

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BEABLE EDUCATION, INC.,
Petitioner,

v.

ACHIEVE3000, INC.,
Patent Owner.

IPR2021-01169
Patent 9,652,993 B2

Before SCOTT C. MOORE, ERIC C. JESCHKE, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

JESCHKE, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining All Challenged Claims Unpatentable

35 U.S.C. § 318(a)

Denying in Part and Dismissing in Part Patent Owner's Motion to Exclude

37 C.F.R. § 42.64

I. BACKGROUND

Petitioner Beable Education, Inc. challenges claims 1–14 of U.S. Patent No. 9,652,993 B2 (Ex. 1001, “the ’993 patent”), which is assigned to Patent Owner, Achieve3000, Inc. We have jurisdiction under 35 U.S.C. § 6, and we issue this Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons below, we conclude that Petitioner has proven, by a preponderance of the evidence, the unpatentability of claims 1–14 of the ’993 patent.

A. *Procedural History*

Petitioner filed a Petition to institute *inter partes* review of challenged claims 1–14. Paper 2 (“Pet.”). Patent Owner filed a Preliminary Response. Paper 6. Upon review of the arguments and supporting evidence, we instituted *inter partes* review of all claims and grounds asserted in the Petition. Paper 7 (“Decision on Institution” or “Dec. Inst.”).

After institution, Patent Owner filed a Response (Paper 16, “PO Resp.”), Petitioner filed a Reply (Paper 23, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 24, “PO Sur-reply”). Patent Owner filed a motion to exclude evidence (Paper 28, “MTE”), which Petitioner opposed (Paper 29, “MTE Opp.”), and Patent Owner filed a reply in support of the motion (Paper 30, “MTE Reply”).

Petitioner relies on the declaration testimony of Mr. Christopher Vento, filed with the Petition. Ex. 1003 (“Vento Decl.” or “Vento Declaration”). Patent Owner relies on the declaration testimony of Dr. Benjamin Bederson, Ph.D., filed with the Response. Ex. 2011 (“Bederson Decl.”). An oral argument in this proceeding was held on October 4, 2022, and a copy of the transcript was entered into the record. Paper 33.

B. Related Proceeding

The parties identify a stayed proceeding in the U.S. District Court for the District of New Jersey involving the '993 patent: *AC Holdco, Inc. v. Beable Education, Inc.*, No. 3-20-cv-09211 (MAS) (D.N.J.), filed July 21, 2020. Pet. 3; Paper 4 (Patent Owner Mandatory Notices) at 1.

C. The '993 Patent

The '993 patent relates “to a web-based system and method for providing customized instructional material to a plurality of users, where the instructional material is modified to match each skill level of each user.” Ex. 1001, 1:23–26.

Figure 1 is reproduced below:

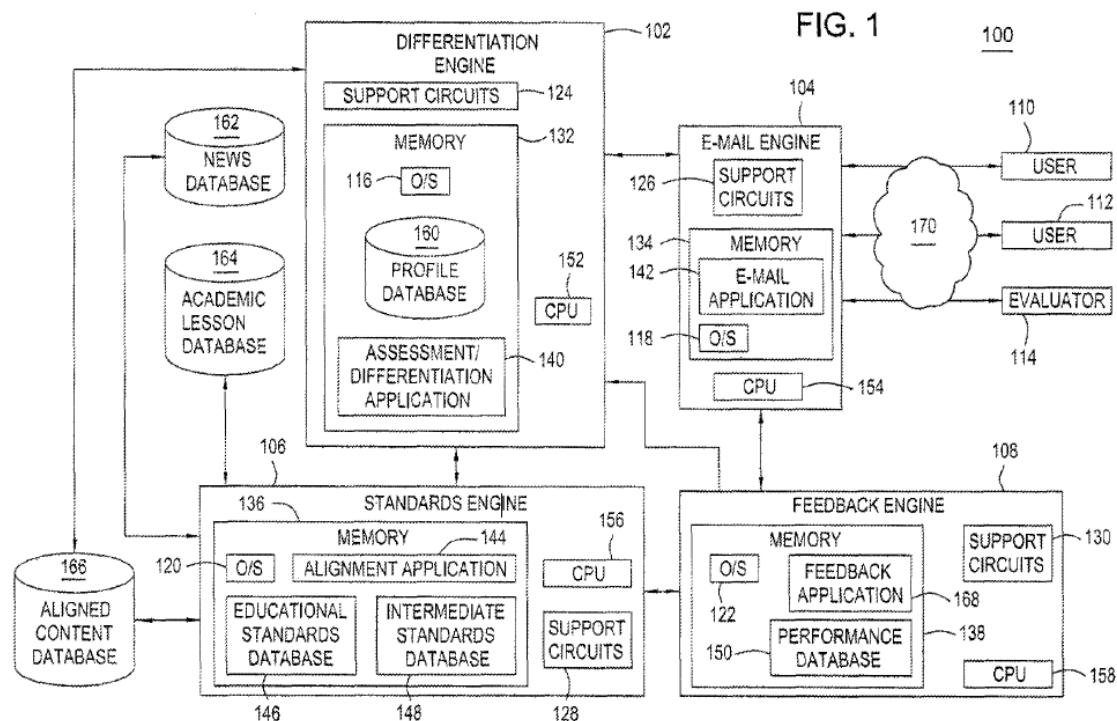


Figure 1 depicts “a system for providing differentiated content based on multiple levels of skill.” Ex. 1001, 5:16–17. Depicted system 100 includes differentiation engine 102, e-mail engine 104, standards engine

106, and feedback engine 108. *See id.* at 5:47–50. The ’993 patent discloses that “memory 132 of the differentiation engine 102 comprises an assessment and differentiation application 140 comprising modules for obtaining aligned content and matching the aligned content to a skill level of a user 110, 112.” *Id.* at 6:18–22.¹ Evaluator 114 “may use the e-mail engine 104 to provide lessons comprising modified content to a user 110, 112 or to a group of users.” *Id.* at 6:59–61. Memory 136 of standards engine 106 includes (1) “at least one database 146 for storing a plurality of educational standards, such as state academic standards, local district academics standards, and the like,” (2) “another database 148 for storing a plurality of intermediate content standards that the system uses to align unmodified content to the plurality of educational standards,” and (3) “alignment application 144 that includes modules for aligning unmodified content to educational standards stored in database 146 using the intermediate content standards stored in database 148.” *Id.* at 7:15–25. Memory 132 of feedback engine 108 (1) includes “performance database 150 that stores performance and progress data associated with each user 110, 112 of the system 100” and may also include (2) “feedback application 168 having modules for generating performance and progress data associated with a user 110, 112 of the system 100.” *Id.* at 8:4–10.

¹ In this Decision, we omit emphasis on reference numerals in quotations from the ’993 patent and prior art references.

Figure 2 is reproduced below:

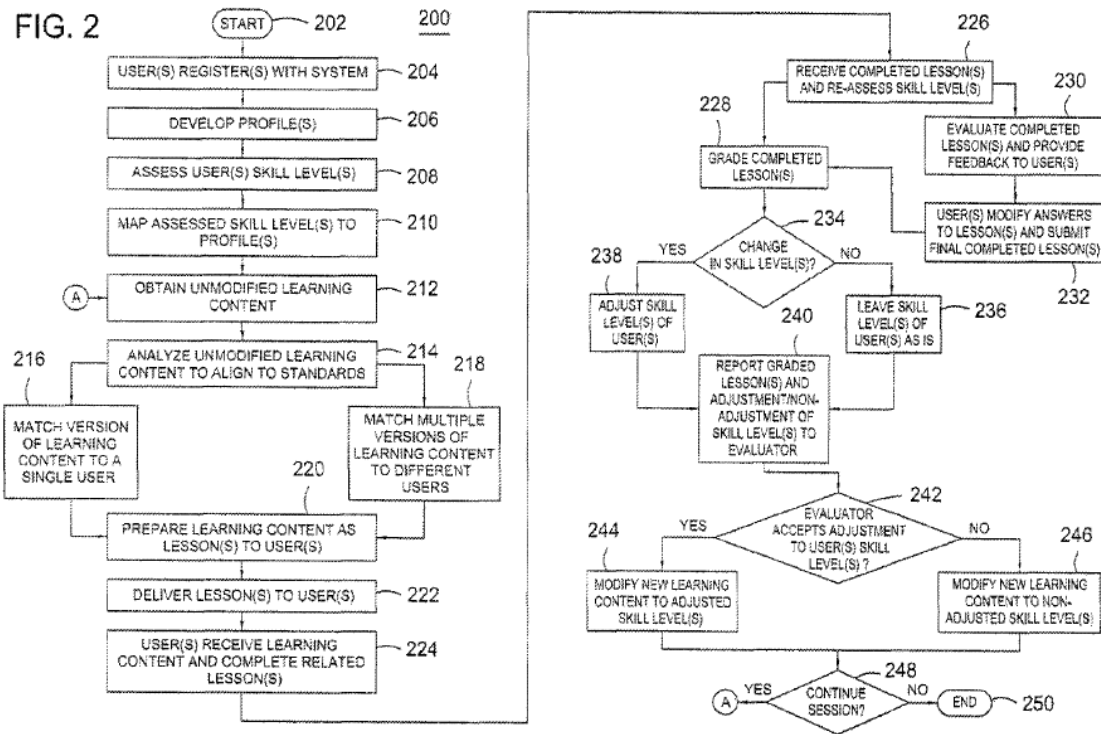


Figure 2 depicts “a method for differentiating content based on multiple levels of skill.” Ex. 1001, 5:19–20. The ’993 patent discloses that the method shown may be performed using system 100 shown in Figure 1. *Id.* at 9:15–19. A system performing the depicted method “delivers differentiated content to each user that is aligned to the user’s skill level(s), maintaining the same content topics, main ideas and core elements, and thereby providing evaluators with the ability to engage whole-class learning using individually differentiated content.” *Id.* at 13:4–9.

D. Challenged Claims

Petitioner challenges claims 1–14, of which claims 1 and 8 are independent. Claims 2–7 depend from claim 1, and claims 9–14 depend from claim 8. Independent claim 1 is reproduced below, with bracketed letters and numbers added to identify each clause:

1. [1.p] A computer implemented method for providing differentiated content to a user of a plurality of users, comprising the steps of:

[1.1] obtaining in real-time, by a standards engine including one or more processors, a first unmodified content from at least one source using at least one computer;

[1.2] obtaining one or more educational standards using at least one computer;

[1.3] evaluating the one or more educational standards to produce a unique standards code by analyzing at least one of one or more statements of the one or more educational standards, a structure of the one or more educational standards, a core meaning of the one or more educational standards, a related and ancillary meaning of the one or more educational standards, a learning mode referenced by the one or more educational standards, an intent of the one or more educational standards, or related critical thinking, logical, philosophical, and pedagogical elements of the one or more educational standards using at least one computer;

[1.4] analyzing, by the standards engine, the first unmodified content to determine a reading difficulty level of the first unmodified content in accordance with each of the one or more educational standards;

[1.5] generating in real-time, by a differentiation engine including one or more processors, a plurality of aligned versions of the first unmodified content by transforming format and content of the first unmodified content, wherein each of the plurality of aligned versions is transformed, respectively, according to a reading difficulty level associated with corresponding one of the one or more educational standards, wherein generating the plurality of aligned versions of the first unmodified content further comprises breaking up the first unmodified content into sentences, selecting a different vocabulary and sentence length according to each reading difficulty level in accordance with the unique standards code while maintaining subject matter of the first unmodified content;

[1.6] transmitting, simultaneously, a first aligned version of the plurality of aligned versions of the first unmodified content to the user, wherein the first aligned version corresponds to a reading skill level of the user;

[1.7] generating, by the differentiation engine, one or more lesson plans for the user, the one or more lesson plans comprising questions associated with the first aligned version and subject matter of the first unmodified content, wherein the one or more lesson plans comprises a lesson comprising one or more of a specific spoken language, a particular font size and level-appropriate vocabulary and a particular graphical format based on the reading skill level of the user; and

[1.8] providing the one or more lesson plans questions associated with the first aligned version to the user via a communication system,

[1.9] wherein each of the plurality of aligned versions are equivalent substantially similar in subject matter, meaning and context to subject matter, meaning and context of the first unmodified content.

Ex. 1001, 20:2–62.²

² We adopt and apply below Petitioner’s designations for the elements of the challenged claims. See Pet. 78–85 (showing numerical designations for the language in the challenged claims).

E. Instituted Grounds of Unpatentability

We instituted *inter partes* review of the challenged claims based on the following ground asserted by Petitioner:

Claim(s) Challenged	35 U.S.C. § ³	Reference(s)/Basis
1–14	103(a)	Cappellucci_949, ⁴ Cappellucci_934, ⁵ Cupp, ⁶ Tudor ⁷

II. DISCUSSION

A. The Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain

³ The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. § 103 that became effective on March 16, 2013. Pub. L. No. 112-29, §§ 3(c), 3(n)(1), 125 Stat. 284, 287, 293 (2011). Because the challenged claims of the ’993 patent appear to have an effective filing date before March 16, 2013, we apply the pre-AIA version of this statute. See Ex. 1001, code (63). We would reach the same outcome, however, under the AIA version of the statute.

⁴ US 2003/0039949 A1, published February 27, 2003 (Ex. 1005, “Cappellucci_949”).

⁵ US 2003/0078934 A1, published April 24, 2003 (Ex. 1007, “Cappellucci_934”).

⁶ US 2003/0068603 A1, published April 10, 2003 (Ex. 1009, “Cupp”).

⁷ US 2003/0017442 A1, published January 23, 2003 (Ex. 1010, “Tudor”).

factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *Id.* (internal quotation marks and citation omitted).

Petitioner contends, with accompanying declaration testimony, that a person having ordinary skill in the art “would have had at least a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related degree and at least 3 to 5 years of experience working with eLearning platforms.” Pet. 8 (citing Vento Decl. ¶¶ 101–103). Petitioner adds that “[e]xperience could take the place of some formal training, as domain knowledge and user interface design skills may be learned on the job” and that “[t]his description is approximate, and a higher level of education or skill might make up for less experience, and vice versa.” *Id.*

In the Decision on Institution, we adopted Petitioner’s proposed level of ordinary skill in the art, stating that it “appears consistent with the record at th[at] stage of the proceeding, including the prior art.” Dec. Inst. 9. In the Response, Patent Owner does not address the issue and does not argue that Petitioner’s proposal for the level of ordinary skill leads to an improper understanding of how a skilled artisan would have understood either the ’993 patent or the prior art. We maintain the definition of the level of ordinary skill in the art adopted at institution.

B. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b), as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). See 37 C.F.R. § 42.100(b). Under that standard,

we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *See id.* at 1317–19.

Petitioner discusses two claim terms: (1) “equivalent substantially similar” in claim 1 and (2) “algorithmically transforming” in claim 8. Pet. 9–11. Patent Owner does not address this issue. *See generally* PO Resp.; PO Sur-reply; *see also* Pet. Reply 1 (stating that Patent Owner “does not propose any claim constructions or dispute Petitioner’s proposed claim constructions”).

We discuss below the two terms identified by Petitioner. We do not, however, discern a need to construe explicitly any of the claim language discussed in this section or any other claim terms because doing so would not change the outcome of the analysis below. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (stating that “we need only construe 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))).

Petitioner argues that both terms “are the results of typographical errors during prosecution, which the Board may correct through interpretation.” Pet. 9. First, Petitioner asserts that “equivalent substantially similar” in claim 1 should be interpreted as “substantially similar.” *Id.* (citing Vento Decl. ¶ 107). According to Petitioner, the applicant amended

claim 1 to replace “equivalent” with “substantially similar,” but an Examiner’s amendment with the Notice of Allowance “mistakenly reintroduced ‘equivalent.’” Pet. 10 (citing Ex. 1002 at 26, 68).

Second, Petitioner asserts that “algorithmically transforming” in claim 8 should be interpreted as “transforming.” Pet. 10 (citing Vento Decl. ¶ 108). According to Petitioner, the applicant amended claim 8 to delete “algorithmically,” but the same Examiner’s amendment with the Notice of Allowance discussed above “mistakenly reintroduced ‘algorithmically.’” *Id.* (citing Ex. 1002 at 27, 70, 75).

A district court may “correct an error in a patent by interpretation of the patent where no certificate of correction has been issued . . . only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims.” *Novo Indus., LP v. Micro Molds Corp.*, 350 F.3d 1348, 1354 (Fed. Cir. 2003); *see Fitbit, Inc. v. Valencell, Inc.*, 964 F.3d 1112, 1119–20 (Fed. Cir. 2020) (suggesting the standard from *Novo* extends to corrections the Board may make in post-grant proceedings, and holding it was error to not correct a “conspicuous” and undisputed error related to antecedent basis). The Board has applied the same standard. *See Volkswagen Grp. of Am., Inc. v. Michigan Motor Techs. LLC*, IPR2020-00446, Paper 9 at 10–11 (PTAB Aug. 25, 2020) (collecting cases). For the reasons provided by Petitioner, as summarized above, we agree, based on the complete record, that the two terms at issue include typographical errors. For purposes of this proceeding, we interpret “equivalent substantially similar” in claim 1 as “substantially similar” and interpret “algorithmically transforming” in claim 8 as “transforming.”

C. Asserted Obviousness of Claims 1–14 Based on Cappellucci_949, Cappellucci_934, Cupp, and Tudor

Petitioner asserts that claims 1–14 of the '993 patent would have been obvious under 35 U.S.C. § 103(a) based on Cappellucci_949, Cappellucci_934, Cupp, and Tudor. Pet. 5, 25–76. Patent Owner provides arguments addressing this asserted ground. PO Resp. 6–68; PO Sur-reply 1–21. We first summarize aspects of the prior art references.

1. The Asserted Prior Art

a. Cappellucci_949

Cappellucci_949 “is directed to a method and system for correlating information within a system that derives information from a plurality of disparate informational resources.” Ex. 1005 ¶ 21. Cappellucci_949 discloses “an e-learning system for providing educational information to users, which can include administrators, teacher[s], students and parents.” *Id.* ¶ 42. Cappellucci_949 incorporates by reference Cappellucci_934. *See id.* ¶¶ 2, 61; Pet. 26–27. Figure 2 of Cappellucci_949 is reproduced below:

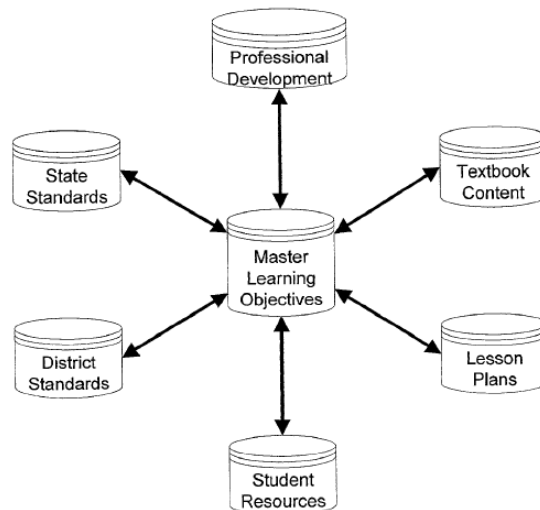


FIG. 2

Figure 2 “is a diagram showing an information model in accordance with the invention of N=6 information resources.” Ex. 1005 ¶ 30. Discussing Figure 2, Cappellucci_949 discloses various “categories or types of educational information resources” in the depicted e-learning system including: “Lesson Plans,” “Standards,” “Assessments,” “Professional Development” resources, “Student Resources,” “Text Books,” and “Other resources.” *Id.* ¶¶ 42–50.

Figure 4 is reproduced below along with a portion of Table 1:

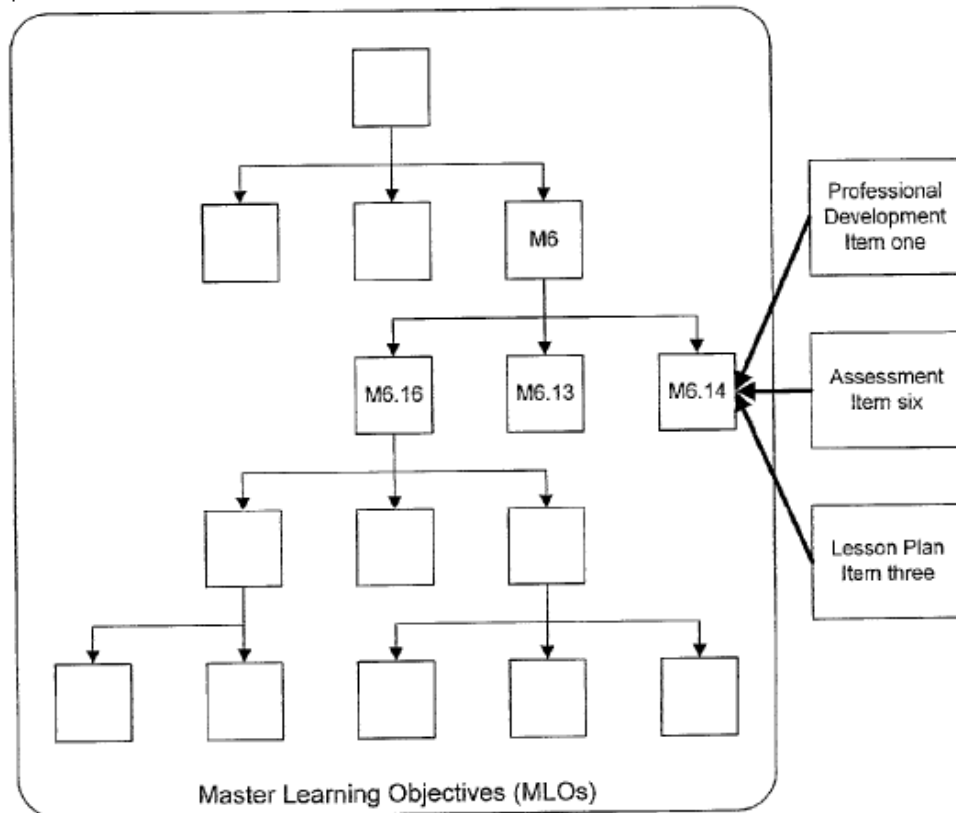


FIG. 4

M6	REAL NUMBER SYSTEMS	
M6.2		Dramatizes number stories
M6.3		Explores the concept of addition using concrete materials
M6.4		Understands meaning: using concrete materials
M6.5		Understands meaning: using pictorial materials
M6.6		Compares and orders: whole numbers
M6.7		Understands/uses ordinal numbers
M6.8		Understands whole number place value
M6.9		Whole number properties: addition
M6.10		Whole number properties: subtraction
M6.11		Whole number properties: multiplication
M6.12		Whole number properties: division
M6.13		Understands/uses Roman numerals
M6.14		Understands/uses exponents
M6.15		Understands/uses scientific notation
M6.16		Understands/uses square numbers and square units
M6.16.1		Compares and orders: decimals
M6.16.2		Compares and orders: integers

Figure 4, reproduced first, “is a diagram of how information objects and elements of diverse information resources can be correlated to the master learning objectives” (“MLOs”), and Table 1 (reproduced second) “provides a further sample of a set or subset of MLOs.” Ex. 1005 ¶¶ 32, 54. Figure 4 and Table 1 together show that each learning objective or node in the tree may be assigned a unique numerical code, such as “M6” for “Real Number Systems” and “M6.13” for “Understands/uses Roman numerals.” *Id.* ¶¶ 53–54, Fig. 4, Table 1.

Figure 5 is reproduced below:

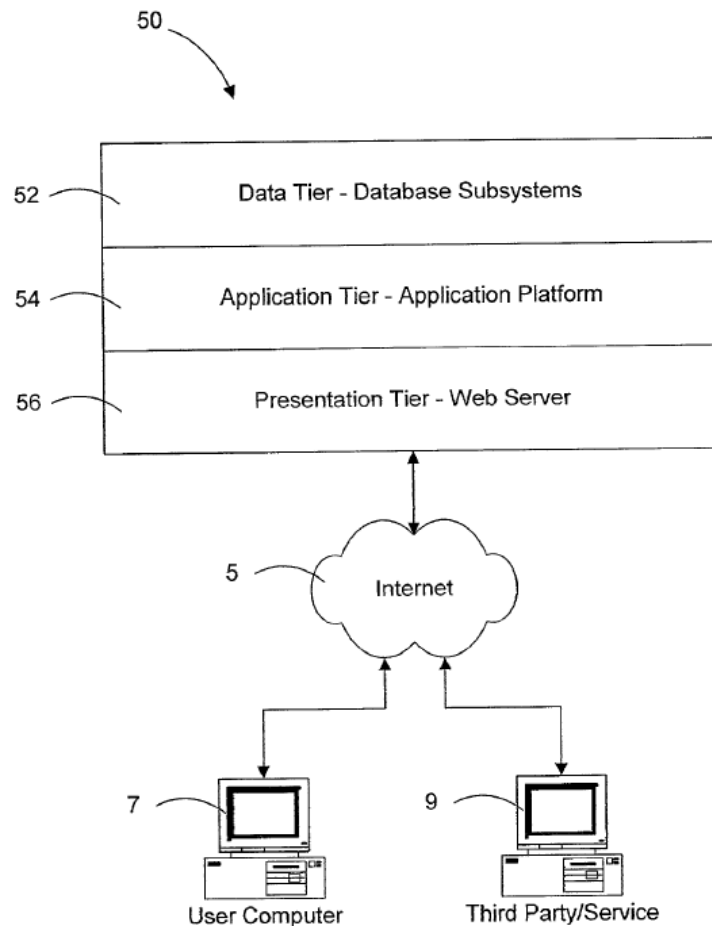


FIG. 5

Figure 5 depicts a system that “can be adapted for providing users, such as administrators, teachers, students and parents access to educational information resources over a global communication network such as the internet.” Ex. 1005 ¶ 61. The depicted system includes data tier 52, application tier 54, and presentation tier 56. *Id.* ¶ 62.

b. Cappellucci_934

Cappellucci_934 (Ex. 1007) discloses the system generally depicted in Figure 5 of Cappellucci_949. See Ex. 1005 ¶ 61. Cappellucci_934 explains that “the method and system are scalable and provide for a layered architecture that enables rapid application development, high availability and strong system security” and “can also provide the ability to customize the information provided by allowing the user to locate, assemble, format and combine information elements from diverse information resources.”

Ex. 1007 ¶ 22. Cappellucci_934 incorporates by reference Cappellucci_949. See Ex. 1007 ¶¶ 2, 69; Pet. 26–27.

Figure 6 of Cappellucci_934 is reproduced below:

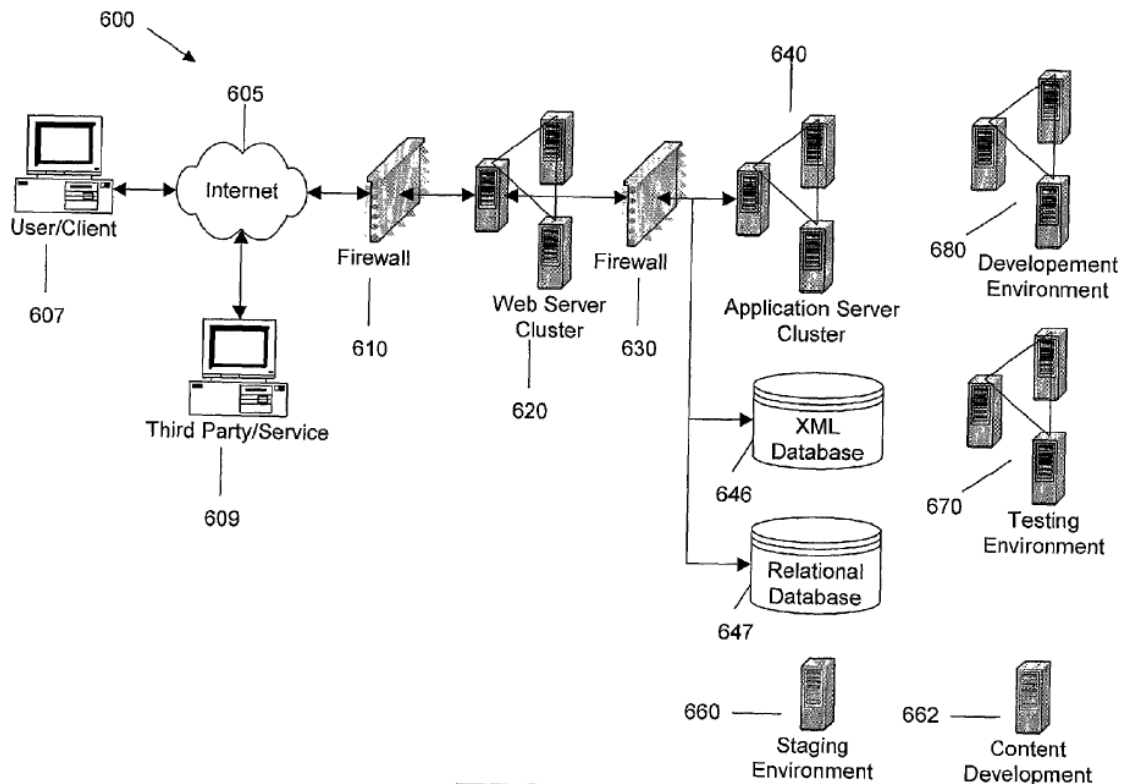


FIG. 6

Figure 6 depicts a diagrammatic view of one embodiment of the system. Ex. 1007 ¶ 57. Cappellucci_934 discloses that “system 600 can

also include user information profiles that enable the system to customize, localize and personalize the information provide[d] to the user” and that “[t]his information can be used to select information that is presented to a user and how that information is presented to a user.” *Id.* ¶ 90.

c. Cupp

Cupp “is directed to systems and methods for creating reading materials written to target readability levels and including target percentages of sight words and/or target phonic skill levels.” Ex. 1009 ¶ 10. Cupp discloses assessing readability levels “based on the Flesch-Kincaide scale,” but explains that “any readability scale may be used and . . . reading programs may be written for any grade level in accordance with the present invention.” *Id.*

Figure 1 of Cupp is reproduced below.

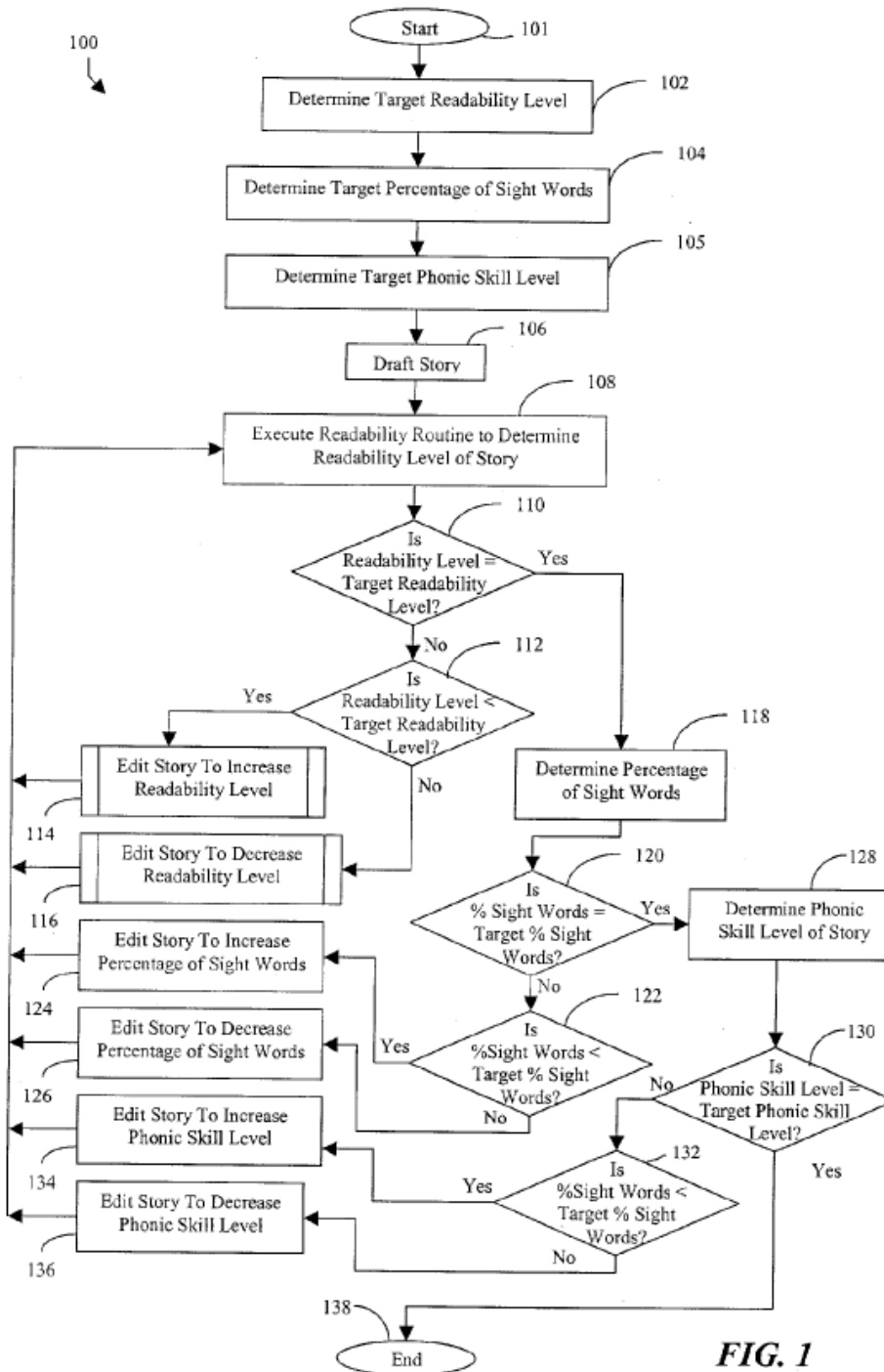


FIG. 1

Figure 1 “is a flow chart illustrating an exemplary method for creating a written work having a selected target readability level, a selected target percentage of sight words and a selected target phonic skill level.” Ex. 1009

¶ 6. Steps 102, 104, 105, and 106 relate to drafting content. *Id.* ¶ 12. The remaining steps relate to editing the drafted content to achieve a target readability level and a target percentage of sight words. *Id.* ¶¶ 13–24.

d. Tudor

Tudor “relates to an educational method and system that adapts to and measures the proficiency of an individual in a specific subject area and assesses those abilities against a specific set of varying local, state or national standards.” Ex. 1010 ¶ 16. Specifically, Tudor discloses “standards-based adaptive measurement assessment” using, for example, “a large item bank of questions with difficulty indices.” *Id.* Tudor also discloses that “[t]he item bank has a plurality of learning objectives ranging from grades two to twelve” that are “derived from district, state and national standards, and high-stakes tests.” *Id.* ¶ 20.

2. Independent Claim 1

Petitioner contends that the proposed combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor discloses each limitation of independent claim 1. Pet. 26–63. To support its arguments, Petitioner identifies certain passages in the cited references and explains the significance of each passage with respect to the corresponding claim limitation. *Id.* Petitioner also articulates reasons to combine the relied-upon aspects of Cappellucci_949, Cappellucci_934, Cupp, and Tudor, and explains why one of ordinary skill in the art would have had a reasonable expectation of success in the combination. *Id.* at 26–35. We discuss in turn the subject matter of each element in claim 1, then address general arguments as to whether Petitioner has met its burden to demonstrate unpatentability, and then address objective indicia of nonobviousness.

a. Element 1.p

In its preamble, claim 1 recites “A computer implemented method for providing differentiated content to a user of a plurality of users, comprising the steps of.” Ex. 1001, 20:2–4. For this language, Petitioner relies on disclosures in Cappellucci_949 and Cappellucci_934 as to providing education information to several different users. See Pet. 35–36 (citing Ex. 1005 ¶¶ 40, 42, 60–64, Fig. 5; Ex. 1007 ¶¶ 42, 52, 90–94; Vento Decl. ¶¶ 197–200). In the alternative and to the extent Cappellucci_949 or Cappellucci_934 do not expressly disclose “differentiated content,” Petitioner relies on the combination of “Cappellucci in view of Cupp”⁸ for this language, with Cupp disclosing “differentiated content.” Pet. 36–37 (citing Ex. 1009 ¶¶ 25, 33, 39, 42, Fig. 2, Fig. 3; Ex. 1005 ¶¶ 42, 61–64; Vento Decl. ¶ 203).

Patent Owner does not present arguments for this language. To the extent the preamble is limiting, we find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art satisfies this claim language.

b. Element 1.1

Element 1.1 recites: “obtaining in real-time, by a standards engine including one or more processors, a first unmodified content from at least one source using at least one computer.” Ex. 1001, 20:5–7. For this claim language, Petitioner relies on disclosures in Cappellucci_949 and

⁸ We understand Petitioner to use “Cappellucci” to refer to Cappellucci_949 and Cappellucci_934, together. We do the same, as Cappellucci_949 incorporates Cappellucci_934 by reference, in its entirety. See Ex. 1005 ¶¶ 2, 61.

Cappellucci_934. See Pet. 37–39 (citing Ex. 1005 ¶¶ 47–49, 63, 72–75, Figs. 7–9; Ex. 1007 ¶¶ 29, 39, 44–46, 65–67, 79, 81, 93, Fig. 8; Vento Decl. ¶¶ 206–210, 218). In the alternative, Petitioner also relies on Cupp as disclosing “first unmodified content.” Pet. 37 (citing Ex. 1009, Fig. 1 (step 106)). Petitioner adds that one of ordinary skill in the art “would have understood, or it would have been obvious, that Cappellucci includes a ‘*standards engine including one or more processors*’ and that ‘*standards engine*’ performs the ‘*obtaining*’ of the ‘*first unmodified content.*’” Pet. 39–40 (citing Ex. 1001, 5:50–53, 5:58–62; Ex. 1005, Fig. 2; Ex. 1007, Fig. 7; Vento Decl. ¶¶ 211–212).

Patent Owner does not present arguments for this element. We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art satisfies this element.

c. Element 1.2

Element 1.2 recites: “obtaining one or more educational standards using at least one computer.” Ex. 1001, 20:8–9. For this claim language, Petitioner relies on disclosures in Cappellucci_949 and Cappellucci_934. See Pet. 40–41 (citing Ex. 1005 ¶¶ 42, 44, Fig. 2; Ex. 1007 ¶¶ 46, 60, 62, Figs. 2 & 7; Vento Decl. ¶¶ 214–218). Petitioner adds that one of ordinary skill in the art “would have understood, or it would have been obvious, that the educational standards stored in the data tier and new educational standards that may be added to the system would have been ‘*obtain[ed]* . . . *using at least one computer.*’” Pet. 41 (citing Ex. 1005 ¶ 72, Fig. 7; Ex. 1007 ¶¶ 46, 79, Fig. 8; Vento Decl. ¶ 216).

Patent Owner does not present arguments for this element. We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art satisfies this element.

d. Element 1.3

Element 1.3 recites:

evaluating the one or more educational standards to produce a unique standards code by analyzing at least one of one or more statements of the one or more educational standards, a structure of the one or more educational standards, a core meaning of the one or more educational standards, a related and ancillary meaning of the one or more educational standards, a learning mode referenced by the one or more educational standards, an intent of the one or more educational standards, or related critical thinking, logical, philosophical, and pedagogical elements of the one or more educational standards using at least one computer.

Ex. 1001, 20:10–23.

Petitioner asserts that “Cappellucci in view of Tudor teaches or suggests” this element. *See* Pet. 41 (citing Pet. 12–19, 23–25, 33–35; Vento Decl. ¶¶ 219–234); *see also* Pet. 41–46 (entire discussion). Specifically, Petitioner asserts that Cappellucci_949 (1) teaches or suggests a “unique standards code” by disclosing MLOs, which are “related to and correlated with educational standards,” and (2) “further teaches, or at least suggests, that the educational resources (including educational standards) are used to produce, or at least revise, the MLOs.” Pet. 42 (citing Vento Decl. ¶¶ 221–222), 43 (citing Ex. 1005 ¶¶ 24, 42, 51, 52, 72, Fig. 2, Fig. 7; Vento Decl. ¶¶ 223–224). To the extent Cappellucci does not teach how the MLOs are produced, Petitioner relies on Tudor as “teach[ing] or suggest[ing] ‘evaluating the one or more educational standards to produce’ learning

objectives.” Pet. 43–44 (citing Vento Decl. ¶ 226). According to Petitioner, it would have been obvious to one of ordinary skill in the art “to ‘*evaluat[e] . . . one or more educational standards to produce*’ essential learning objectives, as disclosed by Tudor, to produce the MLO’s (‘*a unique standards code*’) disclosed in Cappellucci for at least the reasons” on pages 33–35 of the Petition. Pet. 44 (citing Vento Decl. ¶¶ 227–228).

Patent Owner presents three arguments as to why Petitioner has allegedly failed to show that the relied-upon combination discloses or renders obvious this element (and similar element 8.6 in claim 8). See PO Resp. 47–53; PO Sur-reply 16–18. We address each in turn below.

First, Patent Owner argues that Petitioner has not shown that Cappellucci teaches or suggests the recited “unique standards code.” See PO Resp. 47–48. We disagree. As acknowledged by Patent Owner (PO Resp. 47), Petitioner takes the position that the master learning objectives (“MLOs”) in Cappellucci_949 are “unique standards codes” and identifies “M6.17.1” shown in Table 1 (which is “Understands concept of addition”) as an exemplary “unique standards code.” See Pet. 41–43 (citing, e.g., Ex. 1005 ¶ 54 (Table 1); Vento Decl. ¶¶ 220–225). Patent Owner does not dispute this position,⁹ but rather argues that the Vento Declaration should be “given no weight on this issue” because, *during his deposition*, Mr. Vento allegedly could not provide an example of a “unique standards code” and could not “identify an MLO in Cappellucci until prompted by Petitioner’s

⁹ Moreover, as noted by Petitioner, Dr. Bederson, Patent Owner’s declarant, does not dispute that that “M6.17.1” in Cappellucci_949 is an example of a “unique standards code.” See Ex. 1044, 135:10–14, *cited at* Pet. Reply 21.

lawyer.” PO Resp. 47–48 (citing Ex. 2012, 32:10–39:15, 75:10–78:19, 80:19–82:11, 119:14–120:21, 126:3–128:7).

Having considered the relevant section of the Petition (Pet. 41–46) and the deposition testimony highlighted by Patent Owner, we are persuaded by Petitioner’s position as to Cappellucci_949 disclosing “unique standards codes.” In his Declaration, Mr. Vento presents the *same position* presented by Petitioner—i.e., that the MLOs in Cappellucci_949 are “unique standards codes” and that “M6.17.1” is an example of a “unique standards code”:

In Figure 4 and Table 1, Cappellucci ’949 describes MLOs having a unique numerical scheme where each node and leaf has a unique numerical code. EX1005, ¶¶54-59. For example, “The general category, ‘Real Number Systems’ (M6) is a learning objective even though it serves also as a categorization for more detailed and granular learning objectives, such as ‘Understands concept of addition’ (M6.17.1).” EX1005, ¶54. The Cappellucci references’ MLOs are “*unique standards codes*.”

Vento Decl. ¶ 222, *cited at* Pet. 42. We do not view the fact that Mr. Vento could not recall that same example during his deposition as a reason to wholly discredit his (or Petitioner’s) position, and Patent Owner cites to no case law or other support for such a proposition. As stated by counsel for Patent Owner, the purpose of Mr. Vento’s deposition was to provide testimony “about” his Declaration (*see* Ex. 2012, 8:16–20), not to show that the Declaration had been committed to memory.

Second, Patent Owner argues that Petitioner has not shown that the relied-upon prior art satisfies the recited requirement of “evaluating the one or more educational standards to produce a unique standards code.” *See* PO Resp. 48–51. Specifically, Patent Owner initially asserts that the MLOs in Cappullucci_949 are “not the same” as the recited “unique standards code” in that, “[a]n MLO, as described by Cappellucci itself, is a ‘master learning

objective,’ such as “understands concept of addition” whereas “the claimed unique standards code is a *code*, such as a ‘unique numerical code.’” *Id.* at 48 (citing Ex. 1005 ¶¶ 51, 54; Ex. 1007 ¶ 72; Ex. 1001, 14:34–39; Ex. 2012, 28:7–13, 73:19–22; Bederson Decl. ¶ 89). We do not agree with this distinction. The record supports Petitioner’s contrary position that “Cappellucci’s MLOs include a unique numerical scheme.” Pet. Reply 21. This is supported by Mr. Vento’s testimony that, “[i]n Figure 4 and Table 1, Cappellucci ’949 describes MLOs having a unique numerical scheme where each node and leaf has a unique numerical code.” Vento Decl. ¶ 222 (citing Ex. 1005 ¶¶ 54–59), *cited at* Pet. 42. Further, in numerous instances, Cappellucci_949 refers to specific MLOs using both a textual description and a unique numerical code. *See, e.g.*, Ex. 1005 ¶ 54 (discussing “more detailed and granular learning objectives, such as ‘Understands concept of addition’ (M6.17.1)”), ¶ 57 (discussing how “the MLO, M6.14 from the table above, is the learning objective”), ¶ 58 (discussing “the MLO M6.14”), ¶ 59 (discussing “MLO number M6.14”); Pet. 42 (citing Ex. 1005 ¶¶ 54–59).

We agree, however, with Patent Owner that Cappellucci *alone* “does not disclose how codes like M6, M6.17/1 and the like ***are produced*** for Cappellucci’s respective learning objectives” (as presented in the alternative to the reliance on Tudor for this claimed aspect). *See* Pet. 43–44. As argued by Patent Owner, the aspects of Cappellucci_949 relied on by Petitioner address the revising and existence of the MLOs, not how they are produced. *See* PO Resp. 49 (top paragraph) (citing Pet. 43 (citing Ex. 1005 ¶ 52; Vento Decl. ¶ 224)).

We turn now to Petitioner’s alternative reliance on Tudor as to “evaluating the one or more educational standards to *produce*” learning

objectives. See Pet. 43–45 (“But to the extent Cappellucci does not expressly disclose how the MLOs (*‘unique standards code’*) are produced, Tudor teaches, suggests, or renders obvious how the MLOs would have been produced.”). In this discussion, Petitioner highlights, for example, Tudor’s disclosure that, “[b]y analyzing these standards and collating them with the learning objectives from a plurality of standardized tests, a common set of essential learning objectives and skills for each subject for all grade levels are generated to form the item bank.” Ex. 1010 ¶ 35, *quoted at* Pet. 44.

Patent Owner argues that “Petitioner provides no meaningful explanation as to why [one of ordinary skill in the art] would have modified Cappellucci to produce an MLO when, according to Petitioner, Cappellucci *already has* MLOs” and also argues that “Petitioner says Tudor’s teachings would have motivated [one of ordinary skill in the art] to modify Cappellucci, but does not explain why.” PO Resp. 50 (citing Pet. 33–34, 43). We disagree. Petitioner’s position is not that one of ordinary skill in the art would have incorporated the teachings of Tudor to produce MLOs *in addition to* the ones already in Cappellucci_949; instead, Petitioner expressly states that one of ordinary skill in the art, in developing the combined system, would have incorporated the teachings of Tudor to produce the MLOs already “disclosed in Cappellucci.” See Pet. 44 (discussing how it would have been obvious to one of ordinary skill in the art “to ‘*evaluat[e] . . . one or more educational standards to produce*’ essential learning objectives, as disclosed by Tudor, to produce the MLO’s (*‘a unique standards code’*) disclosed in Cappellucci”), 33 (stating that one of ordinary skill in the art “would have been motivated to combine Tudor’s teachings related to evaluating standards to produce a set of essential

learning objectives and lesson plans in the systems and methods disclosed by the Cappellucci references and in the systems and methods of the combined Cappellucci-Cupp system” and that “[t]o the extent Cappellucci does not expressly disclose how the MLOs are produced, [one of ordinary skill in the art] would have looked to Tudor, who teaches evaluating educational standards to produce a common set of essential learning objectives” (citing Vento Decl. ¶¶ 187–194; Ex. 1005 ¶¶ 51–59, Figs. 2–4; Ex. 1007 ¶¶ 25–26, Fig. 7; Ex. 1010 ¶¶ 20, 35, 37, 41, 50)).

Further, contrary to Patent Owner’s assertion (PO Resp. 50), Petitioner *does* explain *why* a skilled artisan would have used Tudor’s method to produce the MLOs in Cappellucci, stating, that one of ordinary skill in the art “would have recognized that deriving learning objectives from district, state, and national educational standards [(as expressly taught in Tudor)] would provide learning objectives that are commensurate with the standards mandated by the educational authorities.” Pet. 34 (citing Vento Decl. ¶ 190) (discussing Ex. 1010 ¶¶ 20, 35). Patent Owner contends that this statement by Petitioner “does not address creation of a unique code” (PO Resp. 50), but it does; the “learning objectives” referenced in that statement would—in the proposed combination—be the MLOs from Cappellucci_949, which, as discussed above, *include* the recited “unique standards code[s].”

Third, Patent Owner argues that Petitioner has not shown that the proposed combination satisfies the requirement “to produce a unique standards code by analyzing at least one of” the seven options listed in element 1.3. *See* PO Resp. 51–53. Patent Owner argues that “the only discussion in Tudor is a generic direction to ‘analyze standards,’ stating

‘[b]y analyzing these standards and collating them with the learning objectives from a plurality of standardized tests, a common set of essential learning objectives and skills for each subject for all grade levels are generated to form the item bank.’” *Id.* at 52–53 (quoting Ex. 1010 ¶ 35). According to Patent Owner, “there is no mention in Tudor of how [one of ordinary skill in the art] would accomplish the ‘analy[sis]’” disclosed. *Id.* at 53 (citing Bederson Decl. ¶ 96). Patent Owner contends that “Petitioner presents no evidence [one of ordinary skill in the art] would have understood Tudor’s standards analysis to be done in the way claimed.” *Id.* (citing Bederson Decl. ¶ 96).

Petitioner responds that the requirement at issue “is satisfied by merely evaluating one educational standard to produce a unique standards code by analyzing one statement of the one educational standard” and states that it “explained that [one of ordinary skill in the art] ‘would have understood, or it would have been obvious, that Tudor’s disclosed analysis of educational standards to produce learning objectives’ include analyzing at least ‘one or more statements’ in the educational standard, and such statements were well-known in educational standards.” Pet. Reply 21–22 (citing Pet. 44–45; Vento Decl. ¶¶ 227–229). The complete record supports Petitioner’s position.

As an initial matter, Patent Owner does not contest Petitioner’s proposed construction of element 1.3 as requiring “analyzing” *only one* of the seven listed possibilities. We agree with Petitioner as to that construction, as element 1.3 expressly states “analyzing at least one of” before listing the seven options with a disjunctive “or” between the last two options. See Ex. 1001, 20:10–23. Further, to the extent argued by Patent

Owner, we agree with Petitioner (Pet. Reply 22) that although Tudor does not expressly disclose analyzing “one or more statements of the one or more educational standards” as recited, the disclosures of “analyzing these standards” (Ex. 1010 ¶ 35, *quoted at* Pet. 44)—i.e., the “district, state and national [educational] standards” (Ex. 1010 ¶ 20, *quoted at* Pet. 44; Ex. 1010 ¶ 30)—would have necessarily included “analyzing . . . *one or more statements* of the one or more educational standards.”

Patent Owner’s third argument focuses not on the construction of the language at issue, but on whether one of ordinary skill in the art would have known *how* to perform the analysis disclosed in Tudor. *See, e.g.*, PO Resp. 53 (arguing that “there is no mention in Tudor of how [one of ordinary skill in the art] would accomplish the ‘analy[sis]’”). As an initial matter, element 1.3 recites “analyzing . . . one or more statement of the one or more educational standards” and Tudor discloses, e.g., “analyzing these standards” (Ex. 1010 ¶ 35); it is unclear why more than that is required to satisfy this aspect of element 1.3 and Patent Owner provides no evidence or argument supporting its contention that more is required. *See* Pet. Reply 22 (“Petitioner explained that [one of ordinary skill in the art] ‘would have understood, or it would have been obvious, that Tudor’s disclosed analysis of educational standards to produce learning objectives’ include analyzing at least ‘one or more statements’ in the educational standard, and such statements were well-known in educational standards. Nothing more is required.” (citing Pet. 44–45; Vento Decl. ¶¶ 227–229)).

Moreover, Petitioner discusses—for almost *two full pages* in the Petition—why one of ordinary skill in the art would have understood *how* to analyze educational standards to produce learning objectives. *See* Pet. 44–

46 (citing Ex. 1010 ¶¶ 31, 35, 50–51; Ex. 1017; Vento Decl. ¶¶ 229–233). In this discussion (for example), Petitioner states—in testimony supported by the Vento Declaration—that one of ordinary skill in the art “would have known to analyze the content of a given educational standard to understand the standard and how the standard would influence the learning objectives.” Pet. 45 (citing Vento Decl. ¶ 229).

Patent Owner dismisses this statement as “not address[ing] how [one of ordinary skill in the art] would have read Tudor or address the particular claim limitations.” PO Resp. 53. But the overall discussion in the Petition begins with, and squarely addresses (as phrased by Petitioner), why one of ordinary skill in the art “would have understood, or it would have been obvious, that Tudor’s disclosed analysis of educational standards to produce learning objectives” would have included analyzing at least one of the seven options recited in element 1.3. Pet. 44–45 (citing Ex. 1010 ¶ 35; Vento Decl. ¶ 229); *see also* Pet. 44–46 (overall discussion). We find Petitioner’s and Mr. Vento’s discussion on this issue adequately supported by the record.

We also disagree with Patent Owner’s assertion that “Petitioner provides no motivation to combine (including any explanation why or how Tudor would have been modified) or [reasonable expectation of success] to support obviousness beyond bald assertion.” PO Resp. 53. Petitioner provides *at least ten pages* of discussion as to the reasons to combine Cappellucci with Cupp and Tudor. *See* Pet. 26–35. And those pages cite to approximately *fourteen pages* of testimony by Mr. Vento. *See* Vento Decl. ¶¶ 165–194. For example, Petitioner discusses, with support from Mr. Vento, why it would have been obvious to one of ordinary skill in the art “to use Cupp’s methods to determine the readability level of a news article

obtained using Cappellucci's system and to edit the news article to generate different versions written at second-, fourth-, and six grade reading levels to accommodate different readers' abilities." Pet. 28 (citing Vento Decl. ¶ 176).

For the reasons above, we find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art discloses the subject matter of element 1.3. Further, we determine, in light of the complete record, that Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art at the time of the invention would have had reason to modify the prior art as proposed to result in the subject matter of element 1.3.

e. Element 1.4

Element 1.4 recites: "analyzing, by the standards engine, the first unmodified content to determine a reading difficulty level of the first unmodified content in accordance with each of the one or more educational standards." Ex. 1001, 20:24–27. Petitioner asserts that "Cappellucci in view of Cupp teaches or suggests" this element. See Pet. 46 (citing Pet. 12–23, 27–33; Vento Decl. ¶¶ 235–242); see also Pet. 46–49 (entire discussion). Specifically, Petitioner discusses why Cupp's step 108 "teaches '*analyzing*' content '*to determine a reading difficulty level*'" and why one of ordinary skill in the art "would have further understood, or it would have been obvious, that Cupp's '*reading difficulty level[s] . . . accord[] with each of the one or more educational standards.*'" Pet. 47 (citing Ex. 1009 ¶ 13, Fig. 1; Vento Decl. ¶¶ 237, 239). As to the latter, Petitioner highlights that "Cupp discloses that readability levels may be 'based on the Flesch-Kincaide scale' but also discloses that 'any readability scale may be used.'"

Id. (quoting Ex. 1009 ¶ 10). Petitioner adds that it would have been obvious to one of ordinary skill in the art “to use the readability routine disclosed by Cupp to determine a reading difficulty level of a news article disclosed by Cappellucci_934 in order to determine which users should be provided a copy of the news article (based on the article’s reading difficulty level and the user’s grade level).” Pet. 48 (citing Vento Decl. ¶ 238; Pet. 27–33).

Patent Owner argues that Petitioner has failed to show that the proposed combination discloses or renders obvious this element (and similar element 8.7). *See* PO Resp. 36–37; PO Sur-reply 14–15. Specifically, Patent Owner argues that

Petitioner’s argued motivation (*i.e.*, that POSITA would add Cupp to determine the reading difficulty level of the article to match it to the grade level of the user) does not make sense because in Petitioner’s view Cappellucci’s content is already matched to a grade level (such that it could be matched to the grade level of the student).

PO Resp. 37. Thus, according to Patent Owner, one of ordinary skill in the art “would have had no reason to modify Cappellucci with Cupp, which Petitioner relies on exclusively for determining the reading level of its news articles.” *Id.*

This argument does not show an error in Petitioner’s position. Here, Patent Owner argues that one of ordinary skill in the art would not have incorporated the aspects of Cupp relied on as to this element because the identified “first unmodified content” in Cappellucci *already has* a “reading difficulty level” associated with it. But element 1.4 recites the step of “analyzing . . . the first unmodified content *to determine* a reading difficulty level of the first unmodified content;” element 1.4 does not merely recite the presence of the *result* of that analysis. Thus, as argued by Petitioner,

although Cappellucci discloses the *result* of the analysis, Petitioner properly relied on Cupp to explain—and incorporate into the combination—*how* such a result would have been obtained (i.e., the step recited in element 1.4). *See* Pet. Reply 15 (“Further, limitation 1.4/8.7 requires ‘analyzing . . . the first unmodified content *to determine* a reading difficulty level.’ Because Cappellucci does not expressly teach determining the reading difficulty level of content, the Petitioner correctly relied on Cupp to supply the missing teaching and explained how and why a POSA would have combined the references’ teachings.” (citing Pet. 46–49; Vento Decl. ¶¶ 235–242)).

We do not view Petitioner’s reliance on Cupp as indicating mere “hindsight reconstruction” (PO Sur-reply 14), but rather using knowledge in the prior art to create a fully functioning system, which would include *how* to perform the “analyzing” step in element 1.4. *See In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971) (“Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant’s disclosure, such a reconstruction is proper.”).

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art discloses the subject matter of element 1.4. Further, we determine, in light of the complete record, that Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art at the time of the invention would have had reason to modify the prior art as proposed to result in the subject matter of element 1.4.

f. Element 1.5

Element 1.5 recites:

generating in real-time, by a differentiation engine including one or more processors, a plurality of aligned versions of the first unmodified content by transforming format and content of the first unmodified content, wherein each of the plurality of aligned versions is transformed, respectively, according to a reading difficulty level associated with corresponding one of the one or more educational standards, wherein generating the plurality of aligned versions of the first unmodified content further comprises breaking up the first unmodified content into sentences, selecting a different vocabulary and sentence length according to each reading difficulty level in accordance with the unique standards code while maintaining subject matter of the first unmodified content.

Ex. 1001, 20:28–42.

Petitioner asserts that “Cappellucci in view of Cupp teaches or suggests” this element. *See* Pet. 49 (citing Pet. 12–23, 27–33; Vento Decl. ¶¶ 243–256); *see also* Pet. 49–56 (entire discussion). Specifically, Petitioner first discusses how “Cappellucci in view of Cupp teaches or suggests ‘*generating . . . a plurality of aligned versions of the first unmodified content by transforming format and content of the first unmodified content*’” by highlighting Cupp’s teachings of, for example, “‘edit[ing]’ content ‘until the readability level of the work is equal to the target readability level, the percentage of sight words in the work is equal to the target percentage of sight words, and the phonic skill level of the work is equal to the target phonic skill level.’” Pet. 50 (quoting Ex. 1009, Abstract).

Petitioner then discusses why “it would have been obvious to [one of ordinary skill in the art] to implement Cupp’s method of Figure 1, beginning at step 108, in the system disclosed by Cappellucci to, among other things,

‘generat[e] . . . a plurality of aligned versions of the first unmodified content,’ such as editing a news article to generate different versions written at second-, fourth-, and sixth-grade reading levels.” Pet. 51 (citing Pet. 27–33; Vento Decl. ¶¶ 245–246). Petitioner adds that one of ordinary skill in the art “would have understood, or it would have been obvious, that Cupp’s methods would *‘generat[e] in real-time’* the *‘aligned versions of the first unmodified content’*” and discusses why one of ordinary skill in the art “would have understood, or it would have been obvious, that Cappellucci in view of Cupp includes a *‘differentiation engine including one or more processors.’*” Pet. 52–53 (citing Vento Decl. ¶¶ 248–249; Ex. 1009 ¶¶ 39, 42; Ex. 1007, Figs. 1, 6).

In addition, Petitioner states that “Cappellucci in view of Cupp further teaches or suggests that *‘each of the plurality of aligned versions is transformed, respectively, according to a reading difficulty level associated with corresponding one of the one or more educational standards’*” because, according to Petitioner, one of ordinary skill in the art “would have understood, or it would have been obvious, that Cupp’s methods would have been used to create different versions of a written text for any or all reading levels.” Pet. 54–55 (citing Pet. 27–33, 46–49; Vento Decl. ¶ 251). Petitioner then addresses why Cupp teaches “breaking up the first unmodified content into sentences” and “selecting a different vocabulary and sentence length according to each reading difficulty level.” Pet. 55–56 (citing Vento Decl. ¶¶ 252–253; Ex. 1009 ¶¶ 15, 25–38, Figs. 2–3). Further, Petitioner explains why one of ordinary skill in the art (1) “would have understood, or it would have been obvious, that Cupp’s reading difficulty levels are *‘in accordance with the unique standards code’*” and (2) “would

have understood, or it would have been obvious, that Cupp’s methods “*maintain[] subject matter of the first unmodified content.*” Pet. 56 (citing Vento Decl. ¶¶ 254–255; Ex. 1009 ¶¶ 22, 34, 35; Ex. 1007 ¶ 90).

Patent Owner presents four arguments as to why Petitioner allegedly fails to prove the disclosure or obviousness of element 1.5 (and similar element 8.8). See PO Resp. 6–36; PO Sur-reply 1–14. First, Patent Owner argues that Cupp does not disclose or suggest that the generated “plurality of aligned versions” “*maintain[] subject matter of the first unmodified content*” as recited. PO Resp. 30–36; PO Sur-reply 10–14. In support, Patent Owner highlights that, in relied-upon Figure 3, Cupp discloses “***deleting entire sentences*** to reduce the reading level.” PO Resp. 32–33 (citing Ex. 1009, Fig. 3 (step 318 (“Delete Sentence”), ¶ 37)). According to Patent Owner, any person of ordinary skill in the art would have understood this disclosure “as expressing, at best, *complete indifference* to whether any particular aspects of subject matter are maintained.” *Id.* at 32 (citing Bederson Decl. ¶ 73). Patent Owner states that “Cupp certainly says nothing about deleting the longest sentence only if it does *not* contain an important topic, an important idea or an important element.” *Id.* at 34.

This argument does not identify a deficiency in Petitioner’s position. As an initial matter, and as argued by Petitioner, the proposed combination need not, in every instance, include Cupp’s step of deleting sentences highlighted by Patent Owner. See Pet. Reply 13. Specifically, as noted by Petitioner and agreed upon by Patent Owner, claim 1 includes *both* increasing *and* decreasing the “reading difficulty level” of the “first unmodified content” when generating the “plurality of aligned versions.” *Id.* (citing PO Resp. 6 (discussing how element 1.5 “require[s] that each and

every aligned version must: (1) be adjusted to a reading difficulty level that is *increased or decreased* compared to the original unmodified content” (emphasis added)); Bederson Decl. ¶ 46 (same). Relied-upon Figure 3 of Cupp is a flow chart illustrating “an exemplary method for editing a written work to decrease its readability level” (Ex. 1009 ¶ 8), whereas Figure 2—*also* relied on by Petitioner as to element 1.5 (*see* Pet. 51–52)—is a flow chart illustrating “an exemplary method for editing a written work to increase its readability level” (Ex. 1009 ¶ 7). Thus, even assuming that deleting a sentence *would* fail to maintain the subject matter in the “plurality of aligned versions,” that step would not be included in *all* of the possible instances of the proposed combination relied on by Petitioner. *See* Pet. Reply 13 (“It is thus undisputed that Cupp’s method for increasing readability, which the Petition relied on, maintains the original content’s subject matter and satisfies the claims.”), 14 (discussing how deleting sentences need not be performed in Cupp); *see also ParkerVision, Inc. v. Qualcomm Inc.*, 903 F.3d 1354, 1363 (Fed. Cir. 2018) (“[A] prior art product that sometimes, but not always, embodies a claimed method nonetheless teaches that aspect of the invention.”), *cited at* Pet. Reply 14.

In addition, we are persuaded that *even deleting an entire sentence* from the “first unmodified content” when generating one of the “plurality of aligned versions” (if included in the proposed combination) would not necessarily “change the original content’s subject matter” (as phrased by Petitioner). Pet. Reply 13. Instead, we generally agree with Petitioner that “[o]mitting a sentence from an article doesn’t change the article’s subject matter—an article about terrorism is still about terrorism if a sentence is

deleted.” *Id.*¹⁰ Patent Owner does not explain why omitting one sentence would necessarily change the “subject matter,” but instead highlights that Cupp does not contain “any disclosure that modifications are made with specific regard to maintaining the subject matter of the original unmodified content.” PO Sur-reply 12. We do not find Cupp’s *silence* on this issue to support Patent Owner’s assertion that deleting a sentence from the “first unmodified content” would necessarily change the content’s subject matter. Indeed, Cupp also lacks disclosure that deleting a sentence *does change* the subject matter.

Moreover, as noted by Petitioner, Cappellucci_934 discloses that students at different grade levels would receive “the same informational content.” Pet. Reply 14 (quoting Ex. 1007 ¶ 90) (citing Pet. 31–32, 56, 63). Although we agree with Patent Owner that one of ordinary skill in the art may not view changing merely font size and color (provided as exemplary changes in paragraph 90 of Cappellucci_934) as changing “informational content” (PO Sur-reply 13), the fact remains that Cappellucci_934 provides a teaching—relied on by Petitioner (Pet. 31–32, 56, 63)—that students at different grade levels would receive the same “informational content” even if it “will appear different on each student’s computer.” Ex. 1007 ¶ 90.

¹⁰ As to the meaning of “maintaining subject matter,” the ’993 patent explains that the system in Figure 2 “delivers differentiated content to each user that is aligned to the user’s skill level(s), maintaining the *same content topics, main ideas and core elements*, and thereby providing evaluators with the ability to engage whole-class learning use individually differentiated content.” Ex. 1001, 13:6–9 (emphasis added). Dr. Bederson agrees that these emphasized terms provide examples of “subject matter.” See Bederson Decl. ¶ 77.

Second, Patent Owner argues that Petitioner fails to prove the disclosure or obviousness of “generating . . . a *plurality* of aligned versions of the first unmodified content” in element 1.5. See PO Resp. 15–24; PO Sur-reply 1–6. Specifically, Patent Owner initially argues that “[n]either Cupp nor Cappellucci discloses creating a *plurality* of versions of *the same content*, and Petitioner’s obviousness argument does not fill this hole.” PO Resp. 16. Patent Owner also asserts that Petitioner has not explained how or why one of ordinary skill in the art would have modified the prior art to arrive at the limitation at issue. See *id.* at 17–18. Although we agree with Patent Owner that neither Cupp nor Cappellucci *alone* teaches the entirety of the limitation at issue in element 1.5, we disagree that the Petitioner’s discussion of the proposed combination fails to address this recitation. See Pet. Reply 7 (stating that, with this argument, Patent Owner’s “attack on the references individually ignores the asserted combination”).

In the discussion of the limitation at issue, Petitioner states that “it would have been obvious to [one of ordinary skill in the art] to implement Cupp’s method of Figure 1, beginning at step 108, in the system disclosed by Cappellucci to, among other things, ‘*generat[e] . . . a plurality of aligned versions of the first unmodified content*,’ such as editing a news article to generate different versions written at second-, fourth-, and sixth-grade reading levels.” Pet. 51 (underlining added) (citing Pet. 27–33; Vento Decl. ¶¶ 245–246). With this and the citations to earlier portions of the Petition and the Vento Declaration, Petitioner posits that one of ordinary skill in the art would have implemented Cupp’s process with a “plurality of aligned versions.” Explaining this position further, in the relied-upon earlier portion of the Petition, Petitioner states:

Based on Cupp’s teachings, it would have been obvious to [one of ordinary skill in the art] to implement Cupp’s method of Figure 1, beginning at step 108, in the system disclosed by Cappellucci to (i) determine the readability level of the content disclosed by Cappellucci and (ii) edit the content to generate one or more modified versions having different target readability levels. For example, it would have been obvious to [one of ordinary skill in the art] to use Cupp’s methods to determine the readability level of a news article obtained using Cappellucci’s system and to edit the news article to generate different versions written at second-, fourth-, and six grade reading levels to accommodate different readers’ abilities.

Pet. 28–29 (emphasis added) (citing Vento Decl. ¶ 176; Ex. 1007¹¹ ¶¶ 90, 93), *cited at* Pet. 51. This position as to the view of one of ordinary skill in the art is supported by the cited testimony of Mr. Vento (*see* Vento Decl. ¶ 176) as well as by at least cited paragraph 90 of Cappellucci_934, which discloses a system with user profiles that include “grade level” and discloses modifying the presentation of information based on grade level without changing the “informational content.”

Moreover, cited paragraphs 245 and 246 of the Vento Declaration (*see* Pet. 51) provides testimony supporting Petitioner’s position:

For example, it would have been obvious to [one of ordinary skill in the art] to use Cupp’s methods to decrease the readability level of the text to generate versions at kindergarten and first-grade reading levels. *See* EX1007, ¶90; EX1009, ¶4. It also would have been obvious to [one of ordinary skill in the art] to use Cupp’s methods to increase the readability level of this text to generate versions at the third- and fourth-grade reading levels. *See* EX1007, ¶90; EX1009, ¶4. Indeed, [one of ordinary skill in the art] would have understood, or it would have been obvious,

¹¹ Although Petitioner cites paragraphs 90 and 93 of Cupp (Ex. 1009), we understand Petitioner to have intended to cite to Cappellucci_934 (Ex. 1007). *See* Vento Decl. ¶ 176 (citing Ex. 1007 ¶¶ 90, 93).

that Cupp’s methods would have been used to create different versions of a written text for any or all reading levels. It was well known at the time of the ’993 patent that “not all students in the same class read at the same level” and that teachers “typically face a classroom of students with reading ability from the 2nd to the 12th grade.” EX1022, 4. Using Cupp’s methods to “*generat[e] ... a plurality of aligned versions of the first unmodified content*” would permit a teacher in such a mixed-ability classroom to teach from the same text while accommodating different students’ reading and comprehension abilities.

Vento Decl. ¶ 246; *see also* Pet. 30–31 & Pet. Reply 9 (both discussing how classrooms may include students with different reading abilities). We view this discussion, along with the aspects of the record discussed above, as adequately explaining *why* one of ordinary skill in the art would have modified the relied-upon methods of Cupp in the context of the Cappellucci system to arrive at the limitation at issue—i.e., to permit a teacher to teach from the same text while accommodating the students’ different reading and comprehension abilities in a single classroom. *See* Pet. 28–29 (citing Vento Decl. ¶ 176; Ex. 1007 ¶¶ 90, 93); Vento Decl. ¶ 246, *cited at* Pet. 51; *cf.* PO Sur-reply 3 (contending that Petitioner and Mr. Vento fail to provide “any discussion of any motivation to modify Cupp such that [one of ordinary skill in the art] would want to achieve, let alone how to achieve, generating plurality of aligned versions from a first unmodified content”). For at least this reason, the editing methods of Cupp would have been performed to create a plurality of different versions of the unmodified content of Cappellucci, especially in light of the disclosures in Cappellucci as to providing differentiated content in mixed-ability classrooms. *See* Pet. 31–32 (citing Ex. 1007 ¶¶ 42, 90; Vento Decl. ¶ 182).

On this issue, Patent Owner posits that Petitioner did not argue that “*Cappellucci* teaches creating aligned content at different reading levels.” PO Resp. 16. As noted above, we agree that *Cappellucci* does not teach the *entirety* of the limitation at issue; but for the reasons also discussed above, Petitioner relies on Cupp for methods of “generating” aligned versions of “first unmodified content” and relies on *Cappellucci* for providing students in a mixed-ability classroom with a “plurality of aligned versions” of content, once generated. Thus, although *Cappellucci* discusses the issue of “*having content available at different reading levels*” (PO Resp. 18), Cupp is relied on by Petitioner as to how to *create* such content for a mixed-ability classroom. Thus, contrary to Patent Owner’s argument, Petitioner does not rely on *Cappellucci alone* to address the *entirety* of the limitation at issue in element 1.5. *See id.* at 18–20.

As to Patent Owner’s argument that Petitioner “fails to explain how, in its proposed combination, the readability level for any version (let alone multiple versions) would be selected so that the modifications described in Cupp could even proceed” (PO Resp. 18), Patent Owner has not explained or provided evidence to indicate why a “selection” of the reading difficulty level for each of the “plurality of aligned versions” is required by element 1.5.

Patent Owner also argues that Petitioner has not adequately explained why one of ordinary skill in the art “would have been motivated, based on *Cappellucci*’s disclosure of modifying the format of content, to look for other ways to modify content.” PO Resp. 21–22 (citing Pet. 31–32). We disagree. As discussed above, in the highlighted discussion on pages 31 and 32 of the Petition, Petitioner presents certain *express* disclosures in

Cappellucci—as to providing differentiated content in mixed-ability classrooms—to explain *why* one of ordinary skill in the art would have looked elsewhere (such as to Cupp) to understand *how* to create different versions of unmodified content (so they could be provided as taught in Cappellucci). *See* Pet. 31 (discussing why “Cappellucci provides express teachings or suggestions that would have led [one of ordinary skill in the art] to Cupp’s disclosures about modifying texts’ readability to target levels”); *see also* Pet. Reply 9 (discussing how “Cappellucci teaches presenting content in different formats for different students but ‘does not describe creating different versions that have *different reading levels* by changing, *e.g.*, ‘vocabulary and sentence length,’ as claimed” and that “Cupp supplies this missing teaching”).

Patent Owner also asserts that “there would be no reasonable expectation of success . . . because the results in creating versions at different reading levels would not have been predictable given that Cupp changes or deletes sentences or change[s] vocabulary without any goal of maintaining the subject matter or having the same unique standards code” PO Resp. 22 (citing Bederson Decl. ¶ 61). This argument, however, does not actually address Petitioner’s position as to why there would have been a reasonable expectation of success, which we find supported by the record. *See* Pet. 32–33 (citing Vento Decl. ¶ 185). Instead, this argument essentially restates the first argument above as to Cupp deleting sentences, which does not show a deficiency in Petitioner’s positions.

Patent Owner also argues that Petitioner has not shown that, in the context of the proposed combination, the method of Cupp would have

modified content such that the “quality of the machine-produced version would have been reliably sufficient for educational purposes.” PO Resp. 22–23 (citing Bederson Decl. ¶ 62). As an initial matter, the challenged claims do not recite a requirement as to a level of “quality” “sufficient for educational purposes.” Thus, this argument does not distinguish the proposed combination based on a *claimed* feature. See Pet. Reply 10 (stating that this argument is “not commensurate with the claims’ scope”).

Moreover, to the extent Patent Owner contends that the proposed combination would have “quality” issues undermining “educational purposes,” that draws into question how the applicant overcame such a problem when this issue is not discussed in the ’993 patent in any passage identified by Patent Owner. See *Smith & Nephew, Inc. v. Rea*, 721 F.3d 1371, 1381–82 (Fed. Cir. 2013) (addressing a patent owner’s argument as to an alleged technical issue in the proposed combination, stating that “[t]his naturally raises the question of how [patent owner] managed to make such a combination work”).

Third, Patent Owner argues that Petitioner has failed to prove that, in the proposed combination, “each and every aligned version match[es] ‘the unique standards code’—a single, unique code produced (as specified in Limitation 1.3) by ‘evaluating the one or more education standards.’” PO Resp. 25; *id.* at 24–30; PO Sur-reply 7–10. Throughout the relevant sections of the Response, Patent Owner consistently asserts that the generated “plurality of aligned versions” must “match” the recited “unique standards code.” PO Resp. 25 (quoted above), 26 (stating that “the claims require that the aligned versions match a unique standards code”), 27. As noted by Petitioner, however, element 1.5 does not include the requirement that the

generated “plurality of aligned versions” *match* the recited “unique standards code.” See Pet. Reply 10 (asserting that this argument “fails at least because it’s not commensurate with the claims’ scope”).

Patent Owner and Dr. Bederson use “match” as a synonym for “in accordance with” (PO Resp. 25–27; PO Sur-reply 7; Ex. 1044 (Bederson Deposition), 137:12–138:6), but that is not supported by the record for two reasons. As the first, neither Patent Owner nor Dr. Bederson discuss why such a construction of “in accordance with” is supported by the intrinsic and extrinsic evidence of record. In addition, even if we were to replace “in accordance with” with “match[ing]” in element 1.5, we do not view the claim language as supporting Patent Owner’s argument that the generated “plurality of aligned versions” must “match” the recited “unique standards code.” Specifically, given the location of “in accordance with” in the “wherein” clause at issue, we view the phrase “in accordance with the unique standards code” to be part of the description of *how* the step of “selecting a different vocabulary and sentence length” is performed:

wherein generating the plurality of aligned versions of the first unmodified content further comprises breaking up the first unmodified content into sentences, *selecting a different vocabulary and sentence length according to each reading difficulty level in accordance with the unique standards code while maintaining subject matter of the first unmodified content.*

Ex. 1001, 20:36–42 (emphasis added). In other words, the language of element 1.5 does not support the more direct relationship proposed by Patent Owner, in which the generated “plurality of aligned versions” must *match* the recited “unique standards code.”

As to the phrase “in accordance with the unique standards code,” Petitioner states in the Petition that one of ordinary skill in the art “would

have understood, or it would have been obvious, that Cupp’s reading difficulty levels are ‘*in accordance with the unique standards code*’” because, as discussed with respect to element 1.4, “Cupp’s readability levels relate to grade levels.” Pet. 56 (citing Vento Decl. ¶ 254; Pet. 46–49). Petitioner continues that “Cappellucci’s MLOs also relate to grade levels” as, “[f]or example, Cappellucci_949 discloses that the ‘MLO data object’ includes ‘a grade level field’ that associates the MLO with a grade level.” *Id.* (quoting Ex. 1005 ¶ 76). According to Petitioner, because “both Cupp’s readability levels and Cappellucci’s MLOs relate to grade levels, they also accord with each other, at least via the grade levels.” *Id.* (citing Vento Decl. ¶ 254).

Patent Owner asserts that this discussion “it is not a demonstration that Petitioner’s cited art discloses or renders obvious ‘generating’ each aligned version ‘in accordance with the unique standards code’” (PO Resp. 26) and does not show a “direct relationship” between the standards code and reading difficulty level (PO Sur-reply 8–9). We disagree with the premises of Patent Owner’s argument. As to the part in the Response, for the reasons above, we view the phrase “in accordance with the unique standards code” as part of the description of *how* the step of “selecting a different vocabulary and sentence length” is performed: that is, “according to each reading difficulty level in accordance with the unique standards code.” And, turning to the Sur-reply argument, as also discussed above, element 1.5 does not require a “direct relationship” between “reading difficulty level” and the “unique standards code” as argued. Based on the claim language actually recited in element 1.5, we view the relationship identified by Petitioner between Cupp’s reading difficulty levels and

Cappellucci's MLOs—both of which relate to grade levels—as establishing, by a preponderance of the evidence, that the proposed combination satisfies the claim language at issue in the second “wherein” clause of element 1.5 (“according to each reading difficulty level in accordance with the unique standards code”). See Pet. 56; Pet. Reply 11.

Patent Owner also argues that the claims require, and Petitioner has allegedly failed to adequately show in the proposed combination, that the “plurality of aligned versions” “match the same educational standard” (rather than the “unique standards code” argued above). PO Resp. 27. We again agree with Petitioner that this argument is not commensurate in scope with the claims. See Pet. Reply 10 (“The claims don’t require aligned versions that ‘match’ a unique standards code or an educational standard.”). The relevant portion of element 1.5 recites: “wherein each of the plurality of aligned versions is transformed, respectively, according to a reading difficulty level *associated with corresponding one of the one or more educational standards.*” Ex. 1001, 20:32–35 (emphasis added). Neither Patent Owner nor Dr. Bederson discuss why construing “associated with” as “match[ing]” is supported by the intrinsic and extrinsic evidence of record. In addition, even if were to replace “associated with” with “match[ing]” in the relevant portion of element 1.5 (quoted above), the claim language does not support Patent Owner’s position. Specifically, we view the phrase “associated with corresponding one of the one or more education standards” as part of the description of *how* the “plurality of aligned versions is transformed”:

wherein each of the plurality of aligned versions is transformed, respectively, *according to a reading difficulty level associated*

with corresponding one of the one or more educational standards.

Ex. 1001, 20:32–35 (emphasis added). In other words, the claim language at issue does not support the more direct relationship proposed by Patent Owner, in which the generated “plurality of aligned versions” must *match* the recited “educational standards.”

Next, Patent Owner repeats its argument—discussed above as to element 1.3—that “Petitioner cannot meet its burden because at deposition Petitioner’s expert could not identify *any* ‘unique standards code’ in Cappellucci” and thus “Petitioner cannot prove (as it argued in the Petition) that Cappellucci teaches a unique standards code.” PO Resp. 28; *id.* at 28–30 (entire argument); Pet. Reply 11–12 (addressing this argument). As discussed above in the context of Patent Owner’s first argument as to element 1.3, we do not view Mr. Vento’s deposition testimony as undermining Petitioner’s position as to “unique standards code.”

We do not address Patent Owner’s argument as to the reasonable expectation of success, which was raised for the first time in the Sur-reply. See PO Sur-reply 10 (citing PO Resp. 26–29); *see also* Consolidated Trial Practice Guide 74 (Nov. 2019), <https://www.uspto.gov/TrialPracticeGuide> Consolidated (“Generally, a reply or sur-reply may only respond to arguments raised in the preceding brief. . . . While replies and sur-replies can help crystalize issues for decision, a reply or sur-reply that raises a new issue or belatedly presents evidence may not be considered.”).

Fourth, Patent Owner contends that Petitioner conflates certain distinct claim terms in element 1.5 (PO Resp. 6–14) and “effectively reads the unique standards code requirement out of the Challenged Claims” (*id.* at 6). We do not agree with Patent Owner that Petitioner conflated any

claim terms. In the discussion at issue (PO Resp. 6–14), Patent Owner does not cite to the Petition, or identify any *specific* example to support its general assertion. In addition, for the reasons discussed above (in this section and that addressing element 1.3) and as addressed by Petitioner (Pet. Reply 5–6 (summarizing positions as to this language)), we do not agree with Patent Owner that Petitioner fails to adequately address the phrase “unique standards code” recited in claim 1, including in element 1.5.

For the reasons above, we find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art discloses the subject matter of element 1.5. Further, we determine, in light of the complete record, that Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art at the time of the invention would have had reason to modify the prior art as proposed to result in the subject matter of element 1.5.

g. Element 1.6

Element 1.6 recites: “transmitting, simultaneously, a first aligned version of the plurality of aligned versions of the first unmodified content to the user, wherein the first aligned version corresponds to a reading skill level of the user.” Ex. 1001, 20:43–46. Petitioner relies on “Cappellucci in view of Cupp” for this element. *See* Pet. 57; *see also* Pet. 57–59 (citing Ex. 1005 ¶¶ 40, 60; Ex. 1007 ¶¶ 28, 39, 52, 90–93; Vento Decl. ¶¶ 257–261) (entire discussion). Specifically, Petitioner states that Cappellucci “discloses transmitting content to users based on a user profile that includes information about the student’s grade level, proficiency or ability level, location, and interest” and states that one of ordinary skill in the art “would have understood, or it would have been obvious, to use Cappellucci’s system

and methods to transmit the ‘*first aligned version . . . to the user*’ because providing content to users is a primary objective of Cappellucci.” Pet. 57 (citing Ex. 1005 ¶ 40; Ex. 1007 ¶¶ 39, 90–93; Vento Decl. ¶ 258). In addition, Petitioner discusses why “[t]he Cappellucci-Cupp combination further teaches, suggests, or renders obvious ‘*wherein the first aligned version corresponds to a reading skill level of the user.*’” Pet. 58–59 (citing Ex. 1005 ¶ 60; Ex. 1007 ¶¶ 28, 90–93; Vento Decl. ¶ 260). As to the term “simultaneously,” Petitioner notes, for example, that “Cappellucci_934 discloses that content ‘can be . . . delivered to large groups of users in real time,’ and the system can ‘accommodate hundreds of thousands or millions of users.’” Pet. 57 (quoting Ex. 1007 ¶¶ 39, 52). According to Petitioner, one of ordinary skill in the art “thus would have understood that Cappellucci’s system and network support a plurality of users, and would have provided access to and transmitted content to users using the system at the same time (‘*simultaneously*’).” Pet. 57–58 (citing Vento Decl. ¶ 259).

Patent Owner first discusses claim construction and then argues Petitioner has failed to prove disclosure or obviousness of this element (or of similar element 8.9). See PO Resp. 41–47; PO Sur-reply 15–16. We begin with claim construction. There are two possible understandings of what is required from element 1.6 based on the term “simultaneously.” As the first possibility, the relevant portion of element 1.6 may require “transmitting” the recited “first aligned version” to *two or more* users at essentially the same time. We discussed this possibility in the Decision on Institution. See Dec. Inst. 35–36. As the second possibility, Patent Owner proposes that the relevant portion of element 1.6 requires “transmitting” “*aligned versions* at multiple skill levels simultaneously.” See PO Resp. 41–46; PO Sur-reply

15–16; *see, e.g.*, PO Resp. 45 (stating that “the key component of the invention is the ability to deliver differentiated lessons containing the same content, but at different reading levels, to multiple users at essentially the same time”). In other words, under Patent Owner’s construction, each of at least two “aligned versions,” each at different “reading skill levels,” must be sent to at least one user at essentially the same time. Although Patent Owner’s proposed construction does appear to align with aspects of the Specification¹² and the prosecution history,¹³ it would essentially require rewriting element 1.6, for example, as: “transmitting, simultaneously, ~~a first aligned version of~~ the plurality of aligned versions of the first unmodified content to ~~the~~ a plurality of users, wherein ~~the~~ a first aligned version corresponds to a reading skill level of ~~the~~ at least one user.” This we cannot do. *See K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1364 (Fed. Cir. 1999) (“Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee.”); *Tex. Instruments, Inc. v. U.S. Int’l Trade Comm’n*, 988 F.2d 1165, 1171 (Fed. Cir. 1993) (“[C]ourts can neither broaden nor narrow claims to give the patentee something different than what he has set forth.”) (internal quotes omitted). Because we determine that Petitioner has shown that the proposed combination satisfies element 1.6 under *either* possibility

¹² Ex. 1001, 10:52–56 (“The method of this embodiment provides for an unmodified learning content to be provided at multiple skill levels simultaneously, thereby providing for collaborative learning from the same unmodified learning content by many users of varying skill levels.”), *discussed at* PO Resp. 42, 45.

¹³ Ex. 1002 at 77 (“Further, the aligned versions in Applicants’ claim 1 [] are transmitted simultaneously and are graphically modified automatically according to user skill level”), *discussed at* PO Resp. 42, 45.

(for the reasons discussed below), however, we need not determine which of these two possibilities is correct. *See Nidec*, 868 F.3d at 1017.

We turn now to applying the two possibilities. As noted above, Petitioner states that “Cappellucci_934 discloses that content “can be . . . delivered to large groups of users in real time,’ and the system can ‘accommodate hundreds of thousands or millions of users.’” Pet. 57 (quoting Ex. 1007 ¶¶ 39, 52). According to Petitioner, one of ordinary skill in the art “thus would have understood that Cappellucci’s system and network support a plurality of users, and would have provided access to and transmitted content to users using the system at the same time (‘*simultaneously*’).” Pet. 57–58 (citing Vento Decl. ¶ 259). Patent Owner argues that these disclosures in Cappellucci_934 do “not even describe sending different content to different users, let alone simultaneously.” PO Resp. 46–47 (citing Bederson Decl. ¶ 86; Pet. 57; Ex. 1007 ¶¶ 39, 52). We disagree. As an initial matter, for the reasons discussed above as to element 1.5, the proposed combination satisfies the requirement for “generating . . . a plurality of aligned versions of the first unmodified content” Further, we find that the relied-upon aspects of Cappellucci_934 disclose or suggest element 1.6. For example, the disclosure in paragraph 39 that the system delivers its content to “large groups of users in real time” supports that the generated “plurality of aligned versions” (from element 1.5) would be provided “simultaneously,” which Patent Owner views as “at essentially the same time.” PO Resp. 45. Supporting this, we note that, in another paragraph cited by Petitioner, Cappellucci_934 elaborates on the prior disclosure in paragraph 39, stating that the content at issue can be “delivered to the user in or near real time and typically, in less than 0.2 seconds.”

Ex. 1007 ¶ 81, *cited at* Pet. 39, 59. Taken together, these disclosures, along with other disclosures relied upon by Petitioner as to the system “accommodat[ing] hundreds of thousands or millions of users” (Ex. 1007 ¶¶ 50, 52, *cited at* Pet. 57; Vento Decl. ¶ 259), support a finding that each of the “aligned versions” of the “plurality of aligned versions”—including the “first aligned version” would be delivered to two or more users at essentially the same time (i.e., “simultaneously”). This finding is also supported by the testimony of Mr. Vento. *See* Vento Decl. ¶ 259 (stating that the “Cappellucci references’ system and network support a plurality of users, and would have provided access to and transmitted content to users using the system at the same time (*‘simultaneously’*)”), *cited at* Pet. 57–58. In this way, the relied-upon disclosures satisfy element 1.6 under both understandings of “simultaneously.”

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art discloses the subject matter of element 1.6. Further, we determine, in light of the complete record, that Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art at the time of the invention would have had reason to modify the prior art as proposed to result in the subject matter of element 1.6.

h. Element 1.7

Element 1.7 recites “generating, by the differentiation engine, one or more lesson plans for the user, the one or more lesson plans comprising questions associated with the first aligned version and subject matter of the first unmodified content, wherein the one or more lesson plans comprises a lesson comprising one or more of a specific spoken language, a particular

font size and level appropriate vocabulary and a particular graphical format based on the reading skill level of the user.” Ex. 1001, 20:47–55. Petitioner relies on “Cappellucci in view of Cupp” for this element. See Pet. 59; see also Pet. 59–62 (citing Ex. 1005 ¶ 43; Ex. 1007 ¶¶ 42, 61, 81–87, 90–91; Ex. 1009 ¶¶ 5, 19, 25–38; Vento Decl. ¶¶ 262–269) (entire discussion).

As to the “differentiation engine” and “the first aligned version,” Petitioner refers to the discussions of elements 1.5 and 1.6. See Pet. 59. As to the rest of the first clause in element 1.7 (i.e., before the “wherein” clause), Petitioner first discusses how Cappellucci discloses “Lesson Plans” comprising “questions” and also how, for example, “Cappellucci_934 discloses that ‘a teacher can create or customize a lesson plan by locating and assembling one or more activities, assignments, and reading materials that correspond to the learning objective of the lesson.’” *Id.* (citing Ex. 1007 ¶¶ 42, 81–87). Petitioner states that, “[t]o meet the needs of a student at a second-grade reading level, it would have been obvious to generate a lesson plan and questions derived from the second-grade version of the article, which would nevertheless be based on the subject matter of the article” because “[t]his would permit evaluating the student’s comprehension of the article based on the student’s current reading level, as well as other benefits.” Pet. 60 (citing Vento Decl. ¶ 265). Petitioner also discusses why one of ordinary skill in the art “would have understood, or it would have been obvious, to generate the lesson plan using ‘*the differentiation engine*.’” Pet. 60–61 (citing Vento Decl. ¶ 267; Ex. 1007 ¶¶ 85, 90). For the “wherein” clause, Petitioner discusses why “[t]he Cappellucci-Cupp combination further teach, suggest, or render obvious” those aspects. See

Pet. 61–62 (citing Vento Decl ¶ 268; Ex. 1007 ¶¶ 90–91; Ex. 1009 ¶ 5, 19, 25–38).

Patent Owner presents two arguments as to this element (and similar element 8.10), which we address in turn below. See PO Resp. 37–41. First, Patent Owner asserts that “Petitioner interprets this claim element as requiring all aspects of ‘generating, by the differentiation engine, one or more lesson plans . . . ’ to be done by a computer without any human intervention,” but argues that “Cappellucci certainly does not disclose a *computer* generating an entire lesson plan without receiving content from a human source like a teacher, the Petition points to no such disclosure, and thus Petitioner’s argument fails.” *Id.* at 38–41.

As an initial matter, we do not view Petitioner as taking the position that element 1.7 should be construed to *exclude* “any human intervention” at all, as asserted by Patent Owner. PO Resp. 38. For example, in the discussion of the claim language “generating . . . one or more lesson plans for the user . . . comprising questions associated with the first aligned version and subject matter of the first unmodified content,” Petitioner highlights disclosures in Cappellucci_934 of a teacher’s involvement in creating a lesson plan:

Cappellucci_934 discloses that “a teacher can create or customize a lesson plan by locating and assembling one or more activities, assignments, and reading materials that correspond to the learning objective of the lesson.” EX1007, ¶42; see EX1007, ¶¶ 81–87. Cappellucci_934 further discloses that a teacher, to “meet the needs of her students,” may “create a customized version of [an] information object” (such as a lesson plan) using “any of the educational information resources available within the system,” EX1007, ¶82, which, in the Cappellucci-Cupp

combination, includes “*the first aligned version*,” see Section VIII.A.4.g. EX1003, ¶264.

Pet. 59–60 (underlining emphasis added).

Regardless of how Patent Owner characterizes Petitioner’s interpretation of this limitation, Patent Owner agrees that it does not exclude human intervention. See PO Resp. 38 (characterizing Petitioner’s interpretation as requiring the generating step “be done by a computer without human intervention”); *id.* n.24 (disagreeing with that interpretation). We agree with that understanding. Although element 1.7 requires “generating, by the differentiation engine, one or more lesson plans for the user” (with the “lesson plans” having certain recited features), we do not see a basis to construe this limitation as *excluding* “any human intervention.” Thus, with this first argument, and as discussed below, Patent Owner is arguing against a position that neither party has taken and that has not been shown by either party to be supported by the record.

As one example of a step allegedly improperly performed by a human in Cappellucci showing the proposed combination is outside of the scope of this element, Patent Owner asserts that “Cappellucci certainly does not disclose a *computer* generating an entire lesson plan without receiving content from a human source like a teacher, the Petition points to no such disclosure, and thus Petitioner’s argument fails.” PO Resp. 40–41 (underline emphasis added). But element 1.1, which recites “obtaining . . . a first unmodified content” does not *exclude* the involvement of a human being to, for example, identify the desired “source” (such as “academic textbook[s], news sources, library databases, pre-developed lesson databases, and the like” (Ex. 1001, 9:64–67)) such that the “at least one computer” can then “obtain[]” the “first unmodified content” from that “source.”

Similarly, we see no reason (and Patent Owner identifies none) that the step of element 1.7 “generating, by the differentiation engine, one or more lesson plans for the user” cannot have *some* human involvement, for example, before or after the “generating” step as long as the “generating” step is performed “by the differentiation engine.” *See, e.g.*, Ex. 2012, 85:14–86:1 (Counsel for Patent Owner: “Why are you talking about what a teacher can create or customize here, if the claim requires that it all be computerized?” Mr. Vento: “Again, I think this is – this is just saying that there’s – there may be a final step where once the lesson plan is generated, the instructor may be able to override it potentially as a manual task, if needed. But I don’t think this precludes or invalidates that that is generated via computer.”) (cited at PO Resp. 38–39).

And Petitioner addresses why, in the context of the proposed combination, one of ordinary skill in the art “would have understood, or it would have been obvious, to generate the lesson plan using ‘*the differentiation engine*’” as recited. Pet. 60–61 (citing, e.g., Vento Decl. ¶ 267). We are persuaded by Petitioner’s discussion and the relied-upon testimony of Mr. Vento, and do not agree with Patent Owner’s contrary argument that “Cappellucci does not teach computerized *generation* of content such as the claimed lesson plan” (PO Resp. 39). For example, Petitioner asserts that “Cappellucci_934 discloses that the system uses information in a user’s profile, such as grade level, ‘to select information that is presented to a user and how that information is presented to a user’” and states that “[t]his information in ‘a student profile can be used to filter questions in a practice assessment test delivered to a student.’” Pet. 60 (quoting Ex. 1007 ¶ 90). Petitioner adds that “Cappellucci_934 discloses

generating customized lesson plans using the ‘custom publishing tools,’ which may include a ‘*differentiation engine*.’” Pet. 60–61 (quoting Ex. 1007 ¶ 85;¹⁴ Pet. 49–57). On this issue, Mr. Vento highlights the discussion in paragraph 91 of Cappellucci_934 as to how “the system may . . . provide a teacher with different lesson plans because a lesson plan which includes counting snowballs may create problems for teachers in southern climates which don't receive any snow.” Vento Decl. ¶ 267, *cited at* Pet. 60–61 (quoting Ex. 1007 ¶ 91). Petitioner also states that “Cappellucci’s e-learning ‘system can use information in a student’s profile to customize the user interface and *information* provided to the student’ and the ‘system can automatically provide *easier activities or assignments* to below average students.’” Pet. Reply 16–17 (quoting Ex. 1007 ¶ 42) (citing Pet. 59). Having reviewed these disclosures, we are persuaded that one of ordinary skill in the art would have understood, or it would have been obvious, to generate the “lesson plan” using the “differentiation engine” in the proposed combination, even if a human is involved in some way before or after the “generating” step occurs by the “differentiation engine.” This finding is supported by the testimony of Mr. Vento. *See* Vento Decl. ¶ 267 (“These teachings confirm my opinion that [one of ordinary skill in the art] would have understood, or it would have been obvious, that the Cappellucci references’ ‘*differentiation engine*’ would ‘*generat[e] . . . lesson plans for*

¹⁴ Patent Owner argues that these “custom publishing tools” require interaction by a “user” to “revise.” PO Resp. 39. But, for the reasons above, human intervention to “revise” a lesson plan is not precluded by element 1.7 as long as the “generating” step is performed “by the differentiation engine.”

the user . . . comprising questions’ based at least on the user’s profile.” (first bracketed text added)), *cited at* Pet. 60–61.

Similar to Patent Owner, Dr. Bederson highlights various functions before or after the “generating” step that may be performed by a teacher in the proposed combination) but does not take the position that a human performs the “generating” step. *See* Bederson Decl. ¶ 81. For the reasons above, we are persuaded by Petitioner’s (and Mr. Vento’s) discussion that the “differentiation engine” would perform the step of *actually* “generating . . . one or more lessons plans” such that the teacher would not usurp that specific recited task. *See, e.g.*, Ex. 2012, 85:14–86:1.

Second, Patent Owner argues that Petitioner’s position on element 1.7 must fail because, “at deposition Petitioner’s expert repeatedly insisted on the need to include Tudor . . . to satisfy this” element. PO Resp. 38 (citing Ex. 2012, 84:7–98:10; PO Resp. 20 n.14). We disagree with Patent Owner’s characterization of Mr. Vento’s testimony. Although Mr. Vento did discuss Tudor when questioned about this element (*see, e.g.*, Ex. 2012, 86:13–88:21), as acknowledged by counsel for Patent Owner during the deposition, Mr. Vento relies on “the Cappellucci references, in view of Cupp” as to element 1.7 in the Vento Declaration. *See* Ex. 2012, 88:22–89:10 (discussing Vento Decl. ¶ 262). As noted by Petitioner, Mr. Vento also stated during his deposition that Cappellucci teaches or suggests “generating, by the differentiation engine, one or more lesson plans” as recited in part of element 1.7. Pet. Reply 16 (citing Ex. 2012, 86:2–12, 90:12–91:18, 122:10–123:21). We are not persuaded that Mr. Vento’s statements about Tudor renders *all* of his testimony “not credible” and entitled to “no weight,” as argued by Patent Owner. PO Resp. 38.

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art discloses the subject matter of element 1.7. Further, we determine, in light of the complete record, that Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art at the time of the invention would have had reason to modify the prior art as proposed to result in the subject matter of element 1.7.

i. Element 1.8

Element 1.8 recites: “providing the one or more lesson plans questions associated with the first aligned version to the user via a communication system.” Ex. 1001, 20:56–58. Petitioner relies on Cappellucci in view of Cupp for this element.¹⁵ See Pet. 62–63 (citing Ex. 1005 ¶¶ 40, 61–63, Fig. 5; Ex. 1007 ¶¶ 39, 42, 90–94; Vento Decl. ¶¶ 270–271). Referencing the discussion in the Petition of element 1.7, Petitioner states that “the Cappellucci-Cupp combination includes ‘*lesson plans questions associated with the first aligned version*’” and that “Cappellucci discloses ‘*providing*’ content, including ‘*lesson plans . . . to the user via a communication system,*’ such as the Internet.” Pet. 62 (citing Ex. 1005 ¶¶ 40, 61–63, Fig. 5; Ex. 1007 ¶¶ 39, 42, 90–94). According to Petitioner, one of ordinary skill in the art “would have understood, or it would have been obvious, that Cappellucci’s system would provide the lesson plan and associated questions discussed in [element] 1.7, to the user via a communication system, such as the Internet,

¹⁵ Although the first sentence in the section of the Petition addressing element 1.8 provides that “Cappellucci in view of [sic] teaches or suggests limitation 1.8,” the *next sentence* states, “[a]s demonstrated for limitation 1.7, the Cappellucci-Cupp combination includes” certain features. Pet. 62.

in order to support and evaluate the user’s understanding of the ‘*first aligned version.*’” Pet. 62–63 (citing Vento Decl. ¶ 271).

Patent Owner does not present arguments for this element. We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art discloses the subject matter of element 1.8. Further, we determine, in light of the complete record, that Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art at the time of the invention would have had reason to modify the prior art as proposed to result in the subject matter of element 1.8.

j. Element 1.9

Element 1.9 recites: “wherein each of the plurality of aligned versions are equivalent substantially similar in subject matter, meaning and context to subject matter, meaning and context of the first unmodified content.”

Ex. 1001, 20:59–62. Petitioner relies on “Cappellucci in view of Cupp” for this element. See Pet. 63 (citing Ex. 1007 ¶ 90; Ex. 1009 ¶¶ 22, 28, 34, 35; Vento Decl. ¶¶ 272–273). Petitioner states that “Cupp’s methods replace words with synonyms and combine or separate sentences” and that one of ordinary skill in the art “would have understood that such edits modify the content without substantially changing the subject matter, meaning, and context.” Pet. 63 (citing Ex. 1007 ¶ 90; Ex. 1009 ¶¶ 22, 28, 34, 35; Vento Decl. ¶ 273).

For this element, Patent Owner relies on the same discussion presented as the first argument with respect to element 1.5—relating to “maintaining subject matter of the first unmodified content.” See PO Resp. 30 n.22. For the reasons discussed above, Patent Owner’s first

argument with respect to element 1.5 does not identify a deficiency in Petitioner's positions.

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the relied-upon combination of prior art satisfies element 1.9. Further, we determine, in light of the complete record, that Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art at the time of the invention would have had reason to modify the prior art as proposed to result in the subject matter of element 1.9.

*k. General Arguments as to why Petitioner Allegedly
Has not Met its Burden*

*(1) Alleged Lack of Clarity as to Petitioner's
Positions*

Patent Owner presents two general arguments as to why Petitioner allegedly failed to sufficiently explain its positions. See PO Resp. 63–67. First, Patent Owner asserts as improper Petitioner's statements as to what one of ordinary skill in the art "would have understood." PO Resp. 63–64. In the Decision on Institution, based on Patent Owner's similar pre-institution argument, we stated that we understood these statements by Petitioner as presenting "a theory based on implicit disclosure." Dec. Inst. 20 (citing *IXI IP, LLC v. Samsung Elecs. Co.*, 903 F.3d 1257, 1262–65 (Fed. Cir. 2018) (analyzing an implicit disclosure theory in an appeal from the PTAB); *In re Burckel*, 592 F.2d 1175, 1179 (CCPA 1979) ("Under 35 U.S.C. § 103, a reference must be considered not only for what it expressly teaches, but also for what it fairly suggests."); *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976) ("[T]he question under 35 U.S.C. § 103 is not merely what the references expressly teach, but what they would have

suggested to one of ordinary skill in the art at the time the invention was made.”)). Patent Owner contends that our preliminary understanding, as reflected in the Decision on Institution, is “neither clear from nor supported by the Petition.” PO Resp. 63. We disagree. Petitioner’s position was sufficiently clear for the Board to arrive at the preliminary understanding discussed in the Decision on Institution (Dec. Inst. 19–21), which Patent Owner does not undermine with this conclusory argument. We maintain our preliminary understanding of Petitioner’s statements as to what one of ordinary skill in the art “would have understood,” which Petitioner confirms in the Reply. Pet. Reply 26 (citing *In re Preda*, 401 F.2d 825, 826 (CCPA 1968) (“[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.”)).

Patent Owner also argues that “it was Petitioner’s burden to prove and explain why the disclosure is implicit” and that, “[e]ven if the Board could interpret Petitioner’s vague arguments as implicit disclosure theories, it is insufficient merely to assert a disclosure is implicit without more.” PO Resp. 64 (citing Bederson Decl. ¶ 109). We disagree with Patent Owner’s characterization of Petitioner’s positions.

Patent Owner and Dr. Bederson provide a long list of allegedly improper statements by Petitioner relying on implicit disclosure (PO Resp. 64 n.35; Bederson Decl. ¶ 109), but neither Patent Owner nor Dr. Bederson substantively discuss *any* of them. We will not develop specific arguments based on Patent Owner’s general assertion of failure by Petitioner.

See SmithKline Beecham Corp. v. Apotex Corp., 439 F.3d 1312, 1320 (Fed.

Cir. 2006) (“Judges are not like pigs, hunting for truffles buried in briefs.” (quoting *United States v. Dunkel*, 927 F.2d 955, 956 (7th Cir. 1991))).

Patent Owner and Dr. Bederson assert error in Petitioner’s statement that one of ordinary skill in the art “would have understood, or it would have been obvious, to use Cappellucci’s system and methods to transmit the ‘*first aligned version . . . to the user*’ because providing content to users is a primary objective of Cappellucci.” Pet. 57 (citing Vento Decl. ¶ 258); see also PO Resp. 64 n.35 (citing Pet. 57); Bederson Decl. ¶ 109 (citing Vento Decl. ¶ 258). But Petitioner and Mr. Vento explain why one of ordinary skill in the art would have understood Cappellucci as discussed, expressly stating that it is “because providing content to users is a primary objective of Cappellucci.” Pet. 57; Vento Decl. ¶ 258. Thus, contrary to Patent Owner’s argument (PO Resp. 64), Petitioner does not merely state implicit disclosure positions without support.

Second, Patent Owner argues that “Petitioner repeatedly fails to establish why limitations would have been understood to be disclosed or to provide meaningful analysis of ***whether, how, and why a POSITA would have modified*** the references it cites.” PO Resp. 65; see also *id.* at 64–67 (entire argument). As the first of three alleged examples, Patent Owner highlights the discussion of limitations 1.1 and 8.4. See *id.* at 65–66. According to Patent Owner, Petitioner contends that these limitations “‘would have been obvious’ from Cappellucci, but without any explanation” and takes the alternative position that Cupp discloses “first unmodified content” but Petitioner fails to explain how “‘*obtaining . . . first unmodified content*’ is rendered obvious in connection with any Cappellucci-Cupp combination.” *Id.* at 65–66 (citing Pet. 37, 39, 63–64).

We do not agree with Patent Owner as to this first example. As an initial matter, the discussion of limitation 1.1 focusing on Cappellucci spans more than three pages and cites to five pages of testimony by Mr. Vento. See Pet. 37–40 (citing Vento Decl. ¶¶ 205–213). This discussion cannot be dismissed as “without any explanation.” PO Resp. 65. Further, Petitioner clearly relies on Cupp *in the alternative* as to “first unmodified content.” See Pet. 37 (“Alternatively, Cupp discloses the ‘*first unmodified content.*’ See EX1009, FIG. 1 (step 106).”); see also Pet. Reply 26–27 & Dec. Inst. 20–21 (discussing how alternative theories are not prohibited if they are supported). We do not rely on this alternative position as to elements 1.1 and 8.4, for which Patent Owner does not present any specific arguments.

As the second of three alleged examples, Patent Owner highlights the discussion of limitations 1.2 and 8.5. See PO Resp. 66–67. Patent Owner states that “[t]he Petition first asserts ‘Cappellucci teaches or suggests’ the Limitation (Pet. 40), but then asserts the Limitation ‘would have been obvious’ without explaining how or why, or what additional teaching or modification would have rendered the Limitation obvious.” *Id.* at 67 (quoting Pet. 41) (citing Bederson Decl. ¶ 110).

We do not agree with Patent Owner as to this second example. The statement on page 41 of the Petition does not state that the *entire* element would have been obvious; instead, it provides that one of ordinary skill in the art “*would have understood, or it would have been obvious, that the educational standards stored in the data tier and new educational standards that may be added to the system would have been ‘obtain[ed] . . . using at least one computer.’*” Pet. 41 (emphasis added) (citing Vento Decl. ¶ 216). Again, Petitioner’s position challenged by Patent Owner is provided *in the*

alternative. Patent Owner does not challenge Petitioner’s implicit disclosure position (i.e., as to what one of ordinary skill in the art “would have understood”) with any specific argument. We do not rely on Petitioner’s alternative position—as to what “would have been obvious”—as to limitations 1.2 and 8.5, for which Patent Owner does not present any specific arguments.

As to the third example, Patent Owner highlights the discussion of limitations 2.1–2.3 and 9.1–9.3. *See* PO Resp. 67. According to Patent Owner, “Petitioner asserted it would have been obvious ‘to combine Tudor’s computer-based educational system . . . in the system disclosed in Cappellucci’” but “Petitioner did not explain specifically what would be combined or how.” *Id.* (quoting Pet. 65) (citing Bederson Decl. ¶ 111).

We do not agree with Patent Owner. The discussion of limitations 2.1–2.3 and 9.1–9.3 spans approximately two pages and cites four pages of testimony by Mr. Vento. *See* Pet. 64–66 (citing Vento Decl. ¶¶ 292–298). As part of this discussion, Petitioner states that “[i]t would have been obvious to [one of ordinary skill in the art] to combine Tudor’s computer-based educational system, such as computer system 200 of Figure 2, in the system disclosed in Cappellucci.” Pet. 65 (citing Vento Decl. ¶ 297; Pet. 33–35 (addressing combining Cappellucci/Cupp with Tudor)). We determine that this discussion is adequate to explain Petitioner’s position as to limitations 2.1–2.3 and 9.1–9.3, for which Patent Owner does not present any specific arguments. For these reasons, these general arguments do not undermine Petitioner’s positions as to the challenged claims.

*(2) Alleged Improper Mixing of Embodiments in
the Cappellucci References*

Patent Owner argues that Petitioner improperly mixes different embodiments from the Cappellucci references without providing an adequate obviousness analysis. See PO Resp. 60–63. Specifically, Patent Owner asserts that “Petitioner repeatedly mixes paragraphs on an ‘**alternative** embodiment’ regarding ‘**news information**’ (EX1007, ¶¶92–93) with *other* sections of Cappellucci_934 describing another (main) embodiment related to an ‘**e-learning**’ system.” *Id.* at 61 (citing Pet. 37–38, 48, 51, 57–58, 60, 74, 75–76). According to Patent Owner, “Petitioner has not provided a motivation to combine the news system with the e-learning system” because the “two-page discussion of the motivation to combine the Cappellucci references the Board identified at institution ([Dec. Inst.] 40–41 (citing Pet. 26–27)) never mentions the ‘news information’ embodiment that, under Petitioner’s theories, would have to be combined with the ‘e-learning’ embodiment that is the focus of both Cappellucci references.” PO Resp. 62 (citing Pet. 27–28; Bederson Decl. ¶ 105).

Patent Owner also argues that, “with respect to the Cappellucci-Cupp combination, Petitioner again provides no motivation to combine the news information embodiment of Cappellucci with Cupp.” PO Resp. 62. According to Patent Owner, “while Petitioner’s Cappellucci cites regarding this motivation to combine argument include the news embodiment cites (EX1007, ¶¶92–93), Petitioner’s argument does not address the news system.” PO Resp. 63 (citing Bederson Decl. ¶¶ 106–107).

We do not agree with either argument. We first address the arguments as to the Cappellucci references. Paragraph 92 and the beginning of paragraph 93 of Cappellucci_934 describe system 600:

[0092] In an alternative embodiment, the system 600 can be used to deliver other kinds of information to a user. System 600 can [be] used in any environment in which it is desirable to enable to the user to customize the information that many users can obtain access to.

[0093] For example, the system in accordance to the present invention can be used to provide customized news information from many diverse news information resources to a diverse user base.

Ex. 1007 ¶¶ 92, 93. Although paragraph 92 does use the term “alternative embodiment,” the discussion quoted above makes clear that the “news information” aspect can be a feature of *the same* “system 600” that is disclosed as part of the e-learning system relied on by Petitioner, which Patent Owner refers to as the “main” embodiment. Other disclosures support this understanding. *See* Ex. 1007 ¶ 60 (“In accordance with one embodiment of the invention, the system 600 of the invention can be [used] as part of an online learning or e-learning system.”), *cited at* Pet. 16, 40; *see also* Pet. Reply 25–26 (noting that “in paragraphs 92–93, Cappellucci_934 expressly discloses that the same ‘system 600’—that is described throughout the disclosure—‘can be used to deliver other kinds of information to a user,’ including ‘customized news information’” (citing Ex. 1007 ¶¶ 57–69, 92–93)). Thus, we agree with Petitioner that “paragraphs 92–93 do not describe a different system; rather, they simply explain that *the same system* can deliver different types of information.” Pet. Reply 26 (emphasis added) (citing Ex. 1007 ¶¶ 92–93).

Moreover, even assuming paragraphs 92 and 93 of Cappellucci_934 *did* disclose an entirely different embodiment, Mr. Vento expressly discusses—in a paragraph cited in the Petitioner’s section on reasons to

combine the Cappellucci references—a reason to incorporate the news information feature into the proposed combination:

Additionally, by incorporating Cappellucci '934's ability "to provide customized news information from many diverse news information sources to a diverse user base," the resulting combination would have vastly more resources to draw from. EX1007, ¶93. The resulting combination would allow teachers to design more diverse, engaging, and topical lesson plans than with Cappellucci '949's teachings alone. A POSA would have recognized these benefits of making the combination.

Vento Decl. ¶ 171, *cited at* Pet. 27 & Pet. Reply 26; *cf.* PO Resp. 62

(arguing that "Petitioner has not provided a motivation to combine the news system with the e-learning system" (citing Bederson Decl. ¶ 105)). Patent Owner does not address this discussion in the Response or the Sur-reply.

As to Patent Owner's separate argument about the Cappellucci-Cupp modification (PO Resp. 62–63), for the reasons above, Petitioner has provided a reason to incorporate the news information feature from Cappellucci_934 into the proposed combination overall, and Patent Owner has not substantively addressed that reasoning, except to incorrectly assert that "no motivation" at all has been provided. *Id.* at 62. Indeed, in several statements in the lengthy discussion of combining "Cappellucci with Cupp," Petitioner discusses why the resulting combination would have used a "news article" as exemplary information delivered to the users:

(1) "For example, it would have been obvious to [one of ordinary skill in the art] to use Cupp's methods to determine the readability level of a news article obtained using Cappellucci's system and to edit the news article to generate different versions written at second-, fourth-, and six-grade reading levels to accommodate different readers' abilities." Pet. 28–29 (citing Vento Decl. ¶ 176; Ex. 1007 ¶¶ 90, 93);

(2) “Because Cupp’s editing methods would create new content (e.g., different versions of a news article written for different reading levels) to be added to the system disclosed by Cappellucci, it would have been obvious to include Cupp’s methods in Cappellucci’s content creation tools.” Pet. 29–30 (citing Vento Decl. ¶ 177);

(3) “[One of ordinary skill in the art] would have known of the need in the educational field, particularly in web-based applications, for differentiating content and would have looked to teachings, such as Cupp, to differentiate reading material, such as the content stored in Cappellucci’s data tier and from the other sources (e.g., news sources) disclosed by Cappellucci, such that this content would be readable when provided to users (e.g., students).” Pet. 31 (Vento Decl. ¶¶ 180–181);

(4) “Cappellucci and Cupp describe computer-based education technology in the predictable arts, and thus [one of ordinary skill in the art] would have had a reasonable expectation that she would successfully modify Cappellucci’s content, such as textbooks and news articles, using Cupp’s methods.” Pet. 32–33 (citing Vento Decl. ¶ 185).

For the reasons discussed above, Petitioner’s reliance on the news information feature of Cappellucci’s e-learning system does not undermine Petitioner’s obviousness analysis.

1. Objective Indicia of Nonobviousness

We next turn to Patent Owner’s objective evidence of nonobviousness. Objective evidence of nonobviousness, when present, must be considered as part of an obviousness inquiry. *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012). Notwithstanding what the teachings of the prior art would have suggested to one of ordinary skill in the art, the totality of the evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that one or more of the challenged claims would not have been

obvious to one of ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984).

“In order to accord substantial weight to secondary considerations in an obviousness analysis, the evidence of secondary considerations must have 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), *cert. denied*, 141 S. Ct. 373 (2020). Applying *Fox Factory*, the Board uses a two-step analysis in evaluating nexus between the claimed invention and objective evidence of nonobviousness. *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 33 at 33 (PTAB Jan. 24, 2020) (precedential). We first consider whether the patent owner has demonstrated “that its products are coextensive (or nearly coextensive) with the challenged claims,” resulting in a rebuttable presumption of nexus. *Id.* If not, that does not end the inquiry; “the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Id.* (quoting *Fox Factory*, 944 F.3d at 1373–75).

Patent Owner produces evidence directed to alleged industry praise. PO Resp. 55–60; PO Sur-reply 18–20. Petitioner responds. See Pet. Reply 23–25. We address nexus and then the evidence of alleged industry praise.

(1) Nexus

“The patentee bears the burden of showing that a nexus exists.” *Fox Factory*, 944 F.3d at 1373 (quoting *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999)). Patent Owner references “nexus” in the Response but, as noted by Petitioner, does not clearly address either of

the two options under *Fox Factory*. See Pet. Reply 24 (arguing that Patent Owner “doesn’t allege that the claims are entitled to a presumption of a nexus or that the objective indicia are a direct result of novel features of the claims”). In the Sur-reply, Patent Owner does not directly address this issue, but only references “the presumption of nexus.” PO Sur-reply 18 (“Petitioner’s Reply is unable to overcome the presumption of nexus that arises from PO’s establishing ‘that the asserted objective evidence is tied to a specific product and that product “is the invention disclosed and claimed in the patent.”’” (quoting *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1329 (Fed. Cir. 2016))). We determine that Patent Owner has only asserted a presumption of nexus; we address below whether Patent Owner is entitled to the asserted rebuttable presumption of nexus on the record here.

As stated in *Fox Factory*, “presuming nexus is appropriate when the patentee shows that the asserted objective evidence is tied to a specific product and that product embodies the claimed features, and is coextensive with them.” *Fox Factory*, 944 F.3d at 1373 (quotations omitted). Patent Owner asserts that its Achieve3000 Literacy product is entitled to a presumption of nexus. See PO Resp. 56. Patent Owner’s position fails for several reasons. We first discuss general failings with Patent Owner’s position and then address issues with the specific evidence relied upon.

First, even assuming as correct Patent Owner’s *unsupported* position that it owns only one other patent—U.S. Patent 8,714,896—in addition to the ’993 patent in this proceeding (see, e.g., PO Resp. 57), statements regarding, for example, a “patented platform” (see Ex. 2019 at 11) *certainly could* reference a system allegedly embodying the claims of the ’896 patent, and *not* embodying the claims of the ’993 patent at issue in this proceeding.

Second, as discussed further below, Patent Owner fails to show that statements as to, for example, their “patented platform” relate to the Achieve3000 Literacy product because the record does not support that the Achieve3000 Literacy product was Patent Owner’s *only* product.

Third, we question the adequacy and reliability of the statements of listed inventor Saki Dodelson—former CEO of Patent Owner and current CEO of Petitioner—as supporting that the Achieve3000 Literacy product is (for example) a “patented platform” that practices a claim of the ’993 patent. Indeed, neither Patent Owner nor Dr. Bederson provide an analysis demonstrating that the Achieve3000 Literacy product actually embodies *any* claim of the ’993 patent; instead, Patent Owner seeks to rely on statements by Ms. Dodelson as *alleged admissions* on this issue. We are not aware of any case law, and Patent Owner does not identify any, that statements by an inventor—even one working for an entity now challenging the validity of that patent—can adequately demonstrate that a certain product embodies the claims of the patent in the context of a presumption of nexus analysis. With these generalized failings in mind, we now discuss each specific piece of evidence highlighted by Patent Owner. *See* PO Resp. 55–60.

Exhibit 2019 is a document from Patent Owner’s website, provided by the Wayback Machine. Patent Owner relies on this Exhibit to assert that Ms. Dodelson “asserts today [that] the ’993 claimed invention is embodied by Patent Owner’s product Achieve 3000 Literacy.” PO Resp. 56. Exhibit 2019, however, does not mention the Achieve3000 Literacy product or the ’993 patent at all, but rather discusses features of an unidentified “patented platform.” Ex. 2019 at 11.

Exhibit 2015 is a document that discusses certain alleged features of the Achieve3000 Literacy product, but Patent Owner does not explain, and we do not find from our review, that this exhibit discusses the product practices *any* patent, including the '993 patent. *See* PO Resp. 56 (discussing Ex. 2015).

Exhibit 2005 is a press release touting the issuance of the '896 patent, but it does not mention the '993 patent—at issue in this proceeding—at all. *See* Ex. 2005, *cited at* PO Resp. 56–57.

Exhibit 2001 is Ms. Dodelson's biography from her current position, as CEO of Petitioner, in which she states that she was the founder and CEO of Patent Owner, which “introduced online differentiated learning and patented its breakthrough methodology.” Ex. 2001 at 1, *cited at* PO Resp. 58. Exhibit 2007, Ms. Dodelson's professional networking profile, provides that when she was the CEO for Patent Owner she “pioneered online differentiated learning and co-developed its patented method of differentiation.” Ex. 2007 at 1, *cited at* PO Resp. 58. Neither of these exhibits mention the '993 patent or the Achieve3000 Literacy product.

Exhibits 2013 and 2014 are press releases announcing alleged industry praise relied on by Patent Owner. *See* Exs. 2013 & 2014, *cited at* PO Resp. 59–60. Exhibit 2013 mentions the Achieve3000 Literacy product but does not mention *any* patent, including the '993 patent. Exhibit 2014 does not mention the Achieve3000 Literacy product or the '993 patent (but does generally reference a “patented method”). We find that none of these exhibits demonstrate that the Achieve3000 Literacy product embodies *any* claim of the '993 patent.

In his discussion of objective indicia, Dr. Bederson also does not demonstrate that the Achieve3000 Literacy product embodies *any* claim of the '993 patent. Instead, Dr. Bederson, like Patent Owner, relies on the evidence discussed above as showing that Ms. Dodelson “treated the Achieve3000 Literacy product as embodying the claimed invention in Patent Owner’s patents.” Bederson Decl. ¶ 100 (citing Exs. 2005, 2007, 2019); *see also* Pet. Reply 24 (arguing that “Dr. Bederson’s opinion that Achieve3000’s product embodied the claimed invention is based solely on general statements online and in marketing material that he attributes to inventor Dodelson”). As noted by Petitioner, Dr. Bederson acknowledged in his deposition that he had “not analyzed the actual Achieve 3000 product separately” to determine whether it embodies any claim of the '993 patent. Ex. 1044, 72:11–20, *cited at* Pet. Reply 24. For the reasons above, the evidence cited by Patent Owner and Dr. Bederson does not establish that the Achieve3000 Literacy product embodies *any* claim of the '993 patent.

Moreover, in the context of the presumption of nexus analysis, the Federal Circuit has made clear that the “coextensiveness requirement” is *separate* from the requirement that the product or process embodies the claims. *See Fox Factory*, 944 F.3d at 1377 (“We reject [the patent owner’s] attempt to reduce the coextensiveness requirement to an inquiry into whether the patent claims broadly cover the product that is the subject of the evidence of secondary considerations.”). Here, Patent Owner does not even mention, let alone provide evidence supporting, satisfying the *separate* coextensiveness requirement.

We determine that Patent Owner has not established a presumption of nexus as to the Achieve 3000 Literacy product because (1) Patent Owner has

not adequately demonstrated that the Achieve3000 Literacy product embodies *any* claim of the '993 patent and (2) has not adequately shown that the Achieve 3000 Literacy product is coextensive (or nearly coextensive) with the challenged claims. Thus, on the record here, we determine that Patent Owner has not established a nexus to the Achieve 3000 Literacy product. Regardless, to present a full discussion of the issues, we discuss the objective indicia evidence below as if Patent Owner *had* established nexus.

(2) Industry Praise

We now discuss the specific evidence relied upon by Patent Owner, assuming that nexus had been established to the Achieve 3000 Literacy product. Patent Owner presents evidence related to industry praise and “public recognition.” PO Resp. 55–60; PO Sur-reply 18–20. Praise from industry participants, especially competitors, is probative of nonobviousness because such participants “are not likely to praise an obvious advance over the known art. Thus, if there is evidence of industry praise of the claimed invention in the record, it weighs in favor of the nonobviousness of the claimed invention.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1053 (Fed. Cir. 2016) (en banc). We first discuss statements by Ms. Dodelson and Patent Owner and then address alleged “public recognition.”

As to the statements by Ms. Dodelson, Patent Owner highlights some from her time as CEO of Patent Owner, and some from after her transition to a role as CEO of Petitioner. Even assuming the laudatory statements from her time as CEO of Patent Owner had a nexus to the claims of the '993 patent, we do not view such statements as evidence of praise *from the industry*. See *Bayer Healthcare Pharms., Inc. v. Watson Pharms., Inc.*, 713 F.3d 1369, 1377 (Fed. Cir. 2013) (discussing how “self-referential

commendation fall[s] well short of demonstrative true industry praise”); *In re Cree, Inc.*, 818 F.3d 694, 702 (Fed. Cir. 2016) (rejecting patentee’s reliance on “self-serving statements from researchers about their own work” as alleged evidence of praise); *see also* PO Resp. 55–59 (citing Ex. 2019). Similarly, Patent Owner’s own press release—including statements from then-CEO Ms. Dodelson—touting the issuance of the ’896 patent is not praise *from the industry* as to the ’993 patent at issue in this proceeding. *See* Ex. 2005, *cited at* PO Resp. 56–57. Further, Patent Owner’s own laudatory comments in marketing materials for the Achieve3000 Literacy product are not praise *from the industry*. *See* Ex. 2015, *cited at* PO Resp. 56.

Further, statements from *after* Ms. Dodelson’s move to a position as CEO of Petitioner provide no praise specific to the ’993 patent *at all*, and provide only indirect praise to Ms. Dodelson’s former company (i.e., Patent Owner) as a “pioneering company” that “patented its breakthrough methodology.” Ex. 2001, *cited at* PO Resp. 58 (also citing Ex. 2007 (similar indirect statements of praise)). We do not view these statements as evidence supporting the patentability of any claim of the ’993 patent.

We turn now to the alleged evidence of “public recognition”: Exhibits 2013 and 2014. *See* PO Resp. 59–60. Patent Owner highlights Exhibit 2013 to support its contention that, “[i]n March 2021, Patent Owner’s Achieve3000 Literacy product earned Research-Based Design product certifications from Digital Promise, which is awarded based on research demonstrating the efficacy of these products and Patent Owner was one of seven awarded this certification in 2021.” *Id.* at 59. Although this evidence does show “recognition” of some kind from the industry for the Achieve3000 Literacy product, as noted by Petitioner, the document makes

clear that this was a “product certification” rather than praise of the Achieve3000 Literacy product. Ex. 2013; see Pet. Reply 24–25 (arguing that Patent Owner “fails to explain how an unexplained industry accreditation is commensurate with industry praise”). Moreover, Patent Owner—rather than an entity in the industry—submitted the evidence to Digital Promise to receive the certification. Ex. 2013 (“To receive consideration for this product certification, Achieve3000 submitted evidence to Digital Promise confirming a link between research on how students learn and the design of its products.”).

As the second of two documents on this issue, Patent Owner highlights Exhibit 2014 to support its contention that “[t]he Center for Research and Reform in Education at John Hopkins University School of Education recognized Achieve3000 for providing strong evidence of efficacy in improving literacy.” PO Resp. 59. Assuming for purposes of this discussion that nexus had been established to the Achieve3000 Literacy product, we would view Exhibits 2013 and 2014 as being entitled to some, but not considerable, weight of nonobviousness.

m. Conclusion as to Claim 1

For the reasons discussed above (§ II.C.2.a–k), the evidence presented by Petitioner strongly indicates that claim 1 would have been obvious over the combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor. For the reasons also discussed above (§ II.C.2.l), Patent Owner has not demonstrated a nexus; and, even if we were to assume a nexus, Patent Owner’s objective evidence would still not weigh strongly in favor of nonobviousness. When considering all the evidence of obviousness and nonobviousness together (*see In re Cyclobenzaprine Hydrochloride*

Extended-Release Capsule Patent Litig., 676 F.3d 1063, 1079 (Fed. Cir. 2012)), we find Petitioner’s strong evidence of obviousness would outweigh Patent Owner’s objective evidence of nonobviousness, even if Patent Owner had demonstrated a nexus. Thus, we conclude Petitioner has demonstrated by a preponderance of the evidence that claim 1 would have been obvious over the combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor.

3. *Independent Claim 8*

Petitioner contends that the proposed combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor discloses each limitation of independent claim 8. Pet. 63–64. Petitioner states that “[c]laim 8 is a system claim that recites ‘*a) at least one processor; b) at least one input device coupled to at least one network; and c) at least one storage device storing processor executable instructions which, when executed by the at least one processor, performs*’ nearly identical steps as claim 1.” Pet. 63–64. In support, Petitioner provides a comparison of claims 1 and 8. See Ex. 1019, *cited at* Pet. 63–64. Petitioner also references the discussion of claim 1. See Pet. 64 (citing Pet. 35–63; Vento Decl. ¶¶ 274–289).

Patent Owner argues the similar subject matter of independent claim 8 together with the subject matter of independent claim 1 and does not provide arguments addressing the subject matter of claim 8 separate from those presented above as to claim 1. See, e.g., PO Resp. 6–53.

For the same reasons discussed above as to independent claim 1, we find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the proposed combination of

Cappellucci_949, Cappellucci_934, Cupp, and Tudor satisfies each of the elements of independent claim 8.

As to claim 8, Petitioner relies on the same articulated reasons to combine the relied-upon aspects of Cappellucci_949, Cappellucci_934, Cupp, and Tudor, and the same explanation as to why one of ordinary skill in the art would have had a reasonable expectation of success in the combination provided for claim 1. Pet. 26–35.

For the same reasons discussed above as to independent claim 1, we find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that one of ordinary skill in the art at the time of the invention would have had reason to combine Cappellucci_949, Cappellucci_934, Cupp, and Tudor, as proposed, and would have had a reasonable expectation of success.

The analysis of Patent Owner’s objective evidence of nonobviousness is the same for claim 8 in the context of this asserted ground as for claim 1. *See supra* § II.C.2.1.

For the reasons discussed above (§ II.C.2.a–k), the evidence presented by Petitioner strongly indicates that claim 8 would have been obvious over the combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor. For the reasons also discussed above (§ II.C.2.1), Patent Owner has not demonstrated a nexus; and, even if we were to assume a nexus, Patent Owner’s objective evidence would not weigh strongly in favor of nonobviousness. When considering all the evidence of obviousness and nonobviousness together (*see In re Cyclobenzaprine*, 676 F.3d at 1079), we find Petitioner’s strong evidence of obviousness would outweigh Patent Owner’s objective evidence of nonobviousness, even if Patent Owner had

shown a nexus. Thus, we conclude Petitioner has demonstrated by a preponderance of the evidence that claim 8 would have been obvious over the combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor.

4. Dependent Claims 2 and 9

Claims 2 and 9 depend from independent claims 1 and 8, respectively. To address these claims, Petitioner discusses why the proposed combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor satisfies the additional limitations in these claims and discusses why one of ordinary skill in the art at the time of the invention would have had reason to combine the references as proposed with a reasonable expectation of success. *See* Pet. 64–68; Vento Decl. ¶¶ 290–304.

The record evidence, as presented, supports Petitioner’s position as to the additional limitations in these dependent claims. Patent Owner does not present arguments addressing these claims. We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the proposed combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor satisfies the additional limitations in claims 2 and 9. We also determine that Petitioner has adequately explained why one of ordinary skill in the art would have combined the references as proposed and that there would have been a reasonable expectation of success. Based on the complete record and having weighed the underlying factual findings in the overall obviousness assessment (including in light of the objective indicia discussed above), we determine, that Petitioner has demonstrated by a preponderance of the evidence that claims 2 and 9 would have been obvious based on Cappellucci_949, Cappellucci_934, Cupp, and Tudor.

5. *Dependent Claims 3 and 10*

Claim 3 depends from claim 1, and claim 10 depends from claim 9, with both claims 3 and 10 adding the requirement: “further comprising facilitating communications among the plurality of users within a same reading level group using at least one computer.” Ex. 1001, 21:13–15, 22:47–49. Petitioner argues that Cappellucci teaches or suggests “facilitating communications among the plurality of users . . . using at least one computer” based on the disclosure in Cappellucci_934 of “an ‘email application’ that allows users to email other users.” Pet. 69 (citing Ex. 1005 ¶ 63; Ex. 1007 ¶¶ 48, 58, 87, Fig. 1; Vento Decl. ¶¶ 305–309).

According to Petitioner, one of ordinary skill in the art “would have understood, or it would have been obvious, that Cappellucci’s email application *facilitates* communications among any group of users having access to the application, including users ‘*within a same reading level group*’” in that Cappellucci_949 discloses “table definitions storing information about classes, including the students/users in the class, demonstrating an association between similarly situated users.” Pet. 69 (citing Vento Decl. ¶ 307; Ex. 1005, Fig. 13).

Patent Owner argues that Petitioner “makes the unsupported assertion that it would have been obvious to facilitate communications for the ‘same reading level group’ but never explains how Cappellucci would have been modified to accomplish this or why, and never asserts any reasonable expectation of success.” PO Resp. 53–54 (citing Pet. 69–71; Bederson Decl. ¶ 97; Ex. 2012, 105:10–106:1).

Patent Owner’s argument does not address Petitioner’s position as to claims 3 and 10. As an initial matter, in the context of this asserted ground

overall, Petitioner provides a lengthy and thorough discussion as to the reasons to modify the relied-upon prior art and how it would have been modified, and also discusses why there would have been a reasonable expectation of success. *See* Pet. 26–35. That discussion applies to this entire asserted ground. Petitioner does not propose *further* modification to the relied-upon prior art to address the additional limitations of claims 3 and 10. *See* Pet. 69–71. Instead, Petitioner takes the position that, in the context of this proposed modification to the prior art, *one of ordinary skill in the art would have understood* the features and teachings *already present* in that proposed modified system as satisfying the requirement regarding facilitating communications for “the same reading level group”:

In light of the fact that Cappellucci allows users to both (1) send email to others users, EX1007, ¶87, and (2) track classroom information reflecting students having the “*same reading level group*,” *see* EX1005, FIG. 13. [One of ordinary skill in the art] would have understood, or it would have been obvious, that the email application in Cappellucci would facilitate communications among similarly situated users, e.g., students in the same classroom with the same reading level.

Pet. 70–71 (citing Vento Decl. ¶ 308). As discussed in the Decision on Institution, we continue to understand Petitioner’s statements as to what one of ordinary skill in the art “would have understood”—such as this discussion—as presenting (often in the alternative) a theory based on implicit disclosure. *See* Dec. Inst. 19–20 (citing *IXI IP*, 903 F.3d at 1262–65; *In re Burckel*, 592 F.2d at 1179; *In re Lamberti*, 545 F.2d at 750).

This discussion by Petitioner as to the understanding of one of ordinary skill in the art is supported by the testimony of Mr. Vento. *See* Vento Decl. ¶ 308; *see also* Pet. Reply 23 (asserting that “[t]he Petitioner relied on both Cappellucci’s teachings and Mr. Vento’s testimony to confirm

the basic concept that email facilitates communications between similarly situated students” (citing Vento Decl. ¶¶ 306–308)). Dr. Bederson does not provide a contrasting view of the understanding of one of ordinary skill in the art, but rather parrots Patent Owner’s argument as to the lack of explanation of the alleged further modification that Petitioner does not, in fact, rely upon. *See* Bederson Decl. ¶ 97, *cited at* PO Resp. 53–54.

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the proposed combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor satisfies the additional limitations in claims 3 and 10. We also determine that Petitioner has adequately explained why one of ordinary skill in the art would have combined the references as proposed and that there would have been a reasonable expectation of success. Based on the complete record and having weighed the underlying factual findings in the overall obviousness assessment (including in light of the objective indicia discussed above), we determine, that Petitioner has demonstrated by a preponderance of the evidence that claims 3 and 10 would have been obvious based on Cappellucci_949, Cappellucci_934, Cupp, and Tudor.

6. Dependent Claims 4, 5, 7, 11, 12, and 14

Claims 4, 5, and 7 depend from claim 1 and claims 11, 12, and 14 depend from claim 8. To address these claims, Petitioner discusses why the proposed combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor satisfies the additional limitations and discusses why one of ordinary skill in the art would have had reason to combine the references as proposed. *See* Pet. 71–76; Vento Decl. ¶¶ 310–316, 320–331.

The record evidence, as presented, supports Petitioner’s position as to the additional limitations in these dependent claims. Patent Owner does not present arguments addressing these claims. We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the proposed combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor satisfies the additional limitations in these claims. We also determine that Petitioner has adequately explained why one of ordinary skill in the art would have combined the references as proposed and that there would have been a reasonable expectation of success. Based on the complete record and having weighed the underlying factual findings in the overall obviousness assessment (including in light of the objective indicia discussed above), we determine, that Petitioner has demonstrated by a preponderance of the evidence that claims 4, 5, 7, 11, 12, and 14 would have been obvious based on Cappellucci_949, Cappellucci_934, Cupp, and Tudor.

7. Dependent Claims 6 and 13

Claim 6 depends from claim 1 and claim 13 depends from claim 8, with claims 6 and 13 each adding, “wherein aligning the first unmodified content further comprises mapping words within the first unmodified content to a content standard.” Ex. 1001, 21:24–26, 22:59–61. Petitioner addresses claims 6 and 13 together, contending that the proposed combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor discloses the additional limitation. Pet. 73. Specifically, Petitioner states that “Cupp discloses ‘*aligning*’ by ‘*mapping words within the . . . content to*’ grade level” and that, as discussed as to elements 1.3 and 1.4, “MLOs, educational standards, and grade levels are related to and accord with each other.”

Pet. 73 (citing Ex. 1009 ¶¶ 21–24; Pet. 41–49). Petitioner adds that one of ordinary skill in the art “would have understood, or it would have been obvious, to map words in the first unmodified content to a content standard, such as an educational standard.” *Id.* (citing Vento Decl. ¶ 318¹⁶; Ex. 1001, 17:4–7).

Patent Owner argues that “Petitioner argues only that content standards are related to grade levels, and does not argue that Cupp discloses mapping words to a content standard” and that, “[i]nstead, Petitioner baldly asserts doing so would have been obvious.” PO Resp. 54 (citing Bederson Decl. ¶ 98; Pet. 73; Vento Decl. ¶ 18). According to Patent Owner, “Petitioner provides no how or why for any modification, and does not present any argument regarding [reasonable expectation of success].” *Id.* at 54–55 (citing Bederson Decl. ¶ 98).

Patent Owner’s argument does not address Petitioner’s position. As an initial matter, in the context of this asserted ground overall, Petitioner provides a lengthy and thorough discussion of the reasons to modify the relied-upon prior art and how it would have been modified, and also discusses why there would have been a reasonable expectation of success. *See* Pet. 26–35. That discussion applies to this entire asserted ground. Petitioner does not propose *further* modification to the relied-upon prior art to address the additional limitations of claims 6 and 13. *See* Pet. 73. Instead, Petitioner takes the position that, in the context of this proposed modification to the prior art, *one of ordinary skill in the art would have*

¹⁶ Based on the citation to paragraphs 317–319 of Mr. Vento’s Declaration as to claims 6 and 13 overall, we understand the cite to “¶ 18” to have been intended as a reference to paragraph 318. *See* Pet. 73.

understood the features and teachings *already present* in that proposed modified system as satisfying the additional limitation in these claims. *See* Pet. 73 (citing Vento Decl. ¶¶ 317–319; Ex. 1009 ¶¶ 21–24; Pet. 41–49; Ex. 1001, 17:4–7). As discussed in the Decision on Institution, we continue to understand Petitioner’s statements as to what one of ordinary skill in the art “would have understood”—such as in this discussion—as presenting (often in the alternative) a theory based on implicit disclosure. *See* Dec. Inst. 19–20 (citing *IXI IP*, 903 F.3d at 1262–65; *In re Burckel*, 592 F.2d at 1179; *In re Lamberti*, 545 F.2d at 750).

The discussion by Petitioner as to the understanding of one of ordinary skill in the art is supported by the testimony of Mr. Vento. *See* Vento Decl. ¶ 318; *see also* Pet. Reply 23 (summarizing its position and stating that, “[b]ased on these teachings and known-relationships, Petitioner explained it was obvious to align content by mapping words to a content standard”). Dr. Bederson does not provide a contrasting view of the understanding of one of ordinary skill in the art, but rather parrots Patent Owner’s argument as to the lack of explanation of the alleged further modification that Petitioner does not, in fact, rely upon. *See* Bederson Decl. ¶ 98, *cited at* PO Resp. 54–55.

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that the proposed combination of Cappellucci_949, Cappellucci_934, Cupp, and Tudor satisfies the additional limitations in claims 6 and 13. We also determine that Petitioner has adequately explained why one of ordinary skill in the art would have combined the references as proposed and that there would have been a reasonable expectation of success. Based on the complete record and

having weighed the underlying factual findings in the overall obviousness assessment (including in light of the objective indicia discussed above), we determine, that Petitioner has demonstrated by a preponderance of the evidence that claims 6 and 13 would have been obvious based on Cappellucci_949, Cappellucci_934, Cupp, and Tudor.

D. Patent Owner's Motion to Exclude

Patent Owner filed a Motion to Exclude certain exhibits and testimonial evidence. *See* MTE; MTE Reply. Petitioner opposes Patent Owner's Motion. *See* MTE Opp. We address each argument in turn below.

1. Exhibits 1017, 1018, 1021, 1022, 1024–1028 and 1032–1041

Patent Owner argues that Exhibits 1017, 1018, 1021, 1022, 1024–1028 and 1032–1041 should be excluded in their entirety as (1) not relevant as “Petitioner failed to establish that they are printed publications or that they were publicly available” under 35 U.S.C. § 311(b), (2) not relevant in that Exhibits 1032–1035 and 1037 are “dated or were printed from the Internet after August 31, 2006,” (3) inadmissible in that any copyright dates on these exhibits are hearsay not falling into any exception, and (4) not properly authenticated. *See* MTE 2–5.

As an initial matter, we dismiss as moot the Motion as to Exhibits 1018, 1021, 1024–1028 and 1032–1041 because we do not rely on them in this Decision. *See* TPG 79–80 (“In the Board's experience, consideration of the objected-to evidence is often unnecessary to resolve the patentability of the challenged claims, and the motion to exclude is moot.”). Exhibits 1017 and 1022 are referenced above in this Decision. We address Patent Owner's arguments as to these two exhibits.

We are not persuaded by Patent Owner’s first argument. As an initial matter, as noted by Petitioner, a motion to exclude is not the proper mechanism to challenge the prior art or printed publication status of an exhibit. MTE Opp. 4 (citing *Arista Networks, Inc. v. Cisco Sys., Inc.*, IPR2016-00303, Paper 53 at 9 (PTAB May 25, 2017) (“A motion to exclude is the wrong vehicle to challenge public availability, which is a substantive issue that goes to the sufficiency of the evidence, not to admissibility at issue here.”); *Accord Healthcare, Inc., USA v. Daiichi Sankyo Co.*, IPR2015-00864, Paper 104 at 33–34 (PTAB Sept. 12, 2016).

Moreover, even assuming Patent Owner’s Motion were the proper mechanism to address this issue, as argued by Petitioner, the Federal Circuit has held that non-prior art evidence may be used—as Exhibits 1017 and 1022 are used here—to show the state of the art and the knowledge of one of ordinary skill in the art. See *Yeda Research v. Mylan Pharm. Inc.*, 906 F.3d 1031, 1041 (Fed. Cir. 2018) (“[N]on-prior art evidence of what was known cannot be applied, independently, as teachings separately combinable with other prior art, but can be relied on for their proper supporting roles, e.g., indicating the level of ordinary skill in the art, what certain terms would mean to one with ordinary skill in the art, and how one with ordinary skill in the art would have understood a prior art disclosure.” (quotation and citation omitted)), cited at MTE Opp. 4–5; see also MTE 2 (admitting that Exhibits 1017 and 1022 were “documents relied upon by Petitioner or its expert, Christopher Vento, for their contentions relating to what [one of ordinary skill in the art] would have been familiar with and the state of the art at the time of the invention”). In the Reply Brief, Patent Owner does not address the *Yeda Research* decision, and instead, simply states the opposite

proposition without support. *See* MTE Reply 1 (“To be relevant to show the state of the art and the knowledge of [one of ordinary skill in the art], such information must be accessible and known to [one of ordinary skill in the art] prior to the ‘993 Patent’s priority date, August 31, 2006.”).

We need not address Patent Owner’s second argument because, as mentioned above, we dismiss as moot the Motion as to Exhibits 1032–1035 and 1037.

We turn now to Patent Owner’s third argument, that Exhibits 1017 and 1022 are inadmissible in that any copyright dates on these exhibits are hearsay not falling into any exception. MTE 3–4. We are not persuaded by this argument. As an initial matter, for the same reasons discussed as to the first argument, the copyright date goes to public availability, which, under *Yeda Research*, is not a basis to exclude these two exhibits. *See* MTE Opp. 7 (relying on the prior discussion as to this argument). Thus, Petitioner need not rely on the date in the copyright marks for the truth of the matter asserted—i.e., the years.¹⁷ *See id.* (arguing that “the dates listed on the disputed evidence are not hearsay because Petitioner is not relying on them ‘to prove the truth of the matter asserted’” (quoting Fed. R. Evid. 801(c)(2))). Accordingly, the copyright marks in Exhibits 1017 and 1022 are not hearsay in the context of how they are relied on by Petitioner in this proceeding.

We turn now to Patent Owner’s fourth argument, that Exhibits 1017 and 1022 are not properly authenticated and thus, inadmissible under Federal Rules of Evidence 602 and 901. MTE 4. According to Patent Owner,

¹⁷ Exhibit 1017 has a mark of “© June 1995” (Ex. 1017 at 3) and Exhibit 1022 has a mark of “© 2004 William H. DuBay. All Rights Reserved” (Ex. 1022 at 2).

“Petitioner fails to submit evidence from a witness with knowledge to support a finding that these documents are what the Petitioner contends they are” and fails to provide “any evidence relating to the authenticity of the dates in these documents.” *Id.* We are not persuaded by this argument.

As discussed by Petitioner, Federal Rule of Evidence 901 provides a non-exhaustive list “of evidence that satisfies the requirement” as to authentication, including “(1) Testimony of a Witness with Knowledge,” and “(3) Comparison by an Expert Witness or the Trier of Fact.” Fed. R. Evid. 901. In his Declaration, Mr. Vento states that Exhibits 1017 and 1022 (among others) “are true and accurate copies of what they purport to be and that an expert in the field would reasonably rely on them to formulate opinions such as those set forth in this declaration.” Vento Decl. ¶ 7. And, in a declaration filed with Petitioner’s Opposition,¹⁸ a library expert authenticated by comparison Exhibits 1017 and 1022. *See* Ex. 1043 ¶¶ 2, 5. In the Reply, Patent Owner focuses on the “authenticity of th[e] dates” on these Exhibits rather than the authenticity of the identity and content of the documents overall. *See* MTE Reply 2–3. For these reasons, we deny Patent Owner’s Motion to Exclude as to Exhibits 1017 and 1022.

2. Exhibits 1011–1015, 1023, 1024, 1026, 1027, and 1029–1041

Patent Owner argues that Exhibits 1011–1015, 1023, 1024, 1026, 1027, and 1029–1041 should be excluded in their entirety as uncited by Petitioner in either the Petition or Reply, although Patent Owner acknowledges they are cited in the Vento Declaration. MTE 4–5. Petitioner

¹⁸ Patent Owner also does not contest the timing of the filing of the Fields Declaration. *See* MTE Reply.

opposes. MTE Opp. 9–10. We dismiss as moot the Motion as to these exhibits because we do not rely on them in this Decision. *See* TPG 79–80.

3. *The Vento Declaration*

Patent Owner asserts that we should exclude paragraphs 7, 45–79, 81, 95–99, 101–103, 144, and 161–331 of the Vento Declaration because those paragraphs “are not relevant, are conclusory, lack foundation, conflict with other evidence, and are merely *ipse dixit*.” MTE 5; *see id.* at 5–15. We address each of Patent Owner’s arguments below.

a. *Testimony Allegedly Not Based on the Knowledge of One of Ordinary Skill in the Art*

Patent Owner presents several arguments as to why certain paragraphs of Mr. Vento’s testimony should be excluded as allegedly not based on the knowledge of one of ordinary skill in the art. *See* MTE 5–10. First, Patent Owner argues that we should exclude paragraphs 45–79 of the Vento Declaration because those paragraphs allegedly “constitute improper expert testimony beyond Vento’s expertise about the education system from the perspective of a seasoned educator.” MTE 5; *see also id.* at 5–9 (entire argument). We dismiss as moot the Motion as to these paragraphs because we do not rely on them in this Decision. *See* TPG 79–80.

Second, Patent Owner argues that we should exclude paragraphs 46–47, 49–54, 57–64, 66, 70–72, 74, 75, 77, 180, 230, 239, 246, 265, 266, 290, 293, 312, 314, and 315 because those paragraphs cite to Exhibits 1017, 1018, 1021, 1022, 1024–1028, and 1032–1041, which Patent Owner argues are inadmissible. *See* MTE 9–10. For the reasons discussed above, we deny or dismiss as moot Patent Owner’s Motion as to the listed Exhibits, and thus, do not exclude the listed paragraphs of the Vento Declaration on this basis.

b. Testimony Allegedly Relying on Hindsight

Patent Owner argues that paragraphs 161–331 of the Vento Declaration should be excluded because they “lack factual support, conflict with other evidence, and constitute impermissible hindsight.” MTE 10; *see also id.* at 10–14 (entire argument). We are not persuaded to exclude these paragraphs because, as argued by Petitioner, the bases identified go to the *weight* of the evidence, not its *admissibility*. *See* TPG 79 (“A motion to exclude is not a vehicle for addressing the weight to be given evidence.”); MTE Opp. 13 (stating that “all the issues go to weight and sufficiency of the evidence, not to admissibility”).¹⁹ “Vigorous cross-examination [and] presentation of contrary evidence . . . are the traditional and appropriate means of attacking shaky but admissible evidence” (*Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 595 (1993)), not a motion to exclude the evidence. We deny the Motion as to this basis.

c. Testimony as to the '993 Patent's Prosecution History

Next, Patent Owner argues that we should exclude paragraphs 95–99 of the Vento Declaration because, according to Patent Owner, Mr. Vento “does not have any expertise to opine on the prosecuting of patents.” MTE 14. We dismiss as moot the Motion as to these paragraphs because we do not rely on them in this Decision. *See* TPG 79–80.

¹⁹ We agree with Petitioner that Patent Owner mischaracterizes the Federal Circuit’s decision in *InTouch Technologies, Inc. v. VGo Communications, Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014) as involving “excluding” evidence, when, in fact, the discussion addressed the *weight* of the expert’s testimony. *See* MTE Opp. 13–14 (discussing MTE 10).

d. Testimony Allegedly Outside the Petition

Patent Owner presents two arguments as to why certain paragraphs of Mr. Vento's testimony should be excluded as allegedly "outside the Petition." MTE 15. First, Patent Owner argues that we should exclude paragraphs 46, 47, 66–68, 71, 72, 74, and 76 of the Vento Declaration because those paragraphs allegedly "cite[] over 22 documents that are not presented against patentability in the Petition or Decision Granting Institution." *Id.* We dismiss as moot the Motion as to these paragraphs because we do not rely on them in this Decision. *See* TPG 79–80.

Second, Patent Owner argues that we should exclude "additional arguments that are not presented in the Petition, including in Paragraphs 171, 180, 181, 246, 297 relating to [one of ordinary skill in the art's] combination of Cappellucci and Cupp." MTE 15. We are not persuaded by this argument. As an initial matter, Patent Owner does not actually identify any *specific* "additional arguments" in the highlighted paragraphs. Moreover, an allegedly improper incorporation by reference is a regulatory issue, not an evidentiary one, and thus, not within the proper scope of a motion to exclude. *See* MTE Opp. 14 (noting that this argument by Patent Owner was "without citation to or reliance on any Federal Rule of Evidence"). We deny the Motion as to this basis.

III. CONCLUSION

Upon consideration of the briefing and the evidence of record, we determine that Petitioner has proven by a preponderance of the evidence that claims 1–14 would have been obvious based on Cappellucci_949,

Cappellucci_934, Cupp, and Tudor.²⁰ We deny in part and dismiss in part as moot Patent Owner's Motion to Exclude Evidence.

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–14	103(a)	Cappellucci_949, Cappellucci_934, Cupp, Tudor	1–14	
Overall Outcome			1–14	

²⁰ 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, 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).

IV. ORDER

For the reasons above, it is:

ORDERED that Petitioner has proven by a preponderance of the evidence that claims 1–14 are unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Exclude Evidence is denied in part and dismissed in part as moot; and

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

IPR2021-01169
Patent 9,652,993 B2

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