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Paper 68
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

L-3 COMMUNICATIONS HOLDINGS, INC. and
PREMIER UTILITY SERVICES, LLC,
Petitioner,

v.

POWER SURVEY, LLC,
Patent Owner.

Case IPR2014-00834
Patent 8,482,274 B2

Before KARL D. EASTHOM, KEVIN W. CHERRY, ROBERT J. WEINSCHENK, and WILLIAM M. FINK, *Administrative Patent Judges*.

WEINSCHENK, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background*

L-3 Communications Holdings, Inc. and Premier Utility Services, LLC (collectively, "Petitioner") filed a Petition (Paper 2, "Pet.") requesting an *inter partes* review of claims 1–5 and 8 of U.S. Patent No. 8,482,274 B2 (Ex. 1003, "the '274 patent"). Power Survey, LLC ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp.") to the Petition. On November 26, 2014, we instituted an *inter partes* review of claims 1–5 and 8 ("the challenged claims") of the '274 patent on the following grounds:

Claim(s)	**Statutory Basis**	**Applied References(s)**
1, 2, 5, and 8	35 U.S.C. § 103(a)	*EFA-200/-300 EM Field Analyzer Operating Manual*, Narda Safety Test Solutions GmbH (2002) (Ex. 1004, "EFA Manual") and U.S. Patent No. 3,662,260 (issued May 9, 1972) (Ex. 1005, "Thomas")
3	35 U.S.C. § 103(a)	EFA Manual, Thomas, and U.S. Patent No. 6,002,348 (issued Dec. 14, 1999) (Ex. 1006, "Greene")
4	35 U.S.C. § 103(a)	EFA Manual, Thomas, and E. Oran Brigham, *The Fast Fourier Transform*, Prentice-Hall, Inc. (1974) (Ex. 1008, "Brigham")

Paper 9 ("Dec. on Inst."), 17.

After institution, Patent Owner filed a redacted Response (Paper 31, "PO Resp.") and a sealed Response (Paper 22) to the Petition, and Petitioner filed a redacted Reply (Paper 42, "Pet. Reply") and a sealed Reply (Paper 43) to the Response. An oral hearing was held on July 9, 2015, and a transcript of the hearing is included in the record. Paper 67 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6(c). We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons set forth below, Petitioner has shown by a preponderance of the evidence that claims 1–5 and 8 of the '274 patent are unpatentable.

B. *Related Proceedings*

The parties identify the following petitions for *inter partes* review as being related to this case (Pet. 5; Paper 5, 2–3):

IPR Case No.	**Involved U.S. Patent No.**
IPR2014-00832	U.S. Patent No. 8,482,274
IPR2014-00835	U.S. Patent No. 8,536,856
IPR2014-00836	U.S. Patent No. 8,536,856
IPR2014-00838	U.S. Patent No. 8,598,864
IPR2014-00839	U.S. Patent No. 8,598,864

The parties also identify the following district court case as being related to this case: *Power Survey, LLC v. Premier Utility Services, LLC*, No. 2:13-cv-05670-FSH-MAH (D.N.J). Pet. 5; Paper 5, 2–3.

C. *The '274 Patent*

The '274 patent relates to identifying voltage anomalies. Ex. 1003, Abstract. According to the '274 patent, a voltage anomaly may occur when the cabling of a power distribution system is physically damaged and an electrically conductive path is established between the cabling and an object, such as a manhole cover or street light pole. *Id.* at col. 1, ll. 36–44. An electrically energized object located near a street may present a danger to people and animals in the area. *Id.* at col. 1, ll. 44–46.

The '274 patent explains that the prior technique for identifying voltage anomalies was a time consuming manual inspection that involved making direct contact with potential hazards using a handheld device. *Id.* at col. 2, ll. 6–17. The '274 patent describes a system that uses a sensor probe

mounted on a motor vehicle to generate data regarding electric fields proximate a street. *Id.* at col. 2, ll. 25–30, col. 15, ll. 1–7. This electric field data can be used to identify a voltage anomaly and alert a user to its presence. *Id.* at col. 2, ll. 28–35. For example, a voltage anomaly can be identified by an electric field that exceeds a threshold. *Id.* at col. 16, ll. 39–46, col. 17, ll. 34–35, col. 20, ll. 31–34.

D. *Illustrative Claim*

The independent claim challenged by Petitioner is claim 1 of the '274 patent, which is reproduced below.

> 1. A mobile apparatus mounted to a motor vehicle for detecting an electric field, comprising:
>
> at least one sensor probe, coupled to an electrically non-interfering support frame mounted to the vehicle, that generates a signal corresponding to an electric field detected by the at least one sensor probe as the sensor probe moves past a plurality of conductive objects proximate a street, wherein the at least one sensor probe comprises two or more electrodes, and wherein the two or more electrodes are each separated by a rigid insulator;
>
> a processor, coupled to the at least one sensor probe, that digitizes the signal to form electric field data represented as a plurality of time domain samples, produces field strengths of each of the at least one sensor probes using the plurality of time domain samples, and analyzes the field strengths to identify a line frequency voltage anomaly in the electric field, wherein the electric field data is analyzed based on an expected frequency pertaining to the line frequency voltage anomaly and wherein the voltage anomaly is generated by leakage of electric power from a power grid to at least one energized object in the plurality of conductive objects proximate the street; and
>
> an indicator, coupled to the processor, that alerts a user to a presence of the voltage anomaly in the electric field and indicates that at least one conductive object proximate the street

is energized to a potentially harmful level.

Ex. 1003, col. 25, l. 53–col. 26, l. 13.

II. ANALYSIS

A. *Claim Construction*

The claims of an unexpired patent are interpreted using the broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278–79 (Fed. Cir. 2015). Claim terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the specification. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An applicant may provide a different definition of the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In the absence of such a definition, limitations are not to be read into the claims from the specification. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

1. *voltage anomaly*

Petitioner proposes construing the phrase "identify a line frequency voltage anomaly in the electric field" in claim 1 of the '274 patent to mean "identify an unexpected voltage at a line frequency in the electric field." Pet. 13. Petitioner argues that the '274 patent describes a voltage anomaly as being undesirable or dangerous. *Id.* at 14–15 (citing Ex. 1003, col. 1, ll. 28–43, col. 2, ll. 16–19). According to Petitioner, "unexpected" is another word for undesirable or dangerous. Pet. 15 ("these 'undesirable or dangerous anomalies' – *i.e.*, unexpected voltages"). Petitioner also argues that, during prosecution, the applicant asserted that the invention is directed

to more than just detecting electric fields because it involves identifying a voltage anomaly in the electric fields. *Id.* at 15–16 (citing Ex. 1014, 8–9, 25, 38, 53).

In the Decision on Institution, we determined that Petitioner's proposed construction is not the broadest reasonable interpretation, and we see no reason now to deviate from that determination. Dec. on Inst. 5–6. Specifically, the word "unexpected" in Petitioner's proposed construction is not found anywhere in the claims or the written description of the '274 patent, and we are not persuaded that the word "unexpected" is synonymous with "undesirable" or "dangerous." Further, Petitioner does not explain how any of the cited portions of the prosecution history show that the "voltage anomaly" recited in claim 1 is an unexpected voltage. Pet. 15–17.

Patent Owner proposes construing the phrase "identify a line frequency voltage anomaly in the electric field" in claim 1 of the '274 patent to mean "detect an electric field, at a line frequency, that rises and peaks above a threshold or background and then falls." PO Resp. 54. Patent Owner argues that the claims and written description of the '274 patent indicate that a voltage anomaly is identified as the sensor moves past the anomaly. *Id.* at 54–56. Therefore, according to Patent Owner, an anomaly is represented by a rise in the electric field as the sensor moves closer to the anomaly, a peak when the sensor is near the anomaly, and a fall when the sensor moves past the anomaly. *Id.*

In the Decision on Institution, we determined that Patent Owner's proposed construction would improperly limit the claims to just one of the examples disclosed in the Specification, and we see no reason now to deviate from that determination. Dec. on Inst. 6–7 (citing *Verizon Servs.*

Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1305 (Fed. Cir. 2007)). Specifically, the '274 patent states that an anomaly can be "represented *for example* by a rise-peak-fall in the alert pitch, a corresponding visual spike in raw voltage plot 1206, a high signal strength value in signal strength display field 1322 or a combination thereof." Ex. 1003, col. 19, ll. 21–26 (emphasis added). Thus, the '274 patent indicates that a rise-peak-fall in the audible alert or a visual spike are just *examples* of ways to identify an anomaly. The '274 patent states that a voltage anomaly also can be identified by an electric field that exceeds a threshold or a high signal strength value. *Id.* at col. 16, ll. 39–46, col. 17, ll. 34–35, col. 19, ll. 21–26, col. 20, ll. 31–34.

Patent Owner argues that the portions of the '274 patent discussed in the Decision on Institution only relate to "indicating" a voltage anomaly to a user, not "identifying" a voltage anomaly. PO Resp. 53–54. Patent Owner's argument is not persuasive because Patent Owner does not explain the significance of the alleged distinction between "indicating" and "identifying" a voltage anomaly. *See id.* For example, Patent Owner does not explain how an electric field that exceeds a threshold could somehow indicate a voltage anomaly to a user, yet fail to identify that voltage anomaly. *See id.* Further, Patent Owner relies on some of the same portions of the '274 patent to support its proposed construction of the phrase "identify a line frequency voltage anomaly in the electric field." Dec. on Inst. 6 (citing Ex. 1003, col. 19, ll. 21–26); PO Resp. 55 (citing Ex. 1003, col. 19, ll. 17–29).

Patent Owner also argues that the following portion of the '274 patent confirms that identifying a voltage anomaly requires detecting a peak in the electric field:

> Because the peak of the response to a source of stray voltage anomaly cannot be ascertained until after the vehicle has passed the source, the exact location of the source may not be observed until after the time at which it is detected . . . it is not practical to stop the vehicle carrying system each time a stray voltage is detected, or to back the vehicle up to ascertain the exact location at which the detection took place.

Ex. 1003, col. 10, ll. 1–11; PO Resp. 56. Patent Owner's argument is not persuasive. It would be improper to limit the claims based on this excerpt from the written description because, as discussed above, the written description also indicates that a voltage anomaly can be identified in other ways, not just by detecting a peak in the electric field. *See* Ex. 1003, col. 16, ll. 39–46, col. 17, ll. 34–35, col. 19, ll. 21–26, col. 20, ll. 31–34; *Verizon Servs.*, 503 F.3d at 1305.

In the Decision on Institution, we explained that one definition of the term "anomaly" is "deviation from the normal or common order, form, or rule." Dec. on Inst. 7 (citing THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE, 54 (1975)); Ex. 3001, 54. The examples provided in the '274 patent for identifying a voltage anomaly are consistent with this definition. Namely, a spike in the electric field or an increase in the electric field above a threshold would indicate a deviation from the normal order. Ex. 1003, col. 16, ll. 39–46, col. 17, ll. 34–35, col. 19, ll. 21–26, col. 20, ll. 31–34. Therefore, we determined that the broadest reasonable interpretation of the phrase "identify a line frequency voltage anomaly in the electric field" in claim 1 of the '274 patent is "identify a deviation from a normal line frequency voltage in the electric field, including by identifying an electric field, at a line frequency, that exceeds a threshold, or that rises and peaks above a threshold or background and then falls." Dec. on Inst. 7. We see no

reason now to deviate from that construction.

2. *mobile*

Patent Owner proposes construing the term "mobile" in claim 1 of the '274 patent to mean "designed to operate while in motion." Prelim. Resp. 5; PO Resp. 59. Patent Owner argues that the claim language supports this construction because claim 1 recites a sensor probe that detects an electric field "as the sensor probe moves past a plurality of conductive objects." Prelim. Resp. 6; Ex. 1003, col. 25, ll. 55–60. Patent Owner also argues that the written description of the '274 patent states that "the sensor system 100 may detect an energized manhole cover . . . when moving at speeds of up to 10 mph." Prelim. Resp. 6; Ex. 1003, col. 10, ll. 44–50. We agree that the claims and written description indicate that a mobile apparatus operates while in motion, but Patent Owner does not identify specific evidence showing that a mobile apparatus must be "designed" to operate in motion. Prelim. Resp. 5–7; PO Resp. 59. Therefore, we determine that the broadest reasonable interpretation of the term "mobile apparatus" in claim 1 of the '274 patent is "apparatus that operates while in motion."

3. *monitored event*

Patent Owner proposes construing the term "monitored event" in claim 8 of the '274 patent to mean "a set of observations gathered as the mobile apparatus moves past a conductive object." Prelim. Resp. 7–8. In the Decision on Institution, we determined that the term "monitored event" does not require express construction. Dec. on Inst. 8. The parties do not dispute that determination, and we see no reason now to deviate from that determination.

B. *Obviousness of Claims 1–5 and 8*

Petitioner argues that claims 1, 2, 5, and 8 would have been obvious over the EFA Manual and Thomas; claim 3 would have been obvious over the EFA Manual, Thomas, and Greene; and claim 4 would have been obvious over the EFA Manual, Thomas, and Brigham.[1] Pet. 7. A claim is unpatentable as obvious 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 the 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 ordinary skill in the art; and (4) any objective indicia of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Petitioner provides detailed explanations showing how the prior art references teach or suggest the limitations of the challenged claims and articulated reasons why it would have been obvious to combine the cited teachings. Pet. 24–59. We have considered the parties' arguments and supporting evidence, and we determine that Petitioner has shown by a preponderance of the evidence that claims 1–5 and 8 are unpatentable. We address Patent Owner's arguments below.

[1] Because claim 5 depends from claim 4, the asserted ground of unpatentability for claim 5 also should include Brigham as applied to claim 4. Patent Owner does not identify any prejudice resulting from this oversight. Therefore, we interpret the asserted ground of unpatentability for claim 5 as including Brigham as applied to claim 4.

1. *Overview of the EFA Manual and Thomas*

The EFA Manual is an operating manual for the EFA-200/-300 EM Field Analyzer. Ex. 1004. The EFA-200 sensor only measures magnetic fields, whereas the EFA-300 sensor measures magnetic and electric fields. *Id.* § 1.1.3. The EFA Manual teaches that the EFA-300 sensor generates a signal corresponding to a detected electric field. *Id.* §§ 3.4.1, 3.4.2; Ex. 1011, 192:24–193:8. The EFA-300 sensor includes a processor that digitizes the electric field signal as a plurality of time domain samples. Ex. 1004 § 12.1, Annex C, C-1; Ex. 1023 ¶¶ 73–75. The EFA Manual also teaches that the EFA-300 sensor detects electric fields of a specific frequency and triggers an alarm if the detected electric field exceeds a threshold. Ex. 1004 §§ 5.1, 8.1; Ex. 1023 ¶¶ 80, 82, 86.

Thomas relates to using a sensor probe to detect anomalies in electric fields. Ex. 1005, col. 1, ll. 42–49, col. 6, ll. 62–75, col. 7, ll. 4–17. In particular, Thomas teaches mounting a sensor probe on a motor vehicle using a support member made of an electrically non-conducting material. *Id.* at col. 3, ll. 12–19, col. 6, l. 62–col. 7, l. 25, Figs. 9–14. According to Thomas, the sensor probe mounted on the vehicle identifies anomalies in electric fields while the vehicle is in motion. *Id.* at col. 6, l. 62–col. 7, l. 25, Figs. 9–14. Thomas teaches that an anomaly in an electric field may indicate that electrical current is flowing through an object. *Id.* at col. 7, ll. 6–10, col. 7, ll. 14–17.

2. *Claim 1*

Patent Owner argues that Petitioner improperly analyzes the limitations of claim 1 in isolation, rather than as a whole. PO Resp. 4–7. According to Patent Owner, "Petitioners' part-by-part evaluation only

addresses the question of whether the alleged prior art teaches or suggests a processor that identifies a generic voltage anomaly in a general electric field," but "[t]he relevant question is whether the alleged prior art teaches or suggests a processor that identifies leakage of electric power using the electric field measured by a sensor probe moving past conductive objects proximate a street." *Id.* at 7. Patent Owner's argument is not persuasive.

Petitioner demonstrates that claim 1 as a whole would have been obvious over the EFA Manual and Thomas. Thomas teaches a sensor probe mounted on a motor vehicle that identifies anomalies in electric fields caused by various sources as the vehicle moves past objects.[2] Ex. 1005, col. 6, l. 62–col. 7, l. 25, Figs. 9–14. Thomas also teaches that an anomaly in an electric field may indicate that electrical current is flowing through an object. *Id.* at col. 7, ll. 6–10. Thomas does not mention specifically that the electric current flowing through the object is generated by leakage from a power grid. However, Petitioner identifies evidence indicating that it would have been obvious to one of ordinary skill in the art reading Thomas that a sensor probe mounted on a motor vehicle could also identify an anomaly in an electric field generated by electric current flowing through an object due to leakage from a power grid. Pet. 43–45, 47–48; Ex. 1023 ¶¶ 84, 85, 88; Ex. 1024, 126:10–127:1. Petitioner also identifies evidence indicating that it would have been obvious to one of ordinary skill in the art to mount the

[2] Patent Owner's declarant, Dr. David W. Fugate, states in his declaration that the sensor probe in Thomas is operated only when the vehicle is stationary. Ex. 2015 ¶ 47. Dr. Fugate's testimony is not persuasive because Thomas expressly teaches that the sensor probe is operated while an aircraft flies over objects on land. Ex. 1005, col. 7, ll. 11–17. Further, Dr. Fugate acknowledged during his deposition that the sensor probe can be operated while the truck in Figure 14 is moving. Ex. 1024, 97:22–98:2.

sensor taught by the EFA Manual on a motor vehicle and use it to identify anomalies in electric fields as the vehicle moves past objects proximate a street as taught by Thomas. Pet. 25–28, 43–45; Ex. 1023 ¶¶ 51–55, 64–66. Thus, Petitioner addresses the limitations of claim 1 as a whole.

Patent Owner argues that another "example of Petitioners' legally flawed, piecemeal approach is its treatment of the 'signal' element of claim 1." PO Resp. 11. Specifically, claim 1 recites that the sensor probe "generates a signal corresponding to an electric field detected by the at least one sensor probe," and that the processor "digitizes the signal to form electric field data represented as a plurality of time domain samples." Ex. 1003, col. 25, ll. 55–58, col. 25, ll. 64–66. Patent Owner argues that Petitioner cites to an alarm signal in the EFA Manual as teaching the signal detected by the sensor probe, but then cites to a different signal as being digitized by the processor. PO Resp. 11. Patent Owner's argument is not persuasive. Independent of the alarm signal, Petitioner identifies evidence demonstrating that the EFA Manual teaches a sensor that generates a signal corresponding to a detected electric field (Ex. 1004 §§ 3.4.1, 3.4.2; Ex. 1011, 192:24–193:8), and a digital signal processor that digitizes the signal as a plurality of time domain samples (Ex. 1004 §12.1, Annex C, C-1; Ex. 1023 ¶¶ 73–75). Further, Petitioner explains that the alarm signal itself is not the claimed signal, but, rather, the alarm signal simply confirms that a signal corresponding to an electric field must have been generated. Pet. Reply 5–6.

Patent Owner argues that there are deficiencies in the individual teachings of the EFA Manual and Thomas. PO Resp. 8–11. Specifically, Patent Owner argues that the EFA Manual does not teach detecting "voltage

anomalies generated by leakage from a power grid as the detector moves past conductive objects proximate a street." *Id.* at 8–9. Patent Owner's argument is not persuasive because it only addresses the EFA Manual, not the combination proposed by Petitioner. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981). For example, Patent Owner's argument does not address the evidence discussed above indicating that it would have been obvious to one of ordinary skill in the art reading Thomas that a sensor probe mounted on a motor vehicle would identify an anomaly in an electric field generated by leakage of electric current from a power grid. Pet. 43–45, 47–48; Ex. 1023 ¶¶ 84, 85, 88; Ex. 1024, 126:10–127:1. Patent Owner also argues that Thomas "does not disclose a processor, nor does it disclose any apparatus that analyzes field strengths to identify the claimed voltage anomaly." PO Resp. 10. Patent Owner's argument is not persuasive because it only addresses Thomas, not the combination proposed by Petitioner. *See Keller*, 642 F.2d at 426. For example, Patent Owner's argument does not address the evidence discussed above indicating that the electric field sensor taught by the EFA Manual includes a processor, which, when combined with the teachings of Thomas, would identify an anomaly in an electric field. Pet. 40–41, 45–46; Ex. 1004 §§ 3.4.1, 3.4.2, 5.1, 8.1; Ex. 1023 ¶¶ 80, 82, 86.

Patent Owner argues that the combination of the EFA Manual and Thomas does not teach or suggest a "processor . . . [that] analyzes the field strengths to identify a voltage anomaly [generated by leakage of electric power from a power grid] in the electric field [detected as the sensor probe moves past a plurality of conductive objects proximate the street]." PO Resp. 12. Patent Owner, however, does not explain specifically why the combination of the EFA Manual and Thomas fails to teach or suggest those

limitations of claim 1. *Id.* Moreover, in addition to Petitioner's evidence discussed above, Patent Owner acknowledges that, if the sensor taught by the EFA Manual was mounted on a motor vehicle and driven on a street as taught by Thomas, the processor would generate an alarm when the detected electric field exceeds a threshold. Tr. 60:17–63:3, 66:14–72:10.

Patent Owner also argues that neither the EFA Manual nor Thomas teaches detecting a rise, peak, and fall in an electric field, and, thus, do not teach identifying an anomaly in an electric field under Patent Owner's proposed construction of that limitation. PO Resp. 56–57. As discussed above, we determine that Patent Owner's proposed construction is not the broadest reasonable interpretation. *See supra* Section II.A.1. Moreover, even if we had adopted Patent Owner's proposed construction, Patent Owner's declarant, Dr. David W. Fugate, acknowledges that the electric field measurements captured by the sensor taught in the EFA Manual would indicate a rise, peak, and fall in an electric field. Ex. 1024, 136:14–140:1.

3. *Claim 8*

Dependent claim 8 recites "a computer having a graphical user interface that displays electric field signal strength data, and analyzing and capturing a monitored event within the depicted electric field signal strength data." Ex. 1003, col. 26, ll. 42–45. The EFA Manual teaches a software tool that accompanies the EFA-300 sensor and exports electric field measurement data to a personal computer for further evaluation. Pet. 58–59; Ex. 1004 § 10.2.1. Petitioner identifies evidence indicating that it would have been obvious to one of ordinary skill in the art that the computer software tool taught by the EFA Manual includes a graphical user interface for analyzing and capturing monitored events within the electric field

measurement data. Pet. 59; Ex. 1023 ¶¶ 111, 113.

Patent Owner argues that the testimony of Petitioner's declarant, Dr. Robert G. Olsen, is conclusory and not sufficient to show that analyzing and capturing a monitored event would have been obvious to one of ordinary skill in the art. PO Resp. 13. Patent Owner's argument is not persuasive. As discussed above, the EFA Manual teaches exporting electric field measurement data to a personal computer for "further evaluation." Ex. 1004 § 10.2.1. Dr. Olsen concludes that it would have been obvious that this further evaluation included analyzing and capturing monitored events. Ex. 1023 ¶¶ 111, 113. Thus, Dr. Olsen's conclusion is based on, and supported by, the express teachings of the EFA Manual.

4. *Reasons for Combinations*

Petitioner identifies evidence indicating that it would have been obvious to mount the electric field sensor taught by the EFA Manual on the motor vehicle taught by Thomas because Thomas expressly teaches mounting an electric field sensor on a motor vehicle and using it to identify electric field anomalies while the vehicle is in motion. Pet. 25–28, 43–45; Ex. 1005, col. 3, ll. 12–19, col. 6, l. 62–col. 7, l. 25, Figs. 9–14; Ex. 1023 ¶¶ 51–55, 64–66. Further, the combination would have involved combining known elements (i.e., the electric field sensor in the EFA Manual and the motor vehicle in Thomas) according to known methods (i.e., mounting the sensor on the vehicle with a pipe or other structure as taught by Thomas) to yield predictable results (i.e., identifying anomalies in electric fields while the vehicle is in motion as taught by Thomas). *See KSR*, 550 U.S. at 416. Petitioner identifies evidence indicating that it would have been obvious to combine Greene with the EFA Manual and Thomas because the EFA

Manual teaches determining the location of an electric field measurement, and, thus, one of ordinary skill in the art would have considered well-known ways to determine location, such as the GPS receiver in Greene. Pet. 53–54; Ex. 1004, Annex B; Ex. 1006, col. 4, ll. 39–62; Ex. 1023 ¶¶ 100–102; *see KSR*, 550 U.S. at 416. Petitioner identifies evidence indicating that it would have been obvious to combine Brigham with the EFA Manual and Thomas because the EFA Manual teaches using the fast Fourier transform to produce electric field strengths, and, thus, one of ordinary skill in the art would have looked to other references, such as Brigham, for well-known ways to implement the fast Fourier transform. Pet. 55–57; Ex. 1004 § 6.3, Annex C; Ex. 1008, 83–87; Ex. 1023 ¶¶ 105–106; *see KSR*, 550 U.S. at 416.

a. Level of Ordinary Skill in the Art

Patent Owner argues that a person of ordinary skill in the art would not have combined the cited teachings of the EFA Manual and Thomas because it was not known at the time of filing of the ’274 patent that an electric field sensor could be used to identify a voltage anomaly generated by leakage of electric power from a power grid. PO Resp. 14–18. Patent Owner’s argument is not persuasive. Patent Owner’s declarant, Dr. Fugate, admits that a person of ordinary skill in the art at the time of filing of the ’274 patent would have known that an electric field sensor could be used to identify a stray voltage anomaly (which, according to Patent Owner, is an anomaly generated by leakage of electric power from a power grid). Ex. 1024, 126:10–127:1; Tr. 61:4–7. Further, as discussed above, Thomas teaches that electric current flowing through an object generates an anomaly in an electric field, and, thus, it would have been obvious to one of ordinary skill in the art reading Thomas that an electric field sensor could be used to

identify an anomaly generated by leakage of electric current from a power grid. *See supra* Section II.B.2.

Patent Owner also argues that "Petitioners' sole reason for combining the EFA Manual and Thomas relies solely on the false premise that a skilled artisan would have known about the private Sarnoff experiments on stray voltage detection using electric fields," but "Petitioners failed to show that the skilled artisan would have known about this work." PO Resp. 18. Patent Owner's argument is not persuasive. Thomas teaches mounting an electric field sensor on a motor vehicle and using the sensor to identify anomalies in electric fields while the vehicle is in motion. Ex. 1005, col. 6, l. 62–col. 7, l. 25, Figs. 9–14. As such, Thomas itself would have provided one of ordinary skill in the art with a reason to mount the electric field sensor taught by the EFA Manual on the motor vehicle taught by Thomas and use the sensor to identify anomalies in electric fields while the vehicle is in motion. Pet. 25–28, 43–45; Ex. 1023 ¶¶ 51–55, 64–66. Therefore, Petitioner's reason for combining the cited teachings of the EFA Manual and Thomas is not dependent on whether one of ordinary skill in the art would have known about any private Sarnoff experiments.

b. Reasonable Expectation of Success

Patent Owner argues that a person of ordinary skill in the art would not have had a reasonable expectation of success in combining the EFA Manual and Thomas because it was not known at the time of filing of the '274 patent that a voltage anomaly could be identified from a moving motor vehicle. PO Resp. 19–21. Patent Owner's argument is not persuasive because a reasonable expectation of success does not require that a person of ordinary skill in the art already know with absolute predictability that a

combination would work. *In re Kubin*, 561 F.3d 1351, 1360 (Fed. Cir. 2009). Further, Patent Owner's argument does not address the teachings of Thomas. As discussed above, Thomas teaches mounting an electric field sensor on a vehicle and using the sensor to identify anomalies in electric fields while the vehicle is in motion. Ex. 1005, col. 6, l. 62–col. 7, l. 25, Figs. 9–14. Thus, one of ordinary skill in the art reading Thomas would have had a reasonable expectation that an anomaly in an electric field could be identified from a moving motor vehicle. *See* Ex. 1023 ¶¶ 51–55, 64–66; *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (finding that the teachings of the prior art provide a sufficient basis for a reasonable expectation of success).

Patent Owner argues that a person of ordinary skill in the art would not have had a reasonable expectation of success in using the electric field sensor taught by the EFA Manual in the proposed combination because the sensitivity of that sensor would have made it unsuitable for mobile anomaly detection. PO Resp. 26. Specifically, Patent Owner argues that most voltage anomalies emit electric fields of less than 1 V/m. PO Resp. 20–21, 26. According to Patent Owner, the EFA Manual only provides measurement uncertainty values for electric fields greater than 1 V/m, and, thus, the accuracy of measurements below 1 V/m would be "questionable." PO Resp. 26 (citing Ex. 1004 § 12.2.6; Ex. 2015 ¶ 79). Patent Owner's argument is not persuasive. The EFA Manual expressly states that the alarm threshold for the electric field sensor ranges from 0.1 V/m to 100 kV/m. Ex. 1004 § 8.1.2. Thus, it would have been reasonable to expect the sensor to accurately detect electric fields at least as low as 0.1 V/m.

Patent Owner also argues that the sampling rate of the sensor taught by the EFA Manual would have been too low to reliably detect voltage anomalies while in motion. PO Resp. 24 (citing Ex. 2015 ¶¶ 74–77). Patent Owner's argument is not persuasive. Patent Owner's declarant, Dr. Fugate, acknowledges that, although the sampling rate of the sensor taught by the EFA Manual would limit the speed at which the vehicle could travel, a person of ordinary skill in the art still would have recognized that the sensor "may" work in the proposed combination. Ex. 1024, 120:6–121:5. Thus, Patent Owner does not demonstrate that the sampling rate would have prevented a person of ordinary skill in the art from having at least a reasonable expectation of success in using the sensor taught by the EFA Manual in the proposed combination.

Patent Owner argues that evidence relating to Petitioner's anomaly detection system, the 8950/10, also demonstrates that the sensor taught by the EFA Manual was not suitable for use in mobile anomaly detection systems because it had an inadequate sensitivity and sampling rate. PO Resp. 24–26. Patent Owner's argument is not persuasive. If anything, the evidence relating to Petitioner's 8950/10 system demonstrates the opposite—that the sensor taught by the EFA Manual was suitable for use in mobile anomaly detection systems. Petitioner developed the 8950/10 system by mounting the exact same sensor taught by the EFA Manual to a truck and using it to identify anomalies in electric fields. Ex. 2015, Appendix C, C-1–C-6. Patent Owner subsequently accused the 8950/10 system of infringing claim 1 of the '274 patent in the related district court case (PO Resp. 48; Ex. 2158 ¶ 17), and alleges in this case that claim 1 of the '274 patent reads on the 8950/10 system (PO Resp. 43). By doing so, Patent Owner

acknowledges that the sensitivity and sampling rate of the sensor taught by the EFA Manual are, in fact, sufficient to satisfy the limitations recited in the challenged claims. Thus, the evidence relating to Petitioner's 8950/10 system, to the extent it is relevant to this issue,[3] indicates that a person of ordinary skill in the art likely would have found the sensitivity and sampling rate of the sensor taught by the EFA Manual suitable for mobile anomaly detection systems.

In addition to the reasons discussed above, Patent Owner's argument that a person of ordinary skill in the art would not have had a reasonable expectation of success in combining the EFA Manual and Thomas is not persuasive because Patent Owner's argument is not commensurate with the scope of the challenged claims. *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 962–63 (Fed. Cir. 2014). Patent Owner's argument focuses on whether the sensitivity and sampling rate of the sensor described in the EFA Manual are suitable for detecting weak electric fields in an electrically noisy urban environment. PO Resp. 19 ("the artisan would not have known whether stray voltages could be detected from a moving motor vehicle using their weak electric fields in an electrically noisy urban environment"); Ex. 2015 ¶¶ 51, 57, 59, 60, 76. However, neither the challenged claims nor the written description of the '274 patent are limited to detecting weak electric fields in an electrically noisy urban environment. *See Allergan*, 754 F.3d at

[3] The evidence relating to Petitioner's 8950/10 system may not be relevant because the system was developed after the filing of the '274 patent. We nonetheless address this evidence because Patent Owner argues that it is relevant to whether there would have been a reasonable expectation of success in combining the EFA Manual and Thomas. *See* PO Resp. 24–26.

963. Rather, the '274 patent states that the disclosed system also may be used in rural and suburban areas. Ex. 1003, col. 2, ll. 18–21.

c. Teaching Away

Patent Owner argues that the EFA Manual teaches away from the combination proposed by Petitioner. PO Resp. 27–30. In particular, Patent Owner argues that the EFA Manual teaches that the electric field sensor disclosed therein must be mounted on a tripod. *Id.* at 29. According to Patent Owner, requiring the sensor to be mounted on a tripod indicates that the sensor cannot be used while in motion. *Id.* at 28–30. Patent Owner's argument is not persuasive. Although the EFA Manual requires that the sensor be "mounted on a tripod and insulated from it" (Ex. 1004 § 3.4.1), Patent Owner does not identify any teaching in the EFA Manual that prohibits the sensor from being used while in motion (Ex. 1024, 108:20–109:3). Further, as discussed above, Thomas teaches that an electric field sensor can be mounted to an electrically non-conductive support structure on a motor vehicle and used while the vehicle is in motion. Ex. 1005, col. 3, ll. 12–19, col. 6, l. 62–col. 7, l. 25, Figs. 9–14. Thus, one of ordinary skill in the art reading the EFA Manual and Thomas *together* would understand that the sensor taught in the EFA Manual could be mounted securely to and insulated from a support structure on a motor vehicle, which would satisfy the conditions for use set forth in the EFA Manual. *See* Ex. 1023 ¶¶ 52–53.

5. *Objective Indicia of Non-Obviousness*

Patent Owner argues that certain objective indicia, including long-felt but unmet need, failure of others, commercial success, and copying, demonstrate the non-obviousness of the challenged claims. PO Resp. 31. As a threshold matter, Patent Owner contends that Petitioner's arguments

and evidence relating to these objective indicia should not be considered because Petitioner knew about the objective indicia before filing the Petition, but did not present its arguments and evidence until the Reply. *Id.* at 32–33. Patent Owner's argument is not persuasive. Petitioner is entitled in the Reply to respond to arguments and evidence raised in the Response, which is what Petitioner has done here. *Belden Inc. v. Berk-Tek LLC*, No. 2014-1575, 2015 WL 6756451, at *10–15 (Fed. Cir. Nov. 5, 2015).

a. Long-Felt but Unmet Need

Patent Owner argues that, prior to the '274 patent, utility companies could only identify voltage anomalies by making direct contact with each potential hazard using a handheld device. PO Resp. 36. According to Patent Owner, this manual scanning did not scale effectively to large cities because of the geographic footprint and large number of potential hazards. *Id.* at 36–37. Patent Owner contends that this demonstrates a long-felt but unmet need "for efficient, scalable, stray voltage detection capable of serving as an alternative to manual testing." *Id.* at 37. Although Patent Owner explains generally why the technology existing prior to the '274 patent may not have been ideal for large cities, that alone does not indicate that utility companies actually had a long-felt but unmet need for a more efficient alternative, rather than, for example, just a lack of interest in the technology.

Patent Owner does argue that one particular utility company, Consolidated Edison ("Con Ed"), had a need for a more efficient alternative to manually testing for voltage anomalies. *Id.* at 35–38. However, as Petitioner points out, the evidence indicates that Con Ed's need was not long-felt. Pet. Reply 13–15. Specifically, Patent Owner's predecessor provided a proposal to Con Ed for the development of a mobile contactless

system for detecting voltage anomalies in 2002. Ex. 1039. Con Ed, however, decided not to proceed with that project because Con Ed wanted to use the required funding for other projects. Ex. 1012, 69:4–70:5; Ex. 1029, 134:1–136:3, 142:3–143:12; Ex. 1040, 1. Con Ed only renewed its interest in developing a mobile contactless detection system after a high profile electrocution death in New York City in 2004 and a subsequent order from the State of New York requiring Con Ed to perform testing for voltage anomalies. Ex. 1029, 142:3–143:15; Ex.1040, 1; Ex. 1045, 101:23–102:1; Ex. 2013 ¶¶ 35, 37; Ex. 2046, 1–2. Patent Owner's predecessor developed the system claimed in the '274 patent shortly thereafter, and Con Ed began using it in 2005. PO Resp. 45. As such, the evidence indicates that Con Ed's need for a more efficient alternative to manual testing was not long-felt because it arose in 2004 and was met in 2005. *See Ecolochem, Inc. v. S. Cal. Edison Co.*, 227 F.3d 1361, 1377 (Fed. Cir. 2000) ("This evidence supports the district court's finding that Ecolochem's process was developed not in response to a long-felt need in the power industry, but in response to a shortly-felt requirement imposed by EPRI's guidelines."). Therefore, the objective consideration of long-felt by unmet need does not weigh in favor of finding the challenged claims to be non-obvious.

b. Failure of Others

Patent Owner argues that others tried but failed to develop a more efficient alternative to manually testing for voltage anomalies. PO Resp. 39–41. Much of the evidence identified by Patent Owner, however, does not show any failure by others. Patent Owner identifies several issued United States patents, but does not explain how those patents demonstrate that others failed to develop a more efficient alternative to manually testing for

voltage anomalies. *Id.* at 39 (citing Ex. 2039; Ex. 2056; Ex. 2057). Patent Owner cites to an assessment by the Electric Power Research Institute ("EPRI"), which states that electric field sensors on the market in 2005 would require major modifications to provide a non-contact stray voltage detection system. PO Resp. 39; Ex. 2058, 1. However, Patent Owner does not identify anything in the assessment indicating that EPRI or others actually attempted to develop such a system and failed. PO Resp. 39. Patent Owner cites to an article concluding that mobile detection systems were not sufficiently advanced to be used as the exclusive method of identifying electrical safety hazards. *Id.* at 40–41 (citing Ex. 2060, 7). But Patent Owner does not demonstrate that this undated article refers to systems developed before the filing of the '274 patent. PO Resp. 40–41. Further, the article appears to indicate that others succeeded in developing a mobile contactless detection system (even if the author did not consider that system to be sufficiently advanced to be used as the exclusive method for identifying electrical hazards). Ex. 2060, 7.

Patent Owner also argues that, in the 2004 timeframe, Con Ed attempted to attach voltage detectors to rolling objects, such as skateboards and wheelchairs, and to use "sticks and poles as an extension to a person's arm," and those attempts failed. PO Resp. 40; Ex. 2013 ¶¶ 24–32. Patent Owner, however, does not demonstrate a nexus between Con Ed's failed attempts and the challenged claims. In particular, Patent Owner argues that the problem sought to be solved by the '274 patent was that the prior technology was inefficient because it required making direct contact with each potential hazard. PO Resp. 3, 36–37, 41; Ex. 1003, col. 2, ll. 6–21; Tr. 102:10–12. But the identified attempts by Con Ed also involved making

direct contact with each potential hazard. Ex. 2013 ¶¶ 26–27, 29, 31; Tr. 103:3–13. As such, the evidence does not indicate that Con Ed tried and failed to solve the problem identified in the '274 patent. *See Symbol Techs., Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1578 (Fed. Cir. 1991) ("Nonobviousness is suggested by the failure of others to 'find a solution to the problem which the patent[s] in question purport[ ] to solve.'"). To the contrary, the evidence indicates that Con Ed previously decided not to even try developing a contactless system because it wanted to use the required funding for other projects. Ex. 1012, 69:4–70:5; Ex. 1029, 134:1–136:3, 142:3–143:12; Ex. 1040, 1. Therefore, the objective consideration of failure by others does not weigh in favor of finding the challenged claims to be non-obvious.

c. Commercial Success

Patent Owner argues that sales of its SVD2000 product demonstrate the commercial success of the subject matter claimed in the '274 patent. PO Resp. 41–47. Specifically, Patent Owner identifies the revenue generated from the SVD2000 from 2007 to 2014, and argues that the SVD2000 has been used in 61 regions in the United States and 4 regions in Canada and the United Kingdom. *Id.* at 43 (citing Ex. 2014 ¶¶ 51, 52). In order to demonstrate a nexus between the alleged commercial success and the claimed subject matter, Patent Owner argues that its SVD2000 product is covered by claim 1 of the '274 patent (PO Resp. 42), and cites to testimony from its declarant, Mr. Andrew W. Carter (*id.* at 46). According to Mr. Carter, Patent Owner's customers appreciate that Patent Owner's mobile system is more efficient than manually testing for voltage anomalies. Ex. 2014 ¶¶ 94–101.

Evidence of commercial success is only relevant if there is a nexus between the commercial success and the claimed subject matter. *In re Applied Materials, Inc.*, 692 F.3d 1289, 1299 (Fed. Cir. 2012). As such, there must be evidence that the sales were a direct result of the unique characteristics of the claimed subject matter, as opposed to other economic and commercial factors unrelated to the quality of the claimed subject matter. *Id.* at 1299–1300. Here, Petitioner identifies evidence showing that the alleged commercial success of Patent Owner's product was attributable to factors other than the claimed subject matter, namely government regulation and catalyst events. Pet. Reply 19–20. Specifically, Patent Owner's President and CEO acknowledges that customers purchased Patent Owner's product because: 1) they were required by government regulation to test for voltage anomalies; and/or 2) they experienced a catalyst event, such as a death or injury, due to a voltage anomaly. Ex. 1045, 100:8–9, 101:21–102:12. Patent Owner's declarant, Mr. Carter, similarly acknowledges that customers are reluctant to purchase Patent Owner's product unless they are required to do so by law and/or they experience a catalyst event. Ex. 2014 ¶ 38. This is consistent with the evidence discussed above indicating that Con Ed purchased Patent Owner's product after a high profile electrocution death and subsequent government regulation. *See supra* Section II.B.5.a. Petitioner's declarant, Ms. Dana Trexler Smith, further demonstrates that customers purchased Patent Owner's product because of government regulation and/or catalyst events. Pet. Reply 20; Ex. 1026 ¶¶ 27–35.

In sum, the evidence indicates that sales of Patent Owner's SVD2000 product were driven by government regulation and/or catalyst events. Ex.

1026 ¶¶ 27–35; Ex. 1045, 101:21–102:12; Ex. 2014 ¶ 38; *see supra* Section II.B.5.a. However, the evidence also indicates that, after confronted with one or both of those factors, customers who purchased Patent Owner's product appreciated that it was more efficient than manually testing for voltage anomalies. Ex. 2014 ¶¶ 94–101. As such, the evidence, when considered as a whole, indicates that the patented subject matter may have played some role in sales of Patent Owner's product, but was not the direct or primary cause of those sales. *See Applied Materials*, 692 F.3d at 1299–1300. Therefore, the objective consideration of commercial success weighs only slightly in favor of finding the challenged claims to be non-obvious.

d. Copying

Patent Owner argues that Petitioner copied Patent Owner's SVD2000 product, and, in particular, copied "the claimed innovation of using an e-field sensor to identify voltage anomalies indicative of stray voltage hazards contactlessly, while moving." PO Resp. 47–52. A showing of copying, however, does not unequivocally demonstrate non-obviousness without the presence of additional compelling objective indicia of non-obviousness. *Ecolochem*, 227 F.3d at 1380. For the reasons discussed above, additional compelling objective indicia of non-obviousness are not present in this case. *See supra* Sections II.B.5a–II.B.5.c. Therefore, even if Patent Owner identifies evidence of copying by Petitioner, the objective consideration of copying does not demonstrate that the challenged claims are non-obvious.

6. *Totality of the Evidence*

For the reasons discussed above in Section II.B.1 to Section II.B.4, the evidence presented by Petitioner strongly indicates that the challenged claims would have been obvious over the cited prior art. For the reasons

discussed above in Section II.B.5, the objective indicia of long-felt but unmet need and failure of others do not weigh in favor of non-obviousness, and the objective indicia of commercial success and copying weigh only slightly in favor of non-obviousness. When considering all the evidence of obviousness and non-obviousness together, *see In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litigation*, 676 F.3d 1063, 1079 (Fed. Cir. 2012), we determine that Petitioner has shown by a preponderance of the evidence that claims 1–5 and 8 of the '274 patent are unpatentable as obvious.

C. *Petitioner's Motion to Exclude*

Petitioner filed a redacted Motion to Exclude (Paper 63, "Pet. Mot."), and a sealed Motion to Exclude (Paper 46), to which Patent Owner filed an Opposition (Paper 58), and Petitioner filed a Reply (Paper 61). Petitioner argues that Exhibits 2012–2014, 2082–2086, 2088–2093, 2118, 2119, 2122, 2143, 2152, 2155, and 2163, and portions of Exhibit 2015 should be excluded. Pet. Mot. 1. We have considered the parties' arguments, and, for the reasons discussed below, Petitioner's Motion to Exclude is *denied in part* and *dismissed in part*.

1. *Exhibits 2012 and 2013*

Exhibit 2012 is the declaration of William A. Homyk, and Exhibit 2013 is the declaration of Arthur Kressner. Petitioner argues that Exhibits 2012 and 2013 should be excluded under Fed. R. Evid. 402 or 403, because neither Mr. Kressner nor Mr. Homyk is a person of ordinary skill in the art, and, thus, their testimony regarding the objective indicia of long-felt but unmet need and failure of others is irrelevant. Pet. Mot. 1–4. Petitioner's argument is not persuasive. Although the objective indicia of long-felt but

unmet need and failure of others should be considered from the perspective of a person of ordinary skill in the art, Petitioner does not identify any requirement that only those considered to be a person of ordinary skill in the art may provide testimony regarding those objective indicia. *Id.* Therefore, we are not persuaded that Exhibits 2012 and 2013 should be excluded under Fed. R. Evid. 402 or 403, and Petitioner's Motion to Exclude Exhibits 2012 and 2013 is *denied*.

2. *Exhibit 2014*

Exhibit 2014 is the declaration of Andrew W. Carter. Petitioner argues that Exhibit 2014 should be excluded under Fed. R. Evid. 402, 403, 702, 802, or 901. Pet. Mot. 5. Petitioner argues that Mr. Carter relies on documents that lack authentication and are inadmissible hearsay. *Id.* at 5–6. However, as Petitioner acknowledges, the facts and data underlying Mr. Carter's testimony do not need to be independently admissible. *Id.*; *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F. 3d 1348, 1373 (Fed. Cir. 2013). Further, Petitioner does not explain specifically why the facts and data underlying Mr. Carter's testimony in this case lack authenticity or are unreliable. Pet. Mot. 5–6. Petitioner also argues that Mr. Carter's testimony regarding commercial success is based on an improper definition of the relevant market and fails to demonstrate a nexus to the claimed invention. *Id.* at 6–9. Petitioner's arguments raise a question of sufficiency of proof, not admissibility. Therefore, we are not persuaded that Exhibit 2014 should be excluded under Fed. R. Evid. 402, 403, 702, 802, or 901, and Petitioner's Motion to Exclude Exhibit 2014 is *denied*.

3. *Exhibits 2015 and 2163*

Exhibit 2015 is the declaration of David W. Fugate, and Exhibit 2163 is a Con Ed presentation. Petitioner argues that Exhibit 2163 should be excluded as inadmissible hearsay under Fed. R. Evid. 802, and as lacking authentication under Fed. R. Evid. 901, and that paragraph 69 of Exhibit 2015 should be excluded under Fed. R. Evid. 402 and 403, because it relies on Exhibit 2163. Pet. Mot. 9–11. Petitioner's Motion to exclude Exhibit 2163 and paragraph 69 of Exhibit 2015 is *dismissed as moot* because Patent Owner does not cite to Exhibit 2163 or paragraph 69 of Exhibit 2015 in its briefing and this Decision does not rely on Exhibit 2163 or paragraph 69 of Exhibit 2015. Petitioner also argues that paragraphs 41, 47, and 55 of Exhibit 2015 should be excluded under Fed. R. Evid. 403, because Dr. Fugate acknowledged at his deposition that statements in those paragraphs are inaccurate. Pet. Mot. 11–14. Petitioner's arguments raise a question of the weight that should be given to Dr. Fugate's testimony, not admissibility. Therefore, we are not persuaded that paragraphs 41, 47, and 55 of Exhibit 2015 should be excluded under Fed. R. Evid. 403, and Petitioner's Motion to Exclude paragraphs 41, 47, and 55 of Exhibit 2015 is *denied*.

4. *Exhibits 2082–2086, 2088–2093, 2118, 2119, 2122, 2143, 2152, and 2155*

Exhibits 2082–2086, 2088–2093, 2118, 2119, 2122, 2143, 2152, and 2155 are documents relied upon by Mr. Carter in his declaration. Petitioner argues that Exhibits 2082–2086, 2088–2093, 2118, 2119, 2122, 2143, 2152, and 2155 should be excluded as inadmissible hearsay under Fed. R. Evid. 802, and as lacking authentication under Fed. R. Evid. 901. Pet. Mot. 14–15. This Decision relies on the Exhibits 2082–2086, 2088–2093, 2118, 2119, 2122, 2143, 2152, and 2155, only to the extent they provide a basis for

the portions of Mr. Carter's declaration cited in this Decision. As discussed above, Petitioner acknowledges that the facts and data underlying Mr. Carter's testimony do not need to be independently admissible. *See supra* Section II.C.2. Therefore, we are not persuaded that Exhibits 2082–2086, 2088–2093, 2118, 2119, 2122, 2143, 2152, and 2155 should be excluded under Fed. R. Evid. 802 or 901, and Petitioner's Motion to Exclude Exhibits 2082–2086, 2088–2093, 2118, 2119, 2122, 2143, 2152, and 2155 is *denied*.

D. *Patent Owner's Motion to Exclude*

Patent Owner filed a Motion to Exclude (Paper 48, "PO Mot."), to which Petitioner filed an Opposition (Paper 54), and Patent Owner filed a Reply (Paper 60). Patent Owner argues that Exhibit 1004, and portions of Exhibits 1017 and 1027 should be excluded. PO Mot. 1. We have considered the parties' arguments, and, for the reasons discussed below, Patent Owner's Motion to Exclude is *denied in part* and *dismissed in part*.

1. *Exhibit 1004*

Exhibit 1004 is the EFA Manual. Patent Owner argues that Exhibit 1004 should be excluded for lack of authentication under Fed. R. Evid. 901. PO Mot. 3–6. Federal Rule of Evidence 901 requires that the proponent produce evidence sufficient to support a finding that an item is what the proponent claims it is. Here, Patent Owner admits that Exhibit 1004 is what Petitioner claims it is, namely an operating manual for the EFA-200/-300 EM Field Analyzer. Tr. 53:8–12. What Patent Owner disputes is whether Petitioner has shown by a preponderance of the evidence that the EFA Manual is prior art, i.e., that it was publicly accessible before the critical date. *Id.*; PO Mot. 4. Because this is a question of sufficiency of proof, not admissibility, Patent Owner's Motion to Exclude Exhibit 1004 in its entirety

is *denied*.

Moreover, Petitioner has shown by a preponderance of the evidence that the EFA Manual is a prior art printed publication under 35 U.S.C. § 102(b). Pet. 20–23. Specifically, Petitioner submits the Declaration of Mr. Robert Johnson, the Director of Instrument Products at Narda Safety Test Solutions ("Narda"), which is a business unit of Petitioner. Ex. 1017 ¶ 1. Mr. Johnson testifies that, since 2002, Narda's standard practice has been to include a user manual with each device sold and also to provide user manuals to customers and others upon request. *Id.* ¶¶ 3, 7. According to Mr. Johnson, the EFA Manual was distributed to customers at least 201 times between 2002 and 2004. *Id.* ¶¶ 5, 11, 12. Mr. Johnson also testifies that Narda did not restrict its customers' use or dissemination of the EFA Manual. *Id.* ¶ 6. As a result, Petitioner has shown sufficiently that the EFA Manual is a prior art printed publication. *See In re Enhanced Sec. Research, LLC*, 739 F.3d 1347, 1354–55 (Fed. Cir. 2014) (finding that a product manual constituted publicly-available prior art based on evidence that the manual was available to members of the public upon request and was provided to approximately a dozen customers); *Mass. Inst. of Tech. v. AB Fortia*, 774 F.2d 1104, 1108–09 (Fed. Cir. 1985) (finding that a paper constituted prior art based on evidence that the paper was disseminated without restriction to at least six persons and between 50 and 500 persons were told of the existence of the paper).

Patent Owner also argues that the copyright date on Exhibit 1004 should be excluded as inadmissible hearsay under Fed. R. Evid. 802.[4] PO Mot. 6–7. However, the copyright date on the EFA Manual meets the criteria for the business records exception under Fed. R. Evid. 803(6). Specifically, Mr. Johnson testifies that a copyright date is affixed to every user manual before Narda releases the user manual, thus indicating that the copyright date is a record made at or near the time a user manual is finalized in the regular course of business as part of Narda's regular practice of releasing a user manual. Ex. 2204, 59:7–61:8; Fed. R. Evid. 803(6). Therefore, we are not persuaded that the copyright date on Exhibit 1004 should be excluded under Fed. R. Evid. 802, and Patent Owner's Motion to Exclude the copyright date on Exhibit 1004 is *denied*.

2. *Exhibit 1017*

Exhibit 1017 is a declaration of Robert Johnson. Patent Owner argues that Exhibit 1017 should be excluded under Fed. R. Evid. 602, because Mr. Johnson lacks personal knowledge of the matters in his declaration. PO Mot. 7–10. Specifically, Patent Owner argues that Mr. Johnson did not have personal knowledge that the EFA Manual was distributed to customers at least 201 times between 2002 and 2004, because he did not participate personally in the distribution of those manuals. *Id.* at 4–5, 9. Patent Owner's argument is not persuasive. Although Mr. Johnson may not have personally shipped or distributed the EFA Manual, Mr. Johnson states that

[4] Petitioner does not rely solely on the copyright date as evidence of the public accessibility of the EFA Manual. As discussed above, Petitioner shows that the EFA Manual was publicly accessible based on Mr. Johnson's testimony that the EFA Manual was distributed to customers at least 201 times between 2002 and 2004.

he has personal knowledge that, since 2002, Narda's standard practice is to include a user manual with each device sold and to provide user manuals to customers and others upon request. Ex. 1017 ¶¶ 3, 7. Patent Owner does not argue that Mr. Johnson lacks personal knowledge of Narda's standard practice. Patent Owner also does not explain why Mr. Johnson's knowledge of Narda's standard practice is insufficient to support his testimony about the distribution of the EFA Manual. PO Mot. 9.

Patent Owner argues that Mr. Johnson does not have personal knowledge of the underlying sales records that form the basis for Exhibit C to his declaration. *Id.* at 10. Patent Owner's argument is not persuasive. Although Mr. Johnson may not have reviewed the underlying sales records that form the basis of Exhibit C, Mr. Johnson states that the sales data in Exhibit C was generated upon his request by the sales and marketing department from Narda's business records. Ex. 1017 ¶ 10. Patent Owner does not identify any requirement that Mr. Johnson must have prepared Exhibit C in order to testify about its contents. PO Mot. 10. Further, Patent Owner does not argue that the data in Exhibit C is unreliable. *Id.*

Patent Owner also argues that Mr. Johnson could not explain at his deposition why the EFA Manual could no longer be accessed from certain websites mentioned in his declaration. *Id.* Patent Owner's argument raises a question of the weight that should be given to Mr. Johnson's testimony regarding the websites mentioned in his declaration, not the admissibility of that testimony. For the foregoing reasons, we are not persuaded that Exhibit 1017 should be excluded under Fed. R. Evid. 602, and Patent Owner's Motion to Exclude Exhibit 1017 is *denied*.

3. *Exhibit 1027*

Exhibit 1027 is a declaration of Robert Johnson. Patent Owner argues that the photograph in paragraph 4 of Exhibit 1027 is impermissible hearsay and lacks authentication, and, thus, paragraphs 2–7 of Exhibit 1027 should be excluded under Fed. R. Evid. 802 and 901. PO Mot. 11–13. Patent Owner's Motion to exclude paragraphs 2–7 of Exhibit 1027 is *dismissed as moot* because this Decision does not rely on Exhibit 1027.

4. *Petitioner's Arguments and Evidence Relating to Objective Indicia of Non-Obviousness*

Patent Owner argues that Petitioner's arguments and evidence relating to the objective indicia of non-obviousness should be excluded because Petitioner should have presented those arguments and evidence in the Petition, rather than the Reply. PO Mot. 13–15. For the reasons discussed above, Patent Owner's argument is not persuasive. *See supra* Section II.B.5.

E. *Patent Owner's Motion for Observation on Cross Examination*

Patent Owner filed a redacted Motion for Observation on Cross Examination (Paper 51, "Mot. for Obsv."), and a sealed Motion for Observation on Cross Examination (Paper 50), to which Petitioner filed an Response (Paper 56). Patent Owner's observations relate to the cross examination of Mr. Johnson regarding his declaration submitted as Exhibit 1027. Mot. for Obsv. 1. Patent Owner's Motion for Observation on Cross Examination is *dismissed as moot* because this Decision does not rely on Exhibit 1027.

F. *Motions to Seal*

The parties filed several unopposed motions to seal. Paper 24; Paper 30; Paper 52; Paper 59; Paper 62. Collectively, the motions seek to seal Exhibits 2016, 2018, 2019, 2020, 2022, 2065, 2067, 2143, 2152, 2155,

2181–2194, 2201, and 2202 in their entirety, portions of Exhibits 1026, 2014, 2015, and 2205, and portions of Patent Owner's Response (Paper 22), Petitioner's Corrected Reply (Paper 43), Petitioner's Motion to Exclude (Paper 46), and Patent Owner's Motion for Observation on Cross Examination (Paper 50). For the reasons discussed below, the parties' motions to seal are *granted*.

There is a strong public policy that favors making information filed in an *inter partes* review open to the public. *Garmin Int'l, Inc. v. Cuozzo Speed Techs. LLC*, IPR2012-00001, Paper 34, 1–2 (PTAB Mar. 14, 2013). The standard for granting a motion to seal is good cause. 37 C.F.R. § 42.54. That standard includes showing that the information addressed in the motion to seal is truly confidential, and that such confidentiality outweighs the strong public interest in having the record open to the public. *See Garmin* IPR2012-00001, Paper 34, 2–3. We have reviewed the motions to seal, the documents sought to be sealed, and any redacted, public versions of those documents that have been filed, and we determine that good cause exists to grant the motions.

Although we grant the motions to seal, we previously informed the parties that confidential information subject to a protective order will be unsealed when that information is identified in a final written decision following a trial. Paper 25, 2–3; Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,761 (Aug. 14, 2012). This Decision relies on information from Exhibits 1026 and 2014 that is the subject of the parties' motions to seal. *See supra* Section II.B.5.c. Accordingly, the aforementioned exhibits will be unsealed 45 days after entry of this Decision, unless, before that time, the parties file a motion to expunge those exhibits and replace them

with public versions that only redact confidential information *not* identified in this Decision.

III. CONCLUSION

Petitioner has shown by a preponderance of the evidence that claims claims 1–5 and 8 are unpatentable under 35 U.S.C. § 103(a) as obvious.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–5 and 8 of the '274 patent are shown unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is *denied in part* and *dismissed in part*;

FURTHER ORDERED that Patent Owner's Motion to Exclude is *denied in part* and *dismissed in part*;

FURTHER ORDERED that Patent Owner's Motion for Observation on Cross Examination is *dismissed as moot*;

FURTHER ORDERED that the parties' motions to seal are *granted*;

FURTHER ORDERED that Exhibits 2016, 2018, 2019, 2020, 2022, 2065, 2067, 2143, 2152, 2155, 2181–2194, 2201, and 2202, the identified portions of Exhibits 1026, 2014, 2015, and 2205, and the identified portions of Patent Owner's Response (Paper 22), Petitioner's Corrected Reply (Paper 43), Petitioner's Motion to Exclude (Paper 46), and Patent Owner's Motion for Observation on Cross Examination (Paper 50) will be sealed;

FURTHER ORDERED that Exhibits 1026 and 2014 will be unsealed 45 days after entry of this Decision, unless, before that time, the parties file a motion to expunge those exhibits and replace them with public versions that only redact confidential information *not* identified in this Decision; and

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

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