

Paper No. _____
Filed: April 8, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SMART SOLUTIONS TECHNOLOGIES, S.L.,
Petitioner,

v.

KONINKLIJKE PHILIPS N.V.,
Patent Owner

Case No. IPR2016-00416
Patent No. 7,522,951

PATENT OWNER'S PRELIMINARY RESPONSE

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I. INTRODUCTION

Patent Owner Koninklijke Philips N.V. (“Philips”) submits this Patent Owner’s Preliminary Response under 35 U.S.C. § 313 and 37 C.F.R. § 42.107, responding to Petitioner Smart Solutions Technologies, S.L.’s, d/b/a/ Nuubo (“Petitioner” or “SST”), Petition (“Petition” or “Pet.”), Paper No. 1, filed December 30, 2015, challenging Philips’s U.S. Patent No. 7,522,951 (“the ’951 patent”). The Petition fails to establish a reasonable likelihood of prevailing on any proposed Ground for any challenged claim under 35 U.S.C. § 314(a).

II. OVERVIEW OF THE PETITION AND ITS DEFICIENCIES

SST grounds its Petition on two primary references already presented to the PTO—*Granek*¹ and *Reho*^{2,3}. *Granek*, applied in Grounds A and B, was presented

¹ U.S. Patent No. 4,729,377 to Granek et al. (Ex. 1002)

² International Patent Application No. PCT/FI02/00132 to Reho et al. (Ex. 1003)

³ SST also relies on secondary references U.S. Patent No. 4,941,961 to Noguchi et al. (“*Noguchi*,” Ex. 1004); U.S. Patent No. 568,095 to Muir (“*Muir*,” Ex. 1005); and U.S. Patent No. 4,207,904 to Greene (“*Greene*,” Ex. 1006). Each of these references, however, is cumulative with prior art considered and/or applied during prosecution, including, *e.g.*, U.S. Patent No. 5,427,096 to Bogusiewicz et al. (Ex. 2001). *Compare* Ex. 2001, 3:39-65 & 8:28-41 (disclosing a layer of metallic

and considered by the PTO during prosecution of the '951 patent. *See* Ex. 1007, p. 63. And as SST acknowledges, the Examiner applied the corresponding U.S. patent application publication of *Reho*, applied now in Grounds C-E, during prosecution of the '951 patent. *See* Pet. at 8, n.9; Ex. 1007, pp. 79-85. But the PTO ultimately found the claims patentable over both references and issued the '951 patent. Ex. 1007, p. 21. In the interest of avoiding revisiting challenges previously considered by the PTO and overcome, Philips respectfully requests the Board to exercise its discretion and deny SST's Petition. 35 U.S.C. § 325(d) (the Board may deny institution where "the same or substantially the same prior art or arguments previously were presented to the Office").

The Petition also suffers from a number of flaws that warrant denial of institution. *First*, a recurring flaw in the Petition is its failure to provide a "detailed explanation of the significance of the evidence including material facts." 37 C.F.R. § 42.22(a)(2). Throughout the Petition, SST cites to purported teachings in the

particles in silicone rubber and a layer of carbon in resin) *with* Ex. 1004, 3:10-40 (disclosing a protective layer of silicone rubber with carbon); Ex. 1005, 2:57-60 (disclosing an electroconducting sheet and an electroconducting layer); Ex. 1006, 3:45-49 (disclosing a conducting rubber layer and an electrically conducting mesh layer); *see also* Ex. 1007, pp. 82-83.

asserted references or to a supporting declaration and then broadly concludes—with little or no analysis—that the asserted reference or combination of references discloses a claim limitation. *See, e.g.*, Pet. at 21 (citing teachings of *Granek* and without explanation concluding electrode 24 or 38 is integral with garment by being sewed, glued, or attached), 29-30 & 37-38 (citing one paragraph from declaration and without providing an explanation supporting its obviousness contention), 44-45 (citing paragraphs from declaration without explaining how *Reho* allegedly inherently discloses a claim limitation).

Along these same lines, the Petition repeatedly fails to “specify where each element of the claim is found” in the asserted prior art. 37 C.F.R. § 42.104(b)(4). SST on numerous occasions describes purported teachings of an asserted reference without identifying support or explanation in the reference. *See, e.g.*, Pet. at 22 (arguing *Granek* teaches conductive fabric “woven as part” of garment and electrode “located between” conductive fabric and skin without support or explanation from *Granek*), 44-46 (arguing *Reho* inherently anticipates a claim limitation without identifying any support or explanation from *Reho*). And for each Ground, the Petition reproduces a claim limitation, followed by a large parenthetical that does not clearly identify an alleged element-by-element mapping of the claim features to the asserted references. *Id.* at 18-29, 31-43, 46. The Petition therefore lacks the requisite particularity and specificity of explanation. 35 U.S.C.

§ 312(a)(3); *see also Apple Inc. v. Evolutionary Intelligence, LLC*, IPR2014-00079, Paper 8 at 17-19 (PTAB April 25, 2014) (rejecting petition having “vague” explanation that did “not identify specifically” the relevant feature of the prior art).

Second, the Petition fails to present a “detailed explanation of . . . the governing laws, rules, and precedent.” 37 C.F.R. § 42.22(a)(2). For example, SST challenges claims based on inherent anticipation but does not explain the governing law or how its theory, arguments, and evidence allegedly comport with the legal standards for inherent anticipation. *See* Pet. at 44-47. The same is true of SST’s obviousness arguments. *See id.* at 30 & 38 (summarily concluding “common sense,” “ordinary innovation,” and “predictable result” for obviousness without discussion of supporting law).

Third, the Petition premises its challenges on proposed claim constructions that are unreasonably broad and legally incorrect. Without support from the specification or a proper analysis, SST argues that a number of claim terms should depart from their plain and ordinary meanings. *See id.* at 11-17. But SST’s constructions are not reasonable. They are divorced from the specification and appear crafted in hindsight to encompass the asserted references. For example, SST proposes to expand the term “integral with” to include “attached to” and “integrated in,” (*see id.* at 17), despite the contrary teachings of the specification and its plain meaning. *See infra* Part IV.A. And SST seeks to stretch the term

“located on” to encompass “over,” “adjacent to,” “touching,” “in electrical communication with,” and “embedded in” configurations, (*see* Pet. at 16), without support from either the specification or prosecution history and blind to the plain and ordinary meaning of the term. *See infra* Part IV.C.

Fourth, the Petition presents legally faulty anticipation analyses. SST relies on its unreasonably broad and incorrect construction of “integral with” to argue *Granek* is anticipatory, but nowhere does *Granek* disclose, or SST analyze, the claimed electrically conductive fabric “integral with” a garment under the plain and ordinary meaning of the term. *See infra* Part V.A.2.a. SST also improperly picks and chooses various unrelated teachings from different embodiments in *Granek* to craft its anticipation challenge. *See infra* Part V.A.2.a.i. In its anticipation challenge based on *Reho*, SST presents hollow conclusions that *Reho* inherently discloses the claimed substantially moisture-impermeable material “located on said first surface,” without analyzing or identifying any evidence showing how the limitation is necessarily present in the thing described in *Reho*. *See infra* Part V.C.1.a. SST cites only to portions from the declaration of Dr. Roozbeh Jafari (Ex. 1012) and portions from the declaration of Mr. Agustín Maciá Barber (Ex. 1014). *See* Pet. at 44-46. But the cited testimony from the declarations parrots the Petition and does not explain how the missing limitation is allegedly necessarily present in *Reho*. Moreover, Mr. Barber—SST’s founder, strategy

director, and CTO, (*see* Ex. 1015)—formulates his testimony in support of SST’s inherent anticipation allegations from information contrary to, or absent from, the teachings of *Reho*. *See infra* Part V.C.1.b.

Fifth, the Petition presents conclusory, legally improper obviousness analyses. SST argues obviousness based on *Reho* with conclusory assertions and without addressing the necessary underlying factual determinations, including the required articulated reasoning with rational underpinning to support the legal conclusion of obviousness. *See infra* Part V.B.2.-3. Additionally, SST’s conclusory statements fail to sufficiently address the scope and content of the prior art and how or why *Reho* would allegedly have been modified as proposed despite its conflicting teachings. *See id.*

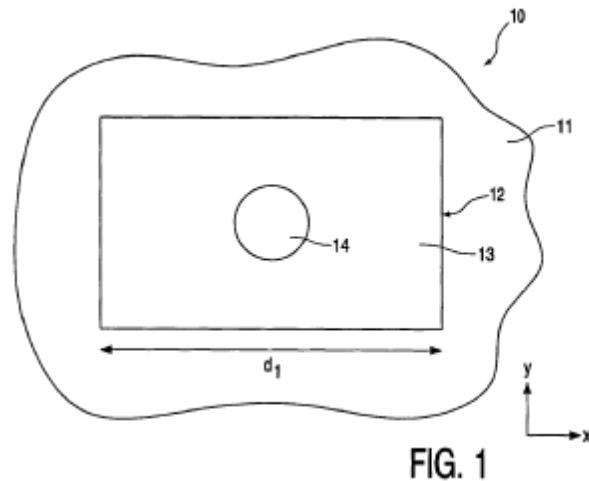
And finally, the Petition presents redundant grounds. Ground D is redundant with Ground C, but SST fails to articulate any meaningful distinction between the two grounds. *See infra* Part V.B.4.

III. SUMMARY OF THE ’951 PATENT

The ’951 patent relates to “performance improvements in substantially fabric based electrodes.” Ex. 1001, 1:3-4. According to the ’951 patent, it is generally difficult for existing textile based electrodes to read electrical signals from a wearer, such as heartbeats, due to high electrical resistance between the conductive portion of the textile and the skin. *Id.*, 1:20-26. To overcome this shortcoming and

improve performance, the '951 patent discloses “a fabric electrode arrangement exhibiting a first surface for application to the skin of a mammal, wherein said fabric electrode arrangement comprises at least one portion of material being substantially impermeable to moisture, said material being located on said first surface.” *Id.*, 1:35-44.

Fig. 1 (reproduced below) illustrates an embodiment of a fabric electrode arrangement 10.



The '951 patent discloses that the electrode arrangement 10 includes “an electrically conductive electrode portion 12 exhibiting a first surface 13 and a portion of material 14 located on the first surface 13.” *Id.*, 3:49-53. The portion of material 14 is substantially impermeable to moisture, and in one embodiment, “is of silicon rubber loaded with carbon black.” *Id.*, 3:55-58. The electrode portion 12 has a “knitted construction,” and in one embodiment, is formed from electrically

conductive yarn. *Id.*, 4:3-9; *see also id.*, Abstract (“a knitted electrically conductive electrode portion (12) containing electrically conductive yarn”).

As alluded to above, “the electrode portion (12) and portion of material (14) are applied to a wearer[']s skin.” *Id.*, Abstract. The '951 patent teaches that the first surface 13 of the electrode portion 12 and the portion of material 14 “contact the skin of a wearer during electrode use.” *Id.*, 3:54-55. And “[b]ecause the at least one portion of material is substantially impermeable to moisture . . . [the] material on the wearer[']s skin would restrict the amount by which the skin underneath is able to breath . . . which promotes gathering of perspiration . . . [and] traps perspiration between itself and the skin.” *Id.*, 1:45-56. According to the '951 patent, the trapped perspiration “reduces the electrical resistance present between the skin and portion of material and so in turn reduces the electrical resistance present between the skin and electrode arrangement.” *Id.*, 1:56-60. “[T]he formation of perspiration between the skin and the moisture impermeable material 14 reduces electrical resistance between the skin and material 14 . . . so a path of relatively low electrical resistance is established between the skin and conductive electrode portion 12 via the material 14.” *Id.*, 5:44-51.

Accordingly, the path defined by the skin, perspiration, material 14, and electrode portion 12 reduces the electrical resistance between the wearer and the electrode arrangement 10. *Id.*, 5:51-55 (“[S]aid path certainly has a lower electrical

resistance in comparison with the electrical resistance of a comparable direct skin-to-electrically conductive textile portion 12 interface”). By reducing electrical resistance, the electrode arrangement of the ’951 patent achieves improved performance, including “more efficient detection of electrical signals that may be associated with the body of a wearer . . . [which] has the potential to allow more reliable measurement.” *Id.*, 1:60-66. This, in turn, expands the conditions and circumstances under which reliable measurements can be made, (*see id.*, 1:64-2:3), such as early stages of wearer exertion, (*see id.*, 2:8-11); allows use of a less sensitive, and hence lower cost, measuring apparatus, (*see id.*, 2:3-4); and reduces the undesirable effects of electrical noise, (*see id.*, 2:25-32).

The ’951 patent further discloses that the electrode arrangement is part of a garment. *Id.*, 3:49-50 (“[F]abric electrode arrangement 10 is shown located on a textile article 11”). In one embodiment—the embodiment claimed in claims 1-4—the electrode portion is “integral with a garment.” *Id.*, 3:10 & 7:6-13; *see also id.*, 4:29-35 (“[T]he electrically conductive electrode portion 12 may be an integral part of the textile article 11 . . . and formed during the same production process Intarsia and jacquard techniques may also be used, or the conductive yarn may be ‘laid in’”). The “integral with a garment” configuration “permits the garment and electrode to be mass produced in a cost-effective manner . . . [and] also permits low profile or more elegant structures.” *Id.*, 3:10-14.

IV. CLAIM CONSTRUCTION ISSUES

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their “broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b). Under that standard, claim terms are given their ordinary and customary meaning, as understood by a person of ordinary skill in the art (“POSITA”) in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). The broadest reasonable construction, however, “cannot be divorced from the specification and the record evidence.” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (internal quotations omitted).

Despite acknowledging that challenged claim terms should be assigned their ordinary and customary meaning, SST urges that five terms in claim 1 should depart from their ordinary and customary meaning and allegedly require express constructions. Pet. at 11-17 (“Except for the terms addressed specifically herein, the terms of the ‘951 Patent should be given their ordinary and customary meaning”). None of these proposed constructions should be adopted as they are unreasonable or improper under controlling claim construction principles and the teachings of the ‘951 patent. And should the Supreme Court in *Cuozzo Speed Techs., LLC v. Lee*, No. 15-446 (U.S. cert. granted Jan. 15, 2016) narrow the broadest reasonable interpretation standard to align more with the claim

construction standard in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*), SST's claim constructions would become even more unreasonable.

A. “integral with”

Claim 1 recites that an “electrically conductive fabric is integral with a garment.” Ex. 1001, 7:12-13. SST argues that this limitation should be interpreted to mean that the “electrically conductive fabric is *attached to or integrated in* a wearable textile article.” Pet. at 17 (emphasis added). SST's construction purports to make “integral with” optional, effectively reading the words out of the claim.

SST has not pointed to any record evidence, or sufficiently articulated any arguments, indicating that the term “integral with” should be construed in a way that departs from its ordinary and customary meaning. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (claim terms “generally given their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor”); *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (claim terms given ordinary and customary meaning except “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution”). To support its incorrect construction, SST misquotes and mischaracterizes a passage from the specification. Pet. at 17 (“It is further disclosed that ‘the electrically conductive

electrode portion 12 may be sewn, glued or otherwise attached to the textile article 11 [or] may be an integral part of the textile article 11” (alteration in original) (quoting Ex. 1001, 4:27-30)).

Yet a full and accurate reading of the passage confirms that there is an “attached to” embodiment distinct from the claimed “integral with” embodiment. And in this context, the specification uses “integral with” consistent with its ordinary and customary meaning:

[t]he electrically conductive electrode portion 12 may be sewn, glued or otherwise *attached to* the textile article 11. *Alternatively* the electrically conductive electrode portion 12 may be an *integral* part of the textile article 11. *In the latter case, where the textile article 11 is of knitted construction the electrode portion 12 may also be of knitted construction and formed during the same production process* merely by appropriate selection of electrically conductive yarn during knitting of the article to define the electrode portion.

Ex. 1001, 4:27-35 (emphases added). The specification further explains—which SST ignores—an electrode “integral with a garment . . . permits the garment and electrode to be mass produced in a cost-effective manner . . . [and] also permits low profile or more elegant structures to be realized.” *Id.*, 3:10-14.

By completing discussion of the “sewn, glued or otherwise attached to” embodiment and starting a new sentence about the distinct “integral with” embodiment with “alternatively,” the ’951 patent draws a clear line between the

two separate embodiments. This separation indicates that—consistent with the ordinary and customary meaning of “integral with,” as would be understood by a POSITA—an electrically conductive fabric “integral with” a garment is different and distinct from an electrically conductive fabric “attached to” a garment. By joining the two sentences with “or” and discarding “alternatively,” SST’s contention glosses over the ’951 patent’s teaching of two separate embodiments, and instead provides an unreasonably broad, genus construction that purports to encompass both the “attached to” embodiment and the claimed “integral with” embodiment. *See* Pet. at 17.

In sum, SST’s proposed construction improperly stretches “integral with” to cover an electrically conductive fabric that is, in fact, *not* “integral with” a garment. This unreasonably broad construction effectively reads the limitation out of the claim and is wholly inconsistent with the ordinary and customary meaning of “integral with,” the specification, and the prosecution history, and should not be adopted by the Board. *Proxyconn*, 789 F.3d at 1298 (The Board may not “construe claims during IPR so broadly that its constructions are *unreasonable* under general claim construction principles”). Rather, and consistent with the prevailing claim constructions principles and the disclosure of the specification, the “electrically conductive fabric [that] is integral with a garment” limitation should be assigned

its plain and ordinary meaning, which excludes being sewn, glued, or otherwise attached to the garment.

B. “a first surface for application to skin”

Claim 1 also recites “an electrically conductive fabric having a first surface for application to skin.” Ex. 1001, 7:7-8. SST first argues that the “for application to skin” limitation is functional language that should not be “give[n] patentable weight.” Pet. at 13. SST is incorrect; the phrase should be given patentable weight.

SST does not explain why this limitation is allegedly functional and not structural, and is silent on “how or why this limitation fails to distinguish the claims from the structure of [the prior art].” See *JST Performance, Inc. v. Koninklijke Philips N.V.*, IPR2014-00874, Paper 11 at 11 (PTAB Dec. 4, 2014) (declining challenge that functional limitation not be given patentable weight).

Furthermore, SST’s position contravenes longstanding legal authority. A functional limitation is entitled to patentable weight just like a structural limitation. *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997) (“A patent applicant is free to recite features of an apparatus either structurally or functionally”); *Cordis Corp. v. Boston Scientific Corp.*, 561 F.3d 1319, 1335 (Fed. Cir. 2009) (“[F]unctional language can be a claim limitation”). SST relies on *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340 (Fed. Cir. 1998) to support its view that the claim phrase is not entitled to patentable weight. See Pet. at 13. But the issue there involved an

intended use statement in the preamble, not an alleged functional limitation in the body of the claim, as here. *C.R. Bard*, 157 F.3d at 1350. Thus, SST's reliance on that case is misplaced.

SST alternatively argues that the "first surface for application to skin" limitation be construed to mean "a surface of the electrically conductive fabric capable of contacting the skin." Pet. at 13. Philips respectfully submits, however, that this claim limitation should be assigned its plain and ordinary meaning and does not require express construction. SST has not explained or proffered any evidence (in the specification, prosecution history, or elsewhere) that would necessitate a different result.

C. "located on said first surface"

Claim 1 further recites at least one portion of material "being located on said first surface" of the electrically conductive fabric. Ex. 1001, 7:9-11. According to SST, this limitation means "the material is located directly on the first surface or is over, adjacent to, touching, in electrical communication with, or embedded in the first surface." Pet. at 16. This construction is unreasonably broad in view of the intrinsic evidence.

SST again reads words out of the claim and replaces them with something more appropriate for the asserted references. SST deletes "located on" and replaces it with a number of alternatives that are inconsistent with the words it deleted:

“being ~~located on~~ located directly on the first surface or is over, adjacent to, touching, in electrical communication with or embedded in” the first surface.

SST’s proposed construction is also divorced from the specification. While a substantially moisture-impermeable material “located on” the first surface of the electrically conductive portion does appear several times in the specification, (*see, e.g.,* Ex. 1001, 1:39-44 & 3:51-56), nowhere does the specification attach a special definition to “located on.” And the specification certainly does not disclose that “located on” means “over, adjacent to, touching, in electrical communication with, or embedded in” (*i.e.,* not necessarily “located on”), as proposed by SST. The teachings of the ’951 patent cited by SST relate to an embodiment where the material is “located directly on” the first surface, (*id.*, 2:33-34); an embodiment where an intermediate layer is present between the material and the first surface, (*id.*, 2:34-36 & 6:13-18); embodiments for attaching the material to the electrode portion, (*id.*, 4:38-44); and an embodiment where the material is unattached and electrically contacts the electrode portion, (*id.*, 6:18-23). *See* Pet. at 15-16. These teachings do not, however, support a broader interpretation of “located on” to encompass “over, adjacent to, touching, in electrical communication with, or embedded.” The specification does not even mention the terms “adjacent to,” “touching,” “in electrical communication with,” or “embedded.”

Furthermore, SST's claim differentiation argument is without merit. SST asserts that because dependent claim 2 recites that the material is "located directly on" said first surface, "claim 1 does not require direct attachment or location of the moisture impermeable layer on the electrode portion or electrically conductive fabric." *Id.* at 16. Whether or not claim 1 requires that the material be "located *directly* on" said first surface does not give freedom to redefine "located on" to broadly cover any physical relationship between the first surface and the moisture-impermeable material, including "over, adjacent to, touching, in electrical communication with, or embedded," contrary to the plain and ordinary meaning of the term and the specification.

Nothing in the prosecution history suggests that the "located on" limitation departs from its plain and ordinary meaning or supports SST's overbroad construction. SST cites to, but does not explain, one paragraph in Dr. Jafari's declaration to purportedly support its construction. *Id.* (citing Ex. 1012, ¶ 80).⁴ Dr. Jafari misstates certain arguments made during prosecution in an attempt to support SST's proposed construction. *See* Ex. 1012, ¶ 80 ("Patent Owner . . .

⁴ From the outset, the Board should disregard Dr. Jafari's arguments, as SST attempts to improperly incorporate the arguments into the Petition. *See* 37 C.F.R. § 42.6(a)(3).

effectively conceded that Kater also disclosed a moisture impermeable portion ‘located on said first surface’ This further evidences that . . . [the] material may even be embedded within”). These arguments, however, related to dependent claim 2 and its recitation of the material being “located *directly* on” said first surface, not the “located on” limitation of claim 1. *See* Ex. 1007, p. 69 (“[C]laim 2 calls for the moisture impermeable portion to be located directly on the first surface. . . . [M]etal connector 12 [of Kater] does not lie directly on the first surface”). Nowhere did Patent Owner concede that the prior art disclosed a material “located on said first surface” or make characterizations about a material “embedded within” the first surface. *See id.*, pp. 68-71.

For at least these reasons, Philips respectfully submits that the material “being located on said first surface” limitation need not be expressly construed and should be interpreted according to its plain and ordinary meaning as understood by one of ordinary skill in the art in light of the specification.

D. “electrically conductive fabric”

SST proposes that the “electrically conductive fabric” limitation of claim 1 be interpreted to mean “a fabric capable of transmitting an electric current.” Pet. at 12. Philips respectfully submits, however, that this limitation should be assigned its plain and ordinary meaning and no express construction is necessary.

The passages from the specification cited by SST do not assign a special meaning to “electrically conductive fabric.” *See* Ex. 1001, 1:39-44 (describing a fabric electrode arrangement), 3:5-6 (describing that the electrode may be knitted or woven), 3:49-53 (describing an embodiment of a fabric electrode arrangement 10 including an electrically conductive electrode portion 12), 4:3-7 (describing the electrically conductive electrode portion 12 as a knitted construction), 6:44-48 (describing other embodiments of the electrode structure as woven, embroidered, or non-woven). In fact, the specification does not mention “transmitting electrical current,” which SST proposes to inject into the claim limitation.

Additionally, SST does not explain how construing “electrically conductive fabric” would add any clarity to the phrase itself in the context of claim 1. This claim term does not need additional construction.

E. “substantially impermeable to moisture”

SST argues that the “at least one portion of material which is substantially impermeable to moisture” limitation of claim 1 be construed to mean “a material that prevents moisture to pass or diffuse through the material to a considerable degree.” Pet. at 15. The specification does not impart a particular definition to the phrase “material which is substantially impermeable to moisture,” and SST does not explain or point to any evidence in the specification or record to suggest that the phrase should be construed in a way that departs from its plain and ordinary

meaning. Indeed, the specification uses the phrase according to its plain and ordinary meaning without applying a different definition. Ex. 1001, 3:45-56 (“Because the at least one portion of material is substantially impermeable to moisture, . . . [it] would restrict the amount by which the skin underneath is able to breath . . . and . . . traps perspiration between itself and the skin”), Abstract (“[T]he perspiration trapped between the skin and moisture impermeable portion”).

Moreover, the passages cited by SST do not even mention the terms “pass,” “diffuse,” or “considerable degree.” Additionally, SST does not articulate how construing the phrase “substantially impermeable to moisture” would add any clarity to the phrase itself in the context of claim 1. Instead, SST’s proposed “to a considerable degree” is vague. SST’s construction would not improve understanding of the claim term.

Accordingly, Philips respectfully submits that “at least one portion of material which is substantially impermeable to moisture” should be assigned its plain and ordinary meaning and no express construction is warranted or necessary.

V. SST HAS FAILED TO ESTABLISH A REASONABLE LIKELIHOOD OF PREVAILING ON ANY OF ITS PROPOSED GROUNDS

A. SST’s Proposed Grounds Based on *Granek*

SST contends that *Granek* anticipates claims 1-3. Pet. at 18-23 (Ground A). And while SST admits that *Granek* fails to disclose a substantially moisture-impermeable material that is “silicone rubber loaded with conductive material,” as

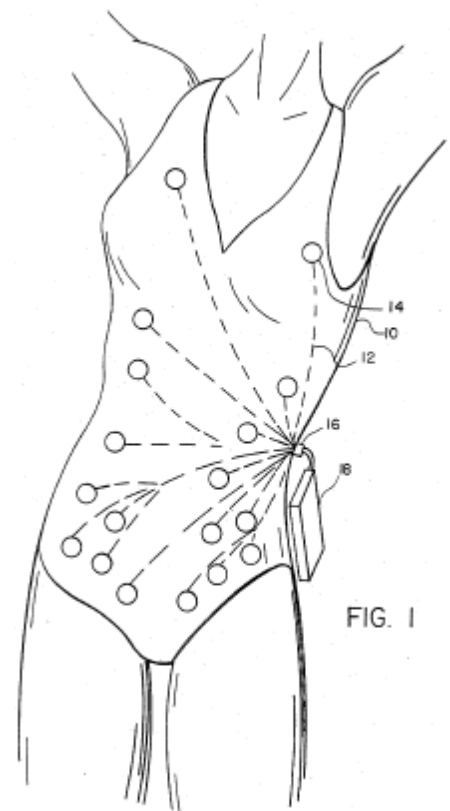
recited in claim 4, SST nevertheless asserts that the claimed feature would have been obvious in view of *Noguchi*. *Id.* at 24-25 (Ground B). As explained below, each of these arguments lacks merit.

1. Overview of *Granek*

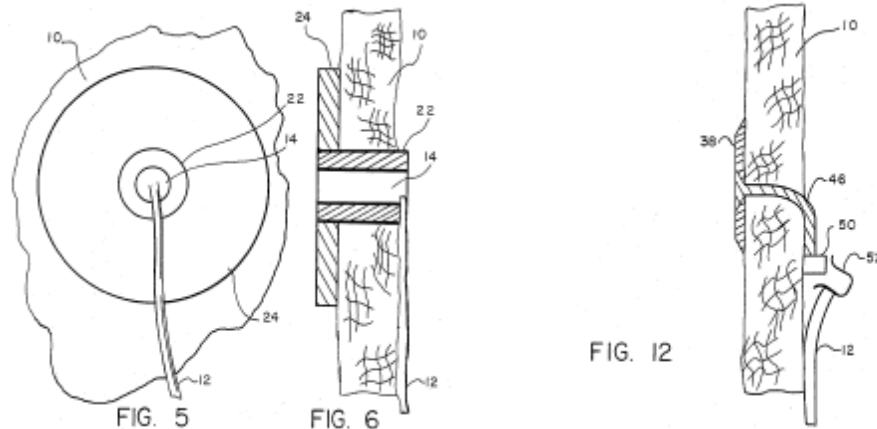
Granek relates to “a garment containing conductive paths to different parts of the body having points of electrical contact with the skin.” Ex. 1002, 1:13-15. An aim of *Granek* is to “provide a means of applying electrodes to any part of the body.” *Id.*, 1:55-56. *Granek* purports to achieve this aim by “constructing a garment of ordinary non-conductive cloth” that includes “designated points [] electrically connected by conductors to a connector plug for attaching to an external or internal electrical device.” *Id.*, 1:67-2:7.

Fig. 1 (reproduced right) illustrates an embodiment of a garment 10. *Granek* teaches that “a multiplicity of insulated conductors 12 such as wires or conducting thread” are embedded in the garment, and “[o]ne end of each conductor 12 is terminated at designated points 14.” *Id.*, 3:6-11.

Granek discloses in Figs. 5-6 (reproduced below) one embodiment in which tubular cylinders 22 are



inserted at the designated points 14. *Id.*, 4:1-2. “[A]n electrode 24 is placed on the inside of the garment 10” and is connected to the conductor 12 through the tubular cylinder 22. *Id.*, 4:10-13. Fig. 12 (reproduced below) illustrates another embodiment in which “an electrode 38 is placed inside or outside the garment and connected by means of a short conductor 46 to a selector terminal 50,” which connects to the conductor 12 via a connector 52. *Id.*, 5:1-7.



Granek further discloses that “[t]he conductors 12, electrodes 24 and 38 and pockets 26 may be metal or conductive cloth.” *Id.*, 5:8-9. And “[i]n the conductive embodiment[,] the tubular cylinder 22 and the electrode 24 might be made of metal or silicone rubber.” *Id.*, 6:68-7:2.

2. *Granek* Does Not Anticipate Claims 1-3 (Ground A)

SST presents three anticipation theories based on *Granek*, relying on either the Figs. 5-6 embodiment or the Fig. 12 embodiment. Pet. at 18 (relying on Figs. 5-6), 19-20 (pointing to “an alternative embodiment” of Fig. 12), 21-22 (relying

“[a]lternatively” again on Figs. 5-6). Each of these theories fails because none of these *Granek* embodiments has an “electrically conductive fabric [that] is integral with a garment,” as required by claim 1. SST predicates its arguments on its unreasonably broad and legally incorrect interpretation of “integral with,” (*see supra* Part IV.A.), and picks and chooses various distinct teachings of *Granek*, contrary to the established law of anticipation. Moreover, SST has not sufficiently demonstrated that *Granek* discloses a material substantially impermeable to moisture “located on said first surface,” as required by claim 1.

a. *Granek* does not teach an “electrically conductive fabric [that] is integral with a garment”

SST points to electrode 24 of the Figs. 5-6 embodiment, or alternatively electrode 38 of the Fig. 12 embodiment, as allegedly corresponding to the claimed “electrically conductive fabric.” Pet. at 19-20. *Granek*, however, does not teach that either electrode 24 of Figs. 5-6 or electrode 38 of Fig. 12 is “integral with a garment,” as required by claim 1. Instead, the extent of *Granek*’s teachings in this regard is simply that “electrode 24 [is] *placed* on the inside of the garment,” (Ex. 1002, 4:9-11 (emphasis added) (referring to the embodiment of Figs. 5-6)), and that “electrode 38 is *placed* inside or outside the garment,” (*id.*, 5:1-3 (emphasis added) (referring to the embodiment of Fig. 12)). In these configurations, electrode 24 and electrode 38 are simply not “integral with” the garment.

SST nevertheless argues that “electrode 24 or 38 is integral with the garment 10 as by being ‘sewed, glued, welded or attached by any other means’ onto . . . the garment 10,” ignoring the plain and ordinary meaning of “integral with.” Pet. at 21 (quoting Ex. 1002, 6:14). Even assuming SST has shown that the electrode 24 of the Figs. 5-6 embodiment or the electrode 38 of the Fig. 12 embodiment is “sewed, glued, welded or attached” onto garment 10—which it has not (*see infra* Part V.A.2.a.i.)—such an arrangement between electrode 24 or 38 and garment 10 does not meet the “integral with a garment” element of claims 1-4. Indeed, the ’951 patent explains that an electrically conductive fabric “sewed, glued or otherwise attached to” a garment is distinct from an electrically conductive fabric “integral with a garment.” *See* Ex. 1001, 4:27-35 (“The electrically conductive electrode portion 12 may be sewn, glued or otherwise attached to the textile article 11. *Alternatively* the electrically conductive electrode portion 12 may be an integral part of the textile article 11” (emphasis added)). SST points to no evidence demonstrating that *Granek* teaches the electrode 24 of the Figs. 5-6 embodiment or the electrode 38 of the Fig. 12 embodiment is “integral with” garment 10. SST has therefore failed to demonstrate a reasonable likelihood of prevailing on its assertion that *Granek* discloses an “electrically conductive fabric [that] is integral with a garment,” as required by claims 1-4.

i. SST cannot establish anticipation by piecing together various disclosures of disparate embodiments and features from *Granek*

SST’s anticipation argument improperly pieces together various unrelated disclosures of *Granek*. But to anticipate a claim, a single prior art reference must “disclose[] within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). SST’s analysis does not show that *Granek* teaches an electrically conductive fabric “integral with” a garment under its own, incorrect construction—“attached to or integrated in”—much less under the proper, plain and ordinary meaning of the phrase.

SST takes *Granek* out of context to argue that “electrode 24 or 38 is integral with the garment 10 as by being ‘sewed, glued, welded or attached by any other means’ onto . . . the garment 10.” Pet. at 21 (quoting Ex. 1002, 6:14). Yet the complete *Granek* passage explains that the “sewed, glued, welded or attached” teaching is unrelated to electrode 24 and electrode 38. Rather, the “sewed, glued, welded or attached” passage relates to the “conducting paths” (*i.e.*, conductors 12), of the garment, not to electrode 24 or 38. Ex. 1002, 6:13-15 (“Electrical *conducting paths* of conducting cloth *sewed, glued, welded or attached by any other means* into a garment” (emphases added)); *see also id.*, 2:12-15 (“The conductors can be

. . . conducting cloth sewn onto the non-conducting base”), 3:24-26 (“[G]arment 10 is shown with the designated points 14 connected by multiple paths through conductors 12”), 7:48-50 (“The conductor pathways 12, and 12A as depicted by FIG. 17 is constructed of the aforementioned Hi-Meg material 54”). SST cherry-picks these teachings of conductors 12 and combines them with *Granek*’s unrelated discussion of electrodes 24 and 38 as though they relate to the same elements without any explanation or basis to do so.

SST does not articulate how a POSITA allegedly would have understood *Granek* as disclosing electrode 24 of Figs. 5-6 or electrode 38 of Fig. 12 “sewed, glued, welded or attached by any other means” onto garment 10, let alone present any evidence in *Granek* to support such an understanding. In fact, the cited testimony from Dr. Jafari’s declaration simply parrots the conclusory statements in the Petition. *Compare* Pet. at 21, ll. 3-7 with Ex. 1012, ¶ 122. His statements should be given little or no weight. 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight”).

SST therefore cannot, as a matter of law, establish anticipation by picking, choosing, and combining features of the “conducting paths” with the features of electrode 24 of the Figs. 5-6 embodiment or electrode 38 of the Fig. 12 embodiment simply because those features are found within *Granek*. *In re Arkley*,

455 F.2d 586, 587-88 (C.C.P.A. 1972) (“Such picking and choosing . . . has no place in the making of a 102, anticipation rejection”).

SST cites other purported teachings of *Granek* to support its assertion that electrode 24 or 38 is “sewed, glued, welded or attached” onto garment 10. *See* Pet. at 21. SST, however, merely presents cursory citations, devoid of any explanation or analysis. *Id.* (citing Ex. 1002, 5:8-14, 6:13-15, 7:3-38, 7:63-8:8 and concluding that *Granek* describes embodiments where electrode 24 or 38 is “sewed, glued, welded or attached” onto garment 10). This falls well short of demonstrating a reasonable likelihood that *Granek* anticipates claims 1-3. 37 C.F.R. § 42.22(a)(2) (petition must include “a detailed explanation of the significance of the evidence including material facts”); Rules of Practice for Trials Before Patent Trial and Appeal Board, 77 Fed. Reg. 48612, 48620 (August 14, 2012) (“Vague arguments and generic citations . . . do not provide sufficient notice to an opponent and create inefficiencies for the Board”).

Furthermore, while the passages cited by SST might mention sewing, gluing, or welding, they relate to completely different embodiments or features from the electrode 24 of the Figs. 5-6 embodiment or the electrode 38 of the Fig. 12 embodiment (*i.e.*, the alleged “electrically conductive fabric” of claim 1). For example, SST cites to a teaching of *Granek* that discusses a “process [that] forms a conductor 12” and is silent on electrode 24 or 38 being sewed, glued, welded, or

attached onto garment 10. Ex. 1002, 5:8-15. SST also cites to disclosures of different and unrelated embodiments from that of Figs. 5-6 and Fig. 12. *Id.*, 7:3-38 (“In FIG. 13, there is taught an electrode arrangement that depicts *another configuration* In a *further modification* as demonstrated by FIG. 16” (emphases added)). And SST’s final, cursory citation to *Granek*, (*id.*, 7:63-8:8), relates to the distinct embodiments of Fig. 13 and Fig. 16. *Granek* discloses in the Figs. 13 and 16 embodiments an electrode means sewn “over” a conductor 12. *See id.*, 7:3-18 (“In FIG. 13 . . . [t]he electrode is sewn onto the garment 10 over the conductor 12) & 7:32-38 (“[A]s demonstrated by FIG. 16 . . . a piece of cloth 53 . . . is sewn to the garment 10 when the electrode means is sewn or suitably affixed thereto”); *see also id.*, 2:60-67 (“FIG. 13 is a cross-sectional view of still another embodiment of an electrode means FIG. 16 is a cross-sectional view of still another embodiment of an electrode means”). The disclosure cited by SST continues to discuss “the assembly of the electrode means” in the Figs. 13 and 16 embodiments, describing “the *conducting pathways 12 . . .* first sewn in place on the outer surface of the garment 10,” then the electrode means “sewn in place *over the appropriate portion of the pathways 12.*” *Id.*, 7:63-8:8 (emphases added). In contrast, neither the Figs. 5-6 embodiment nor the Fig. 12 embodiment discloses an *electrode* sewn, or even placed, “over” a conductor 12. SST’s out-of-context citations to *Granek*’s embodiments and features unrelated to electrode 24 of the

Figs. 5-6 embodiment or electrode 38 of the Fig. 12 embodiment (*i.e.*, the alleged “electrically conductive fabric” of claim 1) cannot establish anticipation of claim 1. *Arkley*, 455 F.2d at 587-88.

SST alternatively argues “that Granek also teaches that a portion 14 of the garment 10 itself may define the ‘electrically conductive fabric having a first surface for application to skin.’” Pet. at 21. But under this approach, SST again picks and combines disparate disclosures of *Granek* as though they relate to each other. This time, SST picks a general discussion in *Granek* that “[s]elected designated points may be made of [c]onductive cloth for special purposes” and combines it with *Granek*’s Figs. 5-6 embodiment. *Id.* at 21-22 (quoting Ex. 1002, 3:31-35). SST then concludes that *Granek* “describes an embodiment where one or more of the designated points 14, where electrodes are positioned, is made of conductive fabric, which may be woven as part of the non-conductive fabric of the garment 10 or layered at the designated point 14.” *Id.* at 22. SST’s alternative anticipation position falls short for a number of reasons.

First, SST fails to point to any teaching in *Granek* to support its assertion that conductive fabric where electrodes are positioned “may be woven as part of . . . the garment 10 or layered.” *Id.* The general mention that the designated points may be made of conductive cloth and the teachings of the Figs. 5-6 embodiment cited by SST are silent as to this feature. *See* Ex. 1002, 3:31-35 & 4:9-16. Nor does

SST articulate, or identify any evidence to show, how these purported teachings allegedly meet the “electrically conductive fabric is integral with a garment” element of claim 1. *See* Pet. at 21-22. SST’s conclusory statements therefore are not sufficient to demonstrate a reasonable likelihood that *Granek* anticipates claims 1-3. 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.104(b)(4) (“The petition must specify where each element of the claim is found in the prior art”); *Schumer v. Lab. Computer Sys., Inc.*, 308 F.3d 1304, 1315-16 (Fed. Cir. 2002) (“[T]estimony concerning anticipation . . . is insufficient if it is merely conclusory”).

Second, *Granek* does not include—nor does SST point to—any disclosure suggesting or linking the general discussion that “[s]elected designated points may be made of [c]onductive cloth” to the Figs. 5-6 embodiment. Rather, the cherry-picked teachings relate to different embodiments. The “conductive cloth” disclosure relates to the general embodiments of Figs. 1-2, (*see* Ex. 1002, 3:4-33), but the disclosure of Figs. 5-6 relates to “*another embodiment* [where] an electrode 24 [is] placed on the inside of the garment 10 *In this embodiment the electrode is selected for use,*” (*id.*, 4:9-16 (emphases added)). Nor does SST articulate, with proper support from *Granek*, how a POSITA allegedly would have linked or otherwise understood the Figs. 5-6 embodiment of *Granek* as including designated points made of conductive cloth or conductive cloth “woven” or “layered” on garment 10. “[I]t is not enough that the prior art reference . . .

includes multiple, distinct teachings that the [ordinary] artisan might somehow combine to achieve the claimed invention.” *Net MoneyIN*, 545 F.3d at 1371. Like the Petition, Dr. Jafari’s declaration is devoid of any such reasoning or analysis. *See* Ex. 1012, ¶ 121 (mirroring Pet. at 21, l. 8-22, l. 13). SST therefore has not sufficiently shown that *Granek* discloses all of the limitations arranged or combined in the same way as claim 1. *Net MoneyIN*, 545 F.3d at 1370 (prior art reference did not anticipate because “it did not contain a discussion suggesting or linking” a general teaching with a specific figure (discussing *Ecolochem, Inc. v. S. California Edison Co.*, 227 F.3d 1361 (Fed. Cir. 2000))).

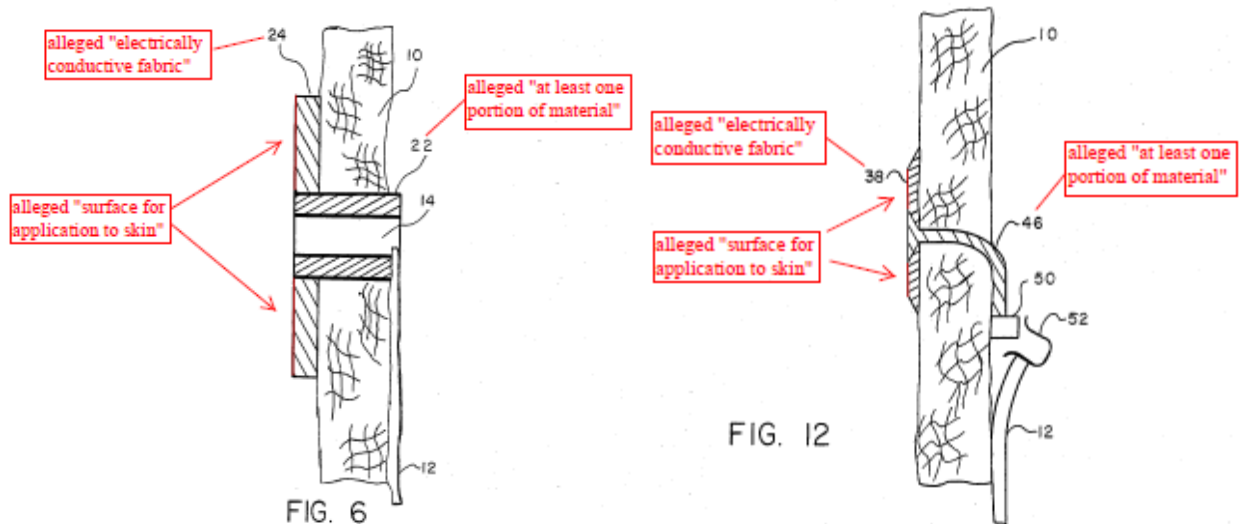
SST has failed to show that *Granek* discloses all elements of claim 1, and therefore has not demonstrated a reasonable likelihood of prevailing on its assertion that *Granek* anticipates claims 1-3.

b. *Granek* does not teach a material substantially impermeable to moisture “located on said first surface”

For the embodiment of Figs. 5-6, SST argues that the tubular cylinder 22 allegedly corresponds to the claimed “at least one portion of material which is substantially impermeable to moisture.” Pet. at 19. Alternatively, SST argues that the conductor 46 of the Fig. 12 embodiment allegedly corresponds to the claimed “at least one portion of material.” *Id. Granek*, however, does not teach that either

the tubular cylinder 22 of Figs. 5-6 or the conductor 46 of Fig. 12 is “located on said first surface” of the electrically conductive fabric, as required by claim 1.

As shown in the annotated figures below, the tubular cylinder 22 extends through the garment 10 and the electrode 24 to the surface of the electrode 24 facing the skin. Similarly, in the embodiment of Fig. 12, the conductor 46 extends through the garment 10 and the electrode 38 to the surface of the electrode 38 facing the skin. Thus, the tubular cylinder 22 is not “located on” a surface of the electrode 24 for application to the skin, nor is the conductor 46 “located on” a surface of the electrode 38 for application to the skin.



As shown above, each of electrodes 24, 38 has no surface for application to the skin on which tubular connector 22 or conductor 46 is located. Rather, electrodes 24, 38 have a void through which tubular connector 22 and conductor 46 respectively pass to the surfaces of electrodes 24, 38. Indeed, SST appears to

concede the same. *See* Pet. at 19-20 (describing the tubular cylinder 22 “to *also be at the inside or skin-facing surface*” of electrode 24, the conductor 46 as “*co-located at the first or inside or skin-facing surface*” of electrode 38, and “each member 22 or 46 being effectively *coterminous with* the electrode 24 or 48” (emphases added)). Since electrodes 24, 38 have no surface for application to skin on which tubular connector 22 or conductor 46 is located, SST has not established that *Granek* discloses a substantially moisture-impermeable material “located on said first surface,” as claimed.

SST has also failed to show that either the conductor 46 or the tubular cylinder 22 is “substantially impermeable to moisture.” SST contends that the conductor 46 is “inherently made of metal or conductive rubber . . . which is well known in the art as being impermeable to moisture.” *Id.* But nowhere in *Granek* does it teach that the conductor 46 is “made of metal or conductive rubber.” In particular, *Granek*’s disclosure cited by SST is silent on this feature. *See* Ex. 1002, 4:9-13 (describing the embodiment of Figs. 5-6), 5:1-9 (identifying conductor 46 of the Fig. 12 embodiment but silent on its material), and 6:67-7:2 (describing the tubular cylinder 22).

Moreover, SST is incorrect in concluding that the conductor 46 is “inherently” of moisture-impermeable metal. SST has not articulated how and why the conductor 46 “necessarily” is made of a metal or conductive rubber that is

moisture impermeable or adduced any evidence to support that assertion. *See Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002) (“Inherent anticipation requires that the missing descriptive material is ‘necessarily present’” (citation omitted)). SST’s reliance on Dr. Jafari’s declaration is also insufficient as the cited testimony merely mirrors the conclusory and unsupported arguments advanced in the Petition. *Compare* Pet. at 19-20 *with* Ex. 1012, ¶ 120; *see* 37 C.F.R. § 42.65(a). As for the tubular cylinder 22, *Granek* teaches that it is not “substantially impermeable to moisture,” but rather “aids the insertion of conductive fluid into and under the garment.” Ex. 1002, 4:2-4.

SST’s third anticipation argument based on the combination of *Granek*’s alleged teaching that “a portion 14 of garment 10 itself may define the ‘electrically conductive fabric’” with the embodiment of Figs. 5-6, (Pet. at 21-22), also fails to meet the “located on said first surface” element of claim 1. As discussed, SST cannot, as a matter of law, establish anticipation by simply picking and combining unrelated teachings of *Granek*. *See supra* Part V.A.2.a.i.

Furthermore, SST broadly concludes—without citing to any factual support in *Granek*—that “the electrode 24 is located between the inner surface of the conductive portion of the fabric and the skin.” Pet. at 22. Yet *Granek* does not teach where any such conductive fabric would be positioned relative to the electrode 24, and it certainly does not disclose that the electrode 24 of Figs. 5-6 is

“located on” a surface of any conductive fabric. Nor does *Granek* describe that the surface of such conductive fabric is “for application to skin.” *Granek* is silent as to the position and configuration of any conductive fabric relative the garment 10 and the electrode 24. While SST contends that the conductive fabric “may be woven as part of . . . the garment 10 or layered,” it fails to present any evidence from *Granek* to support this contention. *Id.* Taken together, SST’s conclusory statements are not sufficient to establish a reasonable likelihood of anticipation. 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.104(b)(4).

3. The Challenge to Claim 4 Based on *Granek* In View of *Noguchi* Should Be Denied (Ground B)

Claim 4 depends from claim 1 and further recites that “said material is silicone rubber loaded with conductive material.” Ex. 1001, 7:19-21. SST admits that *Granek* fails to expressly disclose a silicone rubber loaded with conductive material but relies on alleged teachings of *Noguchi* in an attempt to remedy this deficiency. *See* Pet. at 24-25. But because SST has not established a reasonable likelihood of prevailing as to its anticipation ground of claim 1 with respect to *Granek*, (*see supra* Part V.A.2.), SST likewise cannot succeed in its challenge of dependent claim 4 based on *Granek* alone or in combination with *Noguchi*. *See SynQor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1375 (Fed. Cir. 2013).

The Board should also deny Ground B because SST has failed to articulate “[h]ow the challenged claim is to be construed” and “[h]ow the construed claim is unpatentable.” 37 C.F.R. § 42.104(b)(3)-(4); *see also* 35 U.S.C. § 314(a). Although dependent claim 4 recites that silicone rubber is “loaded with” conductive material, SST omits a proposed interpretation of the term. SST’s failure to construe “loaded with” should be fatal to its proposed Ground B. *See Jiawei Tech. Ltd. v. Simon Nicholas Richmond*, IPR2014-00938, Paper 27 at 2 (PTAB Jan. 31, 2015) (denying petition for “failure to offer a construction of a term critical to understanding the scope of [the challenged] claims”). And SST’s catch-all statement that all other terms “be given their ordinary and customary meaning,” Pet. at 11, should not immunize SST’s burden to construe terms of challenged claims. *Zetec, Inc. v. Westinghouse Elec. Co., LLC*, IPR2014-00384, Paper 10 at 6-7 (PTAB July 23, 2014) (denying institution where petition “do[es] not cite any portion of the specification . . . or provide any other evidence as to why the proffered constructions reflect each term’s ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure”).

B. SST’s Proposed Obviousness Grounds Based on *Reho*

SST next challenges claims 1-4 on two obviousness grounds based on *Reho*—Ground C based on the combination *Reho* and *Muir* and Ground D based on

the combination *Reho* and *Greene*. Pet. at 25-41. As detailed below, however, SST has failed to establish a reasonable likelihood that any of claims 1-4 would be found unpatentable under any of these asserted grounds.

1. Overview of *Reho*

Reho describes “a sensor placed on the skin, which can be used for metering the pulse of humans.” Ex. 1003, p. 2, ll. 3-4. The sensor “comprises a contact layer including conductive fibres, and a moisture layer for retaining moisture on top of the contact layer.” *Id.*, p. 2, l. 28-p. 3, l. 1. The contact layer is placed against the skin and the moisture layer is “remote from the skin.” *Id.*, p. 5, ll. 19-20.

2. *Reho* In View of *Muir* Does Not Render Obvious Claims 1-4 (Ground C)

SST concedes that *Reho* “fails to expressly disclose that the portion of material is located on said first surface of the electrically conductive fabric” but nonetheless contends that claims 1-4 would have been obvious over *Reho* in view of *Muir*. Pet. at 25-34. The Board should deny this ground at least because (a) *Reho* teaches away from proposed modification based on *Muir* and (b) the Petition lacks a complete and proper obviousness analysis.

a. *Reho* teaches away from the proposed modification based on *Muir*

Reho is directed to “[a] sensor . . . that can be tightly and agreeably attached to the skin.” Ex. 1003, p. 2, l. 24. Hence, the principal object of *Reho*’s sensor is to

have its “contact layer brought into tight contact with the skin for the measurements to be sufficiently reliable.” *Id.*, p. 2, ll. 18-19.

In achieving its object, *Reho* recognized that, “[t]o ensure skin contact, liquids . . . can be used between the contact layer and the skin.” *Id.*, p. 2, ll. 19-20. To that end, *Reho* specifically teaches that the sensor design includes “a moisture layer for retaining moisture *on top of* the contact layer.” *Id.*, p. 2, l. 29-p. 3, l. 1 (emphasis added). That is, the contact layer is placed “against the skin,” while the moisture layer is “*remote from* the skin.” *Id.*, p. 5, ll. 19-20 (emphasis added). *Reho* emphasizes the importance of positioning the moisture layer “on top of the contact layer” and “remote from the skin” because the moisture layer “collect[s] moisture from the skin,” (*id.*, p. 5, ll. 20-21), and “*prevents transpiration* secreted at the contact layer *from escaping from the contact layer*,” (*id.*, p. 3, ll. 8-9 (emphases added)). Accordingly, the “moisture layer *retains secretory products* from the skin, such as moisture and electrolytes. This *enhances the contact between the skin and the contact layer* and *increases the electric conductivity* of the contact layer.” *Id.*, p. 3, ll. 4-7 (emphases added); *see also id.*, p. 5, ll. 20-24 (“[T]he seal layer 3 of the sensor 1 starts collecting moisture . . . [and] also retains other secretory products . . . within the contact layer 2. Then the skin contact and the conductive properties of the contact layer are substantially improved”). *Reho* therefore realizes its principal object of having a “contact layer brought into tight contact with the skin for the

measurements to be sufficiently reliable,” (*id.*, p. 2, ll. 18-19), by specifically providing “a moisture layer for retaining moisture on top of the contact layer,” (*id.*, p. 2, l. 29-p. 3, l. 1).

Despite the explicit teachings and object of *Reho*, SST argues that “[i]t would have been obvious . . . to position the portion of material that is impermeable to moisture on top of the first surface of the electrically conductive fabric as taught by Muir in the invention of *Reho*.” Pet. at 29. SST contends that “it involves only routine skill in the art to merely reverse the order of layering in *Reho*’s electrode assembly as taught by Muir.” *Id.* at 30. But SST’s reliance on *Muir* falls squarely within *Reho*’s teaching away from an assembly that includes a substantially moisture-impermeable material “being located on” a “surface for application to skin” of an electrically conductive fabric.

Muir is directed to “electrodes used in the administration of electricity.” Ex. 1005, 1:9-11. *Muir* teaches an electrode “composed of backing A, which may be . . . a non-conductor of electricity. To the face of this backing is secured . . . a sheet B of electroconducting material.” *Id.*, 1:44-50. “Upon this sheet of conducting material B is placed a pliable layer C of suitable electroconducting properties.” *Id.*, 2:57-60. Layer C forms the contact surface between the electrode and skin. *See id.*, 3:1-9 (“[T]he electroconducting-sheet B . . . alone would not

form as perfect a contact of the pad [T]he pliable composition C obviates this difficulty by giving a perfectly smooth surface to form the contact”).

In contrast to *Muir*’s pliable layer C, *Reho* teaches that its contact layer of conductive fibers is “in contact with the skin.” Ex. 1003, Abstract. *Reho* discloses that its “invention comprises . . . a moisture layer for retaining moisture on top of the contact layer” to “enhance[] the contact between the skin and the contact layer and increase[] the electric conductivity of the contact layer.” *Id.*, p. 2, 1. 28-p. 3, 1. 7. SST does not explain why reversing the order of layering in *Reho* based on *Muir* would have been necessary, desirable, or even operable. *See* Pet. at 29-30. Indeed, it would not have been based on *Reho*’s teachings.

To “reverse the order of layering” such that the moisture layer is located on the surface of contact layer for application to skin, would destroy *Reho*’s principle of operation and render *Reho* inoperable for its intended purpose. A POSITA would therefore be discouraged from modifying *Reho* as proposed by SST. *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App’x 755, 758 (Fed. Cir. 2015) (recognizing “combinations that change the ‘basic principles under which the [prior art] was designed to operate,’ or that render the prior art ‘inoperable for its intended purpose’ may fail to support a conclusion of obviousness” (alteration in original) (citations omitted)); *see also Tec Air, Inc. v. Denso Mfg. Michigan Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (“If when combined, the references ‘would

produce a seemingly inoperative device,’ then they teach away from their combination” (citation omitted)).

Specifically, by providing the moisture layer on top of the contact layer, *Reho* teaches that its sensor is designed to “retain[] secretory products from the skin,” including moisture and electrolytes, “within the contact layer,” (Ex. 1003, p. 3, ll. 4-5 & p. 5, ll. 20-23), and “prevent[] transpiration secreted at the contact layer from escaping from the contact layer,” (*id.*, p. 3, ll. 8-9). The moisture layer operates to “enhance[] the *contact between the skin and the contact layer* and increases the electric conductivity of the contact layer.” *Id.*, p. 3, ll. 4-7 (emphasis added). Reversing the order of the contact layer and the moisture layer such that the moisture layer is placed against the skin and the contact layer is positioned on top of the moisture layer would fundamentally alter the *Reho*’s principle of operation. The modified sensor would fail to achieve “enhance[d] contact” between the contact layer and the skin and “increase[d] . . . electric conductivity of the contact layer” because the moisture layer would be positioned between the skin and the contact layer. The modified sensor would also fail to “retain[] secretory products” within the contact layer or “prevent[] transpiration . . . from escaping from the contact layer,” as the moisture layer would no longer be on top of the contact layer to act as an “impervious, substantially moisture proof seal” against the contact layer and the skin. *Id.*, p. 3, l. 1.

Furthermore, neither *Reho* nor SST explains how or if the modified *Reho* sensor, with the moisture layer between the skin and the contact layer, would operate “for metering the pulse of humans,” (*id.*, p. 2, ll. 3-4), let alone for “increas[ing] the electric conductivity of the contact layer,” (*id.*, p. 3, ll. 6-7). *Reho* teaches that the sensor measures data by placing the contact layer in contact with the skin. *Id.*, Abstract (“[A] contact layer in contact with the skin containing conductive fibres for receiving signals”); p. 3, ll. 2-3 (“Data to be measured are collected on the skin with the aid of the contact layer”). Under SST’s proposed modification, the moisture layer would instead be positioned between the skin and the contact layer, and therefore, the contact layer would no longer be “in contact with the skin” to “receiv[e] signals.” And “revers[ing] the order of layering . . . as taught by Muir,” would result in the contact layer completely covered by the moisture layer and not for contact with the skin. *See* Ex. 1005, Fig. 2; 3:1-9.

Reversing the order of the contact layer and the moisture layer would also render *Reho* inoperable for its intended purpose. The purpose of *Reho*—to provide “[a] sensor . . . that can be tightly and agreeably attached to the skin,” (Ex. 1003, p. 2, l. 24)—is achieved by retaining moisture between the contact layer and the skin. *See id.*, p. 2, ll. 19-20 (“To ensure skin contact, liquids . . . can be used between the contact layer and the skin”); p., 3, ll. 4-7 (“The moisture layer retains secretory products from the skin This enhances the contact between the skin

and the contact layer”). Neither *Reho* nor SST articulates how a modified *Reho* sensor with the moisture layer to be placed against the skin and the contact layer positioned on top of the moisture layer would accomplish *Reho*’s intended purpose of a sensor “tightly and agreeably attached to the skin.” *Reho* instead would be rendered inoperable for its intended purpose as the moisture layer would not retain moisture between the contact layer and the skin.

For at least these reasons, *Reho* teaches away from SST’s proposed modification based on *Muir*. Institution of Ground C should therefore be denied.

b. SST fails to present a complete and proper obviousness analysis based on *Reho* and *Muir*

SST has also failed to articulate a complete and proper obviousness analysis for its proposed combination of *Reho* and *Muir*. SST therefore has not demonstrated a reasonable likelihood of prevailing on its assertion that *Reho* in view of *Muir* renders claims 1-4 unpatentable.

SST argues that claim 1 would have been obvious because

Reho discloses that it is desirable that the conductivity of the conductive fabric electrode be improved by employing an impermeable material to trap moisture, including having such moisture-impermeable material also in contact with the skin of the person wearing the garment, and it involves only routine skill in the art to merely reverse the order of layering in *Reho*’s electrode assembly as taught by *Muir*, as essentially requiring only ‘common

sense’ and ‘ordinary innovation’ to arrive at a ‘predictable result,’ namely moisture retention and improved conductivity.

Pet. at 29-30 (citing Ex. 1012, ¶ 149). These statements are conclusory and not supported by any rational underpinning. SST’s proposed obviousness ground based on *Reho* and *Muir* should be denied.

“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). All SST presents is unsupported argument. SST points to no factual support in the record for its argument that “Reho discloses . . . having such moisture-impermeable material also in contact with the skin of the person wearing the garment.” Nor does SST present any factual evidence to support the contention that “it involves only routine skill in the art to merely reverse the order of layering in Reho’s electrode assembly as taught by Muir” or that the combination requires only “common sense and ordinary innovation to arrive at a predictable result.” SST cites only to paragraph 149 of Dr. Jafari’s declaration (Ex. 1012), which simply mirrors the Petition and lacks any facts or analysis to support the opinions and conclusions. *See* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight”). These conclusions are not a

substitute for a fact-based analysis of the proposed combination of *Reho* and *Muir* necessary to support the conclusions.

Additionally, SST's generic statements for obviousness—in both the Petition and supporting declaration—fall well short of adequately articulating why a POSITA would have had reason to modify the order of layering of *Reho*'s sensor based on *Muir*'s purported teachings. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (“[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art”); *see also ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012) (finding record evidence insufficient to support a determination of obviousness where generic expert testimony “fail[ed] to explain why a person of ordinary skill in the art would have combined elements from specific references *in the way the claimed invention does*” (citing *KSR*, 550 U.S. at 418)).

SST does not explain why *Reho*'s purported desirability to improve conductivity of conductive fabric would lead a POSITA to modify *Reho*'s sensor such that the moisture layer is located on the surface of the contact layer for application to skin. Rather, *Reho* specifically teaches that the moisture layer is “on top” of the contact layer and “remote from the skin.” *See supra* Part V.B.2.a. Nowhere does *Reho* teach that the moisture layer is in contact with the skin, while

also being located on the surface of the contact layer for application to skin.⁵ And, as discussed, *Reho* teaches away from reversing the sensor's order of layering as taught by *Muir* because doing so would destroy *Reho*'s principle of operation and render *Reho* inoperable for its intended purpose. *See id.* Indeed, the contact layer would not achieve the desired improved conductivity with the moisture layer modified to be located on the surface of the contact layer for application to skin. *See id.* This would especially be the case if—as taught by *Muir*—*Reho*'s sensor was modified with the moisture layer completely covering the contact layer. *See id.*

SST's allegation that the combination of *Reho* and *Muir* requires “only common sense and ordinary innovation” likewise does not address the necessary rationale to sustain an obviousness ground. Neither the Petition nor the supporting declaration articulates any reasoning, with proper factual bases, as to why “common sense” or “ordinary innovation” would have led a POSITA to modify *Reho*, in particular, to reverse the order of its sensor layering based on *Muir*. SST's “mere recitation of the words ‘common sense’ without any support adds nothing to

⁵ While *Reho* teaches that “[t]he moisture layer of the sensor preferably *surrounds* the contact layer so as to fit against the skin *around* the contact area,” (Ex. 1003, p. 4, ll. 30-31 (emphases added)), it does not disclose that the moisture layer is located on the surface of the contact layer for application to skin.

the obviousness equation.” *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1354 (Fed. Cir. 2013) (citation omitted); *see also Spaceco Bus. Solutions, Inc. v. Moscovitch*, IPR2015-00127, Paper 16 at 22-24 (PTAB May 14, 2015) (denying institution of obviousness ground where “common sense” argument for combination was conclusory and unpersuasive).

SST’s arguments do not provide the required articulated reasoning with rational underpinning to support the legal conclusion of obviousness based on *Reho* in view of *Muir*, and accordingly, Ground C should be denied.

3. *Reho* In View of *Greene* Does Not Render Obvious Claims 1-4 (Ground D)

SST proposes the same modification to *Reho*—with the same hollow reasoning—in view of *Greene* as it does with respect to *Muir*. Pet. at 34-41. Aside from being redundant with Ground C, (*see infra* Part V.B.4.), this ground should be denied because it suffers the same flaws as Ground C—*Reho* teaches away from the proposed modification based on *Greene*, and SST has failed to present a complete and proper obviousness analysis.

a. *Reho* teaches away from the proposed modification based on *Greene*

Greene, like *Muir*, is directed to “[a]n electrode . . . suited for transmitting electrical impulses into the body.” Ex. 1006, Abstract. *Greene* teaches an electrode that “comprises, in succession, a lower layer 22 of conducting rubber, an

intermediate layer element 24 of electrically conducting mesh or screen . . . , [and] an upper layer 26 of non-conducting rubber.” *Id.*, 3:45-49. And similar to pliable layer C of *Muir*, the lower layer 22 of *Greene* covers the intermediate layer 24 and forms the contact surface between the electrode and skin. *Id.*, 4:39-43 (“Intermediate layer element 24 does not extend to the peripheral edge of lower layer 22. Hence, lower layer 22 . . . extends around . . . the periphery of intermediate layer element 24”), 5:17-20 (“[T]he bottom surface 22a of [the lower layer 22] acts as an interface between the electrode and the user’s body”).

Although *Muir* and *Greene* share similar teachings—particularly regarding ordering of layers in an electrode—SST proposes substantially the same faulty modification of *Reho* in view of *Greene* as it does for the combination of *Reho* and *Muir*. SST argues that “[i]t would have been obvious . . . to position the portion of material that is impermeable to moisture on top of or over, adjacent to, touching, in electrical communication with, or embedded in the first surface of the electrically conductive mesh as taught by *Greene*,” and that “it involves only routine skill in the art to merely reverse the order of layering in *Reho*’s electrode assembly as taught by *Greene*.” Pet. at 37-38. As discussed, however, *Reho* teaches away from an assembly that includes a material which is substantially impermeable to moisture “being located on” a “surface for application to skin” of an electrically conductive fabric. *See supra* Part V.B.2.a. A POSITA would be especially

discouraged from modifying *Reho* such that the moisture layer completely covers the contact layer, as taught by *Greene*. Ex. 1006, 4:39-43 & 5:17-20. And SST yet again does not explain why reversing the order of layering in *Reho* based on *Greene* would have been necessary, desirable, or even operable. *See* Pet. at 37-38.

b. SST fails to present a complete and proper obviousness analysis based on *Reho* and *Greene*

SST's arguments to combine *Reho* and *Greene* suffer the same flaws as its arguments for the *Reho* and *Muir* combination—SST fails to articulate the required reasoning with rational underpinning to support the legal conclusion of obviousness. Indeed, SST presents nearly identical conclusory statements:

Reho discloses that it is desirable that the conductivity of the conductive fabric electrode be improved by employing an impermeable material to trap moisture, including having such moisture-impermeable material also in contact with the skin of the person wearing the garment, and it involves only routine skill in the art to merely reverse the order of layering in Reho's electrode assembly as taught by Greene as essentially requiring only 'common sense' and 'ordinary innovation' to arrive at a "predictable result," namely moisture retention and improved conductivity.

Pet. at 37-38 (citing Ex. 1012, ¶ 177). SST points to no factual support in the record showing that "Reho discloses . . . having such moisture-impermeable material also in contact with the skin of the person wearing the garment," that "it involves only routine skill in the art to merely reverse the order of layering in

Reho's electrode assembly as taught by Green," or that the combination requires only "common sense and ordinary innovation to arrive at a predictable result." SST cites only to paragraph 177 of Dr. Jafari's declaration (Ex. 1012), which simply parrots the Petition and lacks any facts or analysis to support the opinions and conclusions. So again, his testimony is entitled to little or no weight. 37 C.F.R. § 42.65(a).

And just like Ground C, SST does not explain why a POSITA would have had reason to modify the order of layering of *Reho*'s sensor based on *Greene*'s purported teachings. SST fails to articulate why *Reho*'s purported desirability to improve conductivity of conductive fabric by employing an impermeable material also in contact with skin would lead a POSITA to modify *Reho*'s sensor, specifically, such that the moisture layer is located on the surface of the contact layer for application to skin. Furthermore, SST does not present any reasoning, with proper factual bases, as to why "common sense" or "ordinary innovation" would compel a finding of obviousness or why a POSITA would modify *Reho* to reverse the order of its sensor layering based on *Greene*.

SST has failed to provide a complete and proper obviousness analysis for its proposed combination of *Reho* and *Greene*, and therefore has not demonstrated a reasonable likelihood of prevailing on its assertion that *Reho* in view of *Greene* renders claims 1-4 unpatentable.

4. SST Proposes Redundant Grounds

Redundant grounds place a significant burden on the Board and the patent owner and cause unnecessary delay that jeopardizes meeting the statutory deadline for final written decisions. *See Liberty Mut. Ins. Co. v. Progressive Cas. Ins. Co.*, CBM2012-00003, Paper 7 at 2 (PTAB Oct. 25, 2012). “[A]t time of institution the Board analyzes the petition on a claim-by-claim, ground-by-ground basis, to eliminate redundant grounds.” *Idle Free Sys., Inc. v. Bergstrom, Inc.*, IPR2012-00027, Paper 26 at 4-5 (PTAB June 11, 2013). The Board considers “whether the petitioner articulated a meaningful distinction in terms of relative strengths and weaknesses with respect to application of the prior art disclosures to one or more claim limitations.” *EMC Corp. v. Personal Web Techs., LLC*, IPR2013-00087, Paper 25 at 3-4 (PTAB June 5, 2013). The petitioner has the burden of showing that “meaningful distinction.” *ScentAir Techs., Inc. v. Prolitec, Inc.*, IPR2013-00180, Paper 18 at 3-4 (PTAB Aug. 26, 2013).

Ground D is redundant with Ground C. Both grounds are based on the same primary reference—*Reho*—and point to the same teachings. *See* Pet. at 25-27 & 34-36. Both grounds propose the same modification of *Reho* based on teachings of secondary references—*Muir* and *Greene*—that are cumulative. *See id.* at 28-29 & 36-37; *see also supra* Part V.B.3.a. And SST presents in each ground the same conclusory statements for obviousness. *See* Pet. at 29-30 & 37-38. Yet SST does

not explain “a meaningful distinction” for redundant Ground D. Because SST fails to articulate why Ground D is not redundant, the Board should deny it.

C. SST’s Proposed Anticipation Ground Based on *Reho* (Ground E)

Even though SST admits that *Reho* fails to disclose the claimed substantially moisture-impermeable “material being located on said first surface” of the electrically conductive fabric, it concludes with a last-ditch anticipation challenge to claims 1-3 based on *Reho*. Pet. at 41-46 (Ground E). This ground—like all the others presented in the Petition—falls well short of establishing a reasonable likelihood that any of the challenged claims would be found unpatentable.

1. SST Fails to Present a Complete and Legally Proper Inherency Analysis Based on *Reho*

SST’s anticipation argument based on *Reho* rests on a flawed inherency theory. “Under the doctrine of inherency, if an element is not expressly disclosed in a prior art reference, the reference will still be deemed to anticipate a subsequent claim if the missing element ‘is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.’” *Rosco, Inc. v. Mirror Lite Co.*, 304 F.3d 1373, 1380 (Fed. Cir. 2002) (citation omitted). “Inherent anticipation requires that the missing descriptive material is ‘necessarily present,’ not merely probably or possibly present, in the prior art.” *Trintec*, 295 F.3d at 1295 (citation omitted). As explained below, SST’s inherent anticipation argument fails for a number of reasons.

a. SST conclusory statements do not meet the legal requirements for inherency or comply with the Board’s requirements to sustain its anticipation ground

SST presents in its Petition conclusory statements—without proper or sufficient analysis and evidentiary bases—that *Reho* inherently discloses a moisture-impermeable material being “located on” a first surface of an electrically conductive fabric for application to skin. For example, SST contends that

the presence of the moisture impermeable material on or over, adjacent to, touching, in electrical communication with, or embedded in the first or skin-facing surface of the fabric electrode *is inherent even in the expressly disclosed embodiments of Reho* wherein the material that is substantially impermeable to moisture is placed on top of the electrode, rather than on the side that faces the skin to which the electrode is to be applied.

Pet. at 44-45 (emphasis added). Notwithstanding SST’s application of an unreasonable interpretation for “located on,” (*see supra* Part IV.C.), SST fails to explain how a moisture-impermeable material located on a first surface of an electrically conductive fabric for application to skin is “*necessarily present*” in *Reho* and would be so recognized by a POSITA. *See Rosco*, 304 F.3d at 1380 (emphasis added). SST also swiftly concludes that “it is clear that such [moisture-impermeable material] *is inherently located on the first surface* of the electrode due to the porosity of a fabric electrode.” Pet. at 46 (emphasis added). But again,

SST does not assert or explain how and why a moisture-impermeable material located on the first surface of the electrode is “necessarily present” in *Reho* and would be so recognized by a POSITA, or articulate how that missing feature is “necessarily present” in *Reho* due to an alleged porosity of a fabric electrode.

SST briefly describes experiments conducted to allegedly “confirm that at least a portion of the substantially impermeable seal layer of the sensor is embedded in or ‘located on said first surface.’” *Id.* at 45. SST, however, neglects any explanation of how these experiments show that a moisture-impermeable material located on the first surface of an electrically conductive fabric is “necessarily present” in *Reho* and would be so recognized by a POSITA. Instead, by SST’s own admissions, these experiments show—at most—that a “moisture-impermeable layer . . . *was able to* ‘leach’ through the pores in the electrically conductive fabric (the electrode) and was found to be present on the first or skin-facing surface.” Pet. at 45 (emphasis added); *see also* Ex. 1014, ¶ 36 (“*The objective of these experiments was to determine whether or demonstrate that the substantially impermeable layer . . . is able to* ‘leach’ or pass through the pores in the electrically conductive fabric (the electrode) and is thus found to be present on the skin-facing surface” (emphases added)). The mere assertion that the experiments were “able to” meet a claim limitation under certain circumstances falls well short of establishing inherent anticipation. *Bettcher Indus., Inc. v. Bunzl*

USA, Inc., 661 F.3d 629, 639 (Fed. Cir. 2011) (“Inherency, however, may not be established by probabilities or possibilities” (internal quotations omitted)).

The Petition also lacks any citation to, or analysis of, teachings in *Reho* to support SST’s conclusion that *Reho* inherently discloses a moisture-impermeable material being “located on” the first surface of an electrically conductive fabric. SST cites only to the declaration of Dr. Jafari (Ex. 1012) and the declaration of Mr. Barber (Ex. 1014). *See* Pet. at 44-46. But in citing Dr. Jafari’s declaration, SST neglects any explanation of the significance of the citations or how the citations support the inherency argument. This is not sufficient to sustain SST’s inherent anticipation challenge. 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.22(a)(2); 77 Fed. Reg. at 48620.

Furthermore, the cited testimony from the declarations, like the Petition, does not present proper or sufficient analysis and factual bases to establish inherency. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (“[T]he extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference’” (citation omitted)). Nowhere in the cited paragraphs of Dr. Jafari’s declaration does it explain how a moisture-impermeable material located on the first surface of the electrode is “necessarily present” in *Reho* and would be so recognized by a POSITA. For example, Dr.

Jafari appears to opine that the contact layer of *Reho* “inherently [has] opening or interstitial spaces.” Ex. 1012, ¶¶ 204-205. He then overreaches by concluding

it is inherent that portions of the seal layer formed of a material such as silicone rubber when applied to the back of the relatively thin, woven or somewhat porous contact layer of the sensor will naturally flow into and fill at least some of the openings or interstitial spaces between the individual fibers of the fabric-like woven sensor and thus be embedded in and to some extent present on the ‘first surface.’

Id., ¶ 206 (emphasis added). Dr. Jafari’s testimony is insufficient as it neglects any argument or explanation on how and why the seal layer of silicone rubber would “necessarily” be located on the first surface when applied to the back of the allegedly thin, woven or somewhat porous contact layer. *See, e.g., Ericsson Inc. et al. v. Intellectual Ventures I LLC*, IPR2014-00958, Paper 11 at 13-14 (PTAB Nov. 11, 2014) (denying institution on inherent anticipation ground where expert testimony did not explain how and why missing claim feature is necessarily present in prior art). Nor does Dr. Jafari’s cited testimony point to any factual evidence in *Reho* or elsewhere in the record to support the conclusion that the seal layer is even “present on” the first surface merely because the seal layer is “applied to the back” of an allegedly thin, woven, or somewhat porous contact layer. *See* 37 C.F.R. § 42.65(a).

Much of the cited testimony of Dr. Jafari instead summarily concludes that *Reho* inherently discloses the missing feature without meaningful discussion on *Reho*'s teachings supporting that conclusion. *See, e.g.,* Ex. 1012, ¶ 138 (“[E]vidence of the ‘state of the art’ in and around 2002 as well as experimental data demonstrate that . . . ‘located on said first surface’ . . . is inherent”), ¶¶ 166 & 201 (same), ¶ 194 (“[T]he presence of the moisture impermeable material on . . . the first or skin-facing surface . . . is inherent”). Likewise, the cited testimony from Mr. Barber lacks any analysis on how and why a moisture-impermeable material located on the first surface is “necessarily present” in *Reho* and would be so recognized by a POSITA. *Cf.* Ex. 1014, ¶ 24 (concluding that “it is inherent”), ¶ 25 (“[T]o confirm the inherency”), ¶ 36 (“[T]he substantially impermeable layer . . . is able to . . . be present on the skin-facing surface”), ¶¶ 46-47 (concluding that experiments allegedly confirm a moisture-impermeable material located on the first surface), ¶ 51 (concluding *Reho* inherently has a moisture-impermeable material “in and at the surface”).

b. SST formulates an inherency argument based on information contrary to, or absent from, the teachings of *Reho*

SST attempts to substantiate its inherency argument by presenting and crafting information and circumstances neither disclosed nor suggested in *Reho*. Inherency mandates, however, that “the missing element is necessarily present *in*

the thing described in the reference.” *Rosco*, 304 F.3d at 1380 (emphasis added) (internal quotations omitted). Contrary to SST’s assertions, Mr. Barber’s experiments “to confirm inherency” were *not* conducted “according to and consistent with the teaching of *Reho*.” Pet. at 45. These experiments included the steps of:

- “applying pressure when applying the silicone rubber directly to the fabric,” Ex. 1014, ¶ 39;
- “a screen-printing process . . . to allow[] the high-viscosity silicone rubber to flow somewhat evenly onto the fabric as the pressure is increased,” *id.*, ¶¶ 39-40;
- “curing the silicone rubber at room temperature . . . , [and] the silicone rubber was cured onto the fabric,” *id.*, ¶ 41; and
- “pre-curing the silicone through the application of an elevated temperature,” *id.*

Yet Mr. Barber’s declaration and the Petition fail to cite or explain where in *Reho* it teaches to apply pressure, screen-print, pre-cure, or cure silicone rubber onto a conductive fabric. Nor does the declaration or the Petition point to any evidence or articulate that a POSITA would so read *Reho*.

Indeed, *Reho* does not disclose or suggest any of these steps. Instead, *Reho* teaches that “[t]he conductive fibres in the contact layer can be sewn into the fabric surface [of a garment] The moisture layer can also be *sewn in the fabric*, or connected to the fabric *by means of a sticker tape*.” Ex. 1003, p. 3, ll. 18-25

(emphases added). SST's inherency argument therefore fails as a matter of law because it is formulated from information and scenarios not taught by *Reho. Rosco*, 304 F.3d at 1380-81 (reversing finding of anticipation by inherency because prior art reference did not disclose process that purportedly results in the missing claim feature nor was there any evidence that a POSITA would so read the prior art reference); *see also Wesley Jessen Corp. v. Bausch & Lomb, Inc.*, 209 F. Supp. 2d 348, 393 (D. Del. 2002) ("The fact that Example [from the prior art reference] can be substantially altered to achieve materials that sometimes fall within the [asserted] patent does not establish anticipation"), *aff'd*, 56 F. App'x 503 (Fed. Cir. 2003); *Daicel Corp. v. Celanese Int'l Corp.*, IPR2015-00173, Paper 13 at 19-21 (PTAB April 1, 2015) (denying institution based on inherency where petitioner did not show that declarant's experiments were described in prior art reference). By ignoring the express teachings of *Reho* and substituting instead unsupported conditions in its experiments, SST allegedly shows a silicone rubber "present and visible on the front side of the fabric electrode," (Ex. 1014, ¶ 43), that merely "may result from a given set of circumstances" but is not sufficient to establish inherent anticipation. *Bettcher*, 661 F.3d at 639 (internal quotations omitted).

SST otherwise impermissibly relies on hindsight for its inherency theory. For example, SST appears to rely on purported teachings of the '951 patent as a basis to support its inherency argument. Pet. at 45 ("The electrode configuration as

disclosed in the '951 Patent will require resistive coupling with the skin This observation extrapolates that non-conductive moisture impermeable and conductive materials must be interleaved"). Moreover, SST's experiments used "silicone rubber loaded with carbon black . . . applied to the 'top' or backside of the fabric electrode." Ex. 1014, ¶ 36. *Reho* does not teach this feature, but as acknowledged by SST, the '951 patent does. *See id.*, ¶ 34.

VI. CONCLUSION

SST has failed to establish a reasonable likelihood that it will prevail with respect to at least one of the claims challenged in the Petition, and the Board should deny *inter partes* review on all grounds.

Respectfully submitted,

Dated: April 8, 2016

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing PATENT OWNER'S PRELIMINARY RESPONSE was served electronically on April 8, 2016, on counsel of record for the Petitioner as follows:

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