_0 in Oselin "is at most a single bit." PO Resp. 27 (citing Ex. 1003, Fig. 1; Ex. 2004 ¶ 76). We are not persuaded that symbol S_0 in Oselin is anything more than a single bit and, therefore, we are not persuaded that S_0 is a bit sequence as required by the claim.

Accordingly, Petitioner has failed to establish, by a preponderance of the evidence, claim 9 is anticipated by Oselin.

6. Claim 10

Claim 10 depends from claim 1 and further recites that "the transmitter comprises a timer device and is controlled in such a way that the pressure measuring device measures pressure in predetermined, significantly constant time intervals." Oselin describes a "periodic operations check, [where] each transmitter 10 sends a respective message with the symbol S_{20} at logic level '1' at intervals established by the division factor of the circuit 104" (Ex. 1003, 27), which Petitioner contends corresponds to "measur[ing] pressure in predetermined, significantly constant time intervals," as required by claim 10 (Pet. 31).

Patent Owner initially responds with arguments similar to those presented with respect to claim 1 (i.e., Oselin's pressure sensor does not measure pressure) (PO Resp. 28–29), which are unpersuasive for the reasons discussed above. Patent Owner additionally argues that "[t]his 'periodic operations check' is used by Oselin to determine that the transmitters are functioning properly; the operations check has nothing to do with pressure measurement." *Id.* at 29. Patent Owner contends that "Oselin does not describe a pressure measurement being taken as part of the periodic

operations check" because "the transmitters 10 merely respond to the output of pressure sensor P when an anomalous pressure is detected by transmitting a sequence with bit S_{18}" and "nothing in Oselin discloses or suggests that the transmitters 10 actively check the output of pressure sensor P or cause a pressure measurement to be taken." *Id.* at 30.

Petitioner responds that it "stands by its position that the hourly periodic checks include taking a measurement and including the bit representing that measurement in the transmitted signal." Pet. Reply 13. We are persuaded by Petitioner's contentions.

Specifically, we are persuaded that bit S_{18} is provided when the periodic operations check occurs and is included in the transmission signal for the periodic operations check (i.e., the signal where bit S_{20} is set at "1"). Therefore, Petitioner has established sufficiently that Oselin discloses at least one situation in which pressure sensor P "measures pressure in predetermined, significantly constant time intervals."

Accordingly, Petitioner has established, by a preponderance of the evidence, claim 10 is anticipated by Oselin.

7. Claim 17

Claim 17 depends from claim 1 and further recites that "each transmitter comprises a detector device which recognizes emittance of a predetermined switching signal and, therefore, switches the transmitter into a pairing mode in which the identification signal and an additional signal indicating the pairing mode is emitted." Petitioner contends that Oselin discloses the limitations of claim 17. For example, Petitioner contends that the signal sent by pushing button 106 in Oselin corresponds to the claimed "predetermined switching signal," blocking circuit 102 in Oselin receives

the signal and corresponds to the claimed "detector device," and the setting of the "test message" at symbol S_{17} in Oselin corresponds to the claimed "additional signal indicating the pairing mode." Pet. 37.

Patent Owner does not dispute Petitioner's contentions, which we find persuasive, other than arguing that Oselin does not disclose those limitations because "[w]hen the transmitter push button 106 is actuated, a **non-wireless** signal is generated and detected by the 'blocking circuit 102' in the same electrical circuit of the transmitter 10 as the push button 106 is disposed." PO Resp. 31. Patent Owner's arguments are based on a construction of "emittance" that requires *wireless* transmission, which we did not adopt as explained above. Based on the evidence presented, we are persuaded by Petitioner's contentions that Oselin discloses the limitations of claim 17.

Accordingly, Petitioner has established, by a preponderance of the evidence, claim 17 is anticipated by Oselin.

8. Claim 18

Claim 18 depends from claim 1 and further recites that "the signal transmitted from the transmitter contains further additional information, which in evaluation of the signal in the receiver, allows recognition of a false transmission as a fault and should the need arise, a correction of this fault." Petitioner contends that the inclusion of bit S_{20} in Oselin's signal meets the limitations of claim 18. Pet. 33, 35. Patent Owner responds that "[n]othing in Oselin discloses the error correction required by claim 18." PO Resp. 33. Patent Owner interprets claim 18 as requiring "that the additional information be usable to perform error correction ***in the receiver***." *Id.* at 36. Patent Owner's argument is not commensurate with the scope of the claim.

The plain language of claim 18 requires that the signal is evaluated in the receiver and "*allows* recognition of a false transmission as a fault and should the need arise, a correction of this fault." (Emphasis added). There is no requirement that *the receiver* corrects the fault. We are persuaded that the evaluation of the signal including bit S_{20} in Oselin allows "recognition of a false transmission as a fault and should the need arise, a correction of this fault." For example, Oselin explains that "by periodically reading the column S_{20} of the memory 200, the arithmetic logic unit 201 can . . . order a corresponding warning signal to be sent to the driver of the motor vehicle." Ex. 1003, 29. Thus, we are persuaded that Oselin's signal, which includes bit S_{20} and is evaluated in receiver 20, "*allows* recognition of a false transmission as a fault and should the need arise, a correction of this fault," as recited by claim 18 (emphasis added).

Accordingly, Petitioner has established, by a preponderance of the evidence, claim 18 is anticipated by Oselin.

B. Obviousness over Oselin

We have reviewed the Petition, the Patent Owner Response, and Petitioner's Reply, as well as the relevant evidence discussed in those papers. We are persuaded that Petitioner has established, by a preponderance of the evidence, claims 1, 2, 5, 10, 11, 13–15, 18, 19, and 21 would have been obvious over Oselin. Petitioner has failed to establish, however, that claims 6 and 9 would have been obvious over Oselin.

1. Claims 1, 2, 5, 10, 13, 15, 17–19, and 21

As noted above, we are persuaded that Petitioner has established, by a preponderance of the evidence, claims 1, 2, 5, 10, 13, 15, 17–19, and 21 are anticipated by Oselin. Because anticipation is the epitome of obviousness, a

disclosure that anticipates under 35 U.S.C. § 102 also renders the claim unpatentable under 35 U.S.C. § 103.[6] *See In re Fracalossi*, 681 F.2d 792, 794 (CCPA 1982); *In re Meyer*, 599 F.2d 1026, 1031 (CCPA 1979); *In re Pearson*, 494 F.2d 1399, 1402 (CCPA 1974). Accordingly, we conclude that Petitioner also has demonstrated, by a preponderance of the evidence, claims 1, 2, 5, 10, 13, 15, 17–19, and 21 are unpatentable as obvious over Oselin.

2. Claims 6 and 9

In our Decision on Institution, we instituted trial for claims 6 and 9 on this ground based on Petitioner's allegations that Oselin teaches each element of claims 6 and 9. *See* Dec. 17–18. As explained above, after considering Patent Owner's arguments and evidence presented after our Decision on Institution, we are not persuaded that Oselin teaches the limitations recited in these claims.

The Petition does not address claim 6 specifically in its discussion of obviousness based on Oselin. *See* Pet. 38–40. With respect to claim 9, the Petition's discussion of obviousness based on Oselin is only directed to the "particular order of the data included in the transmission," and includes no explanation or analysis to cure the deficiency noted above with respect to Petitioner's contentions regarding each "sequence" recited in the claim requiring two or more bits. *See id.* at 39–40. Petitioner's Reply also fails to cure these deficiencies, as it focuses only on the anticipation challenges for claim 6 (Pet. Reply 10–11) and claim 9 (*id.* at 12–13).

[6] Patent Owner does not allege any secondary considerations to overcome a case of obviousness.

Accordingly, Petitioner has not established, by a preponderance of the evidence, that claims 6 and 9 would have been obvious over Oselin.

3. Claim 14

Claim 14 depends from claim 1 and further recites that "a receiver is associated with every pressure measurement device and transmitter fixed to a wheel of the vehicle whereby the signals received by each receiver are conveyed to the display device which is a central display device for all receivers." Petitioner contends that "[i]mplementing a separate receiver for each pressure measurement device and transmitter is nothing more than an obvious design choice" because the result of using multiple receivers, and the matching process used, would be the same as using one receiver Pet. 40. Petitioner reasons that "[t]o implement such a design choice would simply be the mere duplication of parts that would yield predictable results." *Id.* We do not find anything in the '524 patent that contradicts this allegation.

Patent Owner responds that "[w]ith the distributed receiver approach of claim 14, many of the design challenges that occur when a single central receiver is employed to directly communicate with a plurality of transmitters on a vehicle are removed." PO Resp. 45. Patent Owner argues, for example, that "the need to randomize the times at which transmissions occur among multiple transmitters in order to avoid collisions at the central receiver can be avoided using the distributed approach of claim 14" and that "the transmitters can remain in constant 'stand-by' mode, which would conserve energy in a way that Oselin's system would not." *Id.* Patent Owner further argues that "locating respective receiver devices near each wheel of a vehicle that has a transmitter and pressure measuring device can provide significant advantages that are not suggested or contemplated by

Oselin's system." *Id.* at 47. Patent Owner's response is not persuasive, as it is not commensurate with the scope of the claim.

Claim 14 simply requires that each pressure measuring device/transmitter pair has its own receiver. Although use of a separate receiver for each pressure measuring device/transmitter pair may be arranged in a specific manner in the '524 patent, the claim does not include those limitations. For example, contrary to Patent Owner's arguments, claim 14 does not include any limitations directed to whether "the need to randomize the times at which transmissions occur among multiple transmitters in order to avoid collisions at the central receiver can be avoided" (*id.* at 45), whether "the transmitters can remain in constant 'stand-by' mode, which would conserve energy" *id.*), or "locating respective receiver devices near each wheel of a vehicle" (*id.* at 47).

Patent Owner's arguments regarding lack of expert testimony are also unpersuasive. *See id.* at 45–46. Petitioner simply argues that using multiple ones of the same receiver (i.e., one for each pressure measuring device/transmitter pair in Oselin, rather than a common receiver for all pressure measuring device/transmitter pairs) would have been obvious. We are not persuaded that expert testimony is required to conclude that use of multiple receivers would have been obvious, and Patent Owner offers no persuasive explanation to rebut Petitioner's contentions.

Accordingly, Petitioner has established, by a preponderance of the evidence, claim 14 would have been obvious over Oselin.

C. Obviousness over Oselin and Schultz

We have reviewed the Petition, the Patent Owner Response, and Petitioner's Reply, as well as the relevant evidence discussed in those

papers. We are persuaded that Petitioner has established, by a preponderance of the evidence, claims 4, 12, and 16 would have been obvious over the combination of Oselin and Schultz.

1. Overview of Schultz

Schultz describes a remotely actuated transducer and a display unit. Ex. 1005, 1:6–12. Schultz explains that the transducer includes a tire pressure sensor, which provides a signal indicative of tire pressure, and that the signal is received by the display unit. *Id.* at 3:7–14. The display unit includes a processor, which extracts information from the signal and manipulates the information into a form suitable for generating indicia on a display of the display unit. *Id.* at 3:45–50. Schultz explains that the display unit remains in a "dormant" state until powered up by the user in order to conserve energy. *Id.* at 4:5–7. Schultz explains that the transducer also operates in "active" and "dormant" states. *Id.* at 5:50–52. When the display unit is powered up, the processor of the display unit issues a "wake-up" command to activate the transducer, which subsequently sends a signal indicative of tire pressure back to the display unit. *Id.* at 4:31–55.

2. Claim 4

Claim 4 recites "wherein a signal amplifier and filter device, the comparison device and the memory for storing the identification reference signal of the receiver are contained in an integrated chip." Petitioner contends that Schultz teaches the "signal amplifier and filter device" limitation because "its display unit 12 included the 'signal amplifier' 58 and the 'filter device' made up by capacitor C1 and resistor R2." Pet. 43 (citing Ex. 1005, 4:56–67). Petitioner contends that Schultz teaches that the signal amplifier and filtering device in Schultz could be integrated in a microchip

or microprocessor because these elements are part of the display unit and "Schultz discloses that '[t]he functional elements comprising the display unit may similarly be implemented in a microchip or microprocessor.'" *Id.* (quoting Ex. 1005, 3:60–63). With respect to "the comparison device and the memory . . . contained in an integrated chip," Petitioner reasons that "when creating that integrated chip, it would be similarly logical and obvious to include the 'memory for storing the identification reference signal' in that chip as well." *Id.* at 43–44.

As for a reason to combine Schultz and Oselin, Petitioner contends that Oselin and Schultz each disclose tire pressure monitoring systems and that one skilled in the art would have had reason to combine the references to employ the further benefits disclosed in Schultz in the system of Oselin. *Id.* at 41. Petitioner contends that "[t]o modify the Oselin system with Schultz's teachings would be nothing more than combining prior art elements according to known methods to yield predictable results." *Id.*

Patent Owner responds that "[w]hether Oselin and Schultz are considered separately or in combination, the references fail to disclose or suggest any 'integrated chip' that includes all of the required components listed in the claim." PO Resp. 47 (citing Ex. 2004 ¶¶ 114–124). Patent Owner contends that because "Schultz explicitly teaches that the filter provides an input to a pin of the integrated circuit that comprises the amplifier U1, the filter and the amplifier U1 cannot be 'contained' on the same 'integrated chip' as required by claim 4." *Id.* at 48 (citing Ex. 2004 ¶ 116). Patent Owner further contends that "[Petitioner's] reliance on the general statement from Schultz that '[t]he functional elements comprising the display unit may similarly be implemented in a microchip or

microprocessor, and incorporated into a hand-held remote control display device,' is similarly unavailing" because "[t]his statement is taken out of context, as Schultz goes on to describe the processor U3 that actually does implement the functional elements of the hand-held display device in Schultz's system." *Id.* at 51 (citing Ex. 1005, 3:60–63).

In response to Patent Owner's contentions, Petitioner argues that "[t]he fact that Schultz drew schematics showing separate functional elements does not negate the fact that Schultz also taught that they could be integrated together." Pet. Reply 14. We are persuaded by Petitioner's contentions. Schultz specifically notes that "the functions performed by the various elements comprising the foregoing schematic circuit diagrams may be implemented in a variety of ways," and provides the example that "the functions performed by the pressure sensor circuit ma[y] be embodied in a unitary microchip (integrated circuit) for convenient disposition within the valve stem or valve stem cap of a vehicle tire." Ex. 1005, 3:53–60. Schultz further explicitly states that "[t]he functional elements comprising the display unit may similarly be implemented in a microchip or microprocessor, and incorporated into a hand-held remote control display device." *Id.* at 5:60–63.

Patent Owner contends that "a person of ordinary skill in the art would not have recognized that the 'functional elements' implemented in Schultz's microprocessor U3 include[] either the filter or amplifier U1." PO Resp. 51. This is not persuasive because, as noted above, Schultz explains that "[t]he functional elements comprising the *display unit* may similarly be implemented in a microchip or microprocessor." Ex. 1005, 5:60–62

(emphasis added). Patent Owner does not dispute that Schultz's display unit 12 includes the filter and amplifier U1.

Patent Owner additionally contends, contrary to the explicit teachings of Schultz noted above, that "a person of ordinary skill in the art would not have incorporated Schultz's filter and amplifier U1 into the processor U3 for a number of reasons." PO Resp. 51. For example, Patent Owner cites an "increase [of] the area of the processor by approximately 40%," which "would undoubtedly entail additional expense to accommodate the larger processor." *Id.* at 51–52. Obviousness, as a determination of unpatentability, is not a question of commercial viability as a practical business determination. *See Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1013 (Fed. Cir. 1983) ("[T]he fact that the two [prior art disclosures] would not be combined by businessmen for economic reasons is not the same as saying that it could not be done because skilled persons in the art felt that there was some technological incompatibility that prevented their combination. Only the latter fact is telling on the issue of nonobviousness."). Based on the explicit teachings of Schultz, we are persuaded that one skilled in the art would have found it obvious to modify Oselin as proposed by Petitioner.

Accordingly, Petitioner has established, by a preponderance of the evidence, claim 4 would have been obvious over the combination of Oselin and Schultz.

3. Claims 12 and 16

Claims 12 and 16 depend from claim 1, and Patent Owner does not dispute Petitioner's contentions regarding these claims specifically. Based on our review of Petitioner's contentions regarding these claims (*see*

Pet. 34–37), we are also persuaded that Petitioner has established, by a preponderance of the evidence, claims 12 and 16 would have been obvious over the combination of Oselin and Schultz.

D. Obviousness over Oselin and Nowicki

We have reviewed the Petition, the Patent Owner Response, and Petitioner's Reply, as well as the relevant evidence discussed in those papers. We are persuaded that Petitioner has established, by a preponderance of the evidence, claims 3 and 10 would have been obvious over Oselin and Nowicki.

1. Overview of Nowicki

Nowicki describes an abnormal tire pressure warning system including a transmitter device for mounting on a pneumatic vehicle tire. Ex. 1006, 3:23–24. Nowicki explains that "[a] tire condition sensor 20 senses when the tire is in an abnormal condition and, in association with control means 11 and radio circuit 10 powered by battery means 12, initiates an identifying signal to an associated receiver 13 in the form of an identification code." *Id.* at 3:25–30. The transmitter device in Nowicki includes a microcontroller "which controls the pulse duration of the radio signal, repetition rate, and code patterns, for encoding the tire pressure and sensor identification information." *Id.* at 4:3–5. Nowicki explains that the microcontroller includes a low power consuming "sleep mode," and that, during operation, the microcontroller periodically "wakes up" and checks tire pressure and sensor identification. *Id.* at 4:6–18. Nowicki describes an example "sleep mode" duration of twelve seconds, and explains that this "sleep mode" duration spaces individual transmissions about twelve seconds apart. *Id.* at 4:23–27.

2. Claims 3 and 10

Claims 3 and 10 depend from claim 1, and Patent Owner does not dispute Petitioner's contentions regarding these claims specifically. Based on our review of Petitioner's contentions regarding these claims (*see* Pet. 45–48), we are also persuaded that Petitioner has established, by a preponderance of the evidence, claims 3 and 10 would have been obvious over the combination of Oselin and Nowicki.

E. Obviousness over Oselin and Barabino

We have reviewed the Petition, the Patent Owner Response, and Petitioner's Reply, as well as the relevant evidence discussed in those papers. We are persuaded that Petitioner has established, by a preponderance of the evidence, claim 14 would have been obvious over Oselin and Barabino.

1. Overview of Barabino

Barabino is directed to tire pressure warning systems. Ex. 1007, 1:12–16. Barabino describes a tire pressure signaling device secured to a valve stem and configured to leak a small amount of air through passages in the device to produce a sonic or ultrasonic signal when pressure within a tire is either above or below a predetermined limit. *Id.* at 2:38–42, 3:16–37. The signal is detected by a sensor mounted in close proximity to the tire. *Id.* at 3:25–27, 36–37. Barabino explains that a sensor is mounted in each wheel well of the vehicle and that all sensors are connected to a common signal processor providing output to a display. *Id.* at 5:33–34, 36–40.

2. Claim 14

Claim 14 depends from claim 1 and further recites that "a receiver is associated with every pressure measurement device and transmitter fixed to

a wheel of the vehicle whereby the signals received by each receiver are conveyed to the display device which is a central display device for all receivers." Petitioner contends that Barabino teaches this limitation. Pet. 49 (citing Ex. 1008, 5:31–40, 6:34–43). Petitioner contends that both Oselin and Barabino are directed to systems for monitoring tire pressure, and that one skilled in the art would have had reason to combine the teachings of Barabino with Oselin "to avoid false signals from other sensor/valve device[s]," as taught by Barabino. *Id.* at 48 (citing Ex. 1007, 6:34–43).

Patent Owner responds that "[t]he only 'reasons' identified by Schrader in the Petition for combining Oselin and Barabino are fundamentally flawed." PO Resp. 52. Patent Owner explains that "[t]he pressure detectors on the valve stems of each wheel in Barabino emit an ultrasonic sound when the tire pressure strays from an acceptable range of pressures, which sound is detected by respective 'pickup sensors 64' located near each wheel, and the signal reported to central processing circuitry 140." *Id.* at 53 (citing Ex. 1007, 5:31–52. Patent Owner contends that "there is absolutely no mention in Barabino that any information is communicated by wireless radio transmissions from devices associated with each wheel to the processing circuitry 140" (*id.* at 53) and that "[o]ne of ordinary skill in the art . . . would have had no reason to incorporate the pickup sensors 64 into Oselin's RF system" (*id.* at 54). Patent Owner concludes that because "Barabino does not describe anything related to an electromagnetic (RF) wireless system . . . it simply does not follow to mix-and-match components between Oselin's RF system and Barabino's non-RF system." *Id.* at 55.

In reply, Petitioner notes that "[n]either claim 14 nor its base claims 1 and 13 are limited to a particular wireless spectrum" and "Barabino is

simply relied on for the proposition that wireless tire sensor signals can be received by multiple receivers on the same vehicle, rather than one central receiver." Pet. Reply 15. We are persuaded by Petitioner's contentions. Patent Owner does not dispute that Barabino teaches using individual receivers for its pressure detectors. *See* PO Resp. 53. The claim simply requires that each pressure measurement device/transmitter pair has its own receiver, and does not impose any limitation on the type of receiver used. We are persuaded that one skilled in the art would have found it obvious to use of a separate receiver for each pressure measuring device/transmitter pair in Oselin in view of Barabino's teachings.

Accordingly, Petitioner has established, by a preponderance of the evidence, claim 14 would have been obvious over the combination of Oselin and Barabino.

III. SUMMARY

Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–5, 10, 12–19, and 21 of the '524 patent are unpatentable. Petitioner has failed to establish, by a preponderance of the evidence, that claims 6 and 9 are unpatentable.

IV. ORDER

For the reasons given, it is

ORDERED that

A. Claims 1, 2, 5, 10, 13, 15, 17–19, and 21 are unpatentable as anticipated by Oselin;

B. Claims 1, 2, 5, 10, 13–15, 17–19, and 21 are unpatentable as obvious over Oselin;

C. Claims 4, 12, and 16 are unpatentable as obvious over Oselin and Schultz;

D. Claims 3 and 10 are unpatentable as obvious over Oselin and Nowicki; and

E. Claim 14 is unpatentable as obvious over Oselin and Barabino; and

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

For PETITIONER:

Bryan P. Collins
Robert M. Fuhrer
PILLSBURY WINTHROP SHAW PITTMAN LLP
bryan.collins@pillsburylaw.com
robert.fuhrer@pillsburylaw.com

For PATENT OWNER:

Michael T. Hawkins
Patrick J. Bisenius
Michael Kane
FISH & RICHARDSON P.C.
hawkins@fr.com
IPR2014-00476@fr.com
IPR2015-00272@fr.com