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Paper 70
Date: June 6, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

YITA LLC AND JINRONG (SH) AUTOMOTIVE ACCESSORY INDUSTRIAL DEVELOPMENT CO. LTD.,
Petitioner,

v.

MACNEIL IP LLC,
Patent Owner.

IPR2023-00172
Patent 8,899,655 B1

Before JAMES A. WORTH, MICHAEL L. WOODS, and ARTHUR M. PESLAK, *Administrative Patent Judges.*

PESLAK, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

ORDER
Denying Petitioner's Motion to Exclude (Paper 46)
Denying Patent Owner's Motion to Exclude (Paper 47)
37 C.F.R. § 42.64(c)

I. INTRODUCTION

Yita LLC and Jinrong (SH) Automotive Accessory Industrial Development Co. Ltd. (collectively "Petitioner") filed a Petition pursuant to 35 U.S.C. §§ 311–319 requesting an *inter partes* review of claims 1–6 ("the Challenged Claims") of U.S. Patent No. 8,899,655 B1 ("the '655 patent," Ex. 1001). Paper 1 ("Pet."). Petitioner filed a Declaration of Dan Perreault in support of the Petition. Ex. 1003. Patent Owner filed a Preliminary Response. Paper 6 ("Prelim. Resp."). On June 13, 2023, we instituted this *inter partes* review as to all challenged claims and all grounds presented in the Petition. Paper 12 ("Dec.").

After institution, Patent Owner filed a Response to the Petition ("PO Resp.") supported by a Declaration of Dr. Thomas R. Kurfess, a Declaration of Ray Sherman, and a Declaration of Ryan Granger. Paper 24; Ex. 2023; Ex. 2055; Ex. 2083. Petitioner filed a Reply ("Pet. Reply") supported by a second Declaration of Dan Perreault and a Declaration of Scott W. Cragun. Paper 33; Ex. 1055; Ex. 1056. Patent Owner filed a Sur-reply ("Sur-reply"). Paper 42.

Patent Owner filed a Motion to Exclude ("PO MTE") Exhibits 1055–1057 and 1061–1132. Paper 47, i. Petitioner filed an opposition ("PO MTE Opp."). Paper 48. Patent Owner filed a reply ("PO MTE Reply"). Paper 53. As explained below, we deny Patent Owner's Motion to Exclude.

Petitioner filed a Motion to Exclude ("Pet. MTE") Exhibits 2108–2112, Exhibits 2114–2118, Exhibit 2121, Exhibit 2122, Exhibits 2124–2127 and portions of Exhibit 2083. Paper 46, 1. Patent Owner filed an opposition ("Pet. MTE Opp."). Paper 49. Petitioner filed a Reply ("Pet. MTE Reply"). Paper 52. As explained below, we deny Petitioner's Motion to Exclude.

With our authorization, Patent Owner filed a paper identifying evidence filed by Petitioner with the Reply, which Patent Owner asserts exceeds the proper scope of the Reply. Paper 50. Petitioner filed a similar paper in connection with the Sur-reply. Paper 51.

An oral hearing was held on March 19, 2024, and the transcript is entered into the record. Paper 61 ("Tr.").

With our authorization, the parties filed post-hearing briefs addressing whether collateral estoppel applies to Patent Owner's contentions concerning the secondary considerations of commercial success and industry praise. Papers 63, 65. Each party filed a reply. Papers 67, 68. We address this issue in our analysis of claim 6.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision, issued pursuant to 35 U.S.C. § 318(a), addresses issues and arguments raised during the trial in this *inter partes* review. For the reasons discussed below, we determine that Petitioner has proven by a preponderance of the evidence that claims 1–6 of the '655 patent are unpatentable. *See* 35 U.S.C. § 316(e) (2018) ("In an inter partes review instituted under this chapter, the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.").

A. Related Matters

The parties identify the '655 patent as the subject of *MacNeil Automotive Products Limited et al. v. Yita LLC et al.*, No. 2:20-cv-00278 (W.D. WA) and *MacNeil Automotive Products Limited et al. v. Jinrong (SH)*

Automotive Accessory Development Co., Ltd. et al., No. 2:20-cv-00856 (W.D. WA).[1] Pet. 65; Paper 3, 2; *see also* Prelim. Resp. 1–2.

The parties state that the '655 patent relates to U.S. Patent No. 9,138,917, which is challenged in co-pending IPR2023-00173; U.S. Patent No. 8,382,186, which was challenged in IPR2020-01138 (Institution Denied); IPR2022-01139 (Final Written Decision on Jan. 3, 2022) ("the 1139 IPR"); and U.S. Patent No. 8,833,834, which was challenged in IPR2020-01140 (Institution Denied) and IPR2020-01142 (Final Written Decision on Jan. 3, 2022). Pet. 65–66; Paper 3, 2–3. In *Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356 (Fed. Cir. 2023) ("*Yita I*"), the United States Court of Appeal for the Federal Circuit reversed the judgment of the Board in IPR2020-01139 and affirmed the judgment of the Board in IPR2020-01142. *Id.* at 1366.

B. Real Parties in Interest

Petitioner identifies itself, ShengTian (SH) Industrial Development Co., Ltd., and Hong Kong Yinta International Trade Company Limited as real parties in interest. Pet. 65. Patent Owner identifies itself, MacNeil Automotive Products LLC (formerly known as MacNeil Automotive Products, Limited), and WeatherTech Direct, LLC as real parties in interest. Paper 3, 2.

C. The '655 Patent

The '655 patent is titled "Manufacturing Vehicle Floor Trays." Ex. 1001, code (54). The '655 patent issued on December 2, 2014, from Application No. 14/452,637, which was filed on August 6, 2014. *Id.* at

[1] These cases have been consolidated as Case No. C20-278 (W.D. WA). *See* Ex. 1049.

codes (45), (21), (22). Application No. 14/452,637 claims priority through a series of continuation applications to Application No. 10/976,441, filed October 29, 2004, now Patent No. 7,316,847. *Id.* at code (60).

The '655 patent relates to a process for manufacturing vehicle floor trays by constructing an electronic model of the vehicle foot well surface, which in turn is used to construct an electronic three-dimensional image of the vehicle floor tray that is used to make a mold to manufacture the vehicle floor tray. Ex. 1001, code (57). The '655 patent explains that conventionally, vehicle owners attempted to protect the vehicle interior using vehicle floor mats, which moved easily, causing the intended protected area not to be protected, occluded the gas, brake or clutch pedals, or bunched up or undesirably folded over. *Id.* at 1:26–39. Further, the '655 patent explains that it is common for floor mats to have portions intended to lie against the front surfaces of the foot wells and that mats that conform to the bottom surface of the foot well stay in place better. *Id.* at 1:42–49.

The '655 patent explains that vehicle floor trays having sidewalls have been used to offer enhanced protection to the surfaces surrounding the vehicle floor, but because vehicle foot wells have three-dimensional concave shapes, the fit of conventional vehicle floor trays "to the surfaces that they are supposed to protect has been less than optimum." Ex. 1001, 1:55–63. The '655 patent explains that this is because fitting a floor tray to the three-dimensional surface of a vehicle foot well is difficult, and as a result, "the products currently in the marketplace have limited consumer acceptance because of their loose fit inside the foot well" and due to the tendency to "noticeably deform when the occupant's foot contacts it." *Id.* at 1:67–2:7.

According to the '655 patent, there was a need for a better-fitting floor tray that stays in place, and provides a more solid foot feel. Ex. 1001, 2:9–13. The '655 patent describes a process for manufacturing a vehicle floor tray that includes digitally measuring the three-dimensional position of a plurality of points of a vehicle foot well for which the vehicle floor tray is to be provided. *Id.* at 5:1–5. The points are stored in a memory, then used to construct an electronic model of the vehicle foot well surface. *Id.* at 5:5–7. The electronic model of the vehicle foot well surface in turn is used to construct an electronic three-dimensional image of the vehicle floor tray. *Id.* at 5:7–10. From this image, a vehicle tray data file is created and used to make a vehicle tray mold. *Id.* at 5:10–12. The vehicle floor tray is manufactured by molding polymer material in the mold created using the vehicle tray data file. *Id.* at 5:12–13.

Figure 1 of the '655 patent is reproduced below.

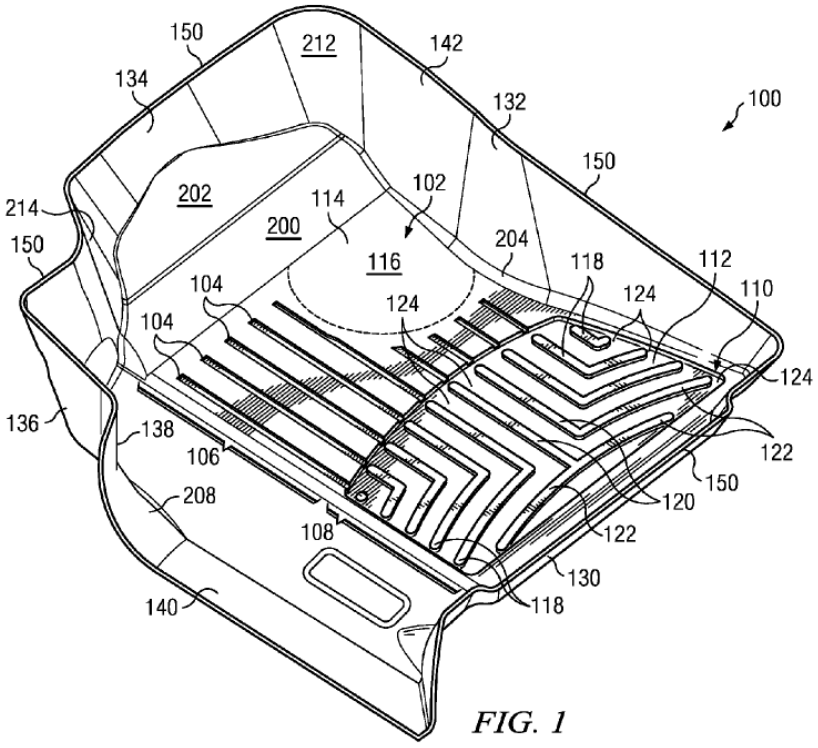

FIG. 1

Figure 1 "is an isometric view of one embodiment of a vehicle floor tray." Ex. 1001, 5:59–60. Floor tray 100 includes floor panel 102, which includes a plurality of longitudinal parallel straight channels 104 that are disposed in forward region 106 of floor panel 102, and that channel liquid runoff from the user's feet to reservoir 110. *Id.* at 6:46–50, 7:1–2. Disposed around floor panel 102 are a series of upstanding side panels, including back panel 130 that is disposed adjacent the bottom of a vehicle front seat, inner side panel 132 that closely fits a transmission tunnel, forward panel 134 that closely conforms to a vehicle firewall, outer side panel 136, and door sill panel 140. *Id.* at 7:47–59. Because tray 100 closely fits to the vehicle foot well in which it is placed, panels 130, 132, 134, 136, and 140 "are all formed so as to as closely conform to the vehicle surfaces against which they are positioned, to an extent not found in prior art vehicle floor trays." *Id.* at 8:8–12. The '655 patent explains that close conformance of the tray side panels to the surfaces of the vehicle foot well "produces a protective tray which will not be horizontally displaced under lateral forces created by the occupant's feet, or by the motion of the vehicle." *Id.* at 8:25–28.

Figure 8 of the '655 patent is reproduced below.

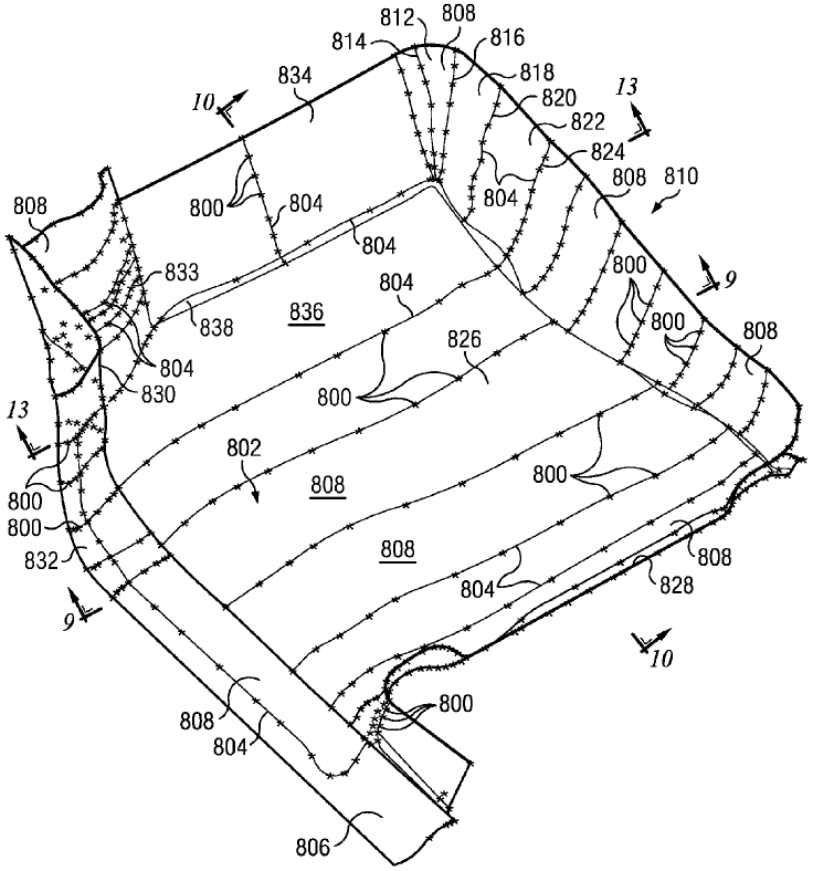

FIG. 8

Figure 8 is an isometric and schematic view of a digitally acquired vehicle foot well floor surface used to make floor tray 100. Ex. 1001, 6:7–9. In the process for making a vehicle floor tray, points on the vehicle foot well for which the floor tray is to be manufactured are digitally measured, captured, and stored in a file. *Id.* at 16:38–53. Figure 8 depicts representative ones of these points as small "x"s 800, on surface 802. *Id.* at 16:59–60. According to the '655 patent, different "lines" of these points are connected together by B-splines 804 that are used to estimate all of the points on the line other than the captured data points of that line. *Id.* at 16:66–17:3. Once splines 804 have been assembled, areas between each pair of parallel splines 804 are lofted to create different areal segments 808

until that surface of the foot well is entirely recreated. *Id.* at 17:14–18. The '655 patent explains that the resultant reconstructed vehicle foot well surface 802 is used "to construct a vehicle floor tray that fits the surface 802 to an enhanced degree of precision." *Id.* at 17:30–33. The resultant tray data file "is a complete representation of both the upper and lower surfaces of the floor tray," and "is used to make a commercial mold for producing the vehicle floor trays." *Id.* at 19:7–9, 19:20–21. According to the '655 patent, "[t]hree-dimensional vehicle floor trays for many different vehicle models can be quickly and accurately manufactured using this method." *Id.* at 19:24–26.

D. Illustrative Claim

Claim 1, the only independent claim challenged, is representative of the claimed subject matter, and is reproduced below with Petitioner's annotations for ease of reference:

> 1. [Preamble] A process for manufacturing a vehicle floor tray, comprising the steps of:
>
> [1a] digitally measuring the three-dimensional position of a plurality of points on a substantially carpeted surface of a vehicle foot well for which the vehicle floor tray is to be provided;
>
> [1b] storing said points in a memory;
>
> [1c] using the stored points to construct an electronic model of the vehicle foot well surface;
>
> [1d] using the electronic model of the vehicle foot well surface to construct an electronic three-dimensional image of the vehicle floor tray;
>
> [1e] creating a vehicle tray data file from the electronic three-dimensional image of the vehicle floor tray;
>
> [1f] using the vehicle tray data file to make a vehicle tray mold;
>
> and

[1g] manufacturing the vehicle floor tray by molding polymer material in the mold.

Ex. 1001, 19:46–20:2; Pet. 18–29.

E. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–6 would have been unpatentable on the following grounds (Pet. 15):

Claim(s) Challenged	35 U.S.C. §[2]	Reference(s)/Basis
1, 2	103(a)	Stanesic,[3] Rothkop,[4] Cicotte[5]
3	103(a)	Stanesic, Rothkop, Cicotte, Lee[6]
4	103(a)	Stanesic, Rothkop, Cicotte, Fisker[7]
5	103(a)	Stanesic, Rothkop, Cicotte, Gruenwald[8]
6	103(a)	Stanesic, Rothkop, Cicotte, Fu[9]

[2] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), included revisions to 35 U.S.C. § 103 that became effective after the effective filing date of the Challenged Claims. Therefore, we apply the pre-AIA version of 35 U.S.C. § 103.
[3] U.S. Patent No. 6,817,649 B1 (issued Nov. 16, 2004) (Ex. 1005, "Stanesic").
[4] U.S. Patent No. 6,144,890 (issued Nov. 7, 2000) (Ex. 1006, "Rothkop").
[5] U.S. Patent No. 6,279,425 B1 (issued Aug. 28, 2001) (Ex. 1007, "Cicotte").
[6] U.S. Patent Publication No. 2001/0020222 A1 (published Sept. 6, 2001) (Ex. 1008, "Lee").
[7] International Publication No. WO 02/071794 A1 (published Sept. 12, 2002) (Ex. 1009, "Fisker").
[8] G. Gruenwald, "Thermoforming, A Plastics Processing Guide," 2nd Edition, Technomic Publishing Company, Inc. (1998) (Ex. 1010, "Gruenwald").
[9] U.S. Patent Publication No. 2003/0074174 A1 (published Apr. 17, 2003) (Ex. 1011, "Fu").

II. ANALYSIS

A. Overview

Petitioner bears the burden of establishing the unpatentability of the Challenged Claims by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). This burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

The Supreme Court explained in *KSR International Co. v. Teleflex Inc.* that

> [o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir.

2006) ("[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 conclusion of obviousness." (alteration in original))).

"Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact." *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted). "[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan 'would have had a reasonable expectation of success from doing so.'" *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art "would have had a bachelor's degree in mechanical engineering, industrial design, or a closely related field, or equivalent formal training, education, or practical experience in a field relating to product design, CAD, or manufacturing." Pet. 13 (citing Ex. 1003 ¶¶ 27–28). Petitioner further contends that the person of ordinary skill in the art "would also have a minimum of three to five years of experience in plastics engineering, CAD, manufacturing, plastic product design, or a related industry," but that "a higher level of training or practical experience might make up for less education, and vice-versa." *Id.*

Patent Owner contends that a person of ordinary skill in the art would have "a Bachelor of Science in mechanical engineering, industrial design, or

a closely related field, or equivalent formal training education or practical experience in a field relating to product design, CAD, or manufacturing." PO Resp. 9. Patent Owner further contends that such an ordinarily skilled artisan "would also have two or more years of manufacturing/industrial experience in the automotive aftermarket art." *Id.*

Petitioner replies that its "level of skill is more appropriate given the claims' focus on three-dimensional scanning and modeling (which apply to many industries)." Pet. Reply 9 (citing Ex. 1001, claim 1; Ex. 1055 ¶¶ 7–13). According to Petitioner, however, "the claims would have been obvious even under [Patent Owner]'s proposed skill level." *Id.* (citing Ex. 1055 ¶ 13). Petitioner refers to Dr. Kurfess's declaration testimony as admitting that three-dimensional scanning and modeling are pertinent to the '655 patent. *Id.* at 10 (citing Ex. 2023 ¶ 18).

In the Sur-reply, Patent Owner contends that Petitioner's definition of the level of skill in the art "is *per se* hindsight" because Petitioner cites to claim 1 for the definition. Sur-reply 5 (citing Pet. Reply 9–10). Patent Owner further contends that Mr. Sherman, "a *fact witness* with expertise in the field, personally knows the skill level of Stanesic (the inventor of Petitioner's primary reference) and how he manufactured his mat." *Id.* (citing Ex. 2055 ¶¶ 47–50, 64–71, 84).

Factors pertinent to a determination of the level of ordinary skill in the art include: (1) educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of workers active in the field. *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–97 (Fed. Cir. 1983) (citing

Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc., 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case. *Id.* Moreover, these factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. Ltd, Inc. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). In determining a level of ordinary skill, we also may look to the prior art, which may reflect an appropriate skill level. *Cf. Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Petitioner supports its proposed level of skill in the art with the testimony of Mr. Perreault. Pet. 13 (citing Ex. 1003 ¶¶ 27–28). Petitioner also refers to the testimony of Dr. Kurfess, who testifies that he has "at least ordinary skill in the arts pertinent to the '655 Patent and the '917 Patent," i.e., "three-dimensional scanning, three-dimensional modeling, thermoforming, prototyping, computer-aided design and manufacturing, and the design and manufacture of automotive interior protective coverings in the automotive aftermarket." Ex. 2023 ¶ 18; Pet. Reply 10 (citing the same). Mr. Sherman concurs with Dr. Kurfess's proposed level of skill. Ex. 2055 ¶ 19.

When comparing Dr. Kurfess's description of the level of skill in the art with Petitioner's definition, we find that the differences are minimal and not material to the determination of patentability in this case. Further, Patent Owner does not argue that its proposed level of skill, if adopted, will affect any of our determinations. Tr. 24:9–24. Additionally, because Mr. Sherman concurs with Dr. Kurfess's proposed level of skill, Patent Owner fails to adequately explain the relevance of Mr. Sherman's testimony concerning

"the skill level of Stanesic . . . and how he manufactured his mat" (Sur-reply 5) to the skill level of a person of ordinary skill in the art in 2004.

For the foregoing reasons, we adopt Petitioner's level of ordinary skill in the art, with the exception of the open-ended term "a minimum of" because it is supported by Mr. Perreault's testimony, not materially inconsistent with Dr. Kurfess's description of the level of skill, and appears consistent with the problems addressed in the '655 patent and the prior art of record. Our determinations set forth herein would not differ if we adopted Patent Owner's level of skill in the art.

C. Claim Construction

We apply the same claim construction standard used by Article III federal courts and the International Trade Commission, both of which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 42.100(b) (2019). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art at the time of the invention. *See id.*; *Phillips,* 415 F.3d at 1312–14. In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

If the specification "reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess[,] . . . the inventor's lexicography governs." *Phillips*, 415 F.3d at 1316 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Another exception to the general rule that claims are given their ordinary and customary meaning is "when the patentee disavows the full scope of a claim term either in the specification or during

prosecution." *Uship Intellectual Props., LLC v. United States*, 714 F.3d 1311, 1313 (Fed. Cir. 2013) (quoting *Thorner v. Sony Comput. Entm't. Am., LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)).

Petitioner contends that no claim "terms need an explicit construction to resolve the controversy between the parties." Pet. 13.

Patent Owner contends that it "acted as its own lexicographer with regard to [the term 'vehicle floor tray'] in the '655 Patent." PO Resp. 10. According to Patent Owner, this term should be construed "as a vehicle floor cover that is: 'deeply concave and which has at least two sidewalls that not only are joined to the floor panel but also to each other.'" *Id.* at 11.

Patent Owner contends that "the industry constantly conflates the two terms ['floor mat' and 'floor tray'], even in relation to PO's own invention." PO Resp. 10 (citing Dec. 11–14). Patent Owner further argues that it "recognizes the Board's point that it refers to 'mat' in its 'Summary of the Invention,' . . . but respectfully avers that this related only to the compositional part of the invention," not to the process description where "the word 'mat' is intentionally omitted." *Id.* at 10 n.3 (citing Ex. 1001, cols. 16–19).

Patent Owner contends that certain parts of the Specification describe "at least two panels are required or referred to in the plural." PO Resp. 11 (citing Ex. 1001, 1:58–59, 5:28–32, 7:47–59, 8:47–9:8). Patent Owner also contends that other parts of the Specification describe that "the tray's central panels and at least two sides are joined together." *Id.* (citing Ex. 1001, 5:29–31, 8:3–7, 8:48–50, 8:56–64, 8:65–9:8, 18:1–4).

Patent Owner next contends that the prosecution history also supports its construction. PO Resp. 10. Patent Owner points to a response to an

office action where it distinguished the Stanesic reference relied on by Petitioner. *Id.* at 10–11 (citing Ex. 2097, 11). The response stated that "[T]he difference between a floor mat and a floor tray is the preexisting concave three dimensionality of the floor tray. Unlike a floor mat, the floor tray has a predefined shape designed to specifically fit inside the foot well of a particular vehicle model." Ex. 2097, 11.

Petitioner, in turn, contends that none of Patent Owner's "cited passages provide a definition that matches MacNeil's proposed construction (which differs from its previous proposed constructions and contradicts its declarant's testimony)." Pet. Reply 7 (citing PO Resp. 10–11; Prelim. Resp. 13; Ex. 1055 ¶¶ 14–19; Ex. 2023 ¶ 24; Ex. 2097, 11). Petitioner further contends that "there is no need . . . to construe floor tray because Stanesic's disclosure meets [Patent Owner's] proposed construction." *Id.* (citing Ex. 1055 ¶¶ 19–26); *id.* at 7–9.

For the following reasons, we do not adopt Patent Owner's proposed construction.

Claim 1 recites a "vehicle floor tray" but does not recite any specific structural details of the tray other than the floor tray will be manufactured by "molding polymer material." Ex. 1001, 19:46–20:2. We find that the claim language does not recite or suggest the aspects of a vehicle floor tray included in Patent Owner's proposed construction.

In order to establish lexicography, "a patentee must 'clearly set forth a definition of the disputed claim term' other than its plain and ordinary meaning." *Thorner*, 669 F. 3d at 1365. Further, "[i]t is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must 'clearly express an intent' to

redefine the term." *Id.* Examples of clear lexicography are when the specification describes that a term "means" or is "defined." *See id.* at 1366.

Patent Owner's proposed construction provides that the vehicle floor tray is "deeply concave" but fails to direct us to any part of the Specification using the term "deeply concave" let alone a clearly stated definition of "deeply concave" in the context of a vehicle floor tray. The response to office action, cited by Patent Owner, refers to the tray as concave, not deeply concave, and thus, does not support Patent Owner's proposed construction. Ex. 2097, 11. For these reasons, to the extent that Patent Owner relies on the prosecution history as a disclaimer of the full scope of claims, we find that the cited response to the office action does not constitute "a clear and unmistakable disclaimer of claim scope." *Uship,* 714 F.3d at 1315.

Further, Patent Owner does not explain how a "deeply concave" vehicle floor tray is consistent with the Specification's description that the tray comprises "a corresponding *substantially convex* outer floor tray surface." Ex. 1001, 4:63–65 (emphasis added); PO Resp. 10–11; *see also* Ex. 2083 ¶ 35 (Mr. Granger testifying, "[t]he deeply concave three-dimensional model of the vehicle foot well surface is used to create a deeply convex lower or outer surface of the vehicle floor tray."), ¶ 39 (Mr. Granger discussing a "predominantly convex model of the lower/outer surface of the floor tray").

In the Summary of the Invention, the '655 patent describes "[a]ccording to one aspect of the invention, there is provided a vehicle floor cover, mat or tray which is removably installable by a consumer." Ex. 1001, 2:50–52. This statement in the Summary of the Invention undercuts Patent Owner's contention that the '655 patent distinguishes between a floor mat

and a floor tray. Patent Owner attempts to minimize the import of this statement with its argument that the term "mat" does not appear in the description of the method of manufacture (PO Resp. 10 n.3). However, we find this statement, although not necessarily determinative, is relevant to our analysis because it shows that Patent Owner used the terms "tray" and "mat" interchangeably in describing the invention.

We have reviewed Patent Owner's citations to the Specification and determine that the Specification does not clearly express an intent to define the term "vehicle floor tray." There are none of the clear hallmarks of a specifically defined term such as "vehicle floor tray is defined as" or "vehicle floor tray means." Rather, Patent Owner relies on descriptions of various aspects of the embodiment of a vehicle floor tray disclosed in Figure 1 of the '655 patent. For example, the '655 patent generally describes that "[f]loor trays have sidewalls." Ex. 1001, 1:58. The '655 patent states that in an "aspect" of the invention, "a vehicle floor tray has a central panel for placement on the floor of a vehicle foot well, and at least first and second upstanding panels." *Id.* at 5:28–30. In column 7, the '655 patent describes that "[d]isposed around the central or floor panel 102 are a series of upstanding side panels, which *will vary in number and configuration from one vehicle model to the next.*" *Id.* at 7:47–49 (emphasis added). These portions of the Specification suggest that the term "vehicle floor tray" should not be limited to any particular number of side panels or any particular configuration, such as the side panels are joined to the floor panel and each other. We, thus, decline to limit the scope of claim 1 by importing aspects of this embodiment into the claim. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346–47 (Fed. Cir. 2015) (explaining

that the court "has repeatedly 'cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification'").

We determine that we need not explicitly construe "vehicle floor tray"[10] or any other claim term to resolve the parties' disputes. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Ground 1: Alleged Obviousness of Claims 1 and 2 over Stanesic, Rothkop, and Cicotte

Petitioner contends claims 1 and 2 would have been obvious over Stanesic, Rothkop, and Cicotte. Pet. 18–38. Petitioner supports its contentions with the Declaration of Mr. Perreault. Ex. 1003. Patent Owner disputes Petitioner's contentions. PO Resp. 18–45.

We begin with a brief summary of the references and then address the parties' respective contentions.

1. Stanesic (Ex. 1005)

Stanesic is titled "One Piece Molded Floor Mat for Front Floor Areas of Vehicle." Ex. 1005, code (54). Stanesic describes "[a] molded floor mat [] dimensioned to fit into the front floor compartment area of pickup trucks and other vehicles with similarly configured floors." *Id.* at 1:44–46.

Figure 2 of Stanesic is reproduced below.

[10] Patent Owner's declarant, Dr. Kurfess, bases his analysis on the "'plain and ordinary' meaning [of claim terms] to a" person of ordinary skill in the art. Ex. 2023 ¶ 117.

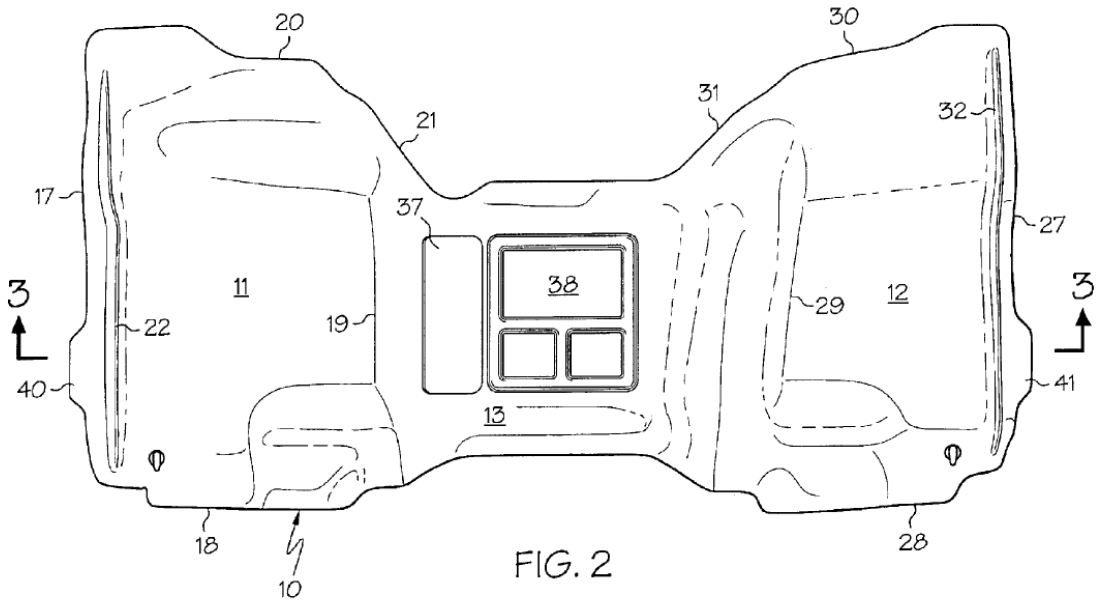

FIG. 2

Figure 2 is a top plan view of the floor mat. Ex. 1005, 1:67.

Floor mat 10 is one piece, "made from a pliable plastic material and is molded to a contour which snugly fits into and covers the driver's foot area, the front passenger's foot area and a center hump in between the two foot areas." *Id.* at 2:31–35. In particular, mat 10 has three contiguous sections, namely, driver foot area section 11, front passenger foot area section 12, and hump area section 13 connecting the driver and passenger foot area sections. *Id.* at 2:35–38. Stanesic explains that "raised wall 22 molded into the mat near and substantially parallel the first lateral edge 17 rises above the flat base 15 to create a tray-like central area in the section 11," and that a similar raised wall 32 is formed in section 12. *Id.* at 2:59–62, 3:8–10.

2. Rothkop

Rothkop is titled "Computerized Method and System for Designing an Upholstered Part." Ex. 1006, code (54). Rothkop "relates to computerized methods and systems for designing an upholstered part such as an automotive vehicle seat." *Id.* at 1:6–8. Rothkop's "system includes a data

input device for inputting seat surface data, and a memory for storing a functional interactive computer data model of the vehicle seat based on the seat surface data." *Id.* at 4:12–15.

Figure 1 is reproduced below.

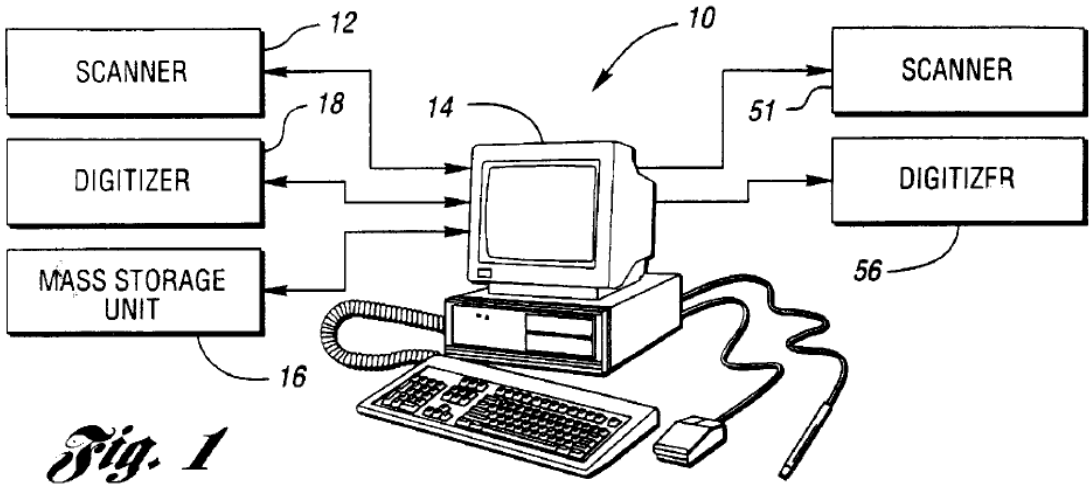

Fig. 1

Figure 1 is a schematic block diagram of a computerized system for designing an upholstered part. Ex. 1006, 4:33–35. System 10 includes a data input device, such as scanner 12 for scanning a physical part such as an existing seat, frame, or vehicle. *Id.* at 4:59–63.

Scanner 12 may be used to scan "a physical part such as an existing seat, frame or vehicle" and preferably "is a contact scanner due to the surface texture of automotive fabric." Ex. 1006, 4:61–64. Scanner 12 scans the physical part into host computer 14, which includes surfacing software for capturing the point data from scanner 12 and outputting a NURBS (Non-Uniform Rational B-spline) surface. *Id.* at 5:1–9. Rothkop explains that using "scanner 12 together with the surfacing software allow[s] one to quickly reverse engineer an existing seat." *Id.* at 5:18–19. By combining the scanned data with other data, Rothkop's system "creates a virtual, functional, interactive computer data model." *Id.* at 5:26–27.

Figure 4 of Rothkop is reproduced below.

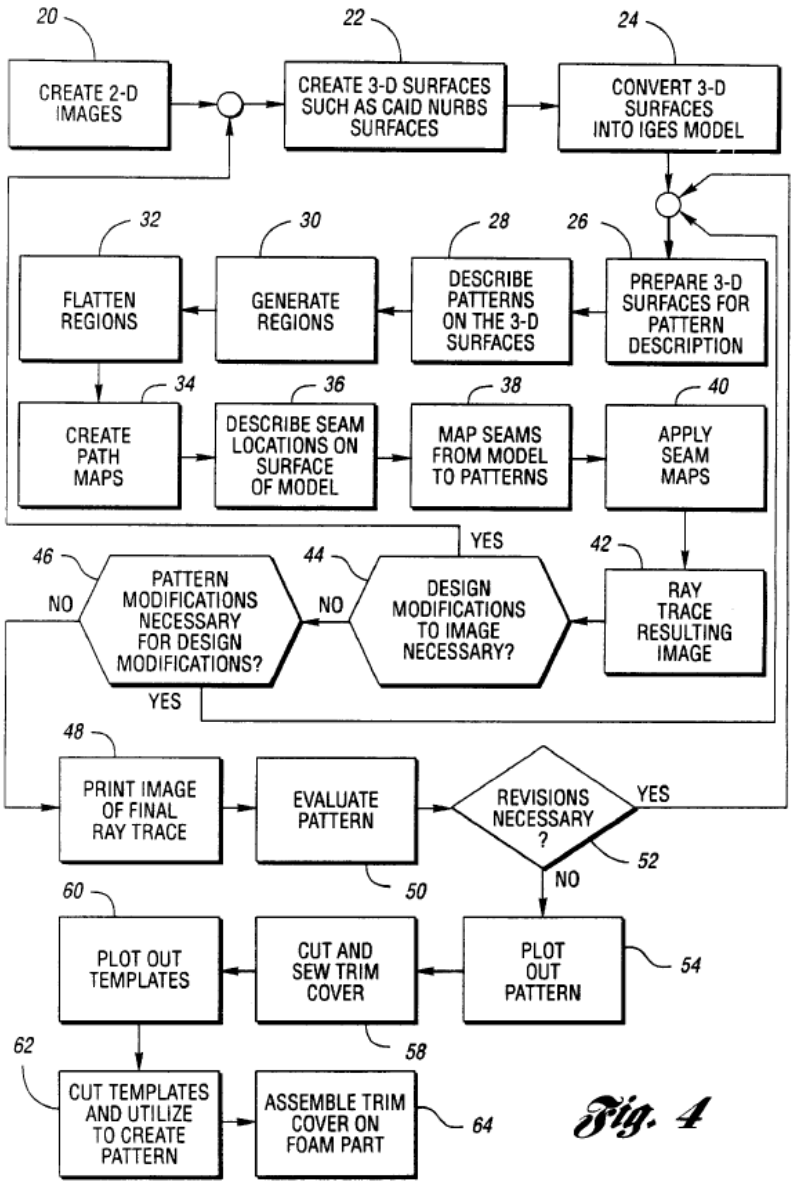

Fig. 4

Figure 4 is a block diagram flow chart illustrating a computerized method for designing an upholstered part. Ex. 1006, 4:41–42.

The method includes creating at block 20 of Figure 4, 2-D images such as fabrics using scanner 12, creating 3-D surfaces such as NURBS surfaces at block 22, and then at block 24 converting the 3-D surfaces into an IGES model by an IGES translator to enable the digital exchange of

information among computer-aided design (CAD) systems. Ex. 1006, 5:61–63, 6:15–21. Thereafter, "high resolution images are generated and displayed on the screen of the WorkStation 14," and patterns representing a seat are generated, and "the patterns are plotted out on Mylar on a plotter 56 (i.e. FIG. 1) to be used as templates for a trim cover." *Id.* at 6:24–25, 7:58–61.

Rothkop also discloses generating templates at block 60 of Figure 4 that "are cut and used to create the seat foam from bulk foam material." *Id.* at 8:1–15. Finally, "a prototype is made by assembling the trim cover on the resulting seat foam, thereby forming a finished prototype." *Id.* at 8:19–21.

3. Cicotte

Cicotte is titled "Method of Producing Tools and Dies." Ex. 1007, code (54). Cicotte "relates to a method of making die shells from a model of predetermined dimensions, where the die shells are ultimately used for stamping, casting, molding, or forging a high volume of identical parts." *Id.* at 1:8–12. Cicotte defines the term "model" as "a three-dimensional representation of an object to be replicated into a series of articles." *Id.* at 3:56–58. Cicotte explains that the model 20 is essentially a "master" for the disclosed method, and "may include an actual physical model such as a clay sculpture, or even a previously manufactured [automobile] body panel," or "may be composed of a digital data set, such as a three-dimensional CAD rendering or a list of digital data points." *Id.* at 4:19–25.

4. Claim 1

Preamble: "A process for manufacturing a vehicle floor tray, comprising the steps of:"

Petitioner contends that a person of ordinary skill in the art "would have understood Stanesic's floor mat to be a floor tray" because it "is

molded to a 'deeply contoured form' that 'snugly fits into' the driver's foot area and includes a 'tray-like central area.'" Pet. 18 (citing Ex. 1003 ¶¶ 106–111; Ex. 1005, Abstract, 2:32–35, 2:46–67, 3:42–43, Figs. 1–3). Petitioner alternately contends that "[e]ven if Stanesic's floor mat is not a floor tray, Stanesic's teachings would have suggested the use of the same contour-matching and manufacturing process for a floor tray in a different vehicle, such as one with a deeper footwell." *Id.* at 18–19 (citing Ex. 1003 ¶ 111). Petitioner further contends that Stanesic "discloses a manufacturing process by teaching that its floor tray can be made with a 'thermoplastic material' that 'can be molded to a desired deeply contoured form and such form be retained.'" *Id.* at 20 (citing Ex. 1003 ¶ 111; Ex. 1005, 3:41–44).

Patent Owner does not address the preamble. *See* PO Resp. 36–45.

We have reviewed the evidence cited by Petitioner and find that Stanesic discloses the subject matter of the preamble. Consequently, we need not determine whether the preamble is limiting.

> *[1.a] "digitally measuring the three-dimensional position of a plurality of points on a substantially carpeted surface of a vehicle foot well for which the vehicle floor tray is to be provided,"*

Petitioner asserts that the "combination of Stanesic and Rothkop discloses element 1[a]." Pet. 20 (citing Ex. 1003 ¶¶ 105, 113–125). According to Petitioner, "Stanesic discloses that its 'floor mat fits onto the carpeted floor compartment areas of the pickup truck with no substantial folds or wrinkles,'" and that "the three areas of the floor tray (driver foot area, passenger foot area, and hump area) are 'molded to closely follow the contours of the respective underlying floor areas.'" *Id.* (citing Ex. 1005, 2:31–43, 2:62–67, 3:62–64). Petitioner asserts that Stanesic "does not specify how its molds are designed and created" to fit the floor area, but that

techniques known in the art would "be used to make parts intended to mate with an existing part or surface." *Id.* at 20–21 (citing Ex. 1003 ¶¶ 114–120).

Petitioner contends that "Rothkop discloses 'computerized methods and systems for designing an upholstered part such as an automotive vehicle seat'" using "digitization of a three-dimensional object" including "'scanning a physical part such as an existing seat, frame or vehicle' and using the scanned data to design a seat, including to accurately develop foam and trim that will interface with the seat and the seat frame." Pet. 21 (citing Ex. 1003 ¶¶ 99–100; Ex. 1006, 1:6–8, 1:36–40, 4:61–63, 5:6–11, 5:55–60, 8:1–23). Petitioner further contends that Rothkop discloses "a 'portable coordinate measuring machine[]' which may be a contact scanner and measures the position of a plurality of points on a surface referred to as 'data point acquisition' in Rothkop." *Id.* (citing Ex. 1006, 1:38–49, 4:59–5:7).

Petitioner next contends that although Rothkop "focuses on 'reverse engineer[ing] an existing seat,' Rothkop more generally discloses 'scanning . . . an existing seat, frame or vehicle' and explicitly states that its methods 'can also be utilized for other upholstered parts of an automotive interior,'" which include "Stanesic's carpeted footwell." Pet. 21–22 (citing Ex. 1006, 4:62–64, 5:18–19, 8:31–37; Ex. 1003 ¶¶ 122–123) (emphasis omitted). Petitioner further contends that, based on Rothkop's teachings, the ordinarily skilled artisan "would have recognized that Rothkop's scanning could be used for scanning Stanesic's carpeted footwells as part of designing Stanesic's floor trays to meet the stated conformance in Stanesic." *Id.* at 22 (citing Ex. 1003 ¶¶ 122–124). Petitioner next contends that applying Rothkop's teachings to Stanesic "disclose[s] 'digitally measuring the three-dimensional position of a plurality of points on a substantially carpeted

surface of a vehicle foot well for which the vehicle floor tray is to be provided.'" *Id.* (citing Ex. 1003 ¶ 125).

Patent Owner does not address this limitation. *See* PO Resp. 36–45.

We have reviewed the evidence cited by Petitioner and find that the combination of Stanesic and Rothkop teaches this limitation.

[1.b] storing said points in memory;

Petitioner contends that "Rothkop discloses that its system includes 'a memory for storing a functional, interactive computer data model of the [scanned] part based on the part surface data.'" Pet. 22–23 (citing Ex. 1006, 3:17–20). Petitioner further contends that a person of ordinary skill in the art "would have understood this teaching to indicate that the memory stores the underlying part surface data points as well as the computer data model." *Id.* at 23 (citing Ex. 1003 ¶¶ 126–127).

Patent Owner does not address this limitation. *See* PO Resp. 36–45.

We have reviewed the evidence cited by Petitioner and find that Rothkop teaches this limitation.

[1.c] using the stored points to construct an electronic model of the vehicle foot well surface;

Petitioner contends that "Rothkop's 'scanner 12 scans the physical part into a host computer or engineering workstation 14.'" Pet. 23 (citing Ex. 1006, 5:1–2). Petitioner further contends that Rothkop discloses using "surfacing software" to "captur[e] the point data from the scanner 12 and outputting a NURBS . . . surface with a deviation or tolerance of no less than 0.5 mm from the scanned points so both the foam and the trim can be developed accurately." *Id.* (citing Ex. 1006, 5:6–11). Petitioner further contends that Rothkop's "computer data model of the part [is] based on the part surface data." *Id.* at 24 (citing Ex. 1003 ¶ 129; Ex. 1006, 3:17–20).

According to Petitioner, "[w]hen applied to Stanesic, Rothkop's teachings would have led a [person of ordinary skill in the art] to use the stored points from a scan of Stanesic's footwell to construct an electronic model (e.g., a NURBS surface) of the vehicle footwell surface." *Id.* (citing Ex. 1003 ¶ 129).

Patent Owner does not address this limitation. *See* PO Resp. 36–45.

We have reviewed the evidence cited by Petitioner and find that Rothkop teaches this limitation.

[1.d] using the electronic model of the vehicle foot well surface to construct an electronic three-dimensional image of the vehicle floor tray;

Petitioner contends, "Rothkop discloses using the electronic model of a seat and seat frame to construct an electronic three-dimensional image of the foam and trim." Pet. 24 (citing Ex. 1003 ¶¶ 130–131). Petitioner further contends Rothkop's "surface data is used to form an electronic model of a seat and seat frame, which is used to electronically model seat trim and seat foam that will interface with the seat and the seat frame." *Id.* (citing Ex. 1006, 5:61–8:17, Fig. 4). Petitioner further contends that "[b]ecause Rothkop also discloses scanning a seat frame and fitting the foam to the seat frame," a person of ordinary skill in the art "would have understood that the three-dimensional image of the foam is also constructed using the electronic model of the seat frame." *Id.* at 26 (citing Ex. 1003 ¶ 135; Ex. 1006, 4:61–63, 5:1–11, 5:18–28, 5:53–60, 8:1–17). Petitioner further contends that applying Rothkop's teachings to Stanesic would have led a person of ordinary skill in the art "to use the electronic model of the vehicle footwell surface (as the scanned part in place of the seat or seat frame) to construct an electronic three-dimensional image of the vehicle floor tray (as the part

being designed in place of the foam and trim)." *Id.* (citing Ex. 1003 ¶¶ 136–137).

Patent Owner provides three contentions, which we address separately.

Patent Owner first contends that "Stanesic discloses a two-dimensional floor covering more akin to a mat than a tray as described in the '655 Patent." PO Resp. 37 (citing Ex. 1005; Ex. 2055 ¶ 57). According to Patent Owner, Figures 1–3 of Stanesic show that "Stanesic is two-dimensional, and its edges do not connect to form corners." *Id.* (citing Ex. 1005, Figs. 1–3). Patent Owner further contends that an ordinarily skilled artisan "would not have digitally measured a footwell based on the disclosure of Stanesic, as it is focused on a two-dimensional surface and would not require such precision to create its two-dimensional floor mats." *Id.* at 38–39 (citing Ex. 2055 ¶ 58).

Petitioner replies that "Stanesic conclusively teaches a three-dimensional floor tray" that is "'molded to a desired *deeply contoured* form' that is retained." Pet. Reply 11 (citing Ex. 1003 ¶¶ 106–111; Ex. 1005, 3:41–43; Ex. 1055 ¶¶ 102–113).

Patent Owner's contention is unavailing for the following reasons.

First, to the extent that this contention is based on Patent Owner's proposed construction of "vehicle floor tray," it is unavailing because we do not adopt that construction.

Figure 3 of Stanesic is reproduced below:

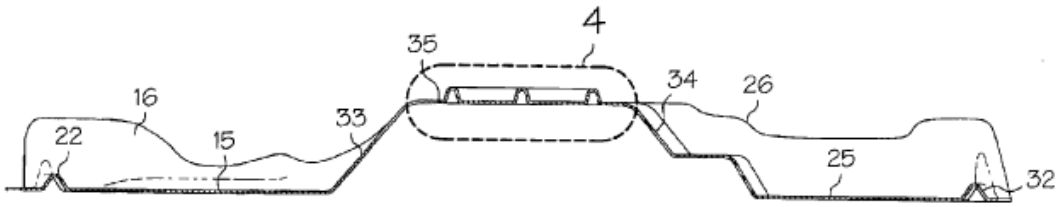

FIG. 3

Figure 3 "is a side elevation view taken in section along line 3–3" in Figure 2. Ex. 1005, 2:1–2. Stanesic's hump area section 13 (identified in Figure 2) "lies directly over the center hump of the truck" and "has a first wall 33 which rises from the interior mold crease 19 of the driver's foot area section, a second wall 34 which rises from the interior mold crease 29 of the passenger foot area section and a substantially horizontal top wall 35 therebetween." Ex. 1005, 3:12–17. We find that Figure 3 and its associated description show that Stanesic's floor mat is three-dimensional, not two-dimensional as Patent Owner asserts.

Mr. Sherman's testimony, cited by Patent Owner to support its argument that Stanesic's mat is two-dimensional, does not address Figure 3 of Stanesic or the associated description of Figure 3 quoted above. Ex. 2055 ¶¶ 57–58. Consequently, his testimony is unsupported on this point, is contrary to the disclosure of Stanesic, and is entitled to no weight.

Patent Owner's second contention is that "Rothkop discloses reverse engineering a car seat and nothing more." PO Resp. 39 (citing Ex. 1006, 5:19–20). According to Patent Owner, "this is not the same as the process claimed in the '655 Patent." *Id.* (citing Ex. 2023 ¶¶ 155, 174). Patent Owner argues that the '655 patent "claims designing a three-dimensional image of a vehicle floor tray (a not-yet existing product) from the electronic model of the vehicle footwell (an already existing, complementary product)." *Id.* (citing Ex. 1001, claim 1). Patent Owner further contends

that Rothkop "creates only two-dimensional patterns of the car seat's trim . . . that are produced and printed onto a sheet of material . . . and eventually cut out and sewn or adhered together and then pulled over the foam to recreate that existing car seat's trim and foam." *Id.* (citing Ex. 1006, 7:61–8:6); *see also id.* at 40–41 (Patent Owner arguing that Rothkop's "foam and trim" are part of the existing vehicle seat and not an interfacing part as Petitioner asserts) (citing Pet. 24; Ex. 2023 ¶ 127).

Petitioner, in turn, contends that "Rothkop never discloses scanning the foam padding." Pet. Reply 13 (citing Ex. 1055 ¶¶ 118–120; Ex. 1058, 167:6–25). According to Petitioner, "Rothkop discloses that the foam is *modeled* based on the scan of the exterior surface of the seat, going beyond 'reverse engineering' the scanned surface." *Id.* (citing Ex. 1006, 8:1–17; Ex. 1055 ¶¶ 116–125).

Patent Owner's second contention is unavailing for the following reasons.

The crux of Patent Owner's argument is that using scanned data to reverse engineer an existing product is different than what is recited in claim 1. According to Patent Owner, claim 1 recites the creation of a new product from scanned data, i.e., a vehicle floor tray that interfaces with the scanned footwell surface. PO Resp. 39–41; Sur-reply 12 ("Petitioners conflate [reverse engineering] . . . with the creation of a not-yet-existing part."); *id.* at 13 ("Petitioners refuse to acknowledge what Rothkop states: 'Use of the Scanner . . . with the surfacing software allow one to quickly *reverse engineer an existing seat*.'").

Patent Owner's argument cherry-picks Rothkop's statement regarding "reverse engineering" the entire seat while failing to directly address

Petitioner's contention. Petitioner contends that Rothkop scans the seat surface and uses that data to construct an electronic three-dimensional model of the seat foam, which interfaces with the scanned seat surface. Pet. 24 ("Rather than focusing on floor trays interfacing with a vehicle footwell, Rothkop focuses on foam and trim interfacing with a vehicle seat and a seat frame."); Pet. Reply 13; Ex. 1055 ¶ 118. The fact that the seat foam is already in existence as part of the existing seat is of little relevance to whether Rothkop teaches using scanned data of a surface to construct an electronic model of an interfacing part, i.e., the seat foam.

Patent Owner's third contention is that Rothkop "creates only two-dimensional patterns of the car seat's trim . . . that are produced and printed onto a sheet of material . . . and eventually cut out and sewn or adhered together and then pulled over the foam to recreate that existing car seat's trim and foam." PO Resp. 39 (citing Ex. 1006, 7:61–8:6). Patent Owner argues that "Rothkop explicitly states its method begins with a two-dimensional image." *Id.* (citing Ex. 1006, 6:15–16, Fig. 4). Patent Owner further contends that "Rothkop then states, '[a]t block 22, 3-D surfaces are created . . . [a]t block 24, the 3-D surfaces are converted into an IGES model.'" *Id.* at 40 (quoting Ex. 1006, 6:17–21). Patent Owner further contends that Rothkop's IGES translator "converts 3-D surfaces into an IGES model" using software described in United States Patent 5,255,352 ("Falk"). *Id.* (citing Ex. 1006, 5:62–66). With respect to Falk, Patent Owner contends it "provid[es] dimensionally correct mapping of two-dimensional . . . surface detail to a three-dimensional . . . surface." *Id.* (citing Ex. 2023 ¶ 123; Ex. 2102, Abstract). Patent Owner further contends that "[t]he data needed to create Rothkop's model is acquired by importing, not scanning

data as alleged by Petitioner." *Id.* (citing Ex. 1006, 5:19–20; Ex. 2023 ¶ 127).

Petitioner, in turn, contends that Patent Owner "ignores Rothkop's express teaching that its 'scanner 12 scans the physical part' and its surfacing software 'captur[es] the point data from the scanner 12 and output[s] a NURBS' surface 'so both the foam and the trim can be developed accurately.'" Pet Reply 13 (citing Ex. 1003 ¶ 129; Ex. 1006 3:17–20, 5:1–11; Ex. 1055 ¶ 119). Petitioner next contends that "[t]he data model of Rothkop's foam 'describes a solid part' made up of the contour lines/wireframe, which necessarily would have been three-dimensional, like that shown in FIG. 7." *Id.* at 14 (citing Ex. 1006, 8:1–13, Fig. 7; Ex. 1055 ¶¶ 120–122). Petitioner also contends that "Rothkop's disclosure of taking templates every 100mm or milling out of block foam would not make sense if the foam was two-dimensional." *Id.* (citing Ex. 1005, 8:1–17; Ex. 1055 ¶ 122). Notwithstanding the foregoing, Petitioner argues that Patent Owner's arguments about "what is specifically done in Rothkop employs an improper bodily incorporation instead of what the *combined* teachings suggest." *Id.*

Patent Owner's contention is unavailing for the following reasons.

Patent Owner's argument focuses on what it characterizes as Rothkop's use of two-dimensional patterns to create the seat trim, i.e., the fabric placed over the seat foam that forms the outer surface of the seat. PO Resp. 39. The outer surface of the seat is scanned in Rothkop. Ex. 1006, 4:59–64. The seat foam in Rothkop interfaces with the seat trim. *Id.* at Fig. 4, step 64 ("assemble trim cover on foam part"); *id.* at 7:9–10 ("Certain methods of attaching trim to foam are better for certain seat styles."); Ex.

1003 ¶ 130; Ex. 1055 ¶ 118. The limitation at issue is directed to "construct[ing] an electronic three-dimensional image of the" interfacing part, i.e., "the vehicle floor tray." Ex. 1001, 19:56–57. Therefore, we look to Rothkop's disclosure for modeling the seat foam.

Rothkop discloses:

> At block 60 [of Figure 4], outputs are generated from the data model that describes a solid part. Templates are generated using the 'contour' function in the surface inquiry menu of the software. A duplicate of the surface is first created and offset a distance of the trim thickness accounting for laminated padding.
> …
> Templates are preferably generated approximately every 100 mm. The generated contour lines are converted to wireframe using the "contour to wireframe" function in the converter's menu. These wire frames are now output for plotting in the IGES format or DXF format to the plotter 56.
> At block 62, the templates are cut and used to create the seat foam from bulk foam material.
> …
> At block 64, a prototype is made by assembling the trim cover on the resulting seat foam, thereby forming a finished prototype.

Ex. 1006, 8:1–21.

Mr. Perreault testifies that Rothkop's teachings show that "the electronic model of the seat (e.g., the surface that is duplicated) is used to construct an electronic three-dimensional image of the foam that is made up of the contour lines and the resulting wireframe." Ex. 1003 ¶ 135 (citing Ex. 1006, 8:4–15). Dr. Kurfess does not dispute Mr. Perreault's testimony that Rothkop constructs a three-dimensional model of the seat foam. *See* Ex.

2023 ¶¶ 154–155. We credit Mr. Perreault's testimony on this point because it is supported by the disclosure of Rothkop.[11]

We have reviewed the evidence cited by Petitioner in light of Patent Owner's arguments and evidence and find that the combination of Stanesic and Rothkop teaches or suggests this limitation. Ex. 1003 ¶¶ 130–137; Ex. 1005, 3:41–43, Fig. 3; Ex. 1006, 3:17–20, 5:1–11, 8:1–21, Fig. 4 (step 64), Fig. 7.

[1.e] creating a vehicle tray data file from the electronic three-dimensional image of the vehicle floor tray;

Petitioner contends that "Rothkop's contour lines and the resulting wireframe are an electronic three-dimensional image of the foam" and that "Rothkop discloses creating a data file from the electronic three-dimensional image of the foam." Pet. 27. Petitioner further contends that "Rothkop discloses that the 'generated contour lines are then converted to wireframe using the "contour to wireframe" function in the converter's menu' and that the wireframes are 'output for plotting in the IGES or DXF format to the plotter.'" *Id.* (citing Ex. 1006, 8:9–13). According to Petitioner, "[o]utputting the wire frames for plotting . . . includes creating a data file . . . from the electronic three-dimensional image." *Id.* (citing Ex. 1003 ¶¶ 140–141). Petitioner further contends that applying Rothkop to Stanesic would have led a person of ordinary skill in the art "to create a vehicle tray data file from the electronic three-dimensional image of the vehicle floor tray so that a floor tray can be made based on the electronic model." *Id.* (citing Ex. 1003 ¶ 142).

[11] Patent Owner also argues that "Cicotte does not remedy the deficiencies of Stanesic and Rothkop." PO Resp. 41. Petitioner, however, does not rely on Cicotte for limitation 1[d]. Pet. 24.

Patent Owner contends that "Rothkop does not disclose creating a data file from an electronic three-dimensional image of a not-yet-existing object." PO Resp. 43 (citing Ex. 2023 ¶ 158). Patent Owner further contends, similar to limitation 1[d], that "Rothkop teaches reverse engineering an existing object to create two-dimensional patterns of that object." *Id.* (citing Ex. 1006, 5:19–20; Ex. 2023 ¶ 158).

Petitioner replies that Patent Owner's "arguments are based on the same errors discussed for 1[d]." Pet. Reply 14.

Patent Owner's contentions are unavailing for the same reasons discussed above for limitation 1[d]. We agree with Petitioner and find that Rothkop's outputting of wireframes for plotting includes creating a data file from the electronic three-dimensional image of the foam. Ex. 1003 ¶¶ 140–142; Ex. 1006, 8:9–13). Similar to his testimony in connection with limitation 1[d], Dr. Kurfess's testimony focuses on Rothkop's disclosure of starting with a two-dimensional pattern for the seat trim but fails to address Rothkop's creation of a three-dimensional model for the seat foam. Ex. 2023 ¶ 158.

We have reviewed the evidence cited by Petitioner in light of Patent Owner's arguments and evidence and find that the combination of Stanesic and Rothkop teaches or suggests this limitation. Ex. 1003 ¶¶ 140–142, Ex. 1006, 8:9–13.

[1.f] using the vehicle tray data file to make a vehicle tray mold; and

Petitioner contends that "Cicotte, as applied to the combination of Stanesic and Rothkop, discloses" this limitation. Pet. 27 (citing Ex. 1003 ¶¶ 105, 143–145). Petitioner contends that "Rothkop focuses on patterns and templates as production tooling, rather than a mold," but "Stanesic discloses the use of molds to form its floor trays." *Id.* at 28 (citing Ex. 1006,

7:57–8:17). According to Petitioner, a person of ordinary skill in the art "would have been led to use Rothkop's digital information to make a mold as the production tooling for Stanesic's floor tray, which was well-known in the art, including in the automotive industry." *Id.* (citing Ex. 1003 ¶ 143).

Petitioner next contends that "Cicotte discloses 'a method of making die shells from a model of predetermined dimensions, where the die shells are ultimately used for stamping, casting, *molding*, or forging a high volume of identical parts,' particularly in the automotive industry." Pet. 28 (citing Ex. 1003 ¶¶ 101–103; Ex. 1007, 1:6–17, 3:1–3, 4:16–19). Petitioner further contends that Cicotte surface maps a model by acquiring data from a "digital data set" and "the 'surface map data is then stored digitally from which a pattern or mold may be later fabricated.'" *Id.* (citing Ex. 1003 ¶ 144; Ex. 1007, 4:13–35, 4:44–47). According to Petitioner, this "would have led a [person of ordinary skill in the art] to use the vehicle tray data file . . . to make a vehicle tray mold for Stanesic's floor tray." *Id.* at 29 (citing Ex. 1003 ¶ 145).

Patent Owner first contends that nothing in Stanesic, Rothkop, and Cicotte either combined or separately "would explain to a [person of ordinary skill in the art] how to create a [vehicle tray data] file, or how to use such a file to create a mold." PO Resp. 44 (citing Ex. 2023 ¶¶ 158–160). Patent Owner further contends that Rothkop and Cicotte are "incompatible" because "Rothkop uses two-dimensional patterns that are cut out with a two-dimensional plotter" while "Cicotte discloses 'producing a rigid mold' that is 'preferably machined from a ceramic blank but may be machined from any suitable material such as a composite, cast iron, Kirksite.'" *Id.* (citing Ex. 1006, 8:61–16; Ex. 1007, 4:43–56; Ex. 2023 ¶ 121). Patent Owner next

contends that "the two-dimensional output of Rothkop necessarily could not be used to create a mold as described by Cicotte." *Id.* (citing Ex. 2023 ¶ 167).

Petitioner replies that Patent Owner "ignores Cicotte's express teachings about using a digital data set to fabricate a mold, and the [ordinarily skilled artisan]'s background knowledge." Pet. Reply 14 (citing Ex. 1003 ¶ 44; Ex. 1007, 4:31–35; Ex. 1060, 6:8–7:13). Petitioner contends that Patent Owner again relies on bodily incorporation with its argument that "the two-dimensional output of Rothkop necessarily could not be used to create a mold as described by Cicotte." *Id.* (citing PO Resp. 44). Petitioner further contends that Rothkop discloses using digital information to make production tooling and "includes a 'data model that describes a solid part.'" *Id.* at 15 (citing Ex. 1006, 8:1–2, 8:21–23). According to Petitioner, an ordinarily skilled artisan "would have used a mold as the production tooling based on Stanesic, and Cicotte discloses that molds can be made from a computer model." *Id.* (citing Ex. 1007, 4:31–35, 4:44–47).

Patent Owner's contentions are unavailing for the following reasons.

To the extent that Patent Owner is relying on its contention that Rothkop teaches two-dimensional modeling, that contention is unavailing for the same reasons discussed above for limitation 1[d]. Stanesic discloses "molded floor mats." Ex. 1005, 1:6. Rothkop discloses using digital files to create production tools such as templates. Ex. 1006, 7:57–67. Cicotte discloses "a method of making die shells from a model of predetermined dimensions, where the die shells are ultimately used for stamping, casting, *molding*, or forging a high volume of identical parts." Ex. 1007, 1:7–11 (emphasis added). Cicotte further discloses that the "model 20 may be

composed of a digital data set, such as a three-dimensional CAD rendering or a list of digital data points." *Id.* at 4:23–25.

We have reviewed the evidence cited by Petitioner in light of Patent Owner's arguments and evidence and find that the combination of Stanesic, Rothkop, and Cicotte teaches or suggests this limitation. Ex. 1003 ¶¶ 105, 143–145; Ex. 1005, 1:6; Ex. 1006, 7:57–67; Ex. 1007, 1:7–11, 4:23–25.

[1.g] manufacturing the vehicle floor tray by molding polymer material in the mold.

Petitioner contends that "Stanesic explains that its floor tray is 'made from a pliable plastic material and is molded to a contour which snugly fits into' the vehicle." Pet. 29 (citing Ex. 1005, 2:31–34). Petitioner contends that Stanesic discloses that its mats are made of "thermoplastic material" and gives examples of several polymer materials. *Id.* (citing Ex. 1005, 3:41–53). Petitioner contends that "[t]he mold would be made using the combined teachings of Rothkop and Cicotte." *Id.* (citing Ex. 1003 ¶ 146).

Patent Owner does not address this limitation. *See* PO Resp. 36–45.

We have reviewed the evidence cited by Petitioner and find that the combination of Stanesic, Rothkop, and Cicotte teaches or suggests this limitation.

Motivation to Combine

Petitioner acknowledges that "Stanesic does not specify how its molds are designed and created to achieve" a mat that "snugly fits into the vehicle over a carpeted footwell." Pet. 29–30 (citing Ex. 1003 ¶ 147; Ex. 1005, Abstract, 1:6–8, 2:31–67, 3:41–44, 3:62–64, Fig. 1–3). Petitioner contends that a person of ordinary skill in the art "would have considered techniques known in the art for designing production tools (such as molds) that can be

used to make parts intended to mate with an existing part or surface." *Id.* at 30–31 (citing Ex. 1003 ¶ 149).

Petitioner next contends that "Rothkop discloses a method for creating production tooling to accurately develop foam and trim that will interface with a vehicle seat and a seat frame." Pet. 30 (citing Ex. 1006, 4:61–5:14, 8:1–23). Petitioner further contends that Rothkop discloses "digitally measuring the three-dimensional position of a plurality of points on a textured surface of a vehicle seat (and digitally measuring the frame), storing the points in memory, using the stored points to construct an electronic model of the vehicle seat (and frame)" and using the model "to construct electronic three-dimensional images of the foam and the trim, creating data files for the foam and the trim from the electronic three-dimensional image of the foam and trim, and using the data files to make production tooling for the foam and the trim." *Id.* (citing Ex. 1003 ¶ 148; Ex. 1006, 1:38–49, 3:17–20, 4:59–5:28, 5:55–60, 7:57–8:23).

Petitioner next contends that "Cicotte discloses using a data file . . . of an automobile body panel to make a mold for the body panel." Pet. 30 (citing Ex. 1003 ¶ 148; Ex. 1007, 1:8–16, 3:1–3, 4:23–35).

Petitioner contends that it was well-known "to digitize an existing surface and use the digital information to either make an accurate part directly or make production tooling (e.g., a mold) so that a part may be developed accurately." Pet. 31 (citing Ex. 1003 ¶ 149; Ex. 1006, 5:1–14, 8:21–23; Ex. 1011 ¶¶ 47–50, 142–152, Figs. 2, 23; Ex. 1016, 13:3–19). According to Petitioner, "scanning parts . . . to design new parts to interface with the scanned part based on the scan data, and creating a mold based on the CAD models to manufacture the new part were all routine tasks for a

[person of ordinary skill in the art] as part of a typical design process." *Id.* (citing Ex. 1003 ¶ 149).

Petitioner next contends that a person of ordinary skill in the art would have been motivated to use the digital approach because it results in "a more cost-effective manufacturing process . . . , higher throughput capability, ability to customize, and higher levels of quality assurance." Pet. 31 (citing Ex. 1003 ¶¶ 150–153; Ex. 1006, 2:61–3:2, 5:18–19; Ex. 1011 ¶¶ 2, 6, 9; Ex. 1016, 17:27–30; Ex. 1021). Petitioner further contends that this would have led a person of ordinary skill in the art "to Rothkop, which disclosed (1) 'a relatively rapid method of data point acquisition' and a way to 'quickly reverse engineer' an automobile physical part," "(2) the ability to accurately develop parts . . . that would interface with an automobile component using CAD software . . . [,] and (3) the use of digital information to create production tooling." *Id.* at 32 (citing Ex. 1003 ¶ 153; Ex. 1006, 2:61–65, 4:61–67, 5:6–11, 5:18–19, 8:21–23).

Petitioner next contends that a person of ordinary skill in the art "would have been motivated to use production tooling in line with Stanesic's disclosure, i.e., molds, rather than Rothkop's production tooling" and "would have recognized that using molds, as disclosed in Stanesic, would facilitate the use of thermoplastics." Pet. 32 (citing Ex. 1003 ¶¶ 154–155; Ex. 1005, 3:41–53). Petitioner next contends, "[t]his would have led a [person of ordinary skill in the art] to consider Cicotte, which discloses making molds based on a data file (e.g., a three-dimensional CAD rendering or list of digital data points) of an automobile body panel." *Id.* (citing Ex. 1003 ¶ 155; Ex. 1007, 1:8–16, 3:1–3, 4:23–35). According to Petitioner, the combination of Stanesic, Rothkop, and Cicotte "is simply combining prior

art elements according to known methods to yield predictable results" and "would have resulted in all limitations recited in claim 1." *Id.* at 33 (citing Ex. 1003 ¶¶ 155–156).

Petitioner next provides argument and evidence in support of its contention that a person of ordinary skill in the art would have had a reasonable expectation of success in combining the teachings of Stanesic, Rothkop, and Cicotte. Pet. 34–36.

Petitioner contends that "[t]he design process outlined in Rothkop and Cicotte was a common, well-known process." Pet. 34 (citing Ex. 1003 ¶ 58). Petitioner further contends that "Rothkop expressly disclosed available tools to perform the processes" and an ordinarily skilled artisan "would have been aware of others." *Id.* (citing Ex. 1003 ¶ 158; Ex. 1006, 1:38–49, 4:65–67, 5:4–5, 5:15–17, 5:41–44, 5:49–51, 5:62–65). Petitioner next contends that an ordinarily skilled artisan "would have known that portable coordinate measuring machines or other scanners could easily and accurately measure a vehicle footwell." *Id.* at 34–35 (citing Ex. 1003 ¶ 59; Ex. 1023, 4–5, 9; Ex. 1027, 6:54–7:35). Petitioner contends that "Rothkop disclosed that a contact scanner may be used for 'the surface texture of automotive fabrics,' which would include Stanesic's carpeted footwell" and that an ordinarily skilled artisan "would have recognized that Rothkop's scanning could be used for Stanesic's carpeted footwells as part of designing Stanesic's floor trays to meet the stated conformance in Stanesic." *Id.* at 35 (citing Ex. 1003 ¶ 160; Ex. 1006, 4:63–64).

With respect to Cicotte, Petitioner contends that an ordinarily skilled artisan "would have reasonably expected making molds based on a data file (as disclosed in Cicotte) would lead to molds appropriate for molding

Stanesic's thermoplastic material to meet the stated conformance." Pet. 35 (citing Ex. 1003 ¶ 161. Petitioner argues that Stanesic "suggests the use of thermoforming for its floor tray, which was a process well-known to a [person of ordinary skill in the art]." *Id.* at 35–36 (citing Ex. 1003 ¶ 161; Ex. 1005, 3:41–51). Petitioner further argues that Cicotte uses "its rigid molds . . . in a process 'very similar to the process of polymer thermoforming.'" *Id.* at 35 (citing Ex. 1003 ¶ 161; Ex. 1007, 6:29–65). Petitioner further contends that an ordinarily skilled artisan "would have expected the mold created based on Rothkop's and Cicotte's teachings to be a mold suitable for thermoforming and would have expected the molded floor tray to closely conform to the mold, which would have accurately contoured to the vehicle footwell." *Id.* at 36 (citing Ex. 1003 ¶ 161). According to Petitioner, an ordinarily skilled artisan "would have reasonably expected success in using Rothkop's and Cicotte's teachings to design a mold for manufacturing Stanesic's floor tray as recited in claim 1." *Id.* (citing Ex. 1003 ¶ 162).

Patent Owner provides five contentions concerning motivation to combine and reasonable expectation of success. PO Resp. 19. We analyze each separately.

i. Stanesic Teaches Away from Claim 1

Patent Owner contends that "Stanesic teaches away from achieving a better fit by more closely contouring a floor mat" because it "teaches that contouring alone is not enough to retain the floor mat." PO Resp. 19 (citing Ex. 1005, 1:23–26, 2:57–59; Ex. 2055 ¶ 57). Patent Owner further contends that "Stanesic teaches a retention system, including retention tabs, that allows an already contoured floor mat to be held in place." *Id.* (citing Ex.

1005, 3:55–40; Ex. 2055 ¶¶ 73–79). According to Patent Owner, because "Stanesic's solution to slippage [of floor coverings] was the retention tabs," Stanesic or the "industry at large" would not motivate an ordinarily skilled artisan "to remove Stanesic's essential retention features to create a mat that did not slip." *Id.* at 20 (citing Ex. 2055 ¶ 49). Patent Owner also contends that the large size of Stanesic's mat "would have immediately discouraged a [person of ordinary skill in the art] from the path taken by the inventors of the '655 Patent." *Id.* (citing Ex. 2023 ¶ 138; Ex. 2083 ¶¶ 87–88).[12]

Petitioner responds that Stanesic "*encourages* close conformance to achieve fit" as "*a part of* its multi-faceted retention system." Pet. Reply 16 (citing Ex. 1005, 2:31–35, 2:39–40, 2:43–45, 2:65–67; Ex. 1055 ¶¶ 128–131). Petitioner further argues that "nothing about the proposed combination requires elimination of Stanesic's tabs." *Id.* (citing Ex. 1055 ¶¶ 131–137). Petitioner also argues that Patent Owner's argument that the size of Stanesic's floor tray would have discouraged a person of ordinary skill in the art relies on bodily incorporation. *Id.* at 18.

In the Sur-reply, Patent Owner contends that Mr. Sherman "testified that he did not make the Stanesic mat using CMM/CAD/CAM." Sur-reply 6 (citing Ex. 2055 ¶ 84). Patent Owner also contends that Mr. Granger "testified that 'an ordinary floor mat designer would have looked at Stanesic and never . . . dreamed of using [CMM].'" *Id.* (citing Ex. 2083 ¶ 88).

For the following reasons, Patent Owner's contentions are unavailing.

[12] Patent Owner also argues that Rothkop could not be used to add the retention tabs to Stanesic's mat. PO Resp. 20–21. It is unclear what relevance this argument about Rothkop has to whether Stanesic teaches away from claim 1. In any event, the Petition does not propose removing Stanesic's retention tabs. Pet. Reply 16 (citing Ex. 1055 ¶¶ 131–137).

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (quoting *Ricoh Co., Ltd. v. Quanta Comput. Inc.*, 550 F.3d 1325, 1332 (Fed. Cir. 2008)). When a prior art reference discloses a different solution to a similar problem, it does not teach away from the claimed subject matter unless the prior art reference also criticizes, discredits, or otherwise discourages the solution claimed. *See Crocs, Inc. v. U.S. Int'l Trade Commission*, 598 F.3d 1294, 1308 (Fed. Cir. 2010) (explaining that the prior art taught away by specifically discouraging use of foam straps); *In re Fulton*, 391 F. 3d 1195, 1201 (Fed. Cir. 2004).

Patent Owner begins with the statement that "Stanesic teaches away from achieving a better fit by more closely contouring a floor mat." PO Resp. 19. This assertion is a straw man argument because nothing in claim 1 recites any particular fit or close contouring of the vehicle floor tray. Ex. 1001, 19:46–20:46. Patent Owner does not explain how Stanesic teaches away from an unclaimed element of claim 1. *See* PO Resp. 19–21.[13]

Patent Owner next argues that Stanesic teaches away because it includes retention tabs to allow a contoured floor mat to be held in place. PO Resp. 19 (citing Ex. 1005, 3:35–40). To the extent this argument has any relevance to claim 1, Patent Owner is arguing that Stanesic discloses a

[13] Mr. Sherman's testimony (Ex. 2055 ¶¶ 47–54) concerning how a commercial product may have been manufactured is irrelevant to whether Stanesic teaches away.

solution to a problem of holding a floor mat in place other than contouring the floor mat to the vehicle footwell. Claim 1, however, does not require a contoured floor mat or recite any particular structural requirement of the floor tray other than the use of "polymer material." Ex. 1001, 19:46–20:2. However, assuming *arguendo* that claim 1 requires a vehicle floor tray that conforms to the vehicle floor well, Stanesic's disclosure of retention tabs is, at best, an alternate or additional means of retaining the floor mat in place. A disclosure of an alternate solution does not constitute a teaching away unless the disclosure "criticizes, discredits, or otherwise discourages the solution claimed." *In re Fulton*, 391 F.3d at 1201. Having reviewed the entire disclosure of Stanesic, we find that nothing in Stanesic criticizes, discredits, or otherwise discourages any of the recited aspects of claim 1. Even if claim 1 required close conformance, Stanesic affirmatively discloses a floor mat "molded to a contour and shape which snugly fits into the truck driver's side foot area." Ex. 1005, 1:47–48.

ii. Reasonable Expectation of Success

Patent Owner contends that an ordinarily skilled artisan "would not have believed that using a highly technical, expensive, and unintuitive CMM and CAD/CAM process would have worked for creating a vehicle floor tray." PO Resp. 21 (citing Ex. 2023 ¶¶ 138, 151–152; Ex. 2055 ¶¶ 59–60). According to Patent Owner, "[a]ttempting to develop such a technique would also not have been worth the effort" and in other industries "many engineers in 2004 used CAD as merely 'an electronic drawing board', intimidated away from using any of its more complicated features." *Id.* at 21–22 (citing Ex. 2023 ¶¶ 165, 168; Ex. 2031; Ex. 2055 ¶¶ 59–60).

Patent Owner next contends that "Stanesic never uses the words 'digital', 'scan', 'CAD', 'CAM', 'CMM', or even 'computer.'" PO Resp. 22 (citing Ex. 1005). Patent Owner further contends that Stanesic's tray "was designed and made using masking tape, employing a well-established method involving a manually created fiberglass mold, without relying on any of these expensive, unproven techniques." *Id.* (citing Ex. 2055 ¶¶ 47–59); *id.* at 23–24 ("[T]he Assignee of Stanesic, had a much more rudimentary way of constructing vehicle floor mats." (citing Ex. 2055 ¶¶ 47–54)).

Patent Owner next contends that neither Dr. Kurfess nor Mr. Perreault "was aware in 2004 of anyone scanning carpeted surfaces in the art." PO Resp. 23 (citing Ex. 2007, 28:22–25; Ex. 2023 ¶ 85). According to Patent Owner, "digitally measuring carpeted, or otherwise non-uniform surfaces in 2004 was the subject of PhD dissertation level work." *Id.* at 22 (citing Ex. 2023 ¶ 72; Ex. 2036).

Patent Owner next contends that "[c]ontrary to Petitioners' claims, an advanced CAD/CAM procedure requiring extraordinary amounts of money, time, and expertise was not a 'commercially feasible' or known option." PO Resp. 23 (citing Ex. 2023 ¶ 165; Ex. 2055 ¶¶ 58–59). Patent Owner further contends that an ordinarily skilled artisan "looking to create a product in a crowded industry, such as the automobile aftermarket field, would not have considered an unproven and unintuitive CMM and CAD/CAM manufacturing process." *Id.* at 24 (citing Ex. 2055 ¶¶ 58–59). According to Patent Owner, "nobody at Lund [the assignee of Stanesic] ***had even been able to operate a scanner***," which Patent Owner contends "is the

quintessential example of no reasonable expectation of success." *Id.* (citing Ex. 2007, 26:7–14).

Petitioner replies that Patent Owner's "evidence shows that CMM/CAD/CAM were valuable tools in the manufacturing industry with known benefits" and "[n]othing about the state of CMM/CAD/CAM in 2004 would have caused a [person of ordinary skill in the art] to doubt that these tools could be used to make a floor tray." Pet. Reply 19–20 (citing Ex. 1055 ¶ 144; Ex. 2023 ¶ 47; Ex. 2031, 1; Ex. 2035, 2).

Petitioner next contends that "[t]he Board already . . . rejected similar arguments in the prior IPRs, crediting Mr. Perreault's testimony about CMM/CAD/CAM over [Patent Owner]'s argument that techniques for obtaining accurate three-dimensional position data of a footwell to make a floor tray were beyond the skill level" of an ordinarily skilled artisan. Pet. Reply 20 (citing Ex. 2008, 59–64).

Petitioner next contends that evaluation of reasonable expectation of success is from the viewpoint of an ordinarily skilled artisan "in the art to which said subject matter [sought to be patented] pertains." Pet. Reply 20 (citing 35 U.S.C. § 103). According to Petitioner, "that includes three-dimensional scanning and three-dimensional modeling." *Id.* (citing Ex. 1001, claim 1; Ex. 2023 ¶ 18). Petitioner next contends that Dr. Kurfess's testimony in support of Patent Owner's argument "that digitally measuring carpeted, or otherwise non-uniform surfaces was beyond the skill level of" an ordinary skilled artisan is unsupported and entitled to little weight. *Id.* (citing Ex. 1055 ¶ 146; Ex. 2023 ¶¶ 69, 85; Ex. 2036; Ex. 2037).

Petitioner next contends that "Lund's interactions with Mr. Perreault, are simply irrelevant." *Id.* at 21 (citing Ex. 1055 ¶ 147).

For the following reasons, Patent Owner's contention that an ordinarily skilled artisan would not have a reasonable expectation of success is unavailing.

"[A] conclusion of obviousness requires a reasonable expectation of success." *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1365 (Fed. Cir. 2016) (citing *KSR*, 550 U.S. at 421). Further, "the 'predictable result' discussed in *KSR* refers not only to the expectation that prior art elements are capable of being physically combined, but also that the combination would have worked for its intended purpose." *DePuy Spine*, 567 F.3d at 1326 (citations omitted). "Obviousness does not require absolute predictability of success . . . all that is required is a reasonable expectation of success." *In re O'Farrell*, 853 F.2d 894, 903–904 (Fed. Cir. 1988) (citations omitted). With these principles in mind, we evaluate the parties' respective contentions.

Patent Owner's argument that there is no reasonable expectation of success in the proposed combination revolve around the scanning of a vehicle footwell.

The '655 patent describes that "points on the vehicle foot well for which the floor tray is to be manufactured are digitally measured and captured. Preferably this step uses a coordinate measuring machine (CMM)." Ex. 1001, 16:41–44. Further, the "FARO® Arm has been efficacious in obtaining these data using a contact method." *Id.* at 16:47–48.

The company manufacturing the FARO Arm was "[f]ounded in 1982 to provide portable CMMs in the medical industry" and "transitioned to the worldwide industrial market in 1993." Ex. 1003 ¶ 49. Patent Owner does

not assert that it invented a new type of CMM for use in the claimed invention. Tr. 38:3–6.

Dr. Kurfess testifies that in 2004, "manufacturing engineers on the floor of the automotive industry would not typically see these types of systems [CMMs]." Ex. 2023 ¶¶ 80–81. Dr. Kurfess bases this testimony on his recollection of visits he made to what he deems "many state-of-the-art manufacturing facilities," where he "did not see many articulated arm CMMs in the plants in that time frame." *Id.* ¶ 81. His testimony on this point is not corroborated by any contemporaneous documents. *See id.* Dr. Kurfess does not identify which manufacturing facilities he may have visited in 2004 but we infer from his testimony that, while he "did not see *many* articulated arm CMMs", he did see CMMs on his visits. His testimony that CMMs were not typically seen in the automotive industry, however, is belied by other evidence of record. Exhibit 1023 states that "Automobile manufacturers such as Land Rover, Jaguar, DaimlerChrysler, Volkswagen, Aston Martin, Audi, Porsche, and BMW exploit the benefits of the Faro Arm system." Ex. 1023, 4. Based on Exhibit 1023, which bears a date of July 30, 2004 (*id.* at 16), we find that CMMs, such as the Faro Arm, were known and used by manufacturers in the automotive industry prior to October 29, 2004.

Patent Owner also relies on Dr. Kurfess's testimony to support its argument that "digitally measuring carpeted, or otherwise non-uniform surfaces in 2004 was the subject of PhD dissertation level work." PO Resp. 22 (citing Ex. 2023 ¶ 72; Ex. 2036).[14] Patent Owner doesn't articulate any

[14] Dr. Kurfess also cites to Ex. 2030 in support of his testimony. *See* Ex. 2023 ¶ 72.

legal conclusion we should draw from this reference to Dr. Kurfess's testimony. *Id.* To the extent that Patent Owner argues that digitally measuring surfaces was beyond the level of skill of a person of ordinary skill in the art in October 2004, such an argument is unavailing and unsupported by the evidence of record.

We first note that Dr. Kurfess does not cite to specific portions of Exhibits 2023 and 2036 where scanning carpeted surfaces are discussed and why that task is beyond the level of a person of ordinary skill in the art. *See* Ex. 2023 ¶ 72. Both exhibits cited by Dr. Kurfess, regardless of the qualifications of the authors, explicitly disclose that CMMs were well known prior to October 29, 2004. Exhibit 2030 states that "[c]o-ordinate measuring machines (CMM) have been used to measure analytic and free form features *for several decades*" and "[t]he requirement to capture geometric surface data led to the development of dedicated three-dimensional scanning machines." Ex. 2030 §§ 2.1.1, 2.1.2 (emphasis added). Exhibit 2036 states that "[r]everse Engineering techniques allow to get the digital duplication of a real object from a point cloud acquired with a 3D scanner from a point cloud by means of CMM." Ex. 2036, 1. Thus, Exhibit 2030 and Exhibit 2036 corroborate Mr. Perreault's testimony that "well before 2004, portable coordinate measuring machines (CMMs) were able to digitally measure components and provide that data to a processing software to develop CAD models." Ex. 1003 ¶ 46. Additionally, Rothkop, filed on October 31, 1997, discloses the use of "a contact scanner" to capture "the surface texture of automotive fabrics." Ex. 1006, 4:63–64. Further, Rothkop's disclosure is not limited to scanning the seat surface. *Id.* at 4:61–

63 (scanner can be used "for scanning a physical part such as an existing seat, frame or vehicle.").

Patent Owner's argument (PO Resp. 23) that neither Dr. Kurfess nor Mr. Perreault was aware of anyone in the art scanning carpeted surfaces is of little import to reasonable expectation of success in light of Rothkop's disclosure of scanning the surface texture of automobile seat fabric. Further, Patent Owner's argument that "Stanesic never uses the words 'digital', 'scan', 'CAD', 'CAM', 'CMM', or even 'computer'" (*id.* at 22) is an attack on Stanesic in isolation and ignores the teachings of Rothkop in the combination.

Patent Owner also interposes arguments concerning how a commercial embodiment of the mat disclosed in Stanesic was fabricated as well as how an assignee of Stanesic ("Lund") constructed its floor mats. PO Resp. 22 (citing Ex. 2055 ¶¶ 47–59), 23 (citing Ex. 2055 ¶¶ 47–54; Exs. 2056–2059; Ex. 2061, Ex. 2062). Arguments concerning how a commercial embodiment was made are of little relevance to the question of whether a person of ordinary skill in the art would have had a reasonable expectation of success in making the combination. The evidence of record, including the exhibits relied on by Dr. Kurfess, shows that CMMs were well known to those of ordinary skill in the art for decades prior to October 29, 2004. Ex. 2030 § 2.1.1.

Patent Owner's contention that "[i]n 2007, nobody at Lund ***had even been able to operate a scanner***, which required Lund to hire Petitioner's own expert, Perreault, to teach them how to operate a scanner" (PO Resp. 24 (citing Ex. 2007, 26:7–14)) is not supported by the cited testimony.

According to Patent Owner, "[t]his is the quintessential example of no reasonable expectation of success." *Id.*

The following is Mr. Perreault's testimony:

> Q. You did consult with Lund International concerning their manufacturing of floor trays, correct?
> A. Lund International purchased a 3D scanning system from my company so that they could characterize the footwells. And then I assisted them in creating the CAD data from the existing footwell so they could then design their floor mats. That was the extent of my work with Lund.

Ex. 2007, 26:7–14. The cited testimony does not support a finding that no one at Lund had been able to operate a scanner or that Mr. Perreault taught anyone to operate a scanner. Leaving aside the question of the relevance of an interaction that occurred in 2007, this testimony does not support Patent Owner's assertion that there is no reasonable expectation of success.

Patent Owner also argues that CAD/CAM procedures required extraordinary amounts of money and were not "commercially feasible." PO Resp. 23 (citing Ex. 2023 ¶ 165; Ex. 2055 ¶¶ 58–59). For reasonable expectation of success, however, the question is whether "the combination would have worked for its intended purpose." *DePuy Spine*, 567 F.3d at 1326. The commercial viability of the proposed combination is simply irrelevant to the question of whether there is a reasonable expectation that the combination would have worked for its intended purpose.

In conclusion, we find that Petitioner has shown a reasonable expectation of success in the proposed combination. The evidence, including Patent Owner's evidence, shows that CMMs were available for decades prior to October 29, 2004. Ex. 2030 § 2.1.1; *see also* Ex. 1003 ¶ 46 ("[W]ell before 2004, portable coordinate measuring machines (CMMs) were able to digitally measure components and provide that data to a

processing software to develop CAD models."). Further, the Faro Arm was in use in the automotive industry in 2004. Ex. 1060, 4. Dr. Kurfess testifies that the level of ordinary skill in the art includes an understanding "of three-dimensional scanning, three-dimensional modeling . . . computer-aided design and manufacturing." *See* Ex. 2023 ¶ 18. A person of ordinary skill in the art with these qualifications would have a reasonable expectation of success using tools that were available for decades prior to October 29, 2004.

iii. A Person of Ordinary Skill in the Art Would Have Been Indifferent to CMM and CAD/CAM

Patent Owner asserts that "[w]here a [person of ordinary skill in the art] 'would have been indifferent' to a combination of elements, there exists no motivation to combine the elements." PO Resp. 24–25 (citing *Tris Pharma, Inc. v. Actavis Labs. FL, Inc.*, 2022 WL 2525318 (Fed. Cir. 2022)).

Patent Owner contends that "Stanesic simply does not motivate a [person of ordinary skill in the art] to combine the disparate technologies of CMM and CAD/CAM that in 2004 were all still in their infancy." PO Resp. 25 (citing Ex. 2023 ¶¶ 87, 165). In support of this contention, Patent Owner argues that Mr. Sherman testifies "that CMM and CAD/CAM, either individually, or especially collectively, were not considered viable or useful tools for creating aftermarket floor trays." *Id.* (citing Ex. 2055 ¶ 46; Ex. 2023 ¶¶ 195–196).[15] Patent Owner further contends that "CMM and CAD/CAM were considered prohibitively expensive, even in industries with significantly more capital." *Id.* at 27 (citing Ex. 2023 ¶¶ 199, 153; Ex. 2025; Ex. 2055 ¶ 80). Patent Owner also contends that "Stanesic cautions against

[15] This assertion finds no support in the cited paragraph of Mr. Sherman's declaration. Ex. 2055 ¶ 46.

using an expensive and technically complex procedure for manufacturing a floor mat." *Id.* at 25 (citing Ex. 1005, 1:23–24); *id.* at 27 ("[T]he costs of producing the Stanesic mat with the method claimed by the '655 Patent would have been prohibitively costly . . . in 2004."). According to Patent Owner, an ordinarily skilled artisan "would have been indifferent to a new and unproven method using CMM and CAD/CAM as they already had low cost, proven technologies readily available to make Stanesic's floor mat." *Id.* at 28 (citing Ex. 2055 ¶¶ 55–58, 60–61).

Petitioner replies that an ordinarily skilled artisan "would not have been indifferent to CMM/CAD/CAM" but "would have been motivated to use CMM/CAD/CAM because of the known benefits." Pet. Reply 19 (citing Ex. 1003 ¶¶ 147–157; Ex. 1055 ¶¶ 142–143). Petitioner argues that Patent Owner's arguments "are based on inaccurate state-of-the-art assertions" that "are legally irrelevant." *Id.*

For the following reasons, we find Patent Owner's contention to be unavailing.

Patent Owner's contention is primarily based on the alleged cost of adopting CMM and CAD/CAM technologies as opposed to what it characterizes as "low cost, proven technologies." PO Resp. 27–28; Ex. 2023 ¶ 165 (Dr. Kurfess testifying as to alleged costs for "using computer-assisted or computer-controlled processes in 2004 to create new products from scanned data"); *id.* ¶¶ 195–196. However, "[t]hat a given combination would not be made by businessmen for economic reasons does not mean that persons skilled in the art would not make the combination because of some technological incompatibility. Only the latter fact would be relevant." *In re Farrenkopf*, 713 F.2d 714, 718 (Fed. Cir. 1983) (citation omitted).

Consequently, to the extent that Patent Owner's contention is based on the costs associated with manufacturing a vehicle floor tray based on the proposed combination, the contention is unavailing.

Tris Pharma, cited by Patent Owner in support of its position, is a non-precedential Federal Circuit decision that is inapposite. In the district court proceeding on appeal in *Tris Pharma*, the defendant "Actavis argued, without supporting evidence, only that a skilled artisan would have been generally motivated to use a single mean peak concentration profile." *Tris Pharma*, 2022 WL 2525318 at *4. The Federal Circuit determined that "the district court reasonably found, the only evidence presented by Actavis regarding motivation to combine was, at best, inconsistent" because, *inter alia*, Actavis "presented expert testimony that a skilled artisan 'would have been indifferent' to and therefore *not* motivated to use a single peak profile." *Id.* In this case, Patent Owner cites to certain paragraphs of Dr. Kurfess's testimony that a person of ordinary skill in the art would be indifferent to CMM and CAD/CAM. PO Resp. 28 (citing Ex. 2055 ¶¶ 55–58, 60–61, 165). However, after reviewing that testimony, we find that Dr. Kurfess never makes a statement in the cited testimony that the ordinarily skilled artisan would be indifferent to CMM and CAD/CAM, nor does he cite to any contemporaneous documentary evidence that an expert would have been "indifferent' to CMM and CAD/CAM technology in 2004. *See* Ex. 2055 ¶¶ 55–58, 60–61, 165. Rather, Dr. Kurfess testifies about what he perceives to be certain problems with the technology in 2004 or the cost of using CMM and CAD/CAM. Because there is no evidence before us of "indifference" by a person of ordinary skill in the art, the holding in *Tris Pharma* is of little import to our analysis.

As explained below in our conclusion on motivation to combine, we consider the testimony of Dr. Kurfess and Mr. Sherman and determine that Petitioner establishes that an ordinarily skilled artisan would have been motivated to combine Stanesic, Rothkop, and Cicotte.

iv. Combining Stanesic, Rothkop, and Cicotte Would Frustrate the Purpose of Stanesic

Patent Owner contends that the proposed combination would frustrate the purpose of Stanesic because it "removes the inventive concept from Stanesic: the multifaceted retention system, and specifically, the retention tabs." PO Resp. 29–30 (citing Ex. 2055 ¶¶ 73–75[16]). Patent Owner further contends that Petitioner's proposed combination "defeats the purpose of Stanesic . . . because Rothkop's reverse engineering teachings would not inform a [person of ordinary skill in the art] how to create the non-existent tabs for Stanesic." *Id.* at 30 (citing Ex. 2023 ¶ 162[17]). According to Patent Owner, because Rothkop "does not teach or otherwise disclose a way to create a three-dimensional image of a ***not-yet-***existent object . . . from an electronic model of a ***pre-***existing object," it "fails to teach . . . how to create a not-yet-existent floor mat with Stanesic's not-yet-existent retention tabs." *Id.* at 31.

Petitioner replies that "scanning the footwell . . . would have provided information on where to locate the tabs so they 'fit underneath the door

[16] The cited testimony of Mr. Sherman does not address the removal of Stanesic's retention tabs or the function of the retention tabs. Ex. 2055 ¶¶ 73–75.

[17] The cited testimony of Dr. Kurfess does not address the teachings of Rothkop or offer any opinion as to why Rothkop would not teach or suggest incorporating Stanesic's retention tabs in the proposed combination. Ex. 2023 ¶ 162.

sills,' just as in other measuring methods." Pet. Reply 16 (citing Ex. 1005, 1:56–58, Ex. 1059, 33:20–35:25; Ex. 1055 ¶ 132). According to Petitioner, an ordinarily skilled artisan "would have known how to design tabs using known CAD operations and would not have needed the scan data to provide the entire form of a floor tray (similar to forming the reservoir of claim 6)." *Id.* at 16–17 (citing Ex. 1001, claims 1, 6; Ex. 1011 ¶ 147; Ex. 1055 ¶¶ 133–137; Ex. 1078 ¶¶ 58, 60).

Patent Owner's contention is unavailing for the following reasons.

First, as noted above in our analysis of Patent Owner's teaching away contention, Petitioner's proposed combination does not remove Stanesic's retention tabs. Second, Mr. Perreault testifies that "scanning the footwell (as proposed in the combination) would provide information on where to locate the tabs so they 'fit underneath the door sills.'" Ex. 1055 ¶ 132 (citing Ex. 1005, 1:56–58). Mr. Perreault also testifies that an ordinarily skilled artisan would have readily understood that scanning the footwell provides the same information as "Stanesic's taping approach [for manufacturing its commercial embodiment] to measuring footwells" described by Mr. Sherman. *Id.* (citing Ex. 1059, 33:20–35:25).

We find Mr. Perreault's testimony to be reasonable because it explains that scanning the footwell provides the same information as the prior art technique for forming the mold for the commercial embodiment of Stanesic's tray and would have allowed one of ordinary skill in the art to include the retention Stanesic's tabs in the same manner.

v. Improper Hindsight

Patent Owner contends that "there is no reason to combine Stanesic, Rothkop, and Cicotte" and that a person of ordinary skill in the art "would

have been dissuaded from doing so." PO Resp. 32 (citing Ex. 2023 ¶¶ 195–203; Ex. 2055 ¶¶ 73–75). According to Patent Owner, "Petitioners are improperly using the '655 Patent as a blueprint to piece together multiple disparate prior art references to arrive at the claimed invention." *Id.* (citations omitted).

Patent Owner contends that Stanesic "best represents the state of the art in floor mat manufacturing at the time of the '655 Patent." PO Resp. 33 (citing Ex. 1019; Ex. 1020; Ex. 2055 ¶ 59). Patent Owner argues that "Stanesic used retention tabs . . . as opposed to better contouring a mat" and none of the "prior art floor mat or tray reference[s] cited by Petitioners" mention CMM or CAD/CAM. *Id.*

Patent Owner next contends that "[t]he issue is whether the state of the art was such that the CMM and CAD/CAM processes known and used in 2004 could be readily applied by a [person of ordinary skill in the art] to the vehicle floor covering market." PO Resp. 34. Patent Owner further contends that Mr. Perreault's testimony that applying CMM and CAD/CAM in the floor tray market "would have been 'routine' lacks any substantiation—indeed, that claim is controverted by Perreault's own testimony." *Id.* (citing Ex. 2007, 26:7–14, 27:5–7); Sur-reply 9. Patent Owner further contends that Mr. Sherman and Dr. Kurfess testify that "CAD/CAM were insufficiently developed and nowhere near 'routine' in 2004 to accommodate applications for manufacturing vehicle floor trays." *Id.* (citing Ex. 2023 ¶¶ 195–203; Ex. 2055 ¶ 77).

Petitioner replies that Patent Owner's "main argument is that the benefits provided by CMM/CAD/CAM technology did 'not come until much later.'" Pet. Reply 19 (citing PO Resp. 34). According to Petitioner,

Patent Owner's "assertions are unsupported and disproved." *Id.* (citing Ex. 1055 ¶¶ 140–141; Ex. 2008, 59–64). Petitioner also contends that Patent Owner's arguments for "indifference are based on inaccurate state-of-the-art assertions . . . and are legally irrelevant." *Id.*

In the Sur-reply, Patent Owner argues that "conventional methods disclosed at least thirteen different ways to manufacture floor trays without the need for innovation." Sur-reply 7 (citing Pet. Reply 26; Ex. 2055 ¶¶ 20–32, 98). According to Patent Owner, before the claimed invention, "floor tray manufacturing had never been done using CMM/CAD/CAM." *Id.*

Patent Owner next argues that "Petitioners have not rebutted, that the costs required to implement PO's method would eclipse the value of Sherman's entire company" and that an ordinarily skilled artisan "would not invest millions of dollars to use unproven methods that achieve purportedly the same results." Sur-reply 8 (citing Ex. 2055 ¶ 84). Patent Owner further argues that "it is unclear how using a digital process adds anything that the conventional methods did not" and, according to Patent Owner, "[a] mold is a mold, regardless of the method by which it is made, and its throughput capability remains the same." *Id.* (citing Ex. 2055 ¶¶ 39–40). Patent Owner next argues that manufacturers of floor trays "in 2004 were able to customize to achieve acceptable quality assurance" and "Petitioners cite no evidence that conventional methods of floor mat/tray manufacture did not suffice or that these 'concerns' or 'benefits' would have motivated a [person of ordinary skill in the art] to consider the method of PO's patent." *Id.* at 8–9.

For the following reasons, we find Patent Owner's hindsight arguments to be unavailing.

Our analysis must be tethered to what is claimed. Claim 1 is a process for manufacturing a vehicle floor tray and does not recite structural aspects of the claimed floor tray other than it be manufactured "by molding polymer material in the mold." Ex. 1001, 19:46–20:2. Patent Owner's assertion that Stanesic uses retention tabs rather than contouring the mat (PO Resp. 33) is, thus, of little relevance to our analysis because claim 1 does not require contouring the floor tray.

The relevance of Patent Owner's characterization of Stanesic as "best representing the state of the art in floor mat manufacturing" is unclear because Stanesic discloses few details of how the mat is actually manufactured other than it "can be molded to a desired deeply contoured form and such form be retained. It can then be cut manually or by machine to a desired shape." Ex. 1005, 3:42–44. In fact, Petitioner's combination is based on its acknowledgement that Stanesic "does not specify how its molds are designed and created." Pet. 20.

Patent Owner's argument that the prior art floor mat references cited by Petitioner do not mention CMM or CAD/CAM is unavailing. PO Resp. 33 (citations omitted). Rothkop discloses using a scanner 12 and CAD software. Ex. 1006, 4:55–6:5. Cicotte discloses machining a mold "by a computer controlled machining center using the surface map data downloaded from a computer." Ex. 1007, 4:44–46. To the extent that this argument applies to Stanesic, the argument is unavailing as an attack on Stanesic in isolation.

Patent Owner's argues that the issue is whether CMM and CAD/CAM processes could be "readily applied" by an ordinarily skilled artisan to the vehicle floor covering market. PO Resp. 34; *see also* Sur-reply 7 (discussing how "floor tray manufacturing had never been done using CMM/CAD/CAM"). This argument is problematic in two respects. First, Patent Owner does not limit the field of the invention to vehicle floor coverings. PO Resp. 9. Second, even if the field of invention were limited to vehicle floor coverings, *KSR* explains that "the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim." *KSR*, 550 U.S. at 418.

Patent Owner argues that Mr. Perreault's testimony, discussed above in connection with reasonable expectation of success undercuts his claim that applying CMM and CAD/CAM would have been routine. PO Resp. 34. We disagree with this characterization of the cited testimony. Mr. Perreault testified that "Lund International purchased a 3D scanning system from my company . . . [a]nd then I assisted them in creating the CAD data from the existing footwell so they could then design their floor mats" and that "in the early 2000s I would have considered myself an expert on" the FARO Arm. Ex. 2007, 26:7–13, 27:3–4. This testimony appears to be nothing more than Mr. Perreault confirming that he assisted a customer with the initial operation of newly purchased equipment in 2007 and it has little relevance to whether the use of CMM and CAD/CAM by an ordinarily skilled artisan in 2004 would have been routine.

Patent Owner also contends CMM and CAD/CAM were insufficiently developed in 2004 to accommodate applications for manufacturing vehicle floor trays is unavailing. PO Resp. 34. As discussed above, the field of the

invention is not limited to vehicle floor trays. Mr. Sherman's testimony cited by Patent Owner does not discuss the state of CMM and CAD/CAM technology in 2004 but recounts how his company made an embodiment of the floor trays of the Stanesic patent "using tried and true methods." Ex. 2055 ¶ 77.

Patent Owner repeats the arguments discussed above in connection with reasonable expectation of success concerning the costs of implementing CMM and CAD/CAM. Sur-reply 8. As discussed above, cost considerations are not relevant. *In re Farrenkopf*, 713 F. 2d at 718.

As explained below, we find that Petitioner establishes a reasonable rationale for the combination that is supported by the cited references. Consequently, Patent Owner's improper hindsight contentions are unavailing. *See In re Cree,* 818 F.3d 694, 702 n.3 (Fed. Cir. 2016).

Motivation to Combine Conclusion

In this case, Petitioner's combination relies on the combination of Stanesic, Rothkop, and Cicotte. Pet. 29–34. Petitioner starts with the proposition that "Stanesic does not specify how its molds are designed and created to achieve such a fit." *Id.* at 30 (citing Ex. 1003 ¶ 147). Petitioner turns to Rothkop, which as we found above for limitations 1[a] – 1[f], discloses using a CMM and CAD/CAM software to design "production tooling to accurately develop foam and trim that will interface with a vehicle seat and a seat frame." *Id.* (citing Ex. 1003 ¶ 148; Ex. 1:38–49, 3:17–20, 4:59–5:28, 5:55–60, 7:57–8:23.); *id.* at 32 ("applying Rothkop's teachings to Stanesic to make Stanesic's floor tray, a [person of ordinary skill in the art] would have been motivated to use production tooling in line with Stanesic's disclosure, i.e., molds"). Because Rothkop does not disclose using a mold as

production tooling (*id.* at 32), Petitioner then turns to Cicotte, which as we found above for limitation 1[f], discloses creating a data file to make a mold for an automobile body panel. *Id.* at 30 (citing Ex. 1007, 1:8–16, 3:1–3, 4:23–35); *id.* at 32 ("This would have led a [person of ordinary skill in the art] to consider Cicotte, which discloses making molds based on a data file (e.g., a three-dimensional CAD rendering or list of digital data points) of an automobile body panel."). Petitioner then reasons that an ordinarily skilled artisan "would have recognized that using Rothkop's and Cicotte's scanning, CAD processing, and mold-making teachings with Stanesic's floor tray manufacturing teachings is simply combining prior art elements according to known methods to yield predictable results." *Id.* at 33 (citing Ex. 1003 ¶ 156). The predictable result is "generating a custom-fit floor tray while 'reduc[ing] the design development cycle' of the floor tray and 'eliminating the need for multiple prototypes.'" *Id.* at 33–34 (citing Ex. 1003 ¶ 157; Ex. 1006, 2:61–65).

"Assessing whether the claimed subject matter involves the 'application of a known technique' will '[o]ften' require 'a court to look at interrelated teachings of multiple patents.'" *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380 (Fed. Cir. 2023) (citing *KSR*, 550 U.S. at 417–18). In this case, Petitioner has shown an interrelationship between the teachings of Stanesic, Rothkop, and Cicotte. Here Rothkop's teaching of scanning the surface of the vehicle seat to create the production tooling for an interfacing part, the seat foam, suggests applying the technique to Stanesic by scanning the vehicle footwell surface rather than the seat to create the interfacing part, the vehicle floor tray. Cicotte is related to

Rothkop and Stanesic in the sense that a digital file is used to create a mold, which is the production tool disclosed in Stanesic.

We find that Petitioner's evidence establishes this to be a combination of prior art elements according to known methods to yield the predictable result of "generating a custom fit floor tray" and reducing the design development cycle of the floor tray and eliminating the need for multiple prototypes. Ex. 1003 ¶ 156. Dr. Kurfess does not dispute this part of Mr. Perreault's testimony. *See* Ex. 2023 ¶¶ 161–168. Rather, he focuses on arguments which we find to be unavailing as discussed above. *Id.* ¶ 162 ("Stanesic teaches . . . away"), ¶ 163 (Stanesic's retention tabs "keep[] the mat in place"), ¶ 164 ("Stanesic further teaches away" and "the cost of manufacture"), ¶ 165 ("a FaroArm was expensive"); ¶ 166 ("Cicotte . . . does not teach the creation of a three-dimensional image of a not-yet existing object"), ¶ 167 ("The three-dimensional model of Cicotte, at best, is based on digital measurements from that already-existing part."). We therefore find Mr. Perreault's testimony to be persuasive.

A combination such as this "is obvious unless its actual application is beyond [the] skill" level of person of ordinary skill in the art. *KSR*, 550 U.S. at 417. We find this combination to be within the level of skill of one of ordinary skill in the art as we have determined above in connection with a reasonable expectation of success.

Claim 1 Summary

For all the foregoing reasons, after considering Patent Owner's contentions and evidence, we find Petitioner has shown that the combination of Stanesic, Rothkop, and Cicotte teaches every element of claim 1 and that a person of ordinary skill in the art would have been motivated to combine

the references with a reasonable expectation of success. Because Patent Owner's evidence of a nexus for objective indicia is limited to dependent claim 6 (PO Resp. 60), we determine that Petitioner has shown by a preponderance of the evidence that claim 1 is unpatentable.

5. Claim 2

Claim 2 depends from claim 1 and recites "wherein said step of digitally measuring the three-dimensional position of the points on the surface of the vehicle foot well comprises using a coordinate measurement machine." Ex. 1001, 20:3–6.

Petitioner contends that "Rothkop discloses this feature because it discloses that three-dimensional data for digitization of a three-dimensional object 'can be obtained from . . . fine contact devices such as portable coordinate measuring machines." Pet. 37 (citing Ex. 1003 ¶¶ 163–164; Ex. 1006, 1:38–49). Petitioner further contends that an ordinarily skilled artisan "would have been motivated to use a portable coordinate measuring machine[] because they can be used even in tight spaces, such as within a vehicle" and because a contact scanner "can account for the surface testure of Stanesic's carpeted footwell." *Id.* (citing Ex. 1003 ¶ 165; Ex. 1005, 1:6–7; Ex. 1006, 4:63–64). Petitioner further relies on its motivation to combine and reasonable expectation of success arguments for claim 1. *Id.*

Patent Owner relies on its contentions for claim 1. PO Resp. 45.

We have reviewed Petitioner's contentions and evidence for claim 2 and find that Rothkop teaches or suggests the limitations of claim 2. Consequently, we determine that Petitioner has shown by a preponderance of the evidence that claim 2 is unpatentable.

E. Ground 2: Alleged Obviousness of Claim 3 Over Stanesic, Rothkop, Cicotte, and Lee

Petitioner contends that the combination of Stanesic, Rothkop, Cicotte, and Lee teaches each limitation of claim 3 and that an ordinarily skilled artisan would have been motivated to combine their teachings with a reasonable expectation of success. Pet. 38–40. Patent Owner disputes Petitioner's contentions. PO Resp. 45–46.

We begin with an overview of Lee and then analyze the parties' respective contentions.

1. Overview of Lee (Ex. 1008)

Lee discloses a system for making custom footwear. Ex. 1008 ¶ 10. Lee discloses scanning an object with shape measuring unit 10 and storing captured image data. *Id.* ¶¶ 55–57. Lee further discloses extracting information based on the scan and generating a three-dimensional model of the scanned object by "deriving a B spline curve" and "generating a B spline surface by lofting several section curves." *Id.* ¶ 77, Fig. 8a.

2. Analysis

Claim 3 depends from claim 1 and recites:

> wherein said step of using the stored points to construct an electronic model of the vehicle foot well surface includes the substeps of:
> connecting together groups of the stored points with B-splines; and
> lofting between the B-splines to create areal segments of the electronic model of the vehicle foot well surface.

Ex. 1001, 20:8–14.

Petitioner contends that the combination of Rothkop and Stanesic discloses the limitations of claim 3 because Rothkop's "software 'output[s] a NURBS (Non-Uniform Rational B-spline) surface with a deviation or tolerance of no less than 0.5 mm from the scanned points.'" Pet. 38 (citing

Ex. 1003 ¶¶ 168–169; Ex. 1006, 5:6–11). According to Petitioner, an ordinarily skilled artisan "would have understood that developing a NURBS surface involves connecting groups of stored points with B-splines and then lofting between them to create areal segments of the electronic model." *Id.* at 38–39 (citing Ex. 1003 ¶ 169).

Petitioner next contends that Lee "also generates B-splines and lofts between the B-splines to form a surface." Pet. 39 (citing Ex. 1003 ¶¶ 167–170; Ex. 1008, Fig. 8a). Petitioner further contends that Lee scans an object and uses data from the scan to "generate[] a 3-dimensional shape model of the object by 'deriving a B spline curve' and 'generating a B spline surface by lofting several section curves.'" *Id.* (citing Ex. 1008 ¶¶ 77–80, Fig. 8a, claim 5). Petitioner further contends that "Lee explains that a B-spline curve is generated by 'connecting points' and 'interpolating each point.'" *Id.* (citing Ex. 1008 ¶ 100). According to Petitioner, an ordinarily skilled artisan "would have been motivated to combine Lee's teachings with the combination of Stanesic, Rothkop, and Cicotte because Lee provides details of how to generate a NURBS parametric surface (disclosed in Rothkop)." *Id.* (citing Ex. 1003 ¶ 171). Further, Petitioner argues that an ordinarily skilled artisan would have had a reasonable expectation of success because a NURBS parametric surface "was 'widely used throughout the CAD industry,' and was thus well within a [person of ordinary skill in the art]'s skill level." *Id.* at 39–40 (citing Ex. 1006, 5:11–13).

Patent Owner first relies on its arguments for claim 1. PO Resp. 45. Patent Owner next argues that an ordinarily skilled artisan "would not have looked to Lee to solve issues in floor mat slippage" because it relates to a "computer-aided process for developing a shoe last and shoe cover" and is

not applicable "to the automotive industry, or vehicle floor trays." *Id.* at 45–46. Patent Owner does not provide legal argument that Lee is not analogous art. *See id.*; *see generally* Sur-reply. Patent Owner further argues that "Lee adds nothing to the disclosure of Rothkop, besides 'explicit mention of well-known B-spline algorithms to modify existing polygonal models.'" PO Resp. 46 (citing Ex. 2023 ¶ 134).

Petitioner replies, if Patent Owner is arguing that Lee is not analogous art because it is not in the automotive field, Patent Owner is wrong. Pet. Reply 21. Petitioner argues that Lee is in the same field of endeavor as the '655 patent because it "is in the manufacturing industry using scanned data to make a custom-fitted part." *Id.* (citing Ex. 1055 ¶ 155). Petitioner further provides evidence and argument why Lee would be "reasonably pertinent to the problem with which the inventor was involved." *Id.* at 22 (citing Ex. 1055 ¶¶ 151–153). Petitioner argues that the inventors of the '655 patent "were involved with providing 'a floor tray that will have a more exact fit to the vehicle foot well for which it is provided.'" *Id.* (citing Ex. 1001, 1:43–46, 1:61–63, 2:9–11). According to Petitioner, "any reference that relates to custom-fitted components or a more exact fit (like Lee . . .) is reasonably pertinent to this problem." *Id.* (citing Ex. 1055 ¶¶ 151–152).

To the extent that Patent Owner relies on its arguments for claim 1, those arguments are unavailing for the reasons discussed for claim 1.

Patent Owner does not explicitly argue that Lee is not analogous art. PO Resp. 45–46. If Patent Owner had made such an argument, we agree with Petitioner's reasoning that Lee is reasonably pertinent to the problem the inventors of the '655 patent were seeking to solve.

For a prior art reference to qualify as analogous art, the reference must either be in the field of the applicant's endeavor or reasonably pertinent to the problem with which the inventor was concerned. *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992). References are selected as being reasonably pertinent to the problem based on the judgment of a person having ordinary skill in the art. *Id.* ("[I]t is necessary to consider 'the reality of the circumstances,' --in other words, common sense--in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor." (quoting *In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979))). Furthermore, the scope of analogous art is to be construed broadly. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1238 (Fed. Cir. 2010).

In this case, Petitioner does not rely on "Lee to solve issues in floor mat slippage." PO Resp. 46. Rather, Petitioner relies on Lee for disclosure "B-splines and lofts between B-splines to form a surface" in combination with Stanesic, Rothkop, and Cicotte. Pet. 39. These techniques are explicitly recited in claim 3. Consequently, we agree with Petitioner that Lee is reasonably pertinent to the problems facing the inventors. Ex. 1003 ¶ 94; Ex. 1055 ¶¶ 150, 154.

We have reviewed Petitioner's contentions and evidence for claim 3 and determine that Petitioner has shown by a preponderance of the evidence that claim 3 is unpatentable

F. Ground 3: Alleged Obviousness of Claim 4 Over Stanesic, Rothkop, Cicotte, and Fisker

Petitioner contends that the combination of Stanesic, Rothkop, Cicotte, and Fisker teaches each limitation of claim 4 and that an ordinarily skilled artisan would have been motivated to combine their teachings with a

reasonable expectation of success. Pet. 40–47. Patent Owner disputes Petitioner's contentions. PO Resp. 46–47.

We begin with an overview of Fisker and then analyze the parties' respective contentions.

1. Overview of Fisker (Ex. 1009)

Fisker is directed to "a method for computer-controlled modeling of customised earpieces." Ex. 1009, code (57). Fisker starts its process by "captur[ing] a 3D digital model of . . . the auditory canal using a 3D scanning device." *Id.* at 30:30–31. Fisker applies a shelling process to a 3D computer model. *Id.* at 8:26–29, 11:4–18, Fig. 26. Fisker discloses that the operator can define the shell thickness which may be fixed or variable. *Id.* at 49:30, 50:16–17. Fisker's process includes arranging components in the shelled computer model to complete the model of the earpiece. *Id.* at 11:29–12:3.

2. Analysis[18]

[4a]: The process of claim 1, wherein said vehicle tray data file is a final vehicle tray data file,

Petitioner contends that "Rothkop, as applied to Stanesic, discloses" this limitation. Pet. 40 (citing Ex. 1003 ¶¶ 176–179). According to Petitioner, "[b]ecause the vehicle tray data file is used to make a vehicle tray mold . . . it would have been obvious to a [person of ordinary skill in the art] for this vehicle tray data file to be a 'final' vehicle tray data file so that the floor tray is manufactured according to the designer's intent." *Id.* (citing Ex. 1003 ¶ 177). Petitioner also argues that Rothkop discloses a process for accounting for circumstances where "the foam created based on the

[18] We use Petitioner's limitation identifiers for ease of reference.

templates does not fit the seat" wherein an ordinarily skilled artisan "would have modified the data file based on the misfit, resulting in a final data file that accounts for the misfit." *Id.* at 41 (citing Ex. 1003 ¶ 178). Petitioner further argues that an ordinarily skilled artisan would have applied this process to any misfits in the data file for Stanesic's vehicle floor tray. *Id.* (citing Ex. 1003 ¶ 179).

Patent Owner does not address this limitation. *See* PO Resp. 46–47.

We have reviewed the evidence cited by Petitioner and find that the combination of Stanesic and Rothkop teaches or suggests this limitation.

[4b]: the process further including the steps of: using the electronic model of the vehicle foot well surface to construct an electronic three-dimensional vehicle tray solid;

Petitioner contends that "Rothkop, as applied to Stanesic, discloses" this limitation. Pet. 41 (citing Ex. 1003 ¶¶ 176, 180–181). Petitioner argues that "Rothkop generates outputs from 'the data model that describes a solid part'" that "is the foam that interfaces with the vehicle seat." *Id.* (citing Ex. 1003 ¶ 180; Ex. 1006, 8:1–17). Petitioner argues that seat surface "is duplicated and then offset, which is used to generate contour lines." *Id.* (citing Ex. 1006, 8:4–13). According to Petitioner, in the combination of Rothkop and Stanesic, an ordinarily skilled artisan "would have created a duplicate surface from the scanned footwell and offset the duplicate surface to construct an electronic three-dimensional vehicle tray solid." *Id.* at 42 (citing Ex. 1003 ¶ 181).

Patent Owner does not address this limitation. *See* PO Resp. 46–47.

We have reviewed the evidence cited by Petitioner and find that the combination of Stanesic and Rothkop teaches or suggests this limitation.

[4c]: shelling the electronic three-dimensional vehicle tray solid to create a preliminary vehicle tray data file representative of a vehicle floor tray that is uniformly thick;

Petitioner contends that "Fisker, as applied to the combination of Rothkop and Stanesic, discloses" this claim limitation. Pet. 42 (citing Ex. 1003 ¶¶ 176, 182–183). Petitioner argues that as part of Fisker's method of computer modeling customized earpieces, "Fisker discloses a 'shelling process' in which a 3D model is shelled." *Id.* (citing Ex. 1009, 8:26–29, 11:4–18, Fig. 26). Petitioner further argues that in Fisker's process, "'[t]he operator defines the thickness of the shell,' which is typically uniform but 'may easily be extended to shells with a varying thickness.'" *Id.* (citing Ex. 1003 ¶ 182; Ex. 1009, 49:30, 50:16–17). According to Petitioner, an ordinarily skilled artisan "would have been motivated to apply Fisker's shelling teachings to the electronic three-dimensional vehicle tray solid of Rothkop's process as applied to Stanesic" to "create[] a preliminary vehicle tray data file representative of a vehicle floor tray that is uniformly thick." *Id.* at 43 (citing Ex. 1003 ¶ 183; Ex. 1005, Figs. 3, 4; Ex. 1009, 49:30, 50:16–17).

Patent Owner does not address this limitation. *See* PO Resp. 46–47.

We have reviewed the evidence cited by Petitioner and find that the combination of Stanesic, Rothkop, and Fisker teaches or suggests this limitation.

[4d]: using the preliminary vehicle tray data file to command a stereolithographic apparatus to create a solid model by selectively curing liquid photopolymer using a laser;

Petitioner contends that "Fisker, as applied to the combination of Rothkop and Stanesic, discloses" this claim limitation. Pet. 43 (citing Ex. 1003 ¶¶ 176, 184–187). Petitioner contends that Fisker discloses "a

computer controllable rapid prototyping machine" that "'may be . . . controlled by a computer' and may be a stereolithography machine." *Id.* (citing Ex. 1009, 15:10–12). Petitioner further contends that Fisker's "'final 3D model will be directly saved in a format compatible with the manufacturing setup' and then produced using stereolithography." *Id.* (citing Ex. 1009, 3:31–33, 62:6–12). Petitioner next contends that "by disclosing stereolithography . . . Fisker also suggests selectively curing liquid photopolymer using a laser because a [person of ordinary skill in the art] would have understood that a stereolithographic apparatus typically makes a physical prototype by selectively curing liquid photopolymer using a laser." *Id.* at 44 (citing Ex. 1003 ¶ 186; Ex. 1007, 5:60–64; Ex. 1032, 0158; Ex. 1039, 2:24–48, 4:34–5:28; Ex. 1040, 1:24–67; Ex. 1041, 6:64–7:1, 14:37–46). According to Petitioner, the combination of Stanesic, Rothkop, Cicotte, and Fisker "would have resulted in using the preliminary vehicle tray data file to command a stereolithographic apparatus to create a solid model by selectively curing liquid photopolymer using a laser." *Id.* (citing Ex. 1003 ¶ 187).

Patent Owner does not address this limitation. *See* PO Resp. 46–47.

We have reviewed the evidence cited by Petitioner and find that the combination of Stanesic, Rothkop, Cicotte, and Fisker teaches or suggests this limitation.

[4e]: fitting the solid model to an actual vehicle foot well;

Petitioner contends that "Rothkop, as applied to Stanesic, discloses" this limitation. Pet. 44 (citing Ex. 1003 ¶¶ 176, 188). Petitioner contends that "[a]s modified by Fisker and as applied to Stanesic, the solid model of the vehicle floor tray created by stereolithography would be fit to Stanesic's actual vehicle footwell." *Id.* (citing Ex. 1003 ¶ 188). Petitioner further

contends that "it would have been obvious to fit the solid model to an actual vehicle footwell to confirm that the floor tray is acceptable." *Id.* at 44–45 (citing Ex. 1003 ¶ 188; Ex. 1006, 5:55–60).

Patent Owner does not address this limitation. *See* PO Resp. 46–47.

We have reviewed the evidence cited by Petitioner and find that the combination of Stanesic, Rothkop, and Fisker teaches or suggests this limitation.

[4f]: and making adjustments to the preliminary vehicle tray data file as a result of fitting the solid model to the actual vehicle foot well, to create the final vehicle tray data file.

Petitioner contends that "Rothkop, as applied to Stanesic, discloses" this limitation. Pet. 45 (citing Ex. 1003 ¶¶ 176, 189–190). Petitioner contends that "Rothkop discloses that the 'seat must fit . . . the seat frame' and that if the seat frame changes, it can 'be updated in the model and the design can be changed accordingly.'" *Id.* (citing Ex. 1006, 5:55–60). Petitioner further contends that "if the foam that is milled based on the templates does not fit the seat frame, a [person of ordinary skill in the art] would have modified the preliminary data file based on the misfit, resulting in a final data file that accounts for the misfit." *Id.* (citing Ex. 1003 ¶ 189). According to Petitioner, "[i]t would have been obvious to use a similar approach for Stanesic's floor tray so that modifications can be made to account for any misfit." *Id.* (citing Ex. 1003 ¶ 190).

Patent Owner does not address this limitation. *See* PO Resp. 46–47.

We have reviewed the evidence cited by Petitioner and find that the combination of Stanesic, Rothkop, and Fisker teaches or suggests this limitation.

Motivation to Combine and Reasonable Expectation of Success

Petitioner contends that an ordinarily skilled artisan "would have been motivated to combine Fisker with the combination of Stanesic, Rothkop, and Cicotte." Pet. 46 (citing Ex. 1003 ¶¶ 191–192). Petitioner argues that Stanesic's "floor tray is shell-like in appearance and has a uniform thickness . . . to avoid weak parts of the floor tray" and that an ordinarily skilled artisan "would have desired to create a floor tray that is not thicker than it needs to be and does not take up more space in the footwell than is needed." *Id.* (citing Ex. 1003 ¶ 191). Petitioner argues these reasons would have led the ordinarily skilled artisan to turn to Rothkop's offsetting and Fisker's shelling which would result in a solid model of a floor tray with uniform thickness. *Id.* (citing Ex. 1003 ¶ 191; Ex. 1006, 8:1–17; Ex. 1009, 8:26–29, 11:4–18, 49:30, 50:16–17, Fig. 26).

Petitioner next contends that an ordinarily skilled artisan "would have been motivated to combine Fisker's stereolithography teachings with Stanesic, Rothkop, and Cicotte to make a prototype of Stanesic's floor tray 'rapidly, reliably, accurately, and economically,'" which "would then facilitate an effective way to test whether the floor tray fit with the vehicle footwell." Pet. 46–47 (citing Ex. 1003 ¶¶ 192–193; Ex. 1039, 1:7–14).

Petitioner next contends that an ordinarily skilled artisan would have had a reasonable expectation of success because, prior to 2004, "CAD techniques, such as offsetting and shelling, were commonly applied as part of the design process, and those techniques were well within a [person of ordinary skill in the art]'s skill level." Pet. 47 (citing Ex. 1003 ¶ 193).

Patent Owner first relies on its contentions for claim 1. PO Resp. 46.

Patent Owner next contends that "Fisker applies to audio devices and ostensibly to medical devices." PO Resp. 46. According to Patent Owner,

an ordinarily skilled artisan "never would have looked to Fisker, or anything related to those fields, let alone to micro-devices such as earpieces to solve problems related to the automotive industry." *Id.* (citing Ex. 2023 ¶ 137).

Patent Owner next contends that for reverse engineering products in 2004, "it was completely impractical to scan objects larger than about 400 mm^3—less than 16 inches." PO Resp. 46 (citing Ex. 2023 ¶ 138; Ex. 2029; Ex. 2083 ¶¶ 87–88). Patent Owner argues that the ear canal falls within the 400 mm limit. *Id.* at 47 (citing Ex. 2023 ¶ 138).

Patent Owner next contends that offsetting and shelling "were not 'commonly applied as part of the design process' for automotive floor trays in 2004, nor were they techniques 'well within the skill level of a" person of ordinary skill in the art'". PO Resp. 47 (citing Ex. 2023 ¶ 177). Patent Owner also contends that likewise an ordinarily skilled artisan "would not have expected success in combining Stanesic, Rothkop, Cicotte, and Fisker to arrive at claim 4." *Id.*

Petitioner replies, if Patent Owner is arguing that Fisker is not analogous art because it is not in the automotive field, Patent Owner is wrong. Pet. Reply 21. Petitioner relies on the same analogous art arguments discussed above for claim 3. *See id.* Petitioner further contends that Patent Owner's argument of a "400 mm^3 limit for digitizing objects" is "completely inaccurate." *Id.* at 22 (citing Ex. 1009, 37:11–13; Ex. 1055 ¶¶ 155–156). Petitioner further contends that Patent Owner's assertions "regarding offsetting and shelling and reasonable expectation of success [] only cite Dr. Kurfess's uncorroborated testimony." *Id.* at 22–23 (citing PO Resp. 47; Ex. 2023 ¶ 177).

To the extent that Patent Owner relies on its arguments for claim 1, those arguments are unavailing for the reasons discussed for claim 1.

Patent Owner does not explicitly argue that Fisker is not analogous art. PO Resp. 46. If Patent Owner had made such an argument, we agree with Petitioner's reasoning that Fisker is reasonably pertinent to the problem the inventors of the '655 patent were seeking to solve.

In this case, Petitioner does not rely on "Fisker to solve problems related to the automotive industry." PO Resp. 46. Rather, Petitioner relies on Fisker for disclosing "a 'shelling process' in which a 3D model is shelled" in combination with Stanesic, Rothkop, and Cicotte. Pet. 42. These techniques are explicitly recited in claim 4. Consequently, we agree with Petitioner that Fisker is reasonably pertinent to the problems facing the inventors. Ex. 1003 ¶ 94; Ex. 1055 ¶¶ 150, 155.

In support of its argument that it was impractical to scan objects larger than 400mm^3 in 2004, Patent Owner relies on paragraph 138 of Dr. Kurfess's declaration, Exhibit 2029, and paragraphs 87 and 88 of Mr. Granger's declaration. PO Resp. 38. Neither Exhibit 2029 nor the cited paragraphs of Mr. Granger's declaration refer to any volume limit for scanning an object. Ex. 2029; Ex. 2083 ¶¶ 87–88.

Dr. Kurfess testifies that he relies on Exhibit 2030. Ex. 2023 ¶ 138. Exhibit 2030 provides that "Scanning machines typically have a working volume in the range of a 400 mm cube." Ex. 2030 § 2.1.2 ("Digitising with scanning machines"). Exhibit 2030 also provides that "optical digitising tools" can capture "[a]reas up to 1200 x 960 mm [47.25 x 37.8 inches]." *Id.* § 2.1.3 ("Digitising with optical systems"). In light of the disclosure of § 2.1.3 of Exhibit 2030, Dr. Kurfess's testimony that "it was completely

impractical to scan objects larger than about 400mm" is contrary to the disclosure in § 2.1.3 and entitled to no weight. Consequently, Patent Owner's contention that it was impractical to scan objects larger than $400mm^3$ such as a vehicle floor tray is unavailing.

Patent Owner relies on Dr. Kurfess's testimony for its contention that offsetting and shelling were not in common use in design processes for automobile floor trays and were not within the level of a person of ordinary skill in the art in 2004. PO Resp. 36. Dr. Kurfess does not cite to any objective evidence in support of his testimony. *See* Ex. 2023 ¶ 177. We note that Dr. Kurfess also testifies that an ordinarily skilled artisan would have background and experience in "three-dimensional scanning, three-dimensional modeling, thermoforming, prototyping, computer-aided design and manufacturing." *Id.* ¶ 18. Dr. Kurfess's unsupported testimony that offsetting and shelling were not within the level of a person of ordinary skill in the art is contrary to his testimony on the qualifications of an ordinarily skilled artisan and entitled to no weight.

Rothkop discloses an offsetting process, i.e., "[a] duplicate of the surface is first created and *offset* a distance of the trim thickness accounting for [the] laminated padding." Ex. 1006, 8:4–6; Ex. 1003 ¶ 180. Mr. Perreault testifies that "[o]ffsetting a surface was a common way in CAD software to form a solid based on a surface." Ex. 1003 ¶ 180 (citing Ex. 1029, 257; Ex. 1032, 73–74). Because Mr. Perreault's testimony is supported by the cited references, it is entitled to substantial weight.

Fisker discloses a shelling process. Ex. 1009, 8:26–29, 11:4–18. Mr. Perreault testifies that "shelling a three-dimensional computer model solid was a common, well-known operation from a [person of ordinary skill]'s

background knowledge of CAD techniques." Ex. 1003 ¶ 182 (citing Ex. 1037, Abstract, 1:6–39, 4:52–55, 6:65–7:5). Because Mr. Perreault's testimony is supported by the cited reference, it is entitled to substantial weight.

We have reviewed the evidence cited by Petitioner in light of Patent Owner's contentions and evidence, and determine that Petitioner has shown that an ordinarily skilled artisan would have been motivated to combine Stanesic, Rothkop, Cicotte, and Fisker for the reasons stated in the Petition and would have had a reasonable expectation of success. Ex. 1003 ¶¶ 191–194.

For the all the foregoing reasons, we determine that Petitioner has shown by a preponderance of the evidence that claim 4 is unpatentable.

G. Ground 4: Alleged Obviousness of Claim 5 Over Stanesic, Rothkop, Cicotte, and Gruenwald

Petitioner contends that the combination of Stanesic, Rothkop, Cicotte, and Gruenwald teaches each limitation of claim 5 and that an ordinarily skilled artisan would have been motivated to combine their teachings with a reasonable expectation of success. Pet. 47–55. Patent Owner disputes Petitioner's contentions. PO Resp. 47–49.

We begin with an overview of Gruenwald and then analyze the parties' respective contentions.

1. Gruenwald (Ex. 1010)

Gruenwald is a treatise on thermoforming. Ex. 1010, 10. Among the chapter topics covered in Gruenwald are "Heating of the Plastic," "Thermoforming Molds," "Vacuum, Air Pressure, and Mechanical Forces," "Thermoforming Equipment," "Thermoforming Processes," and "Design Considerations." *Id.* at 6–8.

2. Analysis

[5a]: The process of claim 1, wherein the process manufactures a vehicle floor tray from a sheet of heated polymeric material by using a vacuum mold,

Petitioner contends that Stanesic and Gruenwald teach this limitation. Pet. 48 (citing Ex. 1003 ¶¶ 198–201). Petitioner specifically contends that "Stanesic discloses a process that manufactures a vehicle floor tray from heated polymeric material using a mold" and that "Stanesic uses a 'thermoplastic material' to make its floor tray and indicates that the 'thermoplastic plastic can be molded to a desired deeply contoured form.'" *Id.* (citing Ex. 1005, 3:41–43). Petitioner next argues that "Stanesic's thermoplastic material is a polymeric material, as a [person of ordinary skill in the art] would have understood, and molding the material to a deeply contoured form discloses the use of a mold to manufacture a floor tray." *Id.* (citing Ex. 1003 ¶ 199). Petitioner further argues that because Stanesic discloses heating the polymeric material to "a temperature of from about 190 degrees F. to about 240 degrees F to become readily moldable," an ordinarily skilled artisan "would have understood this disclosure to suggest that thermoforming was used to make Stanesic's floor tray, which also suggests using a sheet of polymeric material and a vacuum mold." *Id.* (citing Ex. 1003 ¶ 199; Ex. 1005, 3:48–51).

Petitioner next contends that "Gruenwald discloses that in 'thermoforming we begin with an already preformed part, in most cases, a thermoplastic *sheet* or film.'" Pet. 48–49 (citing Ex. 1010, 16). Petitioner further contends that Gruenwald discloses supplying heat "so that the plastic to be formed becomes highly flexible and stretchable but still retains sufficient strength to withstand gravitational force." *Id.* at

49 (citing Ex. 1003 ¶ 200; Ex. 1010, 16). According to Petitioner, Gruenwald's use of lower temperatures allows for lower pressures, which are achieved using a vacuum mold. *Id.* (citing Ex. 1003 ¶ 200; Ex. 1010, 16–17).

Petitioner next contends that an ordinarily skilled artisan would have turned to Gruenwald based on Stanesic's suggestion that thermoforming is used for its floor tray. Pet. 49 (citing Ex. 1003 ¶ 201; Ex. 1005, 3:48–51). According to Petitioner, "[c]ombining Gruenwald's teachings with Stanesic's would have resulted in a process that manufactures Stanesic's vehicle floor tray from a sheet of heated polymeric material by using a vacuum mold." *Id.* at 49–50.

Patent Owner does not address this limitation. PO Resp. 47–49.

We have reviewed Petitioner's evidence for this limitation and find that the combination of Stanesic and Gruenwald teaches or suggests this limitation.

[5b]: said step of using the electronic model of the vehicle foot well surface to construct the electronic three-dimensional image of the vehicle floor tray including the substeps of: establishing curves in the electronic three-dimensional image of the vehicle floor tray to fit corresponding curves of the electronic model of the vehicle foot well surface; and

Petitioner contends that the combination of Rothkop and Stanesic teach this limitation. Pet. 50 (citing Ex. 1003 ¶¶ 198, 202–204). Specifically, Petitioner argues that because Stanesic and Rothkop both teach accurately developing components that interface with another component, "the combination of Stanesic and Rothkop also discloses that this would include establishing curves in the electronic three-dimensional image of the vehicle floor tray to fit corresponding curves

of the electronic model of the vehicle footwell surface." *Id.* (citing Ex. 1003 ¶¶ 202–203; Ex. 1005, 2:31–43, 2:62–67; Ex. 1006, 5:6–11). Petitioner argues that "Stanesic's figures show that the transition between the flat base and the front portion of Stanesic's floor tray and other portions of the floor tray are curved." *Id.* (citing Ex. 1003 ¶ 203; Ex. 1005, Figs. 1–3).

Petitioner next contends that "Stanesic's floor tray is contoured to closely follow, mate with, and snugly fit into the contours of the vehicles' floor surface" and consequently "a [person of ordinary skill in the art] would have understood that Stanesic's footwell included curves and that the electronic model of the footwell resulting from the scan would also include curves." Pet. 52 (citing Ex. 2004 ¶ 204; Ex. 1005, 2:31–43, 2:62–67). According to Petitioner, using Rothkop's teachings, an ordinarily skilled artisan "would have established curves in the electronic three-dimensional image of the vehicle floor tray to fit corresponding curves of the electronic model of the vehicle footwell surface, so that the resulting floor tray would conform to the vehicle's contours." *Id.* (citing Ex. 1003 ¶ 204; Ex. 1005, 2:31–43, 2:62–67).

Patent Owner characterizes Petitioner's contentions for this limitation as being "disclosed by Stanesic" and "[t]his is plainly wrong." PO Resp. 48. Patent Owner contends that Petitioner and Mr. Perreault concede that "Stanesic does not specify how its mold is designed or created." *Id.* (citing Ex. 1003 ¶¶ 116, 149). According to Patent Owner, "Petitioners cannot cite Stanesic to disclose a specific mold-making step, as recited in element 5[b]." *Id.* (citing Ex. 2023 ¶¶ 180–182.).

Patent Owner next contends that Stanesic makes "no mention of electronic three-dimensional images, let alone reference the establishment of curves within those three dimensional images." PO Resp. 49 (citing Ex. 2023 ¶ 182). Patent argues that even in a combination with Rothkop and Cicotte, "Stanesic cannot be cited to disclose establishing curves in a three-dimensional model," "Rothkop is concerned with two-dimensional patterns," and "[n]othing in Rothkop discloses any mechanism of establishing curves conforming with a foot well in a not-yet-existing product." *Id.* (citing Ex. 2023 ¶¶ 89, 121–128).

Petitioner replies that Patent Owner is improperly attacking Stanesic and Rothkop in isolation from the proposed combination of Stanesic, Rothkop, and Gruenwald. Pet. Reply 23. Petitioner argues that "Stanesic's teachings would inform a [person of ordinary skill in the art] on how to apply Rothkop's teachings to design a mold for Stanesic's floor tray in a way that meets Stanesic's conformance teachings." *Id.* (citing Ex. 1003 ¶¶ 202–204). Petitioner further argues that Rothkop "is not limited to two-dimensional patterns" but "discloses how to accurately develop components that will interface with another component." *Id.* (citing Pet. 50; Ex. 1003 ¶ 202; Ex. 1006, 5:6–11).

Patent Owner's contentions are unavailing for the following reasons.

Petitioner does not rely on Stanesic alone to disclose this limitation. Petitioner starts by pointing to the curved portions of Stanesic's floor tray. Pet. 50–51. Petitioner reproduces Stanesic's Figures 1 and 3 to illustrate the curved portions. *Id.* at 51. Patent

Owner does not dispute that Stanesic's floor tray contains curved portions. PO Resp. 47–49. Petitioner explains that to create Stanesic's curved floor tray, an ordinarily skilled artisan "would have established curves in the electronic three-dimensional image of the vehicle floor tray." Pet. 52 (citing Ex. 1003 ¶ 204). We, thus, agree with Petitioner that this contention is an attack on Stanesic in isolation. Dr. Kurfess's cited testimony essentially parrots the Petition on this point, is unsupported by objective evidence, attacks Stanesic in isolation, and is entitled to no weight. Ex. 2023 ¶ 181.

Patent Owner's arguments that Rothkop is concerned with two-dimensional images and a "not-yet-existing product" are unavailing for the same reasons discussed above in connection with claim 1.

We have reviewed Petitioner's evidence for this limitation in light of Patent Owner's contentions and evidence and find that Petitioner establishes that the combination of Stanesic and Rothkop teaches or suggests this limitation. Ex. 1003 ¶ 204.

[5c]: increasing radii of selected ones of the curves in the electronic three-dimensional image of the vehicle floor tray so as to minimize the creation of thin places in the molded vehicle floor tray when the sheet of polymeric material is heated in the vacuum mold to create the vehicle floor tray.

Petitioner contends that "Gruenwald, when applied to the combination of Rothkop and Stanesic, discloses" this limitation. Pet. 52 (citing Ex. 1003 ¶¶ 198, 205–207). Petitioner argues that Gruenwald explains that "thinning is the result of the thermoforming process because a sheet of a certain surface area is being stretched to a greater surface area" and "sharp inside corners" should be avoided. *Id.* (citing Ex. 1003 ¶ 205; Ex. 1010, 50, 52, 177). Petitioner further argues "sharp

corners can lead to 'the danger of brittle failure of the part,' among other problems" and "Gruenwald discloses that '[r]adii at edges and corners should be as generously laid out as possible.'" *Id.* at 53 (citing Ex. 1010, 68).

Petitioner next contends that Gruenwald would have motivated an ordinarily skilled artisan "to increase the radii of any of the curves in the electronic three-dimensional image of Stanesic's floor tray that are too sharp," such as where "the surface of [Stanesic's] mat's base abruptly rises to accommodate the truck's center hump area." Pet. 53 (citing Ex. 1003 ¶¶ 206–207; Ex. 1005, 2:50–57).

Patent Owner first contends that "Petitioners make the same error with respect to claim element 5[c]." PO Resp. 49 (citing Ex. 2023 ¶ 183). Presumably, Patent Owner is relying on its contentions for limitation [5b], which, as discussed above, we find to be unavailing.

Patent Owner next contends that "Stanesic simply cannot be cited as disclosing the modifying of a three-dimensional model" and "Gruenwald similarly is only concerned with thermoforming and does not disclose or suggest modifying an electronic three-dimensional model for the purpose of thermoforming." PO Resp. 49 (citing Ex. 2023 ¶ 181). This contention is an attack on Stanesic and Gruenwald in isolation while Petitioner relies on applying the teachings of Gruenwald to avoid thinning and potential failure by increasing the radii of sharp corners in the combination of Stanesic and Rothkop. Pet. 52–53.

We have reviewed the evidence cited by Petitioner in light of Patent Owner's contentions and find that the combination of Stanesic,

Rothkop, and Gruenwald teaches or suggests this limitation. Ex. 1003 ¶¶ 205–207.

Motivation to Combine and Reasonable Expectation of Success

Petitioner provides several reasons why an ordinarily skilled artisan would have been motivated to combine the teachings of Stanesic, Rothkop, Cicotte, and Gruenwald. *See* Pet. 53–55 (citing, in part, Ex. 1003 ¶¶ 208–211).

First, Petitioner argues that "Stanesic suggests that its floor tray is thermoformed," which, according to Petitioner, "would have led a [person of ordinary skill in the art] to Gruenwald, an 'all-encompassing treatise on thermoforming technology.'" Pet. 53–54 (citing Ex. 1003 ¶ 208; Ex. 1006, 3:48–51; Ex. 1010, 10).

Second, Petitioner argues that an ordinarily skilled artisan would have combined Gruenwald with the combination of Stanesic, Rothkop, and Cicotte to make Stanesic's floor tray. Pet. 54. According to Petitioner, an ordinarily skilled artisan would have been motivated to do so because "Gruenwald discloses that, in thermoforming, the 'sheet conform[s] to the surface of a mold,' in line with Stanesic' teachings to closely follow, mate with, and snugly fit into the contours of the vehicle's floor surface." *Id.* (citing Ex. 1003 ¶ 209; Ex. 1005, 2:31–43, 2:62–67; Ex. 1010, 16).

Third, Petitioner argues that an ordinarily skilled artisan would have combined Gruenwald with the combination of Stanesic, Rothkop, and Cicotte to make Stanesic's floor tray "because of 'the low cost of molds and the short lead time required for tooling up' for thermoforming." Pet. 54 (citing Ex. 1010, 50, 199). According to

Petitioner, "the relatively low mold-cost makes thermoforming particularly suitable for vehicle floor trays where several molds (or sets of molds) must be made to fit vehicle footwells of different makes, models, and years." *Id.* (citing Ex. 1003 ¶ 210).

Fourth, Petitioner contends that an ordinarily skilled artisan, relying on Gruenwald's teachings, would have been motivated to increase the radii of selected curves of Stanesic's floor tray as discussed above for limitation [5b]. Pet. 54–55 (citing Ex. 1003 ¶ 211; Ex. 1010, 52, 68, 177).

Petitioner also contends that an ordinarily skilled artisan "would have had a reasonable expectation of success in making Stanesic's floor tray from a sheet of heated polymeric material by using a vacuum mold." Pet. 55 (citing Ex. 1003 ¶ 212). Petitioner argues that "[b]efore 2004, thermoforming technology was old, well-known, and predictable" and "vacuum forming (e.g., using a vacuum mold to thermoform a sheet of material) was one of the 'most widely used thermoforming processes.'" *Id.* (citing Ex. 1003 ¶ 212; Ex. 1010, 17; Ex. 1043, 9). Petitioner further argues that "[b]oth Stanesic and Gruenwald provide example polymeric materials for thermoforming." *Id.* (citing Ex. 1003 ¶ 212; Ex. 1005, 3:41–54; Ex. 1010, 126, 198, 216, 217). Petitioner also argues that an ordinarily skilled artisan "would have understood how to use CAD tools to adjust the radii of curves and would have known which curves should be adjusted to avoid sharp corners." *Id.* (citing Ex. 1003 ¶ 212; Ex. 1032, 82–85).

Patent Owner relies on its contentions for claim 1. PO Resp. 48. For the same reasons discussed above for claim 1, this contention is unavailing.

Patent Owner does not address Petitioner's contentions for motivation to combine Gruenwald with the combination of Stanesic, Rothkop, and Cicotte or reasonable expectation of success. PO Resp. 47–49.

We have reviewed Petitioner's evidence and arguments and determine that Petitioner has shown that an ordinarily skilled artisan would have been motivated to combine Gruenwald with the combination of Stanesic, Rothkop, and Cicotte with a reasonable expectation of success. Ex. 1003 ¶¶ 208–213.

For all the foregoing reasons, we determine that Petitioner has shown by a preponderance of the evidence that claim 5 is unpatentable.

H. Ground 5: Alleged Obviousness of Claim 6 Over Stanesic, Rothkop, Cicotte, and Fu

Petitioner contends that the combination of Stanesic, Rothkop, Cicotte, and Fu teaches each limitation of claim 6 and that an ordinarily skilled artisan would have been motivated to combine their teachings with a reasonable expectation of success. Pet. 56–63. Patent Owner disputes Petitioner's contentions. PO Resp. 49–52.

We begin with an overview of Fu and then analyze the parties' respective contentions.

1. Overview of Fu (Ex. 1011)

Fu is directed to a method of "efficient techniques for designing and printing shells of hearing-aid devices with a high degree of quality assurance and reliability and with a reduced number of manual and time consuming

production steps and operations." Ex. 1011, code (57). Fu discloses scanning a subject's ear canal, generating a first digital representation of an ear canal and a second digital representation of a hearing aid shell "having a shape that conforms to the ear canal." *Id.* ¶ 9, Fig. 2 (steps 100, 200).

2. Analysis

[6a]: The process of claim 1, wherein said electronic three-dimensional image of the three-dimensional floor tray is a final three-dimensional image of the three-dimensional floor tray,

Petitioner contends that the combination of Rothkop and Stanesic teaches this limitation. Pet. 56 (citing Ex. 1003 ¶¶ 217–220). Petitioner contends that "Rothkop expressly discloses the concept of 'displaying an initial graphical representation of the part,' making modifications, and then 'displaying a final graphical representation of the part.'" *Id.* (citing Ex. 1003 ¶ 219; Ex. 1006, 3:5–14, 4:4–10). According to Petitioner, it would have been obvious to apply this "approach for Stanesic's floor tray so that modifications can be made . . . to produce the final image that is the basis for the vehicle tray data file and subsequently the mold to manufacture the floor tray." *Id.* at 56–57 (citing Ex. 1003 ¶ 120).

Patent Owner does not address this limitation. PO Resp. 49–52.

We have reviewed Petitioner's evidence for this limitation and find that the combination of Rothkop and Stanesic teaches or suggests this limitation.

[6b]: the step of using the electronic model of the vehicle foot well surface to construct an electronic three-dimensional image of the vehicle floor tray including the substeps of creating an initial electronic three-dimensional image of the vehicle floor tray such that an outer surface of the initial electronic three-dimensional image of the vehicle floor tray closely conforms to the electronic model of the vehicle foot well surface; and

Petitioner contends that the combination of Stanesic, Rothkop, and Fu teaches this limitation. Pet. 57 (citing Ex. 1003 ¶¶ 217, 221–225).

Petitioner contends that an ordinarily skilled artisan would have understood that Rothkop's contour lines and resulting wireframe of the foam and the photorealistic image of Rothkop's seat "would include outer surfaces that closely conform to the electronic model of the scanned part." Pet. 57 (citing Ex. 1003 ¶ 222). According to Petitioner, because Rothkop discloses that its "trim cover design is described on surfaces," then "creating an initial image of the trim would be done such that an outer surface of that image closely conforms to the electronic model of the scanned seat." *Id.* (citing Ex. 1003 ¶ 222; Ex. 1006, 6:3–4, 6:17–21. Petitioner further contends that "Rothkop states that the foam is 'fit to the seat frame' after it is made" and "[t]o facilitate this fit, the image of the foam would include an outer surface that closely conforms to an electronic model of a scanned seat frame." *Id.* at 57–58 (citing Ex. 1003 ¶¶ 222–223; Ex. 1006, 4:61–63, 8:15–18).

Petitioner next contends that Fu "has the same objective of conformance using computer-aided design and manufacturing techniques, but in the context of a hearing aid shell." Pet. 58 (citing Ex. 1003 ¶¶ 215–216; Ex. 1011 ¶¶ 2–3, 6, 9). Petitioner further contends that Fu discloses "generat[ing] a first digital representation of a positive or negative image of at least a portion of an ear canal of a subject" and "[a] second digital representation of a hearing aid shell" that "conforms to the ear canal of the subject." *Id.* (citing Ex. 1003 ¶ 224).

According to Petitioner, an ordinarily skilled artisan "would have recognized Fu's teachings as an example of how to implement Rothkop's teachings in the context of a part intended to fit into an existing surface." Pet. 59 (citing Ex. 1003 ¶ 225). Petitioner next contends that an ordinarily skilled artisan "would have been motivated to have similar conforming outer surfaces when using Rothkop's method for Stanesic's floor tray to achieve Stanesic's conformance in the final product." *Id.* at 58–59 (citing Ex. 1003 ¶ 225; Ex. 1005, 2:31–43, 2:62–67).

Patent Owner argues that Petitioner is relying on Fu to establish close conformance which, according to Patent Owner "is an admission that the floor mat of Stanesic does not so 'closely conform.'" PO Resp. 50. Petitioner replies that it has "not admitted that Stanesic does not closely conform" but adds Fu to the combination of Stanesic and Rothkop "to address the context of the *electronic three-dimensional images* aspect of the claim." Pet. Reply 24 n.4.

We disagree with Patent Owner's characterization of the Petition. Petitioner relies on relies on Fu's teachings of generating an electronic three-dimensional image of an interfacing part. Pet. 58.

We have reviewed Petitioner's evidence for this limitation in light of Patent Owner's contentions and find that the combination of Stanesic, Rothkop, and Fu teaches or suggests this limitation. Ex. 1003 ¶¶ 216–246; Ex. 1011 ¶¶ 2–3.

[6c]: modifying the initial three-dimensional image of the vehicle floor tray to create the final three-dimensional image of the vehicle floor tray as including a reservoir.

Petitioner contends that the combination of Stanesic, Rothkop, and Fu teaches this limitation. Pet. 59 (citing Ex. 1003 ¶¶ 217, 226–227).

Petitioner contends that Stanesic discloses that "[r]ecessed areas can be molded into the foot areas of the floor mat to receive and direct water such as from melted snow to peripheral areas so that shoes and pant cuffs are less likely to get wet." Pet. 59 (citing Ex. 1003 ¶ 226; Ex. 1005, 4:13–16).

Petitioner next contends that "Fu discloses an operation that modifies an initial three-dimensional image of a part (e.g., a hearing aid shell) to create a three-dimensional image of the part as including an additional feature (e.g., a canal tip)." Pet. 59 (citing Ex. 1003 ¶ 227; Ex. 1011 ¶ 147). Petitioner contends that Fu scans the ear canal of a subject, generates a point cloud from the captured data, generates a three-dimensional model of a surface describing the patient's ear canal, and generates a finished model of a hearing aid shell. *Id.* at 59–60 (citing Ex. 1011 ¶¶ 142, 143, 147). Petitioner further contends that "a canal tip may be added to the surface triangulation by merging the surface triangulation with a pre-defined template or by deforming the surface interactively to define the canal tip." *Id.* at 60 (citing Ex. 1011 ¶ 147). According to Petitioner, an ordinarily skilled artisan "would have been motivated to use a similar approach to modify the initial three-dimensional image of Stanesic's floor tray to create a final image of a floor tray such that it included a reservoir to keep the driver's shoes and pants from getting wet." *Id.* (citing Ex. 1003 ¶ 227; Ex. 1005, 4:13–16).

Patent Owner argues that Petitioner relies on Fu to address the reservoir limitation in claim 6. PO Resp. 50. This argument is unavailing because Petitioner relies on Stanesic to teach a reservoir and Fu to teach how to modify an initial electronic image to include an additional feature such as Stanesic's reservoir. *See* Pet. 59–60.

We have reviewed Petitioner's evidence for this limitation in light of Patent Owner's contentions and find that the combination of Stanesic, Rothkop, and Fu teaches or suggests this limitation. Ex. 1011 ¶¶ 142, 143, 147

Motivation to Combine/Reasonable Expectation of Success

Petitioner contends that an ordinarily skilled artisan "would have been motivated to combine Fu with the combination of Stanesic, Rothkop, and Cicotte for several reasons." Pet. 60 (citing Ex. 1003 ¶¶ 228–229).

Petitioner contends that Stanesic discloses "its floor tray should closely follow, mate with, and snugly fit into the contours of the vehicle's floor surface" and Fu "discloses a situation where a part (i.e., a hearing aid shell) is designed to 'conform[] to the ear canal of [a] subject." Pet. 60 (citing Ex. 1005, 2:31–43, 2:62–67; Ex. 1011 ¶ 9). Petitioner further contends that an ordinarily skilled artisan "would have recognized Fu's teachings as an example of how to implement Rothkop's teachings in the context of a part intended to fit into an existing surface, such as Stanesic's floor tray into its vehicle footwell." *Id.* at 61 (citing Ex. 1003 ¶ 228).

Petitioner next contends that an ordinarily skilled artisan "would have been motivated to turn to Fu as an effective way to implement

Stanesic's reservoir." Pet. 61 (citing Ex. 1003 ¶ 229). According to Petitioner, this would have led an ordinarily skilled artisan "to use one of Fu's techniques (merging with a template of deforming the surface . . .) so that the mold resulting from Rothkop's process, as applied to Stanesic, would include features that formed reservoirs in the manufactured floor trays." *Id.* (citing Ex. 1003 ¶ 229; Ex. 1011 ¶ 147). According to Petitioner, the ordinarily skilled artisan would have been motivated "to modify the initial three-dimensional image of the vehicle floor tray, for example, to include a reservoir in a final image of the floor tray so that the resulting mold would be designed to form a floor tray with a reservoir." *Id.*

Petitioner contends that an ordinarily skilled artisan "would have had a reasonable expectation of success in using Fu's techniques as part of Rothkop's process." Pet. 62 (Ex. 1003 ¶¶ 230–232). Petitioner argues that it would have been reasonably expected, based on Fu's disclosure of a hearing aid shell conforming to an electronic model of the ear canal that "an initial image of the floor tray based on Stanesic's scanned vehicle footwell floor tray could be created with an outer surface of the image of the floor tray closely conforming to the electronic model of the vehicle footwell surface." *Id.* (citing Ex. 1003 ¶ 230; Ex. 1011 ¶¶ 9, 47).

Petitioner further contends that "Fu provided two different options for modifying an initial image in a context similar to Rothkop's (especially as applied to Stanesic) to create a final image that included an additional feature." *Id.* (citing Ex. 1003 ¶ 231; Ex. 1011 ¶ 147). According to Petitioner, "[b]oth of Fu's options (merging with a

template and deforming the surface) were well within a [person of ordinary skill in the art]'s skill level." *Id.* (citing Ex. 1003 ¶ 231).

Patent Owner's Contentions

Patent Owner first relies on its contentions for claim 1. PO Resp. 50. For the same reasons discussed above for claim 1, this contention is unavailing.

Patent Owner argues that "[r]elying on Fu to disclose or teach close conformance involving vehicle foot trays or vehicle foot wells or such electronic models regarding the same, respectfully, this is a gross misunderstanding of both law and common sense." PO Resp. 51 (citing Ex. 2023 ¶¶ 142–144, 188–191). According to Patent Owner, Fu is not analogous art because "a [person of ordinary skill in the art] would not look to medical devices (and specifically hearing aids) to solve vehicle floor mat problems" and "[t]he same applies to the reservoir limitation." *Id.* (citing Ex. 2023 ¶ 191).

Petitioner replies that Patent Owner "improperly attacks Fu individually as not related to floor trays . . . while ignoring the applicability of Fu's closely conforming and image-modifying techniques to designing Stanesic's floor tray in the Stanesic-Rothkop-Cicotte-Fu combination." Pet. Reply 24 (citing PO Resp. 50–51; Pet. 58–59; Ex. 1003 ¶¶ 68, 228, 231; Ex. 1011 ¶¶ 9, 147; Ex. 1055 ¶¶ 158–160). According to Petitioner, "[t]he addition of Fu is simply to address the context of the *electronic three-dimensional images* aspect of the claim." *Id.* at 24 n.4.

Petitioner argues that Fu is in the same field of endeavor as the '655 patent because it "is in the manufacturing industry using scanned data to make a custom-fitted part." Pet. Reply 21 (citing Ex. 1055 ¶ 150).

Petitioner further provides evidence and argument why Fu would be "reasonably pertinent to the problem with which the inventor was involved." *Id.* at 22 (citing Ex. 1055 ¶¶ 151–153). Petitioner argues that the inventors of the '655 patent "were involved with providing 'a floor tray that will have a more exact fit to the vehicle foot well for which it is provided." *Id.* (citing Ex. 1001, 1:43–46, 1:61–63, 2:9–11). According to Petitioner, "any reference that relates to custom-fitted components or a more exact fit (like . . . Fu) is reasonably pertinent to this problem." *Id.* (citing Ex. 1055 ¶¶ 151–152).

For the following reasons, Patent Owner's contention that Fu cannot be relied on to show "closely conform" or "reservoir" and that Fu is not analogous art are unavailing.

We start with the issue of closely conform/reservoir and then address analogous art. Claim 6 depends from claim 1. Ex. 1001, 20:47. Claim 6 recites "creating an *initial electronic three-dimensional image of the vehicle floor tray* such that an outer surface of the initial electronic three-dimensional image of the vehicle floor tray *closely conforms to the electronic model of the vehicle foot well surface*." *Id.* at 20:53–57 (emphasis added). The subsequent step of claim 6 recites "modifying the initial three-dimensional image of the vehicle floor tray to . . . includ[e] a reservoir." *Id.* 20:59–60. There is, thus, no requirement in claim 6 (or claim 1) that a vehicle floor tray, manufactured according to the recited process, closely conform to a vehicle footwell. Ex. 1055 ¶ 163. Consequently, to the extent that Patent Owner contends that Fu fails to teach close conformance of a vehicle floor tray to a vehicle footwell, the contention is unavailing because it is not commensurate with the scope of claim 6.

Even if claim 6 did require close conformance, Petitioner relies on Stanesic, not Fu, to show a vehicle floor tray in close conformance with a vehicle footwell. For limitation [1a], Petitioner points to Stanesic's disclosure that the floor tray is "'molded to closely follow the contours of the respective underlying floor areas' and 'snugly fit[] into'" them. Pet. 20 (citing Ex. 1005, 2:20–27, 2:31–43). Petitioner cites to the same portion of Stanesic for claim 6. *Id.* at 61. We agree with Petitioner that the cited portions of Stanesic disclose a vehicle floor tray in close conformance with a vehicle footwell.

For limitation [6c], Petitioner argues that "Stanesic discloses that its vehicle floor tray may include a reservoir (which were well-known in the art)." Pet. 59 (citing Ex. 1005, 4:13–16; quoting Ex. 1005, 4:13–16). The cited evidence discloses a reservoir as required by limitation [6c].

Patent Owner relies on Dr. Kurfess's testimony in support of its argument that Fu is not analogous art. PO Resp. 51. Dr. Kurfess first testifies that an ordinarily skilled artisan "never would have looked to Fu, or anything related to those fields, let alone micro-devices such as hearing aid shells to solve problems related to the automotive industry." Ex. 2023 ¶ 144. Dr. Kurfess then testifies that "Fu is a disclosure for a hearing aid shell . . . and a [person of ordinary skill in the art] . . . would not consider the art of medical devices when trying to solve problems with vehicle floor mats." *Id.* ¶ 188. Lastly, Dr. Kurfess testifies that "I completely disagree with Mr. Perreault's conclusion that 'a [person of ordinary skill in the art] would have been motivated to turn to Fu as an effective way to implement Stanesic's reservoir'" and "[c]ommon sense dictates that a prior art disclosure for a custom hearing-aid would not inform a [person of ordinary

skill in the art] about how to ensure a vehicle floor mat will protect 'shoes and pant cuffs." *Id.* ¶ 189 (citing Ex. 1003 ¶ 229; Ex. 1005).

Mr. Perreault explains that "Fu specifically is relied on in the context of modifying the initial image to include a reservoir in the final three-dimensional image of the vehicle floor tray." Ex. 1055 ¶ 159. Mr. Perreault further explains that "Fu expressly discloses two different approaches available in CAD programs for modifying an initial image: merging with a pre-defined template or deforming the surface interactively" and "[t]hat the product is different (a hearing aid with a canal tip vs. a floor tray with a reservoir) does not change the applicability of the well-known CAD operations because such CAD operations were used in many industries for a variety of products." *Id.* (citing Ex. 1003 ¶¶ 43–44, 68; Ex. 1011 ¶ 147).

We start with the proposition that the scope of analogous art should be construed broadly. *Wyers*, 616 F.3d at 1238. We focus on what is recited in claim 6, which is a process for manufacturing a vehicle floor tray based on creating electronic images from digital measurements. Petitioner relies on Stanesic for the particular details of a floor tray including a reservoir. Pet. 59 (citing Ex. 1005, 4:13–16). Contrary to Dr. Kurfess's testimony, Fu is not relied on for "solving problems with vehicle floor mats" or "to ensure that a vehicle floor mat will 'protect shoes and pant cuffs.'" Dr. Kurfess's attempt to narrow the focus to vehicle floor trays is contrary to *Wyers* by ignoring the claim language and the reasons why Petitioner relies on Fu.

Petitioner relies on Fu for teaching methods to modify "an initial three-dimensional image of a part . . . to create a three-dimensional image of the part as including an additional feature." Pet. 59 (citing Ex. 1003 ¶ 227; Ex. 1011 ¶ 147). Dr. Kurfess does not dispute that the tools disclosed in Fu

were well known CAD operations in 2004 as Mr. Perreault testifies but focuses his dispute on his opinion that Fu is not analogous art. Ex. 2023 ¶¶ 188–189. Although Fu, which is directed to designing and manufacturing hearing aid shells, is not in the same field of endeavor as designing and manufacturing vehicle floor trays, we find that Fu's disclosure is reasonably pertinent to the CAD problem of modifying an initial electronic image of an item to add an additional feature of the claimed invention, i.e., adding a reservoir to the initial electronic image of Stanesic's floor tray. *KSR*, 550 U.S. at 402 ("[F]amiliar items may have obvious uses beyond their primary purposes, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle."). Consequently, we determine that Fu qualifies as analogous art.

Patent Owner next contends that "the incorporation of the reservoir into the three-dimensional model causes an intentional departure from the digitally acquired foot well surface in the region of the floor" and "[t]he reservoir selectively compresses the carpeting underneath it, while the remainder of the lower floor tray surface will continue to closely conform to the upper surface of the foot well." PO Resp. 51 (Ex. 1001, 18:6–19:2; Ex. 2023 ¶ 69; Ex. 2083 ¶ 34). Patent Owner argues that the "entire Petition, is silent as to this ***purposeful interference*** regarding a surface interface, to wit, the compression of the carpet by the reservoir." *Id.* at 51–52 (citing Ex. 2023 ¶ 189; Ex. 2083 ¶ 34).

Petitioner replies that "claim 6 does not require purposeful interference." Pet. Reply 24.

Patent Owner's contention is unavailing for the following reasons.

We first look to the language of claim 6, which recites "modifying the initial three-dimensional image of the vehicle floor tray to create the final three-dimensional image of the vehicle floor tray as including a reservoir." Ex. 1001, 20:58–60. The claim does not recite or suggest "an intentional departure from the digitally acquired footwell surface in the region of the floor" or "[t]he reservoir selectively compresses the carpeting underneath it, while the remainder of the lower floor tray surface will continue to closely conform to the upper surface of the foot well." Patent Owner's argument is based on the Specification. *See* PO Resp. 51. Patent Owner's contention is, thus, unavailing because it is based on importing limitations from the Specification into claim 6, which we decline to do.

Patent Owner next contends that an ordinarily skilled artisan "would not have had the ability to effectively use CAD/CAM in this manner to arrive at the claimed invention of the '655 Patent, especially in 2004." PO Resp. 52 (citing Ex. 2023 ¶¶ 196–197). Patent Owner, as with claim 1, relies on Mr. Sherman's activities in 2007 in support of this contention. *Id.* This contention is merely a repackaging of its contentions for claim 1, which we find to be unavailing.

We have reviewed Petitioner's evidence and arguments and determine that Petitioner has shown that an ordinarily skilled artisan would have been motivated to combine Fu with the combination of Stanesic, Rothkop, and Cicotte with a reasonable expectation of success. Ex. 1003 ¶¶ 228–232.

For all the foregoing reasons, we determine that Petitioner has shown that the combination of Stanesic, Rothkop, Cicotte, and Fu teaches or suggests each limitation of claim 6 and that an ordinarily

skilled artisan would have been motivated to combine Stanesic, Rothkop, Cicotte, and Fu with a reasonable expectation of success.

We now turn to Patent Owner's contentions that objective indicia of non-obviousness support the patentability of claim 6.

Objective Indicia

Patent Owner contends that the secondary considerations of expert skepticism, commercial success, and industry praise support the patentability of claim 6 in this case. PO Resp. 52–53. Before considering Patent Owner's evidence on expert skepticism, commercial success, and industry praise, we address the question of nexus.

In order for us to accord substantial weight to secondary considerations in the analysis of the *Graham* factors, Patent Owner must establish "a 'nexus' to the claims, *i.e.*, there must be 'a legally and factually sufficient connection' between the evidence and the patented invention." *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (citations omitted). We presume a nexus when the evidence is tied to a specific product that is "coextensive" with the claimed invention, for example, because "the unclaimed features amount to nothing more than additional insignificant features." *Id.* at 1373–74. Without the presumption, a patentee may establish nexus by showing the secondary considerations evidence is the "'direct result of the unique characteristics of the claimed invention,'" *id.* (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)), rather than a feature that was "known in the prior art," *Ormco Corp. v. Align Technology, Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006). Both presumption of nexus and a nexus in fact are factual questions. *Fox Factory*, 944 F.3d at 1373; *WBIP*, 829 F.3d at 1331–32.

Patent Owner specifically contends that "a presumption of nexus" applies for "Claim 6 because WeatherTech®'s method of manufacturing its floor trays both embodies the claimed features and is coextensive with them." PO Resp. 60 (citing Ex. 2083 ¶¶ 21–47; Ex. 2085). According to Patent Owner, its evidence "demonstrates that the WeatherTech® Floor Liner floor trays are the direct and necessary result of the method claimed in the '655 Patent by drawing explicit connections between each claim element of Claim 6 . . . and Mr. Granger's description of the steps required to manufacture all WeatherTech® floor trays." *Id.* at 60–61. Patent Owner argues that "coextensiveness is further reinforced by the patent marking of the products." *Id.* at 61 (citing Ex. 2083 ¶ 47).

Patent Owner alternatively argues that "even without a presumed nexus, it is evident that a nexus exists because the evidence of secondary considerations, as described above and in Sherman's, Granger's, and Kurfess'[s] declarations, is the 'direct result of the unique characteristics of the claimed invention.'" PO Resp. 61.

Petitioner contends that it would be inappropriate to presume nexus "because [Patent Owner]'s evidence relates to floor trays while the claimed invention is a process." Pet. Reply 25. According to Petitioner, Patent Owner's "products are incapable of 'embodying' the claimed features or being 'coextensive with them.'" *Id.* at 25–26. Petitioner argues that "because closely conforming trays having a reservoir . . . were known in the prior art . . ., 'MacNeil's secondary-consideration evidence is of no relevance to the obviousness inquiry in this case.'" *Id.* at 25 (citing *Yita 1*, 69 F.4th at 1365). Petitioner further argues that "several methods exist to create a closely conforming floor tray without use of the claimed method"

and "Mr. Granger testified to several unclaimed but 'important' steps [Patent Owner] takes" to manufacture its floor trays. *Id.* at 26 (citing Ex. 1055 ¶¶ 161–165; Ex. 1060, 39:8–40:14, 55:9–58:5, 29:24–85:6).

Patent Owner, in turn, contends that Petitioner misunderstands the "two ways to show nexus," i.e., 1) "a presumption of nexus" or 2) "a showing that the evidence is a direct result of the unique characteristics of the claimed invention." Sur-reply 18.

In support of its contention that the evidence shows a presumption of nexus, Patent Owner argues that "[a] product can be coextensive with a method claim, therefore a presumption of nexus can apply between objective indicia for a product and a patented method." Sur-reply 18 (citing *Guardant Health, Inc. v. Vidal*, 2023 WL 3262962 (Fed. Cir. May 5, 2023). Patent Owner contends that its "evidence establishing coextensiveness stands unrebutted" and that "Petitioners' argument regarding 'unclaimed features' misapplies" *Fox Factory*, 944 F.3d at 1366. *Id.*

Patent Owner further contends that "[e]ven absent a presumption, substantial evidence establishes nexus between the objective indicia and PO's claimed combination *as a whole*." Sur-reply 19 (citing *WBIP*, 829 F.3d at 1330). According to Patent Owner, "Petitioners are wrong to argue that evidence of secondary considerations must be tied exclusively to claimed elements missing from the prior art" and Patent Owner's "*combination* of elements—rather than individual isolated elements—establishes nexus." *Id.* (citing Pet. Reply 25).

Analysis of Nexus

The '655 Patent claims priority to U.S. Patent 8,382,186 ("the '186 patent"). Ex. 1001, code (60). Petitioners challenged the '186 patent in the 1139 IPR. Ex. 1054, 2.

The claims of the '186 patent are directed to a vehicle floor tray comprising, *inter alia*, "a first panel . . . closely conforming to a first foot well wall," "a second panel . . . closely conforming to a second foot well wall," and "a reservoir." Ex. 1054, 4–5.

In the 1139 IPR, Patent Owner submitted a declaration from WeatherTech's Vice President of Product Development, Mr. Granger, in support of its argument of a presumption of nexus and/or nexus in fact between the invention claimed in the '186 patent and its evidence of commercial success and industry praise. *See* Ex. 2018. In its opposition to Petitioner's Motion to Exclude portions of Mr. Granger's declaration in this case (Ex. 2083), Patent Owner concedes that much of Mr. Granger's testimony is "almost ***identical***" to corresponding portions of the declaration in the 1139 IPR (Ex. 2018). Pet. MTE. Opp. 3; Paper 63, 2 ("Granger's testimony here is substantially similar insofar as he provided a coextensiveness claim chart"). Patent Owner also concedes that the sales evidence in paragraph 63 of Exhibit 2083 has already been "received and considered in prior proceedings." Pet. MTE. Opp. 3–4 (citing Ex. 2018 ¶ 73; Ex. 2083 ¶ 63).

In the 1139 IPR, Mr. Granger testified that he:

> read some hundreds of product reviews of WeatherTech FloorLiners posted by consumers online. After reading these reviews I come away with the following impressions.

Ex. 2018 ¶ 81.

> Consumer reviewers often point out the closeness of fit as the salient characteristic of the part, or as the reason for purchase.

Id. ¶ 83.

> The biggest reason for the WeatherTech FloorLiner's commercial success, based on the feedback received over the years, is that *they 'fit' the foot wells for which they were custom-designed, to a degree not achieved by competitors*.

Id. ¶ 84 (emphasis added); *see also Yita 1*, 69 F.4th at 1365 (quoting Mr. Granger's testimony from Ex. 2018).

In this case, Mr. Granger testifies that the "staggering growth" of WeatherTech's Floorliner floor trays "is a result of the patented methods used to create the uniquely fitting floor trays having a reservoir sold by WeatherTech." Ex. 2083 ¶ 68. When asked about the discrepancy in his reasons for commercial success and industry praise between this case and the 1139 IPR, Mr. Granger testified it was "just a lapse." Ex. 1060, 84:22–85:4.

In *Yita 1*, the Federal Circuit explained that "secondary-consideration evidence 'may be linked to an individual element' of the claimed invention or 'to the inventive combination of known elements' in the prior art." 69 F.4th at 1364 (citing *WBIP*, 829 F.3d at 1332). In *Yita 1*, the Federal Circuit found that Patent Owner relied on the "closely conforming vehicle tray" to establish nexus. *Id.* at 1362. Because Patent Owner's evidence was linked to the closely conforming feature of WeatherTech's FloorLiners, which was known in the prior art, the Federal Circuit determined that Mr. Granger's testimony of industry praise and commercial success of WeatherTech's FloorLiners "is of no relevance to the obviousness inquiry in this case." *Id.* at 1365. Subsequent to this determination by the Federal Circuit, Patent Owner argues that the industry praise and commercial success of

WeatherTech's floor trays are due to "the unique characteristics of the claimed invention." PO Resp. 61.

In *Fox Factory*, "the Board presumed nexus between the independent claims of [two different] patents and the evidence submitted by" the patent owner, where the patent owner "relie[d] on essentially the same evidence of secondary considerations" for both patents. 944 F.3d at 1378. The Federal Circuit reversed the Board's determination because "[t]he same evidence of secondary considerations cannot be presumed to be attributable to two different combinations of features." *Id.* In this case, Patent Owner admits that "the claims at issue are materially different here" than the claims at issue in the 1139 IPR. Paper 63, 1; *see also id.* at 6 ("There are significant material differences between the method claims of the '655 Patent and the apparatus claims of the '186 Patent."). Patent Owner, however, relies on substantially the same evidence to establish a presumption of nexus here as it did for the '186 patent in the 1139 IPR. Pet. MTE. Opp. 3; Paper 63, 2. Thus, given that Patent Owner admits claim 6 of the '655 patent is materially different than claim 1 of the '186 patent, it cannot, consistent with *Fox Factory*, rely on the same evidence to presume nexus to claim 6. In a case where nexus cannot be presumed, Patent Owner may establish nexus by "proving the degree to which evidence of secondary considerations tied to a product is attributable to a particular claimed invention." *Fox Factory*, 944 F.3d at 1378.

Mr. Granger's conflicting testimony regarding the reasons for industry praise and commercial success of WeatherTech's FloorLiners, based on substantially the same underlying evidence, is problematic for Patent Owner's claim of nexus in fact. Claim 1 of the '186 patent recites a floor

tray that includes a reservoir and that closely conforms to the vehicle footwells. But, Mr. Granger, unlike his testimony in this case, did not attribute the commercial success of WeatherTech's FloorLiner products to the combination of closely conforming and the reservoir but only to the closely conforming aspect of the FloorLiners. Ex. 2018 ¶ 84. Mr. Granger provided copious detail in the 1139 IPR about the process of manufacturing the WeatherTech FloorLiners. Ex. 2018 ¶¶ 49–62. Yet, Mr. Granger did not attribute the industry praise or commercial success of the WeatherTech FloorLiners to the process recited in claim 6 or the combination of the process, closely conforming, and a reservoir. *Id.* ¶ 84. As noted above, Mr. Granger's only explanation for his conflicting testimony is a "lapse." Ex. 1060, 84:22–85:4.

The fact that claim 6 is different than the claims at issue in the 1139 IPR does not alter the basic factual inquiry of why WeatherTech's FloorLiners were the subject of industry praise or were commercially successful. Given his position as WeatherTech's Vice-President of Product Development, we find that Mr. Granger's testimony concerning nexus in this case is the result of litigation induced bias, the testimony lacks credibility, and is entitled to little or no weight.

There is also another problem with Mr. Granger's testimony. As discussed above, we determine that claim 6 does not require that the manufactured vehicle floor tray "closely conform" to the vehicle foot well. This determination further undercuts Mr. Granger's testimony of nexus because he specifically argues that commercial success is tied to, *inter alia*, a vehicle floor tray that closely conforms to the vehicle foot well. *See* Ex. 2083 ¶ 60.

For the foregoing reasons, we find that Patent Owner has not established a nexus between the invention of claim 6 and its evidence of industry praise and commercial success. Patent Owner's evidence, thus, is entitled to little, if any weight.

Notwithstanding the foregoing, we also determine that Patent Owner is collaterally estopped by the Federal Circuit's decision in *Yita I* from relitigating the factual issue of the reason for the commercial success and industry praise for the WeatherTech FloorLiners.

> Collateral estoppel precludes a party from relitigating an issue when:
>
> (1) a prior action presents an identical issue; (2) the prior action actually litigated and adjudged that issue; (3) the judgment in the prior action necessarily required determination of the identical issue; and (4) the prior action featured full representation of the estopped party.

VirnetX Inc. v. Apple, Inc., 909 F.3d 1375, 1377 (Fed. Cir. 2018) (citations omitted).

Collateral estoppel, also known as issue preclusion, "does not include any requirement that the claim (or cause of action) in the first and second suits be the same. Rather, application of issue preclusion centers around whether an issue of law or fact has been previously litigated." *In re Freeman*, 30 F.3d 1459, 1465 (Fed. Cir. 1994).

Petitioner contends that Patent Owner "is precluded from relitigating the reasons for commercial success and industry praise of WeatherTech FloorLiners because each collateral estoppel requirement is met." Paper 65, 3; Paper 68, 1 ("[C]omparison to the claim being different is not an invitation to relitigate the underlying factual reason for success or praise.").

Patent Owner counters that "[c]ollateral estoppel does not apply here because the unadjudicated claims of the '655 Patent present a different issue regarding nexus than the adjudicated claims of the '186 Patent." Paper 63,

2; Paper 67, 3 ("[T]he issues have *everything* to do with the differences between the claims of the '186 Patent and the '655 Patent because secondary-considerations evidence 'must have a nexus to the *claims*.'"). Patent Owner further argues that "the Board's findings in the 1139 IPR regarding PO's secondary considerations evidence were necessarily specific to the claims of the '186 Patent, and are inapplicable to the claims of the '655 Patent." Paper 63, 6 (citing *Kearns v. Gen. Motors Corp.*, 94 F.3d 1553 (Fed. Cir. 1996)). Patent Owner's arguments against the application of collateral estoppel are limited to whether or not the issue in this proceeding is identical to the issue in the 1139 IPR. Patent Owner does not dispute the second, third, and fourth factors discussed above in *VirnetX*. *See* Paper 63, 10.

Patent Owner argues that the issue before us is not identical to *Yita 1* due to the difference in claims. As discussed above, the issue before us at this point is not presumption of nexus, which would require us to compare claim 6 to the WeatherTech FloorLiners to determine whether the products are coextensive with the claims. *Yita 1*, 69 F.4th at 1365. Rather, the issue is nexus in fact, i.e., the reasons for the industry praise and commercial success of Patent Owner's commercial products.

In *Yita 1*, the Federal Circuit determined that the Board's finding that Patent Owner's "secondary-consideration evidence 'relate[d] entirely' to the close-conformance limitation disclosed in the prior art" was "supported by substantial evidence." *Id.* Based on the Board's findings, the Federal Circuit determined that Patent Owner's "secondary-consideration evidence is of no relevance to the obviousness inquiry in this case." *Id.*

Patent Owner now seeks to relitigate the factual findings relating to nexus in fact underlying *Yita 1*. The *Kearns* case cited by Patent Owner is inapposite. *Kearns* dealt with the question of res judicata and whether or not res judicata barred the litigation of patents that were not included in a prior law suit between the parties. 94 F.3d at 1553 ("We conclude that the dismissal of the Michigan suit under Rule 41(b) did not impose the bar of res judicata upon patents that had not been included in the Michigan suit . . . and were not part of the Michigan judgment."). Further, the court in *Kearns* noted that "[i]ssue preclusion, of narrower scope than res judicata, requires that the identical issue was decided on the merits between the same parties" but in that case, "it is not possible to show that the identical issue was presented in the sixteen patents that were not before the Michigan court, as in the five patents that were." *Id.* at 1556 (citations omitted). In this case, Patent Owner asks us come to a different conclusion on the identical issue of the reason for the industry praise and commercial success of WeatherTech's floor trays.

We make the following findings. First, *Yita 1* presents the identical factual issue of the reasons for the industry praise and commercial success of the WeatherTech FloorLiners. Second, the issue was actually adjudicated and formed the basis of the Federal Circuit's determination that the claims of the '186 patent would have been obvious. Third, the judgment of the Federal Circuit to reverse the Board's determination in the 1139 IPR necessarily required determination of the identical issue. Fourth, Patent Owner was a party to *Yita 1* and represented by counsel. Based on these findings, we determine that Patent Owner is collaterally estopped from relitigating the factual issue of the reasons for the industry praise and

commercial success of the WeatherTech FloorLiners. Because of the Federal Circuit's determination in *Yita 1*, we determine that Patent Owner's evidence of industry praise and commercial success is irrelevant.

Skepticism of Experts[19]

Patent Owner contends that "industry experts strongly resisted the adoption of CMM and CAD/CAM technologies for any large-scale application, particularly where cost was a concern and where then-current processes were already proven and reliable." PO Resp. 53 (citing Ex. 2023 ¶¶ 45–101, 163–165, 194–204; Ex. 2055 ¶¶ 83–85). Patent Owner argues that "[i]n 2004, the exorbitant cost of adopting these new technologies was an immediate deterrent." *Id.* (citing Ex. 2023 ¶¶ 47, 50–51, 70, 84, 101, 163–165, 195–196; Ex. 2055 ¶¶ 78–84). According to Patent Owner, "experts were skeptical that usable CAD models could be practically generated from CMM scans of ***existing products***." *Id.* at 54 (citing Ex. 2023 ¶¶ 54–56, 64, 67, 70, 77, 95, 189–191).

Petitioner replies that Patent Owner's "argument that 'industry experts strongly resisted the adoption of CMM and CAD/CAM technologies' is unsupported and contradicts evidence of record." Pet. Reply 29 (citing Ex. 1055 ¶¶ 167–169).

"Evidence of industry skepticism weighs in favor of non-obviousness . . . . Doubt or disbelief by skilled artisans regarding the likely success of a combination or solution weighs against the notion that one would combine elements in references to achieve the claimed invention." *WBIP*, 829 F.3d at 1335 (citations omitted). The Federal Circuit has also explained that "[b]efore learning of the [claimed] process, and with knowledge of earlier

[19] The issue of expert skepticism was not litigated in *Yita 1*.

failed efforts, both [parties' experts] stated unequivocally that they believed the [claimed process] would not adequately solve the problem. Expressions of disbelief by experts constitutes strong evidence of nonobviousness." *Envtl. Designs, Inc. v. Union Oil Co.*, 713 F.2d 693, 697–98 (Fed. Cir. 1983) (citation omitted). The evidence of skepticism, however, "must be specific to the invention, not generic to the field." *Auris Health, Inc. v. Intuitive Surg. Ops., Inc.*, 32 F.4th 1154, 1159 (Fed. Cir. 2022).

The secondary consideration of expert skepticism relates to whether a combination or solution would successfully solve a specific problem. In this case, the problem is the design and manufacture of a vehicle floor tray. To the extent that Patent Owner relies on the costs associated with adopting CMM and CAD/CAM technologies, evidence associated with the alleged cost of the combination is simply irrelevant to whether experts would have been skeptical that the combination of Stanesic, Rothkop, Cicotte, and Fu would successfully produce a vehicle floor tray. *Farrenkopf*, 713 F.2d at 718.

To support its arguments of expert skepticism, Patent Owner refers to testimony by its declarants, Mr. Sherman and Dr. Kurfess. PO Resp. 53. In 2004, Mr. Sherman worked for Nifty Products, Inc., which manufactured floor protection products for automobiles. Ex. 2055 ¶¶ 8–9, App. A.

The first question regarding Mr. Sherman is whether in 2004 he would have been considered as an "expert," a person of ordinary skill in the art, or neither. Patent Owner fails to address this question. *See* PO Resp. 53–55. Mr. Sherman testifies that he agrees with Dr. Kurfess's definition of the level of skill in the art but does not claim to be a person of ordinary skill in the art or an expert in the field. Ex. 2055 ¶ 19. Although Mr. Sherman

worked in the automobile aftermarket industry for many years prior to 2004, he does not have the academic background required under Dr. Kurfess's definition of the level of skill in the art. *Id.* at App. A. Based on this record, we cannot find that Mr. Sherman is either a person of ordinary skill in the art or an expert in the field of CMM and CAD/CAM. Consequently, to the extent that Patent Owner relies on Mr. Sherman's testimony as an expert or person of ordinary skill in the art who expressed skepticism in 2004, the testimony is entitled to little, if any, weight.

Notwithstanding the foregoing, we address Mr. Sherman's testimony. He does not testify that an industry expert expressed skepticism in 2004 that the use of CMM and/or CAD/CAM would successfully work to manufacture a vehicle floor tray. Ex. 2055 ¶¶ 83–84. Nor does Mr. Sherman testify that he was personally skeptical of the use of CMM and/or CAD/CAM technology in 2004 or that his employer, Nifty Products, even considered the technology in 2004, let alone was skeptical of its use in designing and manufacturing a vehicle floor tray. *See id.* Rather, relying on cost estimates prepared by Dr. Kurfess and Mr. Granger for this proceeding, Mr. Sherman testifies that "Nifty Products would not have developed our floor mats with this technology." *Id.* ¶ 83. Mr. Sherman's testimony does not reflect any actual events that occurred in 2004 but was generated specifically for this proceeding and is entitled to no weight in our evaluation of expert skepticism in 2004.

In 2004, Dr. Kurfess was a professor of mechanical engineering at Georgia Institute of Technology. Ex. 2023 ¶ 8. He testifies that he "possessed an ordinary level of skill" in 2004. *Id.* ¶ 18.

Patent Owner cites to large blocks of Dr. Kurfess's testimony in support of its two primary contentions that "industry experts strongly resisted the adoption of CMM and CAD/CAM technologies" and that "experts were skeptical that usable CAD models could be practically generated from CMM scans of ***existing products***." PO Resp. 53–54. Patent Owner does not direct us to any specific part of his testimony where an expert in the field expressed skepticism in 2004 that the combination could be used to design and manufacture a vehicle floor tray. *Id.* at 53–55. Our review of the cited testimony did not locate any such specific skepticism expressed by an expert. Rather, Patent Owner's contention is based on Dr. Kurfess pointing to certain generic issues in 2004.

Notwithstanding the foregoing, many of the exhibits cited by Patent Owner, when read as a whole, undercut Patent Owner's claim of expert skepticism. *See, e.g.*, Ex. 2029, 1 ("CAD/CAM systems have become an integral part of our manufacturing culture, and like most integral components of our industry, rapid evolution had become the hallmark."), *id.* ("CAM will have an increasingly influential role in CAD component design . . . . Time savings in part programming will be substantial because programs and the machined parts machined from them will be right the first time through the process."); Ex. 2030 § 2.1.1 ("Co-ordinate measuring machines (CMM) have been used to measure analytic and free-form features for several decades."); Ex. 2033, 1 ("The U.S. market for portable coordinate measuring machines (CMMs) is beginning to heat up."), *id.* ("portable CMM prices are dropping"), *id.* at 2 ("More typical is the use of portable CMMs on the shop floor. These moveable gages are frequently used in automotive plants . . . . Price points are dropping and accuracies are

getting better."); Ex. 2036 ("Reverse Engineering techniques allow to get the digital duplication of a real object starting from a point cloud acquired with a 3D scanner from a point cloud by means of CMM.").

For the foregoing reasons, we find that Patent Owner evidence of expert skepticism is entitled to little, if any weight.

Weighing the Graham Factors for Claim 6

We have considered the scope and content of the prior art of record, any differences between the claimed subject matter and the prior art, and the level of ordinary skill in the art. For the reasons discussed in our analysis of Ground 5, Petitioner provides persuasive evidence of the unpatentability of claim 6. Patent Owner's evidence of expert skepticism is entitled to little, if any, weight, while its evidence of commercial success and industry praise is entitled to little if any weight and/or is irrelevant. On balance, after weighing all of the evidence in the record, we determine that Petitioner has established by a preponderance of the evidence that claim 6 is unpatentable.

III. PATENT OWNER'S MOTION TO EXCLUDE

Mr. Perreault's Reply Declaration – Exhibit 1055

Patent Owner first moves to exclude Exhibit 1055 pursuant to Federal Rules of Evidence ("FRE") 402, 403, 701, and 702. PO MTE 1. Exhibit 1055 is the Declaration of Dan Perreault in Support of Petitioners' Reply to Patent Owner Response. *Id.*[20] Patent Owner bases the motion on what it contends is "Perreault's complete lack of experience and expertise in this field." *Id.* at 2. According to Patent Owner, "Perreault is not qualified to provide 'expert' testimony as to what a [person of ordinary skill in the art] would consider or think relevant . . . associated with this specific art: vehicle floor mats and trays." *Id.* at 3; *see also id.* at 5 (Arguing "[b]ecause Perreault has no floor tray or mat expertise and experience, PO respectfully submits that he cannot qualify as an expert related to that art.").

Patent Owner then recites at length from the testimony of its declarants, Mr. Granger, Mr. Sherman, and Dr. Kurfess. PO MTE 2–4. Among Patent Owner's contentions are that "Sherman testified at length why Perreault was incorrect" and "Dr. Kurfess rebutted . . . Perreault's testimony." *Id.* at 2–3 (citing Ex. 2023; Ex. 2055 ¶¶ 75–88).

Petitioner responds that Patent Owner's focus on Mr. Perreault's lack of floor tray or floor mat experience "misapplies its own definition of a [person of ordinary skill in the art] and ignores Mr. Perreault's relevant experience." PO MTE Opp. 1–2. Petitioner argues that "neither party defined the [person of ordinary skill in the art] as requiring experience

[20] Curiously, Patent Owner does *not* move to exclude Mr. Perreault's original declaration, Exhibit 1003, filed in support of the Petition. *See* PO MTE.

designing and making floor trays." *Id.* at 2 (citing Pet. 13; PO Resp. 9). Petitioner points to Patent Owner's contention that the ordinarily skilled artisan would have "two or more years of manufacturing/industrial experience in the automotive aftermarket." *Id.* (citing PO Resp. 9). Petitioner then cites to Mr. Perreault's testimony in this proceeding "that he 'had such experience in the automotive aftermarkets industry before 2004.'" *Id.* (quoting Ex. 1055 ¶ 11). Petitioner also cites to Mr. Perreault's prior deposition testimony "that 'many of [his] customers over the years have developed automotive parts requiring [him] and the different people that [he] work[ed] with to obtain data on existing vehicles in order to develop aftermarket parts.'" *Id.* at 3 (quoting Ex. 2007, 28:16–21). Petitioner further argues that "Mr. Perreault testified that he has 'specific design experience with scanning vehicle foot wells in order to produce thermoformed vehicle floor trays'" although the experience was in 2007. *Id.* (citing Ex. 1003 ¶ 13).

For the following reasons, we deny Patent Owner's motion to exclude Exhibit 1055.

Patent Owner ignores its own proposed level of skill in the art, which states that the ordinarily skilled artisan would "have two or more years of manufacturing/industrial experience in the automotive aftermarket art." PO Resp. 9. Patent Owner does not contend that the person of ordinary skill in the art would have specific experience in vehicle floor mats or trays. *Id.* Mr. Perreault testified that he had the specific experience called for by Patent Owner's level of skill in the art. Ex. 1055 ¶ 11. Patent Owner, thus, has not shown that Mr. Perreault does not have the qualifications to offer expert testimony. Further, Patent Owner's extended recitation of testimony

by Mr. Granger, Mr. Sherman, and Dr. Kurfess goes to the weight not admissibility of Mr. Perreault's testimony and is not a reason to exclude the testimony. Consolidated Trial Practice Guide[21] 79 ("CTPG") ("A motion to exclude is not a vehicle for addressing the weight to be given evidence—arguments regarding weight should appear only in the merits documents.").

Exhibits 2114–2118, 2121, 2122

Exhibits 2114–2118, 2121, and 2122 were filed with Patent Owner's Sur-reply on February 1, 2024. Patent Owner devotes about four pages of briefing to an extended recitation of these exhibits that it contends constitute "inconsistent statements and impeachment evidence." *See* PO MTE 6–10. Patent Owner contends that "pursuant to FRE 106, if the Board finds that exclusion of Perreault's testimony is not warranted, PO respectfully asks for the admission of Exhibits 2114–18, 2121, and 2122." *Id.* at 10.

Petitioner contends that a motion to admit evidence "is improper for a motion to exclude." PO MTE Opp. 6.

For the following reasons, we deny Patent Owner's request to admit Exhibits 2114–2118, 2121, and 2122.

Our Consolidated Trial Practice Guide provides that "[t]he sur-reply may not be accompanied by new evidence other than deposition transcripts of the cross-examination of any reply witness." CTPG 73. Regardless of the propriety of invoking FRE 106, Patent Owner fails to address why we should admit these exhibits in light of the normal proscription against accompanying the Sur-reply with evidence other than deposition transcripts of reply witnesses. More pertinently, this is a motion to exclude evidence and is not a proper vehicle for seeking admission of evidence. In any event,

[21] tpgnov.pdf (uspto.gov)

these exhibits are the subject of Petitioner's Motion to Exclude as improper Sur-reply evidence. Pet. MTE. 12. We address the issue of excluding these exhibits below in our analysis of Petitioner's Motion to Exclude.

Mr. Cragun's Declaration – Exhibit 1056

Patent Owner seeks the exclusion of Mr. Cragun's declaration, which Patent Owner characterizes as solely "dedicated to objective indicia of non-obviousness, yet he discloses **no prior experience** in evaluating objective indicia of any kind and claims **no particular expertise** in that work." PO MTE 11 (citing Ex. 2105, 21–22).

Because we do not rely on any aspect of Mr. Cragun's declaration in this Decision, we deny this part of Patent Owner's motion to exclude as moot.

IV. PETITIONER'S MOTION TO EXCLUDE

Paragraphs 44, 49, and 60–88 of Mr. Granger's Decl.– Ex. 2083

Petitioner first moves to exclude the second sentence in paragraph 44 of Mr. Granger's declaration, i.e., "practicing the process of Claim 6 . . . will always and necessarily result in a floor tray made of polymeric material that closely conforms to the foot well and includes a reservoir." Pet. MTE 3, 6–7. Petitioner does not move to exclude the first sentence of paragraph 44. *See id.* We deny Petitioner's motion to exclude the second sentence of paragraph 44 of Exhibit 2083 as moot because we do not rely on the sentence in our Decision.

Petitioner moves to exclude paragraph 49 of Mr. Granger's declaration because he "does not provide any basis for arriving at such a conclusion or cite to any facts or data to support it" or "explain what principles and methods he used or how he applied them." Pet. MTE 6–7.

Petitioner also contend that "Mr. Granger's opinions in ¶¶ 60–79 are similarly deficient." *Id.* at 7–10; *id.* at 10 ("Mr. Granger's opinions in ¶¶ 80–88 are similarly deficient"). We deny Petitioner's motion to exclude paragraphs 49, 60–79, and 80–88 because it is directed to the weight to be given to the testimony, not its admissibility.

Exhibits 2108–2011

Petitioner moves to exclude Exhibits 2108–2110 as inadmissible hearsay. Pet. MTE 10. We deny Petitioner's motion to exclude Exhibits 2108–2110 as moot because we do not rely on any of these exhibits in our Decision.

Exhibits 2108–2112, 2114–2118, 2121, 2122, and 2124–2127

Petitioner argues that these exhibits, which were filed with the Sur-reply, should be excluded because our rules provide that Patent Owner is precluded from filing new exhibits with a Sur-reply other than deposition transcripts of a reply witness. Pet. MTE. 12–15. Patent Owner responds that these exhibits "are proper surreply evidence presented to understand the context of cross-examination and should not be excluded." Pet. MTE. Opp. 13.

Our Consolidated Trial Practice Guide provides that a motion to exclude should not "address arguments or evidence that a party believes exceeds the proper scope of reply or sur-reply." CTPG 79. The proper vehicle for excluding late filed evidence is a motion to strike. *Id.* at 80. Consequently, Petitioner's motion to exclude these exhibits is denied. Additionally, because we do not rely on any of these exhibits, the motion is moot.

V. ALLEGED IMPROPER REPLY/SUR-REPLY EVIDENCE

We authorized the parties to file papers detailing evidence or argument that was alleged to exceed the proper scope of Petitioner's Reply or Patent Owner's Sur-reply. Ex. 3004.

Patent Owner first requests that we strike Exhibits 1078, 1079, and 1080 and associated argument as art not presented in the Petition. Paper 50, 1–2. The request to strike these exhibits and associated argument is moot because we do not rely on any of these exhibits in this Decision.

Patent Owner next requests that we strike part of Mr. Cragun's declaration, Exhibit 1056, and associated argument as incorporating argument by reference. Paper 50, 1. The request to strike those portions of Mr. Cragun's declaration and associated argument is moot because we do not rely on Mr. Cragun's declaration in this Decision.

Patent Owner next requests that we strike the portions of Mr. Perreault's Reply Declaration discussing new art not presented in the Petition or incorporating arguments by reference. Paper 50, 1–2. The request to strike those portions of Mr. Perreault's Reply Declaration is moot because we do not rely on the evidence in this Decision.

Petitioner requests that we strike Exhibits 2108–2127 and associated argument. Paper 51, 1–2. The request to strike these exhibits and associated argument is moot because we do not rely on any of these exhibits in this Decision.

VI. CONCLUSION[22]

Weighing the evidence and the competing testimony, we determine that Petitioner establishes by a preponderance that claims 1–6 of the '655 patent are unpatentable.

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 2	103	Stanesic, Rothkop, Cicotte	1, 2	
3	103	Stanesic, Rothkop, Cicotte, Lee	3	
4	103	Stanesic, Rothkop, Cicotte, Fisker	4	
5	103	Stanesic, Rothkop, Cicotte, Gruenwald	5	
6	103	Stanesic, Rothkop, Cicotte, Fu	6	
Overall Outcome			1–6	

[22] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

VII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–6 of the '655 patent have been shown to be unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Exclude Evidence is denied;

FURTHER ORDERED that Petitioner's Motion to Exclude Evidence is denied; and

FURTHER ORDERED that any party seeking judicial review must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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