

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.; and
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

OURARING, INC.,
Patent Owner.

PGR2024-00039
Patent 11,874,702 B2

Before, NEIL T. POWELL, ELIZABETH M. ROESEL, and
MICHAEL A. VALEK, *Administrative Patent Judges*.

ROESEL, *Administrative Patent Judge*.

DECISION
Granting Institution of Post-Grant Review
35 U.S.C. § 324

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Petitioner”) filed a Petition (Paper 3, “Pet.”) requesting a post-grant review of claims 1–17 of U.S. Patent No. 11,874,702 B2 (Ex. 1001, “the ’702 Patent”). Ouraring, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”).

We have authority to determine whether to institute a post-grant review. 35 U.S.C. § 324 (2024); 37 C.F.R. § 42.4(a) (2024). A post-grant review may not be instituted “unless . . . the information presented in the petition . . . , if such information is not rebutted, would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324(a). For the reasons that follow, we determine that the threshold for instituting a post-grant review is met, and we institute trial.

This is not a final decision as to the patentability of any challenged claim. Any final decision will be based on the full record developed during trial.

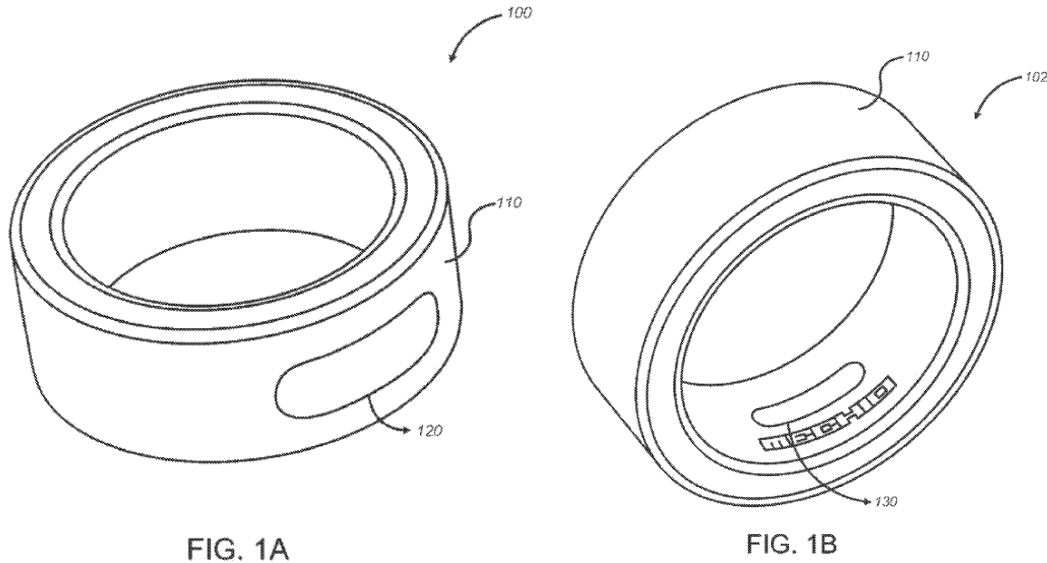
II. BACKGROUND

A. *The ’702 Patent (Ex. 1001)*

The ’702 Patent is titled “Wearable Computing Device” and was issued January 16, 2024, based on an application filed May 24, 2023, that asserts the benefit of a series of provisional and nonprovisional applications, the earliest of which was filed November 29, 2013. Ex. 1001, codes (22), (45), (54), (60). The ’702 Patent discloses a wearable computing device (“WCD”) in the shape of a ring that can be worn on the finger of a user for

extended periods of time, take measurements, and perform various functions. Ex. 1001, 1:50–55.

Figures 1A and 1B of the '034 Patent are reproduced below.



Figures 1A and 1B are perspective views of WCD 110. Ex. 1001, 5:8–12, 9:27–30. “[T]he WCD 110 can include the exterior window 120 on its exterior wall for input/output data transmission and reception, battery recharge, or status indication. The WCD 110 can also include the interior window 130 on its interior wall for various monitoring or sensing activities.” *Id.* at 9:60–65.

Figure 4 of the '702 Patent is reproduced below.

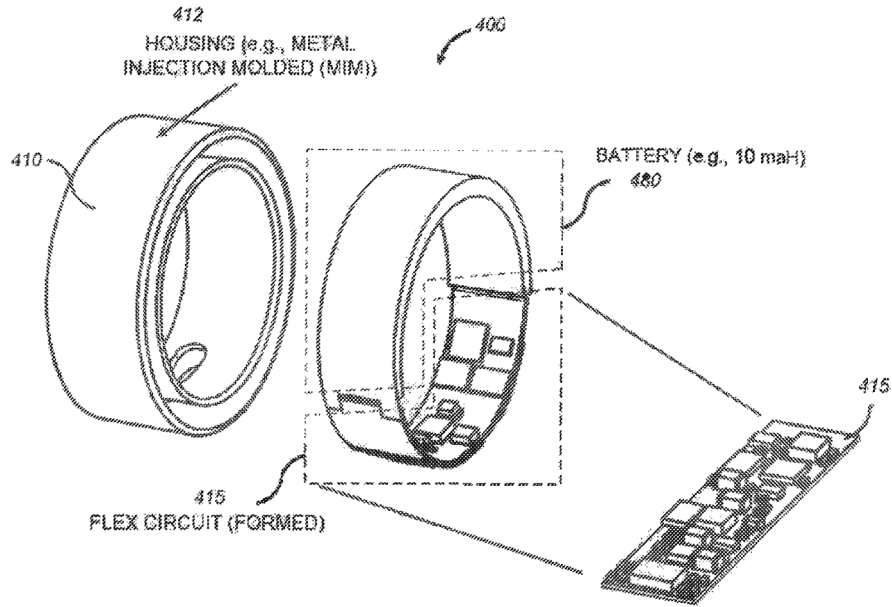


FIG. 4

Figure 4 is an exploded view of WCD 410 illustrating battery 480 and flexible PCB 415, which are configured to fit inside the U-shape of ring housing 412 of the WCD. Ex. 1001, 5:28–30, 16:1–4, 16:27–29.

Figures 7 and 8 of the '702 Patent are reproduced below.

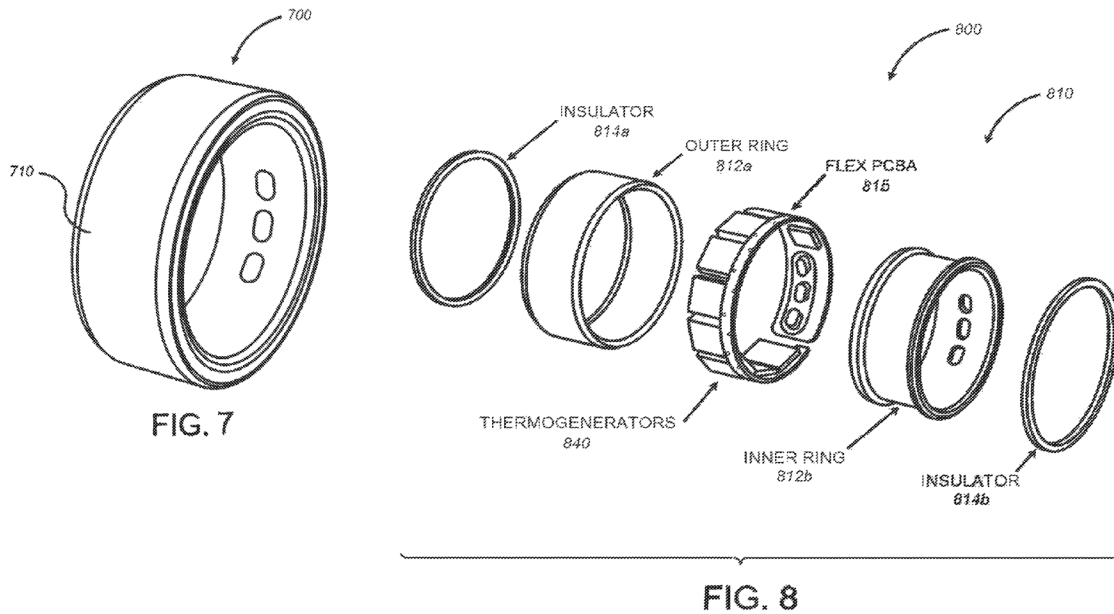


FIG. 8

Figure 7 is a perspective view of a WCD, and Figure 8 is an exploded view of the WCD of Figure 7. Ex. 1001, 5:36–40, 15:1–3. Figures 7 and 8 illustrate a design of the housing for the WCD, where the ring includes outer ring 812a, inner ring 812b, and insulators 814a and 814b. *Id.* at 15:3–6. Also shown in Figure 8 are flexible PCBA 815 and thermogenerators 840. *Id.* at Fig. 8. According to the '702 Patent, a thermoelectric generator charges a battery of the WCD by the difference between a wearer's body temperature and the ambient temperature. *Id.* at 14:64–15:1, 15:7–15.

B. Illustrative Claim

Petitioner challenges all 17 claims of the '702 Patent, of which only claim 1 is independent. Claim 1 is reproduced below:

1. A finger-worn wearable ring device, comprising:
 - [a] an external housing component defining an outer circumferential surface of the finger-worn wearable ring device;
 - [b] an internal housing component coupled to the external housing component, the internal housing component defining an inner circumferential surface of the finger-worn wearable ring device, wherein the internal housing component comprises a substantially transparent material that enables light to pass through the internal housing component;
 - [c] a printed circuit board disposed within a cavity defined by the external housing component and the internal housing component, wherein the printed circuit board is configured to conform to arc within the cavity;
 - [d] one or more light-emitting components electrically coupled with the printed circuit board, the one or more light-emitting components configured to emit light through the substantially transparent material of the internal housing component into a tissue of a user;
 - [e] one or more light-receiving components electrically coupled with the printed circuit board, the one or more light-

receiving components configured to receive, through the substantially transparent material of the internal housing component, the light transmitted by the one or more light-emitting components;

[f] one or more processors configured to process data that is based at least in part on the light received by the one or more light-receiving components; and

[g] a communication module communicatively coupled with the one or more processors, the communication module configured to transmit the data processed by the one or more processors.

Ex. 1001, 44:64–45:29 (bracketed designations added).

C. Asserted Challenges and Evidence

Petitioner asserts the following challenges to patentability.

Ground	Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1	1, 5, 7, 12–15	103	Schröder ¹
2	2–4, 6, 8–11	103	Schröder, LeBoeuf ²
3	8–11	103	Schröder, LeBoeuf, Niwa ³
4	16, 17	103	Schröder, Mestas ⁴

¹ Ex. 1007, US 10,303,867 B2, issued May 28, 2019 (“Schröder”). Petitioner asserts that Schröder qualifies as prior art under 35 U.S.C. § 102(a)(2) based on its foreign priority date of July 25, 2013. Pet. 7–8.

² Ex. 1012, US 8,700,111 B2, issued April 15, 2014 (“LeBoeuf”). Petitioner asserts that LeBoeuf qualifies as prior art under 35 U.S.C. § 102(a)(2) based on its filing date of June 21, 2010. Pet. 9.

³ Ex. 1005, US 2012/0016245 A1, published January 19, 2012 (“Niwa”). Petitioner asserts that Niwa qualifies as prior art under 35 U.S.C. §§ 102(a)(1) and 102(a)(2). Pet. 11.

⁴ Ex. 1010, US 2014/0244009 A1, published August 28, 2014 (“Mestas”). Petitioner asserts that Mestas qualifies as prior art under 35 U.S.C.

Ground	Claims Challenged	35 U.S.C. §	Reference(s)/Basis
5	1–15	103	LeBoeuf, Schröder
6	8–11	103	LeBoeuf, Schröder, Niwa
7	16, 17	103	LeBoeuf, Schröder, Mestas

Pet. 4. Petitioner submits the Declaration of Brian W. Anthony, Ph.D.

Ex. 1002.

III. ANALYSIS

A. Eligibility for Post-Grant Review

The earliest asserted priority date for the ’702 Patent is later than March 16, 2013, the effective date of the post-grant review provisions of the Leahy-Smith America Invents Act (“AIA”). Ex. 1001, code (60) (provisional application filed November 29, 2013). The Petition was filed June 28, 2024, which is within nine months of issuance of the ’702 Patent. *Id.* at code (45) (date of patent: January 16, 2024). The Petition thus satisfies the requirements for post-grant review.

B. Asserted Prior Art

An overview of Schröder suffices for purposes of our decision.

Schröder discloses an external secure unit comprising a memory, a processor, and an interface for sending and receiving data to and from a communication device, such as a smartphone. Ex. 1007, code (57), 1:5–11, 1:42–47, 1:64–67. The external secure unit stores security-relevant data necessary for executing an application program in the communication

§ 102(a)(2) based on its provisional filing date of February 22, 2013.
Pet. 12–13.

device. *Id.* at code (57), 1:56–61. A “finger-ring” can be employed as an external secure unit. *Id.* at 1:61–64.

Schröder’s Figures 1 and 2 are reproduced below.

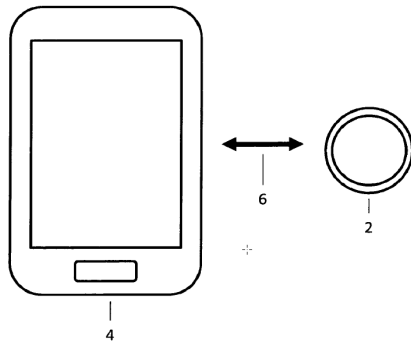


Fig. 1

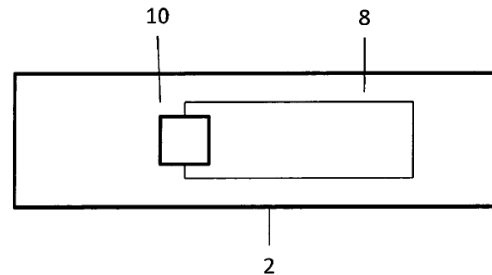


Fig. 2

Figure 1 shows finger-ring 2 as an exemplary external secure unit and smartphone 4 as a communication device, and Figure 2 shows a cross section through finger-ring 2. Ex. 1007, 3:39–44, 3:57–59, 4:58–60.

Schröder discloses a method for authentication by means of finger-ring 2 and smartphone 4. Ex. 1007, 3:59–61. According to Schröder, “finger-ring 2 is worn by a user e.g. permanently on the finger,” which is advantageous as an external secure unit because the ring “cannot be taken away or employed without authorization or get lost.” *Id.* at 3:61–62, 4:15–18. Finger-ring 2 and smartphone 4 are interconnected via contactless communication connection 6, e.g., an NFC (near field communication) connection. *Id.* at 3:64–66, 4:18–22. All security-relevant data necessary for executing applications on smartphone 4, such as email, Facebook, and banking, are stored only on finger-ring 2, not on the smartphone. *Id.* at 4:3–5, 4:10–15.

As schematically indicated in Figure 2, antenna coil 8 and chip or chip module 10 are located in finger-ring 2. Ex. 1007, 4:60–62. These devices

are used to communicate with an NFC reader, such as an RFID (radio frequency identification) reader. *Id.* at 5:12–18, 5:49–53.

Schröder’s Figure 3 is reproduced below.

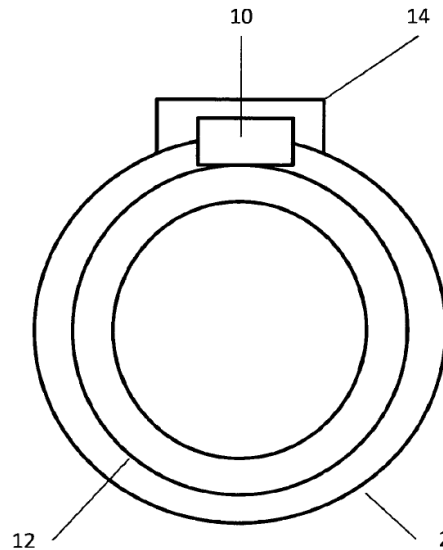


Fig. 3

Figure 3 shows a cross section through an external secure unit in the form of finger-ring 2 with a replaceable chip module 10. Ex. 1007, 3:45–46, 8:54–56. Inlay 12 is inside finger-ring 2 and serves as a carrier for antenna coil 8. *Id.* at 8:56–58. As shown in Figure 3, chip module 10 is inserted into a recess of finger-ring 2. *Id.* at 8:58–59. Chip module 10 is protected by cover 14, which has a hinged or threaded connection to the finger-ring 2. *Id.* at 8:60–63. Chip module 10 is electroconductively connected to antenna coil 8 on inlay 12. *Id.* at 8:63–66. “Advantageously, the chip module 10 is located in a module holder, in order that the contacts of the chip module 10 are properly interconnected to the contacts of a corresponding antenna coil 8.” *Id.* at 9:4–7. According to Schröder, the chip module 10 in Figure 3 is “arranged in particular replaceably,” but “[a]lternatively, the chip module 10 can . . . be firmly connected to the finger-ring 2.” *Id.* at 9:1–4; *see also id.* at

9:13–15 (“Alternatively, it is possible to connect the chip module 10 permanently to the contacts of the inlay 12, e.g. by soldering, crimping, gluing, etc.”).

In a “further embodiment example,” Schröder describes external secure unit 2 as having “an energy storage device, e.g., an accumulator or a battery” that is “connected to the chip module 10.” Ex. 1007, 11:46–67.

Schröder’s Figures 4 and 5 are reproduced below.

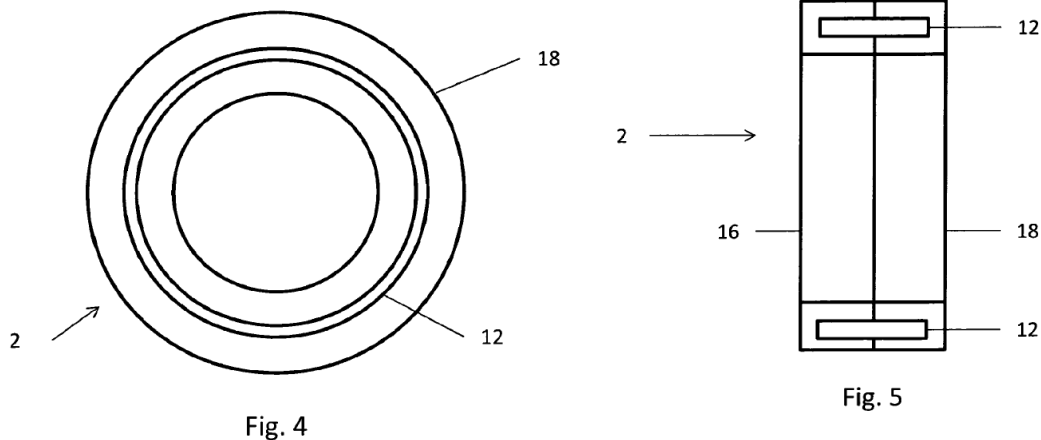
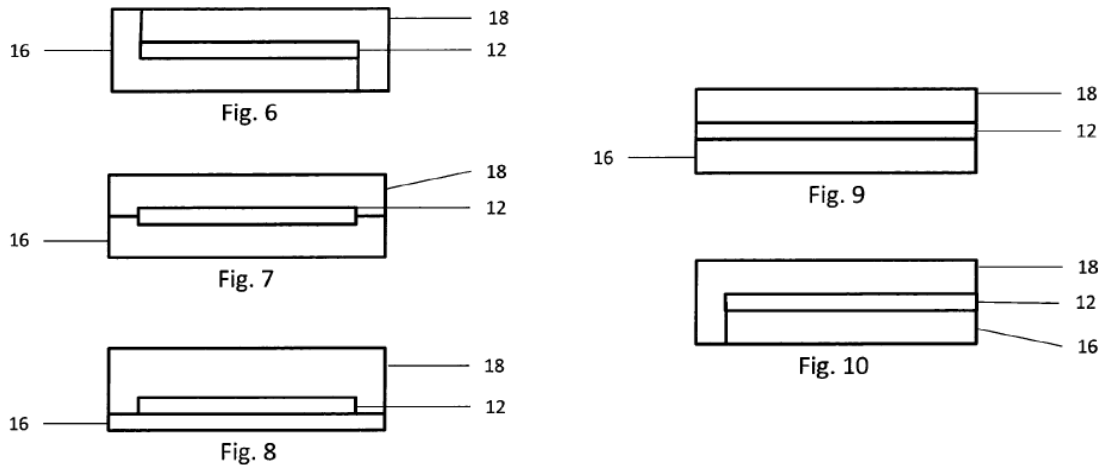


Figure 4 shows a longitudinal cross-section through finger-ring 2 as an exemplary external unit, and Figure 5 shows a cross-section of the finger-ring of Figure 4. Ex. 1007, 3:47–50, 12:4–7. Figure 4 shows one half 18 of finger-ring 2, and Figure 5 shows two ring halves 16 and 18. *Id.* at 12:5–8. As shown in Figures 4 and 5, ring halves 16 and 18 have a recess into which inlay 12 is inserted. *Id.* at 12:8–9. Components 16 and 18 of finger-ring 2 are interconnected in such a way that the connection can be undone in order to insert or exchange inlay 12. *Id.* at 12:20–26. Inlay 12 consists of a flexible carrier material, with antenna coil 8 and chip module 10 connected to each other on the inlay. *Id.* at 12:28–32.

Schröder’s Figures 6 to 10 are reproduced below.



Figures 6 to 10 show different cross sections through a finger-ring, which along with Figures 4 and 5, show “possible construction variants of external secure unit 2 in the form of finger-ring 2.” Ex. 1007, 12:1–3; *see also id.* at 3:51–52; 12:43–45 (describing Figures 6–10). In Figures 6 to 10, finger-ring 2 has ring-shaped components 16 and 18, with inlay 12 arranged between the components. *Id.* at 12:43–55.

According to Schröder, “inlay 12 can have at least one chip module 10 with at least one antenna coil 8, with at least one further electronic device, e.g. a display, optionally being arranged on the inlay 12.” Ex. 1007, 12:61–65.

C. Request for Denial under 35 U.S.C. § 325(d)

Patent Owner argues that we should exercise discretion to deny institution under 35 U.S.C. § 325(d). Prelim. Resp. 38–51.

1. Legal Standard

When deciding whether to institute a post-grant review, we “may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d).

In applying § 325(d), we use a two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of the first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). We also consider the non-exclusive factors set forth in *Becton, Dickinson and Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential in relevant part), which “provide useful insight into how to apply the framework” under § 325(d). *Advanced Bionics*, Paper 6 at 9. Those non-exclusive factors include:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, Paper 8 at 17–18. “If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments

previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.”

Advanced Bionics, Paper 6 at 10.

2. Discussion

Part I of the *Advanced Bionics* framework asks whether the same or substantially the same art was previously presented to the Office or whether the same or substantially the same arguments were previously presented to the Office. *Advanced Bionics*, Paper 6 at 8.

Petitioner contends that part I of the *Advanced Bionics* framework is not met. Pet. 16. Petitioner acknowledges that a patent publication related to LeBoeuf was listed in an Information Disclosure Statement (“IDS”), but asserts that “the record is silent as to the examiner’s consideration or understanding of LeBoeuf’s teachings.” *Id.*

Patent Owner argues that LeBoeuf and Mestas were before the Examiner, and that Schröder and Niwa are cumulative of Vescovi⁵ and other art before the Examiner. Prelim. Resp. 42–50.

We determine that part I of the *Advanced Bionics* framework is not satisfied because Petitioner’s challenges are based, at least in part, on Schröder, and Schröder is not cumulative of Vescovi.

Patent Owner asserts that Vescovi is the closest prior art identified by the Examiner. Prelim. Resp. 17 n.1, 45. Patent Owner argues that Vescovi discloses “a structural member 102 that ‘houses one or more electronic components (such as a processor, memory, and sensors’” *Id.* at 45 (citing Ex. 2015). However, Patent Owner does not assert that Vescovi discloses internal and external housing components, with a printed circuit

⁵ Ex. 2015, US 2015/0277559 A1, published October 1, 2015 (“Vescovi”).

board disposed within a cavity defined by these components, as recited in claim 1 of the '702 Patent. Moreover, in a co-pending proceeding involving a related patent, Patent Owner argues that Vescovi does not disclose the structure of the housing recited in the claims of U.S. Patent 11,868,178 B2, including “internal and external housing components, an inner circumferential cavity with a battery positioned and shaped to fit inside the cavity and including a circuit board disposed within the interior and exterior component and extending through a portion of the cavity.”

PGR2024-00030, Paper 7 at 9, 64 (citing Ex. 1004, 1314 (prosecution history of the '178 Patent)). In the related proceeding, Patent Owner asserts that Vescovi discloses “a unitary structure, not internal and external housing components as claimed.” *Id.* at 64.

In contrast to Vescovi, Schröder discloses finger-ring 2 consisting of ring-shaped components 16 and 18, with inlay 12 arranged between the components. Ex. 1007, 12:43–55, Figs. 6–10. Petitioner contends that Schröder’s ring-shaped components 16 and 18 and inlay 12 correspond to an external housing component, an internal housing component, and a cavity, as recited in claim 1. Pet. 23 (annotation of Schröder’s Figures 7 and 8).

Patent Owner asserts that Stergiou,⁶ Pahlavan,⁷ and Moon⁸ were before the Office during prosecution and contain the same teachings as Schröder, including finger rings with sensors and electrodes and the same ring configuration as Schröder. Prelim. Resp. 43–44. Patent Owner does not, however, assert that Stergiou, Pahlavan, or Moon discloses structures

⁶ Ex. 2012, US 2012/0130203 A1, published May 24, 2012 (“Stergiou”).

⁷ Ex. 2014, US 2003/0142065 A1, published July 31, 2003 (“Pahlavan”).

⁸ Ex. 2013, US 8,554,297 B2, issued October 8, 2013 (“Moon”).

corresponding to an external housing component, an internal housing component, and a cavity, as recited in claim 1.

Because part I of the *Advanced Bionics* framework is not satisfied, we do not reach part II of the framework.

D. Legal Standards for Post-Grant Review

In a post-grant review, “the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.”

Harmonic Inc. v. Avid Tech., Inc., 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3)); *see also* 35 U.S.C. § 322(a)(3) (establishing requirements for a petition for post grant review); 37 C.F.R. § 42.204(b) (requiring a petition for post-grant review to identify how the challenged claim is to be construed; where each element of the claim is found in the prior art relied upon; and how the claimed subject matter fails to comply with the statute).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on 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) when presented, objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

E. Level of Ordinary Skill in the Art

At this stage of the proceeding, there is no dispute about the level of ordinary skill in the art. Based on the testimony of Petitioner’s declarant, we determine that a person of ordinary skill in the art (“POSITA”) would have had a four-year degree in electrical engineering, mechanical engineering, biomedical engineering, optical engineering, or related field of study, and two years of experience in academia or industry studying or developing physiological monitoring devices such as non-invasive biosensors. A POSITA would have been familiar with sensor system design and signal processing. A higher level of education or skill can substitute for less experience, and vice versa. Ex. 1002 ¶ 29.

We find that the level of ordinary skill in the art, as articulated above, is consistent with the level of technical understanding and competence reflected in the ’702 Patent Specification and the asserted prior art references.

F. Claim Construction

In a post-grant review, we apply the same claim construction standard as would be used by a district court to construe a claim in a civil action involving the validity or infringement of a patent. 37 C.F.R. § 42.200(b). Under that standard, claim terms are given their ordinary and customary meaning, as would have been understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history of record. *Id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–19 (Fed. Cir. 2005) (en banc); *Thornerv. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365–66 (Fed. Cir. 2012). “The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

We agree with the parties that it is not necessary for us to provide an express construction for any claim term for purposes of determining whether to institute a post-grant review. Pet. 7; Prelim. Resp. 21.

G. Petitioner’s First Challenge

Petitioner contends that claims 1, 5, 7, and 12–15 are unpatentable over Schröder. Pet. 17–34. Patent Owner opposes. Prelim. Resp. 23–31. At this stage of the proceeding, the parties’ disputes focus on claim elements 1[a], 1[b], and 1[c].

1. Internal and External Housing Components

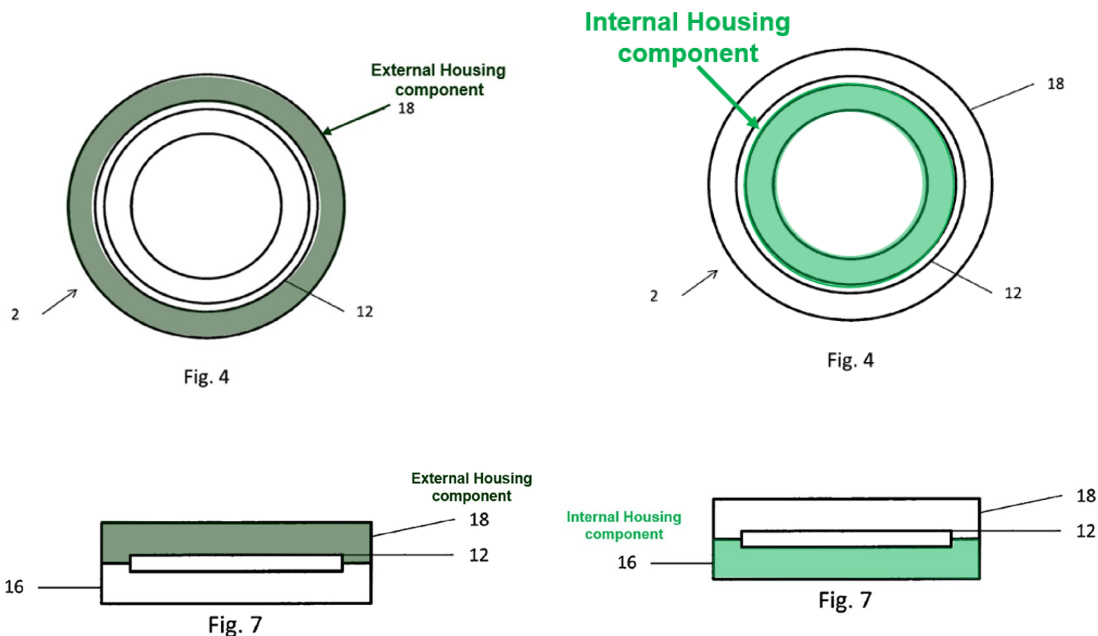
Claim elements 1[a] and 1[b] recite in relevant part:

[a] an external housing component defining an outer circumferential surface of the finger-worn wearable ring device;

[b] an internal housing component coupled to the external housing component, the internal housing component defining an inner circumferential surface of the finger-worn wearable ring device.

Ex. 1001, 44:65–45:4.

Petitioner contends that Schröder's ring half 18 is an external housing component defining an outer circumferential surface, as recited in claim element 1[a], and that Schröder's ring half 16 is an internal housing component coupled to the external housing component and defining an inner circumferential surface, as recited in claim element 1[b]. Pet. 18–21 (citing Ex. 1002 ¶¶ 149–153; Ex. 1007, 12:7–22, 12:45–55). Petitioner illustrates its contention with the following annotations of Schröder's Figures 4 and 7.



Pet. 19, 21. Schröder's Figures 4 and 7 show different cross-sections through a finger ring. Petitioner highlights and labels the portions of these figures that it maps to the external and internal housing components of claim elements 1[a] and 1[b]. *Id.*

Patent Owner argues that Schröder does not disclose or suggest internal and external housing components, as recited in claim elements 1[a] and 1[b]. Prelim. Resp. 23–25. According to Patent Owner, Petitioner’s interpretation of Schröder’s Figure 4 is contrary to the disclosure of the reference. *Id.* at 24.

After considering the parties’ arguments and evidence, we determine that Petitioner’s showing for the internal and external housing components of claim elements 1[a] and 1[b], as summarized above, is sufficient for purposes of granting institution of a post-grant review.

We agree with Patent Owner that Schröder’s Figure 4 does not show ring half 16. Prelim. Resp. 24. We also agree with Patent Owner that the portions Petitioner labels “internal” and “external” housing components in its annotated version of Schröder’s Figure 4 (Pet. 19, 21) are part of a single ring half 18. *Id.*; Ex. 1007, 12:5–6 (In Figure 4, “an inlay 12 is inserted into one half 18 of the finger-ring 2.”). In addition to Schröder’s Figure 4, however, Petitioner relies on Schröder’s Figure 7 to show the internal and external housing components of claim elements 1[a] and 1[b]. Pet. 19, 21. At this stage of the proceeding, Patent Owner does not dispute Petitioner’s contention that internal and external housing components are disclosed by Schröder’s Figure 7 embodiment. Pet. 18–21; *see* Prelim. Resp. 24 (arguing that Petitioner “incorrectly refers” to Schröder’s Figure 7 which appears to show “a different embodiment” than Figures 4 and 5).

2. *Transparent Material*

Claim element 1[b] recites in relevant part “wherein the internal housing component comprises a substantially transparent material that

enables light to pass through the internal housing component. Ex. 1001, 45:4–7.

Petitioner contends that a “POSITA would have understood Schröder’s finger ring to include one or more transparent regions arranged facing the finger in order to allow light to pass and to capture a vein image of the finger. . . . Otherwise the internal housing component, made of metal, would block all emitted light.” Pet. 22 (citing Ex. 1002 ¶ 155; Ex. 1007, 15:9–10). Petitioner further contends that a POSITA would have understood “to provide an internal infrared transmissive window” to allow Schröder’s infrared diode and sensor to capture a vein image. *Id.*

Patent Owner argues that Schröder does not disclose or suggest that “the internal housing component comprises a substantially transparent material that enables light to pass through the internal housing component,” as recited in claim element 1[b]. Prelim. Resp. 26–28. According to Patent Owner, “[t]he features identified in Schröder by Petitioner are neither incorporated in the internal housing component nor for passing light emitted from components in the finger ring.” *Id.* at 27.

After considering the parties’ arguments and evidence, we determine that Petitioner’s showing for the substantially transparent material of claim element 1[b], as summarized above, is sufficient for purposes of granting institution of a post-grant review.

Petitioner asserts that Schröder’s “transparent regions, e.g. windows” are “incorporated into the internal housing component to capture ‘a partial vein image in the finger.’” Pet. 21 (citing Ex. 1007, 9:28–34, 9:62–10:4). On the current record, we agree with Patent Owner that these “transparent regions” are “security elements” or “security features” disposed “on an outer area” of the finger ring, not on an internal housing component with an inner

circumferential surface, as recited in claim element 1[b]. Prelim. Resp. 27; Ex. 1007, 2:38–42, 9:28–34. But Petitioner also relies on Schröder’s disclosure of “biometric sensors such as an infrared diode and sensor arranged opposite to each other to capture ‘a partial vein image in the finger.’” Pet. 21–22; Ex. 1007, 9:62–10:4 (cited by Petitioner). According to Petitioner and Dr. Anthony, “one or more transparent regions arranged facing the finger” would be needed “in order to allow light to pass and to capture a vein image of the finger.” Pet. 22; Ex. 1002 ¶ 154. Patent Owner argues that Schröder’s “plastic embodiment would need no window.” Prelim. Resp. 28. At this stage of the proceeding, however, Patent Owner does not dispute Petitioner’s assertion that an internal housing component made of metal would need to have a transparent region in order to capture a vein image. Pet. 22; Ex. 1002 ¶ 154.

3. *Printed Circuit Board*

Claim element 1[c] recites:

a printed circuit board disposed within a cavity defined by the external housing component and the internal housing component, wherein the printed circuit board is configured to conform to arc within the cavity.

Ex. 1001, 45:8–11.

Petitioner contends that “Schröder’s finger ring has a flexible printed circuit board disposed within a cavity that is defined by the external and internal housing components.” Pet. 22 (citing Ex. 1002 ¶¶ 156–159). As support for that contention, Petitioner provides the following annotations of Schröder’s Figures 7 and 8.

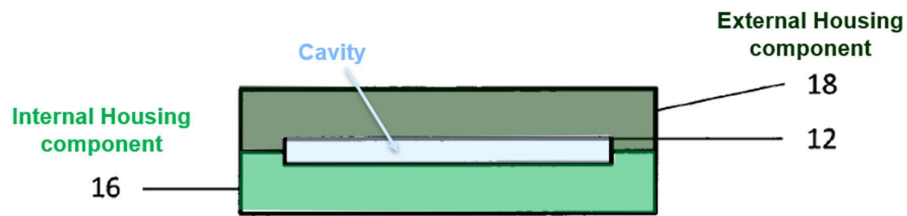


Fig. 7

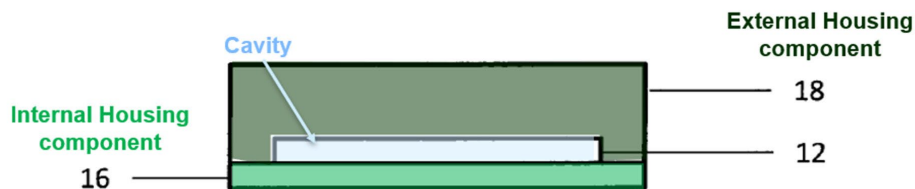


Fig. 8

Schröder's Figures 7 and 8 show different cross sections through a finger-ring. Ex. 1007, 3:51–52, 12:43–45. In each figure, Petitioner labels ring halves 16 and 18 as "external housing component" and "internal housing component," respectively, and inlay 12 as "cavity." Pet. 23.

Petitioner identifies Schröder's inlay 12 as the claimed printed circuit board, asserting that "[i]nlay 12 consists of 'flexible carrier material' like PET and Kapton, which are commonly understood to be printed circuit board materials." Pet. 9, 23 (citing Ex. 1002 ¶ 157; Ex. 1007, 12:28–29). Petitioner contends that Schröder's "[i]nlay 12 carrier provides the substrate for chip module 10, antenna coil 8, and at least one electronic component." Pet. 23 (citing Ex. 1007, 12:35–42). Petitioner also contends that Schröder's inlay 12 is "configured to conform to arc within the cavity," as recited in claim element 1[c]. *Id.* (citing Ex. 1002 ¶¶ 157–159).

Patent Owner argues that Schröder does not disclose or suggest the "printed circuit board" of claim element 1[c]. Prelim. Resp. 29–31. Patent Owner disputes Petitioner's contention that Schröder's inlay 12 is a printed circuit board. *Id.* at 29–30. In addition, Patent Owner argues that

Schröder’s chip module 10 is located outside the recess occupied by inlay 12. *Id.* at 30–31 (reproducing Schröder’s Figure 3).

After considering the parties’ arguments and evidence, we determine that Petitioner’s showing for the printed circuit board of claim element 1[c], as summarized above, is sufficient for purposes of granting institution of a post-grant review.

For purposes of institution, Petitioner’s contentions are adequately supported by Schröder, which describes inlay 12 as a “flexible carrier material, e.g. PET, Kapton, etc.” and a “carrier” for the antenna, chip module, and “at least one further electronic component,” as well as Schröder’s Figures 7 and 8, which depict inlay 12 between ring halves 16 and 18. Ex. 1007, 12:28–42, 12:48–52, 12:61–65, 13:23–25.

We have considered Patent Owner’s argument that Schröder’s inlay 12 “is merely a substance for holding the coil in place, not a printed circuit board,” as well as Patent Owner’s argument contrasting Schröder’s description of inlay 12 with the express disclosure of “a circuit on a circuit board” elsewhere in the reference. Prelim. Resp. 29–30 (emphasis omitted; citing Ex. 1007, 8:57–59, 22:48–50; Ex. 2011⁹). These arguments raise a serious issue about whether a POSITA would have understood Schröder’s inlay 12 as teaching a printed circuit board. This issue would benefit from further development at trial.

We have also considered Patent Owner’s argument that Schröder’s chip module 10 “is located ‘on’ the carrier” and that locating it “within inlay 12 is at cross purposes with the disclosure of Schröder and therefore

⁹ Although Patent Owner’s citation is to “Ex. 2010,” we understand based on the parenthetical explanation of the exhibit that Exhibit 2011 was intended.

not obvious.” Prelim. Resp. 31. For claim element 1[c], Petitioner contends that inlay 12 “provides the substrate for chip module 10.” Pet. 23.

Petitioner’s contention is supported by Schröder’s disclosure that “inlay 12 can have at least one chip module 10 . . . arranged on the inlay 12.”

Ex. 1007, 12:62–65. For claim element 1[d], Petitioner contends that chip module 10 “is in inlay 12.” Pet. 26. On this record, it is unclear whether the location of Schröder’s chip module 10 “on” versus “in” inlay 12 makes a difference as it relates to the alleged obviousness of the challenged claims.

4. *Objective Evidence of Nonobviousness*

“Objective evidence of nonobviousness is an important component of the obviousness inquiry because evidence of secondary considerations may often be the most probative and cogent evidence in the record. It may often establish that an invention appearing to have been obvious in light of the prior art was not.” *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012) (internal quotes omitted).

“For objective evidence of secondary considerations to be relevant, there must be a nexus between the merits of the claimed invention and the objective evidence.” *Volvo Penta of the Americas, LLC v. Brunswick Corp.*, 81 F.4th 1202, 1210 (Fed. Cir. 2023). “A showing of nexus can be made in two ways: (1) via a presumption of nexus, or (2) via a showing that the evidence is a direct result of the unique characteristics of the claimed invention.” *Id.*

Patent Owner contends that its commercial product—the Oura Ring—is “revolutionary” and an “unprecedented success,” with more than more

than 2,500,000 sales. Prelim. Resp. 1–3. According to Patent Owner, the Oura Ring is coextensive with and embodies the ’702 Patent. *Id.* at 3.

We determine that Patent Owner’s argument and evidence concerning commercial success and nexus are best evaluated on a fully developed record.

5. *Conclusion for Petitioner’s First Challenge*

For these reasons, we determine that Petitioner’s challenge to claim 1 based on Schröder meets the threshold for institution of a post-grant review. Any final decision will be based on the full record developed during trial, including any objective evidence of nonobviousness.

H. Petitioner’s Remaining Challenges

In view of our determination that Petitioner’s first challenge to claim 1 based on Schröder meets the threshold for institution of a post-grant review, it is unnecessary for us to determine whether Petitioner’s remaining challenges meet that threshold. *See SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); 35 U.S.C. § 324(a); 37 C.F.R. § 42.208(a) (“When instituting post-grant review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.”). In this decision, we do not reach Petitioner’s other challenges or Patent Owner’s arguments concerning them (*see* Prelim. Resp. 32–38). In our view, those arguments present complex issues that are best evaluated on a fully developed record at trial.

IV. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 324(a), a post-grant review of claims 1–17 of the '702 Patent is instituted commencing on the entry date of this Decision; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 324(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of trial.

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Patent 11,874,702 B2

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