

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NUANCE COMMUNICATIONS, INC.,
Petitioner,

v.

MMODAL SERVICES LTD.,
Patent Owner.

IPR2019-00496
Patent 8,412,524 B2

Before JOHN A. HUDALLA, STACY B. MARGOLIES, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

HUDALLA, *Administrative Patent Judge*.

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

Petitioner, Nuance Communications, Inc. (“Petitioner”), filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1, 5, and 9 (“the challenged claims”) of U.S. Patent No. 8,412,524 B2 (Ex. 1001, “the ’524 patent”). Patent Owner, MModal Services Ltd. (“Patent Owner”), did not file a preliminary response. We determined that the information presented in the Petition established that there was a reasonable likelihood

that Petitioner would prevail with respect to its unpatentability challenges. Pursuant to 35 U.S.C. § 314, we instituted this proceeding on July 18, 2019, as to all challenged claims and all grounds of unpatentability. Paper 7 (“Dec. on Inst.”).

During the course of trial, Patent Owner filed a Patent Owner Response (Paper 21, “PO Resp.”), and Petitioner filed a Reply to the Patent Owner Response (Paper 25, “Pet. Reply”). Patent Owner also filed a Sur-reply. Paper 28 (“PO Sur-reply”). An oral hearing was held on April 20, 2020, and a transcript of the hearing is included in the record. Paper 35 (“Tr.”).

Petitioner filed Declarations of Dr. Andrew Sears with its Petition (Ex. 1003) and its Reply (Ex. 1017). Patent Owner filed a Declaration of David Anderson, Ph.D., with its Response. Ex. 2003. The parties also filed transcripts of the depositions of Dr. Sears (Exs. 2010, 2016) and Dr. Anderson (Ex. 1022).

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1, 5, and 9 of the ’524 patent. For the reasons discussed below, Petitioner has demonstrated by a preponderance of the evidence that claims 1, 5, and 9 of the ’524 patent are unpatentable

I. BACKGROUND

A. *Real Parties-in-Interest*

Petitioner identifies Nuance Communications, Inc. as the real party-in-interest. Pet. 1. Patent Owner identifies MModal Services Ltd., MModal LLC, 3M Health Information Systems, Inc., Multimodal Technologies, LLC,

3M Innovative Properties Company, and 3M Company as the real-parties-in-interest. Paper 4, 2; Paper 6, 2; Paper 34, 1.

B. Related Proceedings

The parties identify the following proceeding related to the '524 patent (Pet. 1; Paper 4, 2): *MModal Services Ltd. v. Nuance Communications, Inc.*, No. 1:18-cv-00901-WMR (N.D. Ga. filed Feb. 28, 2018).

In addition, Petitioner challenged another patent (U.S. Patent No. 8,781,829 B2) owned by Patent Owner in IPR2019-00499. Paper 4, 2. A Final Written Decision in that case is being issued concurrently herewith.

C. The '524 Patent

The '524 patent relates to editing text in draft documents. Ex. 1001, 1:33–34. The '524 patent describes a problem where a draft of a transcript (i.e., a draft document) produced by a human transcriptionist or an automated speech recognition system may include a variety of errors, such as “missing words or word sequences; excessive wording; mis-spelled, -typed, or -recognized words; missing or excessive punctuation; and incorrect document structure.” *Id.* at 1:62–64, 1:66–2:5. Thus, it is necessary to proofread and edit such a draft document to correct the errors. *Id.* at 1:64–66.

Figure 1 of the '524 patent is reproduced below.

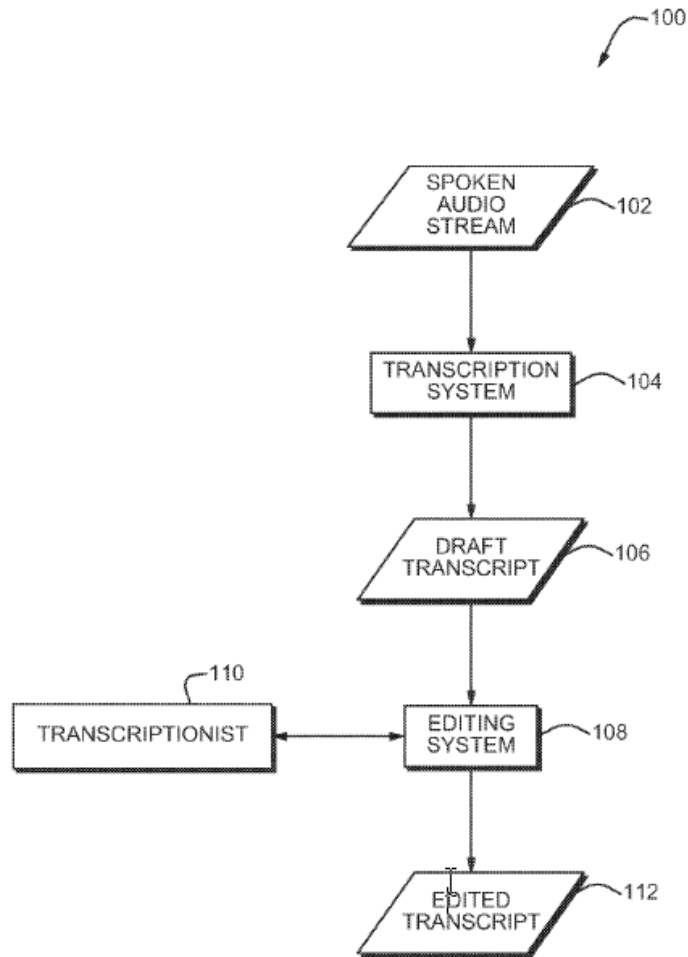


FIG. 1

Figure 1 is a dataflow diagram of system 100 for replacing a first written form of a concept with a second written form of the concept in a draft document. *Id.* at 3:24–27, 4:56–58. Automatic transcription system 104 produces draft transcript 106 of spoken audio stream 102. *Id.* at 4:61–63. Transcriptionist 110 uses editing system 108 to edit draft transcript 106, thereby producing edited transcript 112. *Id.* at 4:63–65.

Figure 3 of the '524 patent is reproduced below.

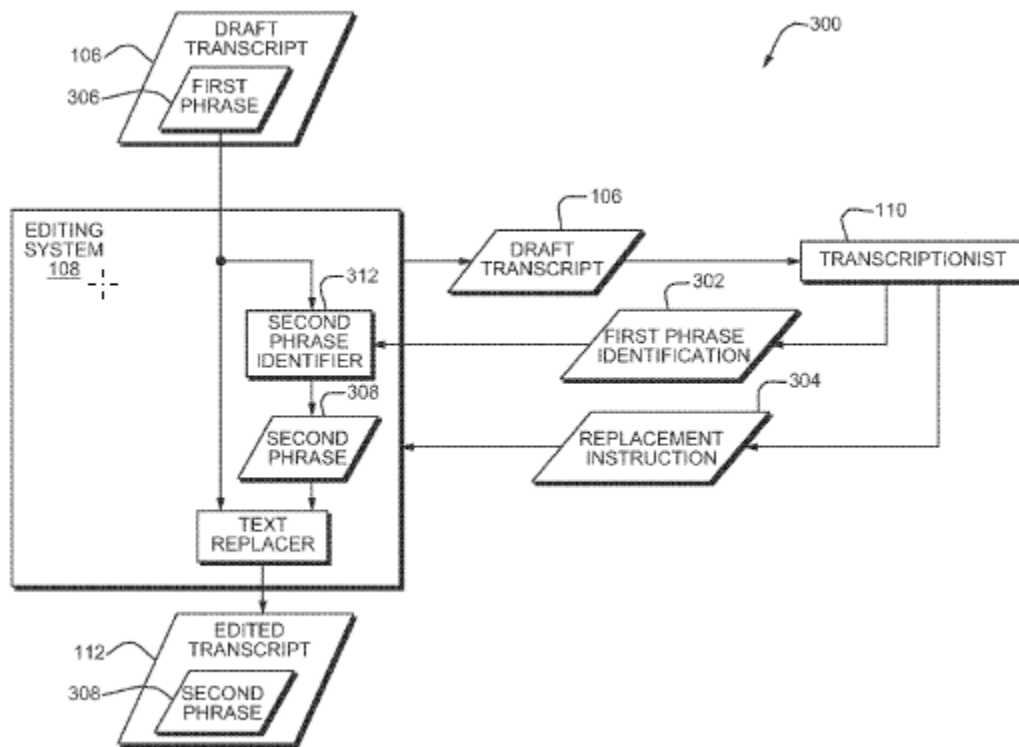


FIG. 3

Figure 3 depicts the dataflow of Figure 1 in more detail. *Id.* at 4:66–5:1. First phrase 306, representing a first written form of a concept, is identified in draft transcript 106. *Id.* at 5:15–16. For example, transcriptionist 110 may identify first phrase 306 and provide editing system 108 with input 302 (such as with a text cursor or by highlighting) indicating first phrase 306. *Id.* at 5:22–28. Alternatively, editing system 108 may identify first phrase 306 when it determines with reference to a dictionary that the displayed text is an alternate written form of a concept. *Id.* at 5:32–39.

Transcriptionist 110 may provide instruction 304 to editing system 108 to modify identified first phrase 306, such as by double-clicking on first phrase 306 or by pressing a predetermined key or key combination. *Id.* at 5:49–55. In response to instruction 304, second phrase identifier 312 in editing system 108 identifies second phrase 308 representing a second

written form of the concept. *Id.* at 5:56–59. Editing system 108 includes text replacer 310 to replace first phrase 306 with second phrase 308 in draft transcript 106, thereby producing edited transcript 112. *Id.* at 5:65–6:2.

The '524 patent claims priority via two continuation applications to a U.S. patent application filed on May 25, 2006. *Id.*, code (63). As discussed below, Petitioner asserts that its asserted references qualify as prior art relative to the May 25, 2006, filing date of this earliest U.S. patent application, i.e., the earliest possible effective filing date. *See* Pet. 4, 7–8.

D. Illustrative Claim

Of the challenged claims, claim 1 is independent. Claims 5 and 9 depend from claim 1. Claim 1 is illustrative of the challenged claims and recites:

1. A computer-implemented method for use with a document tangibly stored in a first computer-readable medium, the method comprising:

(A) accessing the first computer-readable medium to identify a first phrase within the document, the first phrase representing a first written form of a concept;

(B) identifying a plurality of phrases tangibly stored in a second computer-readable medium, each of the plurality of phrases representing an alternative written form of the concept;

(C) displaying at least some of the plurality of phrases to a user; and

(D) receiving, from the user, an instruction to -replace [sic] the first phrase with one of the plurality of phrases in the document on the first computer-readable medium, wherein the instruction does not include the one of the plurality of phrases.

Ex. 1001, 13:11–27.

E. Prior Art

Petitioner relies on the following prior art:

U.S. Patent No. 7,881,936 B2, filed June 1, 2005, issued Feb. 1, 2011 (Ex. 1006, “Longé”);

U.S. Patent No. 8,321,786 B2, filed June 17, 2004, issued Nov. 27, 2012 (Ex. 1007, “Lunati”); and

U.S. Patent No. 5,027,406, filed Dec. 6, 1988, issued June 25, 1991 (Ex. 1008, “Roberts”).

F. The Instituted Grounds

We instituted *inter partes* review of claims 1, 5, and 9 of the ’524 patent on the following grounds (Dec. on Inst. 30), which are all the grounds presented in the Petition (Pet. 7):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 5, 9	103(a) ¹	Longé
9	103(a)	Longé, Roberts
1, 9	103(a)	Lunati
5, 9	103(a)	Lunati, Roberts

II. ANALYSIS

A. Legal Standards

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102 and 103. Because the effective filing date of the ’524 patent is before March 16, 2013 (the effective date of the relevant amendments), the pre-AIA versions of §§ 102 and 103 apply.

matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations.² *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We also recognize that prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). We analyze Petitioner’s obviousness contentions with the principles identified above in mind.

B. Level of Ordinary Skill in the Art

Citing testimony from Dr. Sears, Petitioner contends a person having ordinary skill in the art would have had

a Bachelor’s degree in computer science or a closely related field with 4-6 years of experience, or a Master’s degree and/or PhD in computer science or a closely related field with 2-3 years of experience, the experience being in the research, design or implementation of human-centered computing applications, including document correction/editing in the context of speech recognition technologies.

Pet. 8 (citing Ex. 1003 ¶ 3). Patent Owner’s proposed level of ordinary skill is the same as Petitioner’s with two exceptions: (1) it excludes the option of

² The record does not contain any evidence of secondary considerations of nonobviousness.

a Ph.D. and (2) it excludes the experience in “document correction/editing in the context of speech recognition technologies.” PO Resp. 13.

Dr. Anderson testifies that an ordinarily skilled artisan “need not have a PhD” because “a Master’s degree and 2-3 years’ experience would suffice.” Ex. 2003 ¶ 13. Patent Owner also argues that Dr. Sears “modified his opinion during his deposition” such that “speech recognition was merely ‘an example of relevant technologies.’” PO Resp. 14 (quoting Ex. 2010, 14:8–16).

We agree with Patent Owner that a Ph.D. was not necessary. Under Petitioner’s proposal, a person with a master’s degree would have been equally qualified as a person with a Ph.D., provided that the person had the requisite 2–3 years of experience. *See* Pet. 8. This supports Patent Owner’s position. We also agree with Patent Owner that experience in “speech recognition technology” would not have been necessary. The ’524 patent is directed to “text processing and, more particularly, to editing text in draft documents.” Ex. 1001, 1:33–34. Although such text processing or editing might have been applicable to documents created with speech recognition technology, the record does not indicate that such processing or editing is peculiar to that technology. Thus, we exclude experience in “speech recognition technology” from the definition. Nevertheless, experience in “document correction/editing” seems germane to the definition given the ’524 patent’s stated field of invention. *See id.* And, at oral argument, Patent Owner conceded as much. *See* Tr. 35:11–38:16 (colloquy with Patent Owner’s counsel regarding the level of ordinary skill in the art including counsel’s statement that “the patent does discuss document editing, and so that wouldn’t be incorrect to include within the level of ordinary skill in the

art”). Thus, we retain Petitioner’s proposed experience in “document correction/editing.” *See* Pet. 8.

Accordingly, we determine that a person of ordinary skill in the art would have had a bachelor’s degree in computer science (or a closely related field) with 4–6 years of experience, or a master’s degree in computer science (or a closely related field) with 2–3 years of experience. The person’s experience would have been in research, design, or implementation of human-centered computing applications, including document correction/editing. We are satisfied that this definition comports with the level of skill of skill necessary to understand and implement the teachings of the ’524 patent and the asserted prior art.

C. Claim Interpretation

Because this *inter partes* review is based on a petition filed after November 13, 2018, we construe each claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,340, 51,358 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)). Accordingly, our claim construction standard is the same as that of a district court. *See id.* Under the standard applied by district courts, claim terms are generally given their plain and ordinary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*,

415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

Petitioner does not expressly propose constructions for any of the claim terms. *See* Pet. 8–9. Patent Owner proposes constructions related to the limitation “a plurality of phrases . . . , each of the plurality of phrases representing an alternative written form of the concept” in claim 1 and the limitation “context of the first phrase in the document” in claim 5. PO Resp. 14–26; PO Sur-reply 2–13. Patent Owner’s arguments (PO Resp. 42–43; PO Sur-reply 19) also prompt us to consider whether misspellings are excluded from the scope of the recited “written form of a concept” in claim 1. We now consider each of these claim construction issues.

1. Whether Each “Alternative Written Form” Must Be Different from the “First Written Form” (Claim 1)

Patent Owner’s arguments regarding the recited “alternative written form” relate to the interplay of the italicized language below in steps (A) and (B) of claim 1:

(A) accessing the first computer-readable medium to identify a *first phrase* within the document, the first phrase representing a *first written form of a concept*;

(B) identifying a *plurality of phrases* tangibly stored in a second computer-readable medium, *each of the plurality of phrases representing an alternative written form of the concept*;

Ex. 1001, 13:14–20 (emphases added). Patent Owner contends an ordinarily skilled artisan “would have understood that an ‘*alternative* written form of the concept’ must be an *alternative to and different from* the recited first written form.” PO Resp. 17 (citing Ex. 2003 ¶¶ 42–46); *see also* PO Sur-reply 2–3 (citing Ex. 2003 ¶¶ 39–46). Patent Owner argues “[t]he claim language distinguishes between the ‘*first* written form of a concept,’ in step (A), and the plurality of phrases, each representing an “*alternative* written form of the concept” in step (B). PO Resp. 19 (citing Ex. 2003 ¶¶ 33, 42). Patent Owner explains “[t]here would be no reason for a user to replace a first written form of the concept with *the exact same* written form of the concept—hence the claim language’s recitation that the plurality of phrases are *alternative* written forms of the concept.” *Id.* at 19–21 (citing Ex. 2003 ¶¶ 39–46); *see also* PO Sur-reply 7–8.

Petitioner contends “the plurality of phrases identified on the second computer-readable medium may also include the ‘first phrase’ that is identified in claim limitation 1(A).” Pet. 17 (Ex. 1003, 47–48). Petitioner explains that “the plurality of phrases are alternative written forms of the concept (exactly as the plain language of the claim requires), *not* alternative written forms of the first phrase.” *Id.* at 18 (citing Ex. 1003, 48). In support of its interpretation, Petitioner points to the written form dictionaries depicted in Figures 5 and 7 of the ’524 patent. Pet. Reply 5–15.

As an example, Petitioner notes mapping 502b in Figure 5 “may correspond to . . . *the concept of milligrams* (which may be represented, for example, by *the alternate written forms ‘milligrams’ and ‘mg’*).” *Id.* at 6 (citing 1001, 6:27–33). Petitioner depicts the example related to milligrams in an annotated version of Figure 5, which is reproduced below.

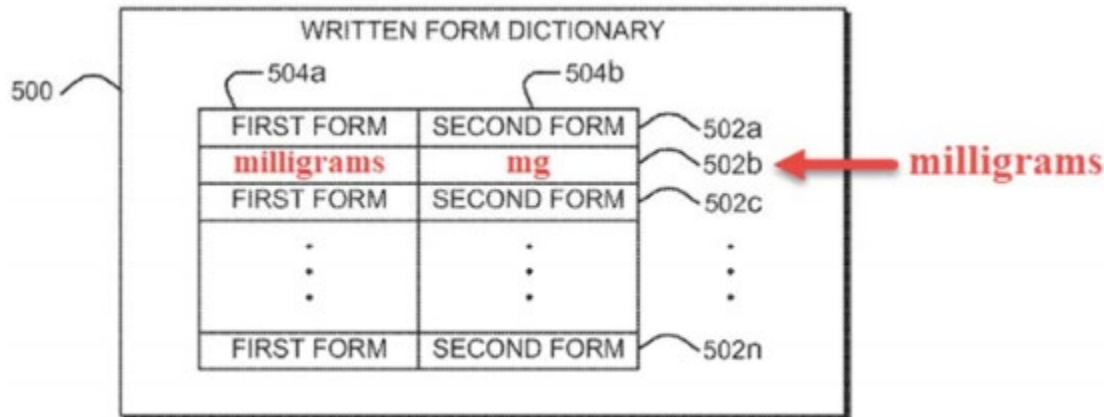


FIG. 5

In this annotated version of Figure 5, Petitioner has inserted in red text “milligrams” as the first form of mapping 502b and “mg” as the second form of mapping 502b. *Id.* at 7–8. Petitioner notes that “both ‘milligrams’ and ‘mg’ are phrases representing *an alternative written form of the concept of milligrams* (a unit of measure), as step B requires.” *Id.* at 8. Petitioner also notes how the ’524 patent implements the use of a written form dictionary:

[O]nce the “first phrase 306 has been identified (FIG. 4, step 404), the editing system 108 may identify the second phrase 308 as follows. The editing system 108 may *search the mappings 502a-n in the written form dictionary 500 for a written form that matches the first phrase 306* (step 602).”

Pet. Reply 10–11 n.4 (quoting Ex. 1001, 6:35–39). As such, Petitioner argues that alternative written forms could not be identified in the written form dictionary unless the first written form is included among the plurality of phrases. *Id.* at 11 (citing Ex. 1017 ¶ 6).

We start by considering the language of claim 1 itself. Step (A) recites that “the first phrase represent[s] a first written form of a concept.” Step (B) recites that “each of the plurality of phrases represent[s] an alternative written form of the concept.” Thus, the “first phrase” in step (A) and “each of the plurality of phrases” in step (B) represent written forms of the same concept based on antecedent basis. In addition, nothing in the plain language of claim 1 prevents the “first written form of the concept” in step (A) from being one of the “alternative written form[s] of the concept” in step (B); the only thing associating all written forms is that they are related to the same concept. Furthermore, the plurality of phrases in step (B) are alternatives to one another insofar as they are all written forms of the same concept. As such, and contrary to Patent Owner’s argument (PO Sur-reply 3), the plurality of phrases in step (B) do not have to be different from the first phrase in step (A) to give meaning to the word “alternative.”

Such an understanding is consistent with how the specification treats various written forms of a concept. In particular, the specification describes how a first phrase is identified by referring to “a dictionary of alternative written forms of various concepts”:

[T]he editing system 108 may identify the first phrase 306. For example, and as described in more detail below, the editing system 108 may maintain a dictionary of alternate written forms of various concepts. When the editing system 108 displays text in the draft transcript 106 to the transcriptionist 110, the editing system 108 may determine, by reference to the dictionary, whether the displayed text is an alternate written form of a concept. If so, the editing system 108 may identify the text as the first phrase 306 in step 404.

Ex. 1001, 5:32–40. As can be seen, first phrase 306, which “represent[s] a first written form of a concept” (*id.* at 5:14–15), is identified precisely

because it is included among the alternative written forms of a concept in a dictionary. This undermines Patent Owner’s suggestion that the plurality of phrases must be “distinct from the first written form of the concept in claim limitation 1(A).” PO Resp. 15.

Furthermore, we do not agree with Patent Owner’s suggestion that it makes no sense to include the first phrase among the alternative written forms of a concept. *See* PO Resp. 16. The specification mentions that the first written form may be used as a search key into each mapping within the dictionary. *See* Ex. 1001, 6:37–39 (“The editing system 108 may search the mappings 502a-n in the written form dictionary 500 for a written form that matches the first phrase 306”), 8:20–29 (discussing a situation where “the first written form in each mapping is used as a key into each mapping”). This makes sense from a hardware perspective because, as noted by Petitioner, “step B ‘identif[ies] a plurality of phrases tangibly stored’ in the written form dictionary, which is [accomplished] by matching the first written form/phrase in step A (in a first computer-readable medium) to a sufficiently matching form/phrase in the written form dictionary (stored in a second computer-readable medium).” Pet. Reply 10 (citing Ex. 1001, 6:14–45; Ex. 1017 ¶ 6) (first alteration by Petitioner; second alteration added). In this way, the search key allows interaction between the two computer-readable mediums.

Finally, we consider Patent Owner’s arguments (PO Resp. 19–21; PO Sur-reply 7–8) regarding whether the “first phrase” can be replaced with the same phrase from among the plurality of phrases in step (D) of claim 1. As noted by Petitioner (Pet. 17–18), the specification describes a situation with “only two applicable alternate forms” wherein “cycling through alternate

forms may have the effect of toggling between the two applicable alternate forms.” Ex. 1001, 9:6–14. Although Patent Owner contends that such toggling must result in replacement of the first phrase with a different phrase (PO Resp. 20 (citing Ex. 1001, 8:65–9:2)), we agree with Petitioner that the user’s instructions might result in replacement with “*the very same phrase*, albeit coming from the second computer-readable medium.” Pet. Reply 13 (citing Ex. 1017 ¶ 15); *see also* Ex. 1001, 6:4–13, Figs. 9A–9C (describing an example where the first phrase “cerebrovascular accident” is replaced by “CVA,” which in turn is replaced by “cerebrovascular accident”), 9:10–14 (describing an example of toggling between the phrases “CVA” and “cerebrovascular accident” in a draft transcript for the concept of a cerebrovascular accident). This understanding is consistent with the interplay of the two computer-readable mediums recited in claim 1, as discussed directly above. It also is consistent with Dr. Andersen’s testimony that the scope of claim 1 does not exclude a scenario where the user opts not to change the first phrase identified in step (A). Ex. 1022, 34:19–23.

For these reasons, we decline to adopt Patent Owner’s proposed construction that would require the plurality of phrases representing alternative written forms of a concept in step (B) to be distinct from the first written form of a concept in step (A).

2. *Whether a Misspelled Word is Excluded from a “Written Form of the Concept” (Claim 1)*

The parties’ positions require us to consider whether a misspelling of a word is excluded from the scope of the recited “written form of the concept” in claim 1. In particular, Petitioner’s obviousness analysis for the Lunati ground maps the recited “written form of the concept” in claim 1 to

various misspellings of words. *See, e.g.*, Pet. 41–42. Petitioner contends the techniques in the specification of the ’524 patent “could be ‘used in conjunction with mappings between any two or more written forms of a concept,’ including ‘**alternate spellings of the same concept.**’” *Id.* at 42 (quoting Ex. 1001, 11:10–14) (emphasis by Petitioner). Citing testimony from Dr. Sears, Petitioner explains that a misspelling may not be the preferred written form of a concept but may “still convey the concept such that it is a written form of a concept.” Pet. Reply 23 (citing Ex. 1003, 66–67).

Patent Owner contends an ordinarily skilled artisan “would have understood that a ‘concept’ is the idea or notion underlying the phrase, *i.e.*, the *meaning* of the phrase.” PO Resp. 4 (citing Ex. 2003 ¶¶ 21–24 and various dictionary definitions). As such, Patent Owner argues “[a] misspelling is not properly considered a written form of a concept, unless by accident it is a proper spelling for *another* concept.” *Id.* at 42; *see also* PO Sur-reply 19 (arguing that a “misspelling itself has no independent meaning and is not an alternative written form of any concept”). Patent Owner also disputes that the “alternative spellings of the same concept” mentioned in the specification of the ’524 patent can be applied to misspellings. Supported by testimony from Dr. Anderson, Patent Owner argues that an ordinarily skilled artisan “would have understood that an alternate spelling is not a misspelling and that these two terms are not coextensive.” PO Resp. 43 (citing Ex. 2003 ¶ 78). As an example, Patent Owner distinguishes alternate spellings such as “grey/gray and judgment/judgement” from misspellings. *Id.* Patent Owner notes that the ’524 patent “replac[es] terms with other phrases with the same meaning, *i.e.*, alternative forms of the concepts.” *Id.* (citing Ex. 1001, 2:15–

21; Ex. 2003 ¶¶ 61–62, 75–83). Moreover, at oral argument, Patent Owner’s counsel stated that claim 1 does not cover misspelled, mistyped, or misrecognized words based on the fact that the Background section of the ’524 patent allegedly distinguishes these items from other types of corrections contemplated by the ’524 patent. Tr. 39:7–43:21 (citing, *inter alia*, Ex. 1001, 1:66–2:18).

We do not agree with Patent Owner that a misspelling is excluded *per se* from the scope of claim 1. The ’524 patent specification does not define the term “written form of a concept.” Although the patent gives examples of “mappings between an abbreviation and an expanded form of a concept,” the patent states that “alternate written forms of a concept need not be in an abbreviation-expanded form relationship.” Ex. 1001, 11:6–10. Rather, according to the patent, the disclosed techniques “may be used in conjunction with mappings between any two or more written forms of a concept,” such as “alternate spellings of the same concept and a concept expressed in different languages.” *Id.* at 11:10–15. Thus, the patent broadly refers to “any” written form of a concept. We agree with Petitioner that, as long as a misspelling is associated with a concept, it is a “written form” of that concept. *See* Pet. Reply 23–24.

Further, we have considered the arguments made by counsel for Patent Owner at the oral hearing. *See* Tr. 39:7–43:21. Although we agree with counsel that the ’524 patent contemplates editing that goes beyond mere corrections of misspelled, mistyped, or misrecognized words, we find no basis in the specification for excluding these types of corrections from the scope of the claims. The description of transcription errors, including misspelled, mistyped, or misrecognized words (Ex. 1001, 1:66–2:5), does

not amount to a clear disavowal of a misspelled word from the scope of a “written form of a concept.” Thus, we determine that a misspelling is not excluded from the scope of a “written form of the concept” in claim 1 so long as the misspelling is associated with a concept.

3. *Whether the Words Surrounding a Phrase Qualify as “Context” (Claim 5)*

Claim 5 recites that step (C) in claim 1 “further comprises identifying the at least some of the plurality of phrases to display based on a context of the first phrase in the document.” Ex. 1001, 13:37–39. Patent Owner contends that “context of the first phrase in the document” should be construed as “the format, parts, and/or sections of the document surrounding the first phrase that may shed light on the phrase’s meaning.” PO Resp. 23. Patent Owner explains that an ordinarily skilled artisan would have understood such context to be “directed to the position or placement of that phrase within the document” and “distinct from the context of a word within a phrase or sentence.” *Id.* (citing Ex. 2003 ¶¶ 49–51). In support of its construction, Patent Owner contends “the clause ‘in the document’ cannot be construed to modify ‘the first phrase’ such that claim 5 relates only to the very first phrase that appears in a particular document.” *Id.* at 25 (citing Ex. 2003 ¶¶ 49–51). Patent Owner argues that the specification “confirms that the relevant context is that of the phrase in the document,” citing certain sections of the specification where context is described in connection with a transcript or a section of a transcript. *Id.* at 24 (citing Ex. 1001, 9:23–28, 10:30–36); PO Sur-reply 9 (citing same). Patent Owner also argues that analyzing context in a sentence is different from analyzing context in a document. PO Sur-reply 10 (citing Ex. 2003 ¶ 49).

Petitioner argues that no ordinarily skilled artisan “would [have] reasonably consider[ed] determining the context of the first phrase based on its proximity to other phrases *within a sentence* as being outside the scope of ‘context of the first phrase in the document,’ for the simple reason that the sentence is *within the document*.” Pet. Reply 17 (citing Ex. 1017 ¶ 19).

Petitioner also contends Patent Owner’s cited references to the word “section” in the specification are non-limiting examples. *Id.* at 17–18.

We decline to adopt Patent Owner’s proposed construction because it would not resolve any controversy in this case. *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e 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))). Even though Patent Owner purports to distinguish its proposed construction from “the context of a word within a phrase or sentence,” the construction does not actually do that. *See* PO Resp. 23. Specifically, the words within a sentence and/or surrounding a phrase in a document are, at least, a “part” of a document (*see* Ex. 1017 ¶ 19); thus, such words would be included in Patent Owner’s proposed construction. *See* PO Resp. 23 (“the format, *parts*, and/or sections of the document surrounding the first phrase that may shed light on the phrase’s meaning” (emphasis added)). This understanding moots the distinction Patent Owner attempts to establish with respect to Petitioner’s patentability analysis for claim 5 and the term “context” (*see* PO Resp. 49–54; PO Sur-reply 24–25), so we need not further consider Patent Owner’s proposed construction. *See Nidec*, 868 F.3d at 1017.

4. *Other Terms*

We determine that no other terms require construction. *See id.*

D. *Obviousness Ground Based on Longé*

Petitioner contends the subject matter of claims 1, 5, and 9 would have been obvious over Longé in view of the knowledge of a person of ordinary skill in the art. Pet. 9–27; Pet. Reply 20–23, 25–26. Patent Owner disputes Petitioner’s contentions. PO Resp. 26, 32–40, 50–52; PO Sur-reply 13–19, 24–25 & n.6.

1. *Longé*

Longé is a U.S. patent directed to “speech recognition combined with disambiguating systems for text input.” Ex. 1006, 1:27–29. Figure 1 of Longé is reproduced below.

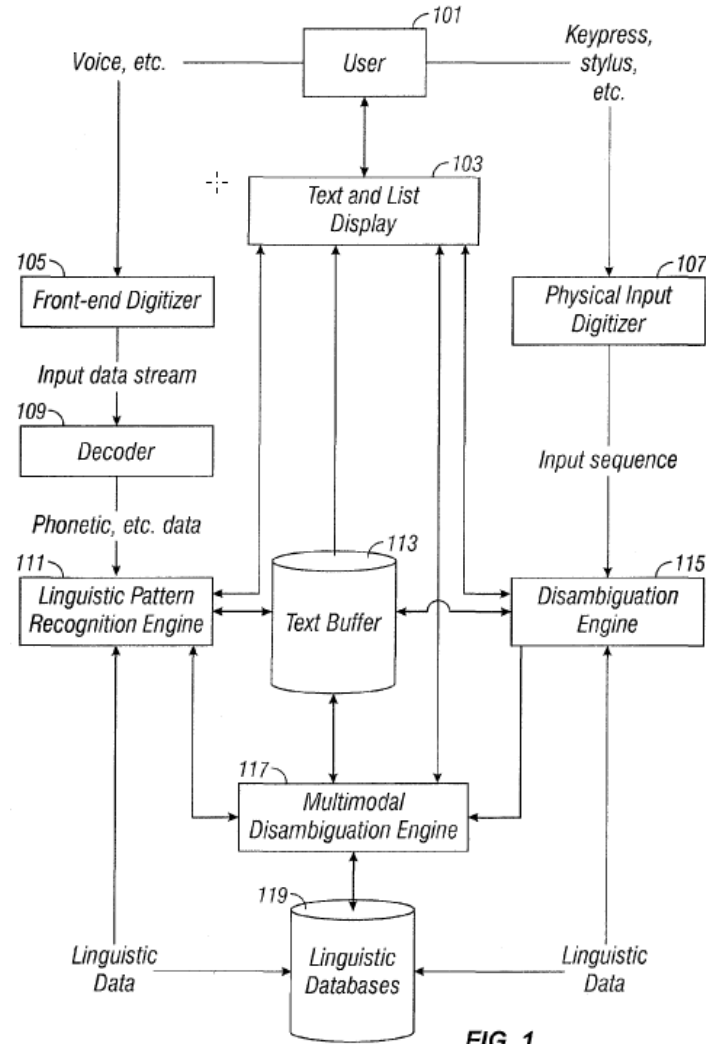


FIG. 1

Figure 1 depicts a system for recognizing user input on a data processing system. *Id.* at 7:53–55. User 101 dictates a word, phrase, sentence, or paragraph, whereupon digitizer 105 and decoder 109 convert the acoustic input to phonetic data. *Id.* at 7:55–58. The phonetic data are analyzed by recognition engine 111 based on the lexicon and/or language model in linguistic databases 119. *Id.* at 7:58–60. The best interpretation is added to text buffer 113 and shown to user 101 via text and list display 103. *Id.* at 7:62–64. User 101 may select a word or phrase for correction via text and list display 103. *Id.* at 8:1–2. Disambiguation engine 115 determines possible interpretations based on the lexicon and/or language model in

linguistic databases 119, optimally including frequency or recency of use, and optionally based on the surrounding context in text buffer 113. *Id.* at 8:6–10. Multimodal disambiguation engine 117 then presents revised interpretations to user 101 for confirmation via text and list display 103. *Id.* at 8:10–15. User 101 may select the correct interpretation from among the revised interpretations. *Id.* at 11:51–53.

Figure 2 of Longé is reproduced below.

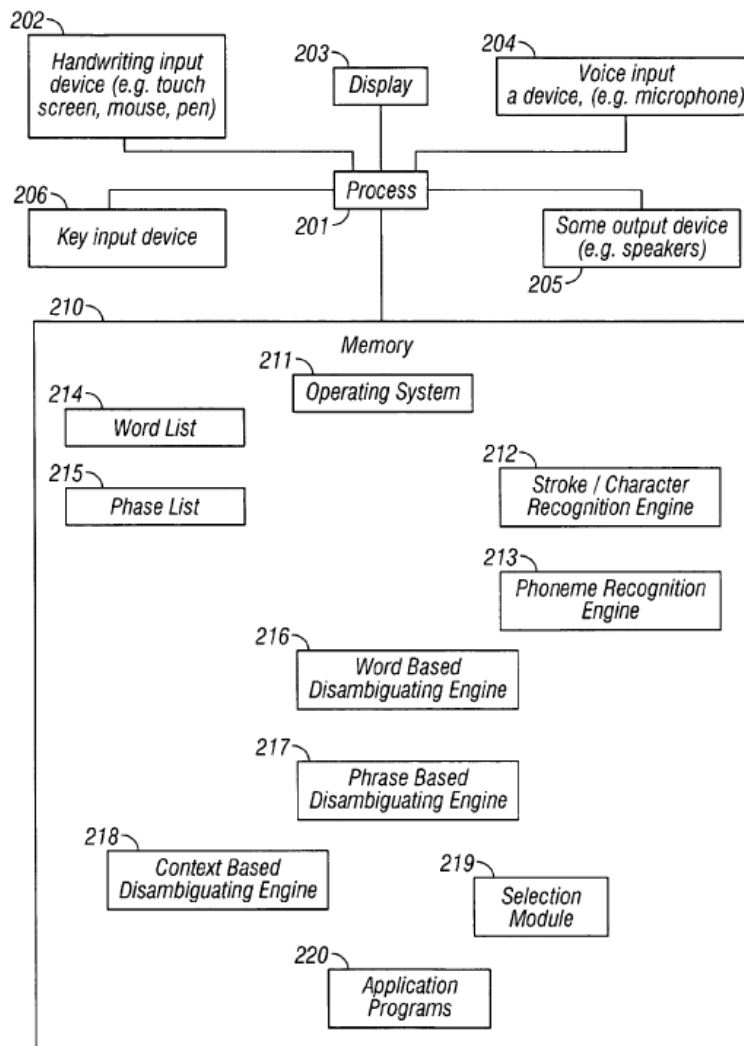


FIG. 2

Figure 2 is a block diagram of a data processing system for recognizing user input. *Id.* at 8:42–43. Processor 201 receives input from the input devices,

including handwriting input device 202, voice input device 204, and key input device 206, and manages output to display 203 and speaker 205. *Id.* at 9:1–4. Processor 201 is coupled to memory 210, which comprises a combination of temporary storage media, such as random-access memory (RAM), and permanent storage media, such as read-only memory (ROM), floppy disks, hard disks, or CD-ROMs. *Id.* at 9:4–8. Memory 210 contains all software routines and data necessary to govern system operation, and typically contains operating system 211 and application programs 220. *Id.* at 9:8–11. Memory 210 may also include word list 214, phrase list 215, word-based disambiguating engine 216, phrase-based recognition or disambiguating engine 217, context-based recognition or disambiguating engine 218, and selection module 219. *Id.* at 9:16–23. Longé also discloses “a client-server feature, whereby [a user’s] utterances are preprocessed on the device, recognized on a server connected e.g. via an available wireless data channel and returned as N-best lists to the device for text display and editing.” *Id.* at 7:15–19.

Longé describes a smart punctuation feature where the disclosed system recognizes the user’s intention to insert a symbol rather than the word and corrects the speech accordingly, e.g., “.” instead of “period” or “:-)” instead of “smiley.” *Id.* at 7:36–39. The system may also identify a replacement word or phrase for output, such as an abbreviation for a longer phrase or an acceptable substitute for a term of profanity. *Id.* at 13:22–26.

Petitioner contends Longé qualifies as prior art under 35 U.S.C. § 102(e) based on its filing date. Pet. 7–8. Patent Owner does not dispute the prior art status of Longé.

We have no evidence of an invention date other than the earliest possible effective filing date of the challenged claims. Thus, we determine that Longé qualifies as prior art under 35 U.S.C. § 102(e) because Longé’s filing date of June 1, 2005, is before the earliest possible effective filing date of the challenged claims, which is May 25, 2006. Ex. 1001, code (63); Ex. 1006, code (22).

2. *Claim 1*

a. Preamble

The preamble of claim 1 recites “[a] computer-implemented method for use with a document tangibly stored in a first computer-readable medium.” Ex. 1001, 13:11–13. Petitioner maps the preamble to Longé’s “‘method for smart editing of speech recognition output’ that includes a ‘processor 201 [that] receives input from the input devices’ and is ‘coupled to a memory 210.’” Pet. 10 (quoting Ex. 1006, 6:35–36, 9:1–5). Petitioner notes that Longé’s memory may include application programs 220 such as a word processor, which processes text documents. *Id.* (citing Ex. 1003, 38–39; Ex. 1006, 9:10–15).

Patent Owner does not dispute Petitioner’s analysis of the preamble of claim 1. Neither party addresses whether the preamble is limiting. Because Petitioner has shown that Longé teaches the preamble (*see, e.g.*, Ex. 1006, 6:35–36 (method for smart editing), 9:1–15 (memory containing word processor)), we need not determine whether the preamble is limiting. *See Nidec*, 868 F.3d at 1017.

b. Step (A)

Claim 1 further recites “(A) accessing the first computer-readable medium to identify a first phrase within the document, the first phrase representing a first written form of a concept.” Ex. 1001, 13:14–16. Petitioner cites Longé’s teachings on interpreting a user’s speech, which results in a list of best interpretations being added to text buffer 113. Pet. 12 (citing Ex. 1003, 41; Ex. 1006, 6:39–46, 7:15–19, 7:62–67). Petitioner contends text buffer 112 may be a random-access memory (RAM). *Id.* at 13–14 (citing Ex. 1003, 42–43; Ex. 1006, 9:5–8, 9:18–22). Petitioner cites Longé’s teaching of presenting the user with a textual representation of the interpreted speech, whereupon the user may “select[] a word or phrase for correction via the text and list display 103.” *Id.* at 12–13 (citing Ex. 1006, 8:1–2). Petitioner contends that selecting the word or phrase requires accessing a computer-readable medium (i.e., temporary storage such as RAM), which a person of ordinary skill in the art would have understood to be “located on the user’s client-device and/or on the server where speech recognition was performed.” *Id.* at 13 (citing Ex. 1003, 42–43).

For the “first phrase representing a first written form of a concept,” Petitioner cites, *inter alia*, Longé’s identification of “‘an abbreviation for a longer phrase’ or ‘an acceptable substitute for a term of profanity.’” *Id.* at 15 (quoting Ex. 1006, 13:25–26). Petitioner contends a term of profanity itself would be identified as the “first phrase” within a document. *Id.* (citing Ex. 1003, 44). Petitioner further contends an ordinarily skilled artisan would have considered “anger, excitement, or any number of other emotions” to be concepts associated with the profanity. *Id.* (citing Ex. 1003, 44–45). Dr. Sears provides an example where the first phrase is “ass” and

“the concept could be profanity, or alternatively a body part.” Ex. 1003, 49–50. As another example, Petitioner contends the “first phrase” would be a longer phrase associated with an abbreviation. Pet. 15 (citing Ex. 1003, 44). Petitioner contends the abbreviation and corresponding longer phrase may together represent a concept depending on the specific abbreviation. *Id.* at 15, 19; Ex. 1003, 44, 49; *see also* Ex. 1017 ¶ 21 (Dr. Sears discussing abbreviations for “tablespoon” and “California”). Petitioner likens Longé’s teachings to those of the ’524 patent, where “cerebrovascular accident” and its abbreviation “CVA” are two written forms of the concept of a cerebrovascular accident. *See* Pet. 17 (citing Ex. 1001, 5:15–20; Ex. 1003, 47–48).³

Patent Owner does not dispute Petitioner’s analysis for step (A).⁴ We are persuaded that an ordinarily skilled artisan would have known from Longé’s teachings that text buffer 113 is implemented as a RAM, i.e., a “first computer-readable medium.” Ex. 1003, 42–43; Ex. 1006, 7:58–67, 9:5–8, 9:18–22. We further agree that Longé’s teachings of presenting the user with identified words or phrases for correction would have required accessing such a computer-readable medium. Ex. 1003, 42–43; Ex. 1006, 8:1–2, 9:18–22. Regarding the “first phrase representing a first written form of a concept,” we are persuaded that an ordinarily skilled artisan considering Longé’s identification of “an acceptable substitute for a term of profanity”

³ Petitioner provides further contentions regarding “smart punctuation.” Pet. 14–15, 18–19. We do not reach those contentions because the parties’ positions regarding Longé’s teachings on profanity and abbreviations are sufficient to dispose of the instant ground.

⁴ Nevertheless, as discussed below, Patent Owner disputes Petitioner’s analysis regarding the interplay of step (B) with step (A).

would have known that a term of profanity (i.e., “a first phrase representing a first written form”), such as “ass,” represents the concept of that word as profanity or, alternatively, the concept of that word as a body part.

Ex. 1003, 49–50; Ex. 1006, 13:22–26. We likewise are persuaded that an ordinarily skilled artisan considering Longé’s identification of “an abbreviation for a longer phrase” would have known that the long form of an abbreviation (i.e., “a first phrase representing a first written form”), such as “tablespoon” or “California,” represents the concept underlying the specific abbreviation. Ex. 1003, 49–50; Ex. 1006, 13:22–26; Ex. 1017 ¶ 21. Thus, we find that Longé teaches step (A) of claim 1 in view of the knowledge of a person of ordinary skill in the art.

c. Step (B)

Claim 1 further recites “(B) identifying a plurality of phrases tangibly stored in a second computer-readable medium, each of the plurality of phrases representing an alternative written form of the concept.” Ex. 1001, 13:17–20. For the “second computer readable medium,” Petitioner cites types of permanent storage media disclosed in Longé “such as read-only memory (ROM), floppy disks, hard disks, or CD-ROMs.” Pet. 16 (citing Ex. 1006, 9:7–8). Petitioner further cites Longé’s disclosure of the memory including “a word list 214 and a phrase list 215,” which “can be used by the phrase-based recognition or disambiguation engine 217.” *Id.* (quoting Ex. 1006, 9:22–23, 9:51–52). Petitioner contends an ordinarily skilled artisan would have understood “that the word or phrase list from which the plurality of phrases would be chosen from would be contained on permanent storage media, such as a hard disk located on the server (*i.e.*, a second

computer-readable medium), to ensure the list is preserved and always accessible.” *Id.* (citing Ex. 1003, 46–47).

Petitioner further contends “[t]he plurality of phrases identified on the second computer-readable medium each represent an alternative written form of the concept.” *Id.* at 17 (citing Ex. 1003, 46–47). As examples of alternative written forms of a concept in Longé, Petitioner cites Longé’s teaching about identifying abbreviations for longer phrases. *Id.* at 15 (citing Ex. 1006, 13:25–26), 19 & n.2 (citing Ex. 1003, 49–50); *see also* Ex. 1017 ¶ 21 (Dr. Sears testifying that “T., tbs., or tbsp.” are abbreviations for “tablespoon” and “Cal., Calif., Ca., or CA” are abbreviations for “California”). Petitioner also cites Longé’s teaching of alternatives for a term of profanity as alternative written forms of a concept. *Id.* at 15 (citing Ex. 1006, 13:25–26), 19–20 (citing Ex. 1003, 49–50). For example, Petitioner notes that “ass,” “derriere,” “backside,” and “rear end” are alternative written forms for the concept of a body part when the “first phrase” is the term “ass.” *Id.* at 19–20 (citing Ex. 1003, 49–50). Alternatively, Dr. Sears testifies that “ass,” “jerk,” and “idiot” are alternative written forms for the concept of profanity when the “first phrase” is the term “ass.” Ex. 1003, 49–50.

Patent Owner argues that, as a matter of claim construction, Petitioner is wrong to suggest that “a plurality of phrases . . . representing an alternative written form of the concept” encompasses and includes the first written form of the concept as an “alternative” to itself. PO Resp. 33. Although Petitioner acknowledges that “Longé discloses *one* written form of the concept that may replace the written form itself of the concept displayed in the document,” Petitioner contends this is not sufficient to teach the

recited “plurality of phrases” in step (B). *Id.* at 33–34; *see also id.* at 37–38 (same argument). Patent Owner also notes that Longé refers to “*an* abbreviation for a longer phrase” and “*an* acceptable substitute for a term of profanity,” each of which Patent Owner interprets to be singular. *Id.* at 37–38 (citing Ex. 1006, 13:25–26) (emphases added by Patent Owner). Patent Owner contends this does not teach the recited “plurality of phrases.” *Id.*

We do not agree with Patent Owner’s arguments. As a matter of claim construction, we do not agree that “the plurality of phrases representing an alternative written form of the concept” in step (B) must be distinct from the “first written form of the concept” in step (A). *See supra* § II.C.1. Thus, to the extent Patent Owner criticizes Petitioner’s analysis based on Longé for discussing only one alternative written form of a concept that is different than the first written form (*see* PO Resp. 33–34), these arguments do not undermine Petitioner’s showing. And, even if we did agree with Patent Owner’s interpretation, Petitioner has established that an ordinarily skilled artisan considering Longé’s teachings on “an abbreviation for a longer phrase” and “an acceptable substitute for a term of profanity” would have known of multiple alternative written forms other than the “first written form.” Pet. 15 (citing Ex. 1003, 44–45; Ex. 1006, 13:25–26); Pet. Reply 21–23 (citing, *inter alia*, Ex. 1017 ¶ 21). Specifically, Petitioner has shown that (1) “derriere,” “backside,” and “rear end” are alternatives for “ass” when the concept is “ass” as a body part; (2) “jerk” and “idiot” are alternatives for “ass” when the concept is “ass” as profanity; (3) “T., tbs., or tbsp.” are alternatives for “tablespoon” when the concept is a “tablespoon”; and (4) “Cal., Calif., Ca., or CA” are alternatives for “California” when the

concept is “California.” Pet. 19–20; Pet. Reply 21–23; Ex. 1003, 49–50; Ex. 1017 ¶¶ 20–21.

Patent Owner argues “Longé includes no disclosure or discussion of how the concept in the profanity would be matched to other (unacceptable and/or acceptable, in context) phrases representing the same concept.” PO Resp. 36. Patent Owner further contends an ordinarily skilled artisan “would have understood that the process matching one written form of the concept with other alternative written forms of the concept (like a thesaurus) was distinct from the error-checking functionality disclosed in Longé.” *Id.* As such, Patent Owner contends this would have required modification of Longé’s disclosure that is not supported in Petitioner’s papers. *Id.* (citing Ex. 2003 ¶¶ 70–74); *see also* PO Sur-reply 18–19.

We disagree with Patent Owner’s arguments. First, Petitioner’s ground is based on obviousness, so Longé need not disclose expressly the alternatives for profanity posited by Petitioner and Dr. Sears. Second, we do not agree that any modification of Longé is required to identify “acceptable substitute[s] for a term of profanity” (Ex. 1006, 13:22–26); rather, Petitioner simply posits implementing the teachings of Longé in concrete examples based on the knowledge of a person of ordinary skill in the art. *See* Pet. 19–20; Ex. 1003, 49 (“With respect to Longé’s disclosure of identifying an acceptable substitute for a term of profanity, a[n ordinarily skilled artisan] would have understood this to refer to any number of examples where less-profane alternatives were provided to replace a term of profanity.”). Moreover, contrary to Patent Owner’s argument (PO Resp. 36–37), hindsight is not necessary because Longé itself teaches identifying replacement words for terms of profanity. Ex. 1006, 13:20–26. No present-

day knowledge or perspective would have been required for an ordinarily skilled artisan to implement this identification with such substitute words, particularly given that Longé also teaches disambiguation from preexisting word lists and/or phrase lists. *See* Pet. 16–17 (citing, *inter alia*, Ex. 1006, 7:62–67, 9:22–23, 9:51–52). Third, we are persuaded that an ordinarily skilled artisan would have conjured numerous alternatives for terms of profanity given that the relatively high level of ordinary skill in the art and the artisan’s particular experience in “document correction/editing.” *See supra* § II.B. We also do not agree with Patent Owner’s arguments because they would have the effect of relegating a person of ordinary skill in the art to being an automaton, rather than a person of ordinary creativity. *See KSR*, 550 U.S. at 421.

Patent Owner argues that Petitioner’s examples of substitutes for profanity do not identify an alternative form of the same concept. PO Resp. 35–36; *see also* PO Sur-reply 14. Patent Owner also argues Petitioner’s examples “do not carry the same implications as the profane terms.” PO Sur-reply 14. We do not agree with Patent Owner’s arguments. The persuasiveness of Petitioner’s obviousness analysis does not turn on the perceived degree of profanity in Petitioner’s exemplary alternatives to profanity. Instead, we are satisfied by Petitioner’s showing that an ordinarily skilled artisan would have known how to implement alternative written forms for profane words based on Longé’s teaching of identifying alternatives for profanity. *See* Pet. 19–20; Ex. 1003, 49–50; Ex. 1006, 13:22–26. In addition, we agree with Petitioner (Pet. Reply 21) that Patent Owner’s and Dr. Anderson’s supposed acceptable counterexample of the concept of profanity—“##!@!@#” (PO Resp. 35–36; Ex. 2003 ¶ 70)—

underscores, rather than undermines, Petitioner’s case by demonstrating yet another alternative written form for the concept of profanity. *See* Ex. 1017 ¶ 20. As stated above, a person of ordinary skill in the art with ordinary creativity would have known to implement myriad alternatives to profanity based on Longé’s teachings.

Patent Owner does not otherwise dispute Petitioner’s analysis for step (B) of claim 1. We are persuaded by Petitioner’s showing that Longé’s word list 214 and phrase list 215 would have been stored on permanent storage media, such as a hard disk, on a server (i.e., the “second computer readable medium”) that identifies word candidates (i.e., the “alternative written form[s] of the concept”). Ex. 1003, 46–47; Ex. 1006, 7:62–67, 9:7–8, 9:22–23, 9:51–52. Thus, we find that Longé teaches step (B) of claim 1 in view of the knowledge of a person of ordinary skill in the art.

d. Step (C)

Claim 1 further recites “(C) displaying at least some of the plurality of phrases to a user.” Ex. 1001, 13:21–22. Petitioner cites Longé’s disclosure of a word choice list that “provides the alternate hypotheses from the speech recognition output 404.” Pet. 20 (citing Ex. 1006, 11:45–55). According to Petitioner, the word choices are displayed to the user so that the user may select the correct interpretation. *Id.* at 20–22 (citing Ex. 1006, 5:5–7, 7:18–19, 11:45–55). Patent Owner does not dispute Petitioner’s analysis of step (C). We are persuaded that Longé teaches displaying some alternative written forms to a user. *See, e.g.*, Ex. 1006, 5:5–7 (“one or more of the word candidates is presented for selection or editing”). Thus, we find that Longé teaches step (C) of claim 1.

e. Step (D)

Claim 1 further recites “(D) receiving, from the user, an instruction to -replace [sic] the first phrase with one of the plurality of phrases in the document on the first computer-readable medium, wherein the instruction does not include the one of the plurality of phrases.” Ex. 1001, 13:23–27. Petitioner cites Longé’s disclosure of “receiving [the] user[’s] choice of a word from the revised N-best list in correction of the selected word.” Pet. 24 (citing Ex. 1006, 16:14–15). Petitioner also cites Longé’s description of “select[ing] the correct interpretation from the word choice list.” *Id.* at 22 (citing Ex. 1006, 11:51–52, Fig. 4). Petitioner contends “the fact that the user is selecting the choice from a list, as opposed to providing the desired alternative written form, necessarily means that the instruction (e.g., clicking on the word or phrase in the list) ‘does not include one of the plurality of phrases.’” *Id.* at 23–24 (Ex. 1003, 55). Patent Owner does not dispute Petitioner’s analysis of step (D). We are persuaded that Longé teaches the user selecting an alternate hypothesis from a word choice list to replace a particular word. *See* Ex. 1006, 11:45–55, Fig. 4. Thus, we find that Longé teaches step (D) of claim 1.

f. Conclusion Regarding Claim 1

Based on the entire trial record, we are satisfied that Longé teaches all of the limitations of claim 1 in view of the knowledge of a person of ordinary skill in the art. Thus, we determine Petitioner has shown by a preponderance of the evidence that the subject matter of claim 1 would have been obvious over Longé in view of the knowledge of a person of ordinary skill in the art under 35 U.S.C. § 103(a).

3. *Claim 5*

Claim 5 depends from claim 1 and recites that step (C) “further comprises identifying the at least some of the plurality of phrases to display based on a context of the first phrase in the document.” Ex. 1001, 13:37–39. Petitioner cites Longé’s teaching that “one or more word candidates are determined based on the first input in view of word context.” Pet. 24 (quoting Ex. 1006, 4:57–59); *see also id.* at 24–25 (quoting Ex. 1006, 6:47–49 (“the invention makes use of both acoustic information and word context in offering the N-best hypotheses”), 8:6–10 (“disambiguation engine 115 determines possible interpretations . . . optionally based on the surrounding context in the text buffer 113”)).

Patent Owner argues Petitioner’s citations to Longé relate to identifying phrases based on the context of a phrase, rather than context *in a document*. PO Resp. 50. Patent Owner explains that Longé’s system “does not consider the document as a whole, or the context of the phrase in the document, but instead uses the immediately surrounding words to provide a best guess as to the word in question.” *Id.* (citing Ex. 2003 ¶¶ 85–87); *see also id.* at 51–52 (similar arguments).

We are persuaded by Petitioner’s analysis. Longé’s system considers surrounding word context to determine word candidates, as set forth in the quotations from Longé reproduced above. *See* Ex. 1006, 4:57–59, 6:47–49, 8:6–10. Patent Owner concedes as much. *See, e.g.*, PO Resp. 50 (stating that Longé’s system “uses the immediately surrounding words to provide a best guess as to the word in question”). Patent Owner only disputes Petitioner’s analysis based on Patent Owner’s proposed construction of “context” (i.e., “the format, parts, and/or sections of the document

surrounding the first phrase”), which Patent Owner contends is “distinct from the context of a word within a phrase or sentence.” *Id.* at 23, 50–52. We decline to adopt Patent Owner’s construction above. *See supra* § II.C.3. Because Longé’s surrounding words are “context . . . in a document,” we determine Longé teaches the additional limitation in claim 5.

Patent Owner otherwise relies on the same arguments discussed above with respect to claim 1. *See* PO Resp. 26; PO Sur-reply 25 n.6. Based on the entire trial record, we determine Petitioner has shown by a preponderance of the evidence that the subject matter of claim 5 would have been obvious over Longé in view of the knowledge of a person of ordinary skill in the art under 35 U.S.C. § 103(a).

4. *Claim 9*

Claim 9 depends from claim 1 and recites that step (D) “further comprises receiving an instruction generated by the user using a single keystroke.” Ex. 1001, 13:49–51. Petitioner cites Longé’s teaching that a user may “select the correct interpretation from the word choice list,” but Petitioner acknowledges Longé does not disclose whether the selection is made using a single keystroke. Pet. 25 (citing Ex. 1006, 11:51–52). Supported by Dr. Sears’s testimony, Petitioner contends an ordinarily skilled artisan “would have known that this selection would be advantageously accomplished with a single keystroke because the use of single keystrokes in human-centered computing applications was well known by the earliest priority date of the [’]524 Patent.” *Id.* (citing Ex. 1003 ¶¶ 41–45, pp. 59–60). In further support of this contention, Petitioner cites two contemporaneous references that demonstrate the use of a single keystroke

to make a selection from a list of options. *See id.* at 25–27 (citing, *inter alia*, Ex. 1009, 33; Ex. 1010, 21).

Patent Owner does not dispute Petitioner’s analysis for claim 9, and Patent Owner relies on the same arguments discussed above with respect to claim 1. *See* PO Resp. 26; PO Sur-reply 25 n.6. Based on Longé’s teachings of selecting a correct interpretation from a word choice list (Ex. 1006, 11:51–52), Dr. Sears’s undisputed testimony (Ex. 1003 ¶¶ 41–45, pp. 59–60), and the contemporaneous references’ teaching of single-keystroke selections in a user interface (Ex. 1009, 33; Ex. 1010, 21), we are persuaded that Longé teaches the additional limitation in claim 9 in view of the knowledge of an ordinarily skilled artisan. Thus, we determine Petitioner has shown by a preponderance of the evidence that the subject matter of claim 9 would have been obvious over Longé under 35 U.S.C. § 103(a).

E. Obviousness Ground Based on Longé and Roberts

Petitioner contends the subject matter of claim 9 would have been obvious over the combination of Longé in view of the knowledge of a person of ordinary skill in the art and Roberts. *Pet.* 27–32; *Pet. Reply* 26. Patent Owner disputes Petitioner’s contentions. *PO Resp.* 26; *PO Sur-reply* 25 n.6.

1. Roberts

Roberts is a U.S. patent directed to speech recognition and training models for use in speech recognition. Ex. 1008, 1:6–8. The system disclosed in Roberts seeks to “improve[] the speed and accuracy with which

users can dictate desired text.” *Id.* at 2:5–7. The system makes an acoustic model from one or more utterances of a word and enables a user to associate a sequence of textual characters with that acoustic model. *Id.* at 2:37–41. The system indicates to the user a menu of character sequences, and the user can select a given character sequence from the menu, edit the selected character sequence, and associate the edited character sequence with the acoustic model. *Id.* at 2:41–47. For editing, Roberts discloses “pick-choice commands” associated with function keys “f1” through “f9,” each of which corresponds to the number of a displayed word choice. *Id.* at 15:31–36. The user may press a function key to indicate that a displayed word associated with that function key is the desired word for a particular utterance. *Id.* at 15:36–40. An example of pick-choice commands associated with function keys is shown in Figure 36, which is reproduced below.

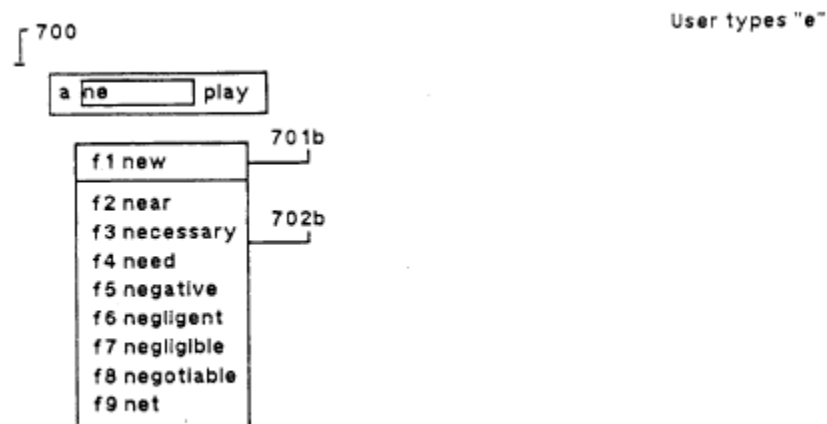


FIG. 36

Figure 36 is an example of a computer display that is used to enter phrases into the system of Roberts. *Id.* at 5:46–48. Pick-choice commands correspond to word choices displayed in word active window 701b or word dictionary window 702b. *Id.* at 32:54–60.

Petitioner contends Roberts qualifies as prior art under 35 U.S.C. § 102(b) based on its issue date of June 25, 1991. Pet. 8. Patent Owner does not contest the prior art status of Roberts.

We determine Roberts qualifies as prior art under 35 U.S.C. § 102(b) because Roberts's issue date of June 25, 1991, is more than one year before the earliest possible effective filing date of the challenged claims, which is May 25, 2006. Ex. 1001, code (63); Ex. 1008, code (45).

2. *Claim 9*

Claim 9 depends from claim 1 and recites that step (D) “further comprises receiving an instruction generated by the user using a single keystroke.” Ex. 1001, 13:49–51. Petitioner's analysis for this ground builds on its analysis of the Longé ground discussed above. According to Petitioner, “Longé discloses that a user may ‘select the correct interpretation from the word choice list,’ but does not explicitly disclose whether the selection is made using a single keystroke.” Pet. 31. As such, Petitioner cites Roberts for teaching “pick-choice commands” that “consist of any of the function keys ‘f1’ – ‘f9’ . . . [,] which correspond to the number of a word choice displayed in either the active window display 701 or the Dictionary Window 702.” *Id.* at 28, 31–32 (citing Ex. 1008, 15:31–40, Fig. 36 and quoting *id.* at 15:31–36). Citing testimony from Dr. Sears, Petitioner contends an ordinarily skilled artisan “reviewing Longé's speech recognition system would have been motivated to look to Roberts' teachings regarding a pick-choice selection system for use with a speech recognition system” so as “to assist with selecting the correct interpretation from the word choice list.” *Id.* at 30, 32 (citing Ex. 1003 ¶¶ 46–49). In particular,

Petitioner contends an ordinarily skilled artisan “would have been motivated to look to other references for a more efficient method for selection that required fewer key strokes in order to increase the speed with which a user could use the system disclosed by Longé.” *Id.* at 29 (citing Ex. 1003 ¶ 46).

Patent Owner does not dispute Petitioner’s analysis for claim 9, and Patent Owner relies on the same arguments discussed above with respect to claim 1 of the Longé ground. *See* PO Resp. 26; PO Sur-reply 25 n.6. We are persuaded by Petitioner’s showing that Roberts teaches the use of a single function key to implement a “pick-choice command[.]” Ex. 1008, 15:31–40, Fig. 36. Thus, Roberts teaches the additional limitation in claim 9. We also are persuaded that an ordinarily skilled artisan would have implemented Roberts’s pick-choice commands in Longé’s system to improve the user interface for making selections from a word choice list. Ex. 1003 ¶¶ 46–49. Thus, we determine Petitioner has shown by a preponderance of the evidence that the subject matter of claim 9 would have been obvious over Longé in view of the knowledge of a person of ordinary skill in the art and Roberts under 35 U.S.C. § 103(a).

F. Obviousness Ground Based on Lunati

Petitioner contends the subject matter of claims 1 and 9 would have been obvious over Lunati in view of the knowledge of a person of ordinary skill in the art. Pet. 33–52; Pet. Reply 23–26. Patent Owner disputes Petitioner’s contentions. PO Resp. 26, 40–49; PO Sur-reply 19–24, 25 n.6.

1. *Lunati*

Lunati is a U.S. patent directed to “a web-based interface for correcting spelling, grammar, syntax, or other errors in electronic text of an E-mail message.” Ex. 1007, 1:8–10. Lunati discloses an “error checking routine [that] detects errors such as spelling errors in the electronic text and creates a correction file of the electronic text containing tags, markers and other information allowing errors to be displayed and corrected using the user’s graphical interface.” *Id.* at 2:47–51. Lunati’s routine “can be used to modify various documents other than e-mails, including . . . documents in word processing programs.” *Id.* at 9:14–17.

Figure 8 of Lunati is reproduced below.

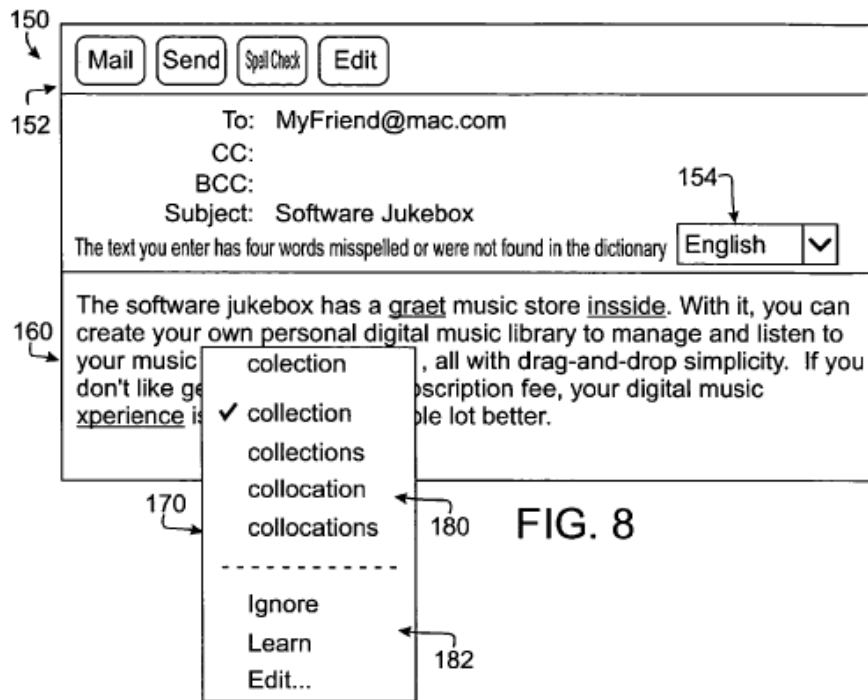


Figure 8 depicts error correction interface 150 showing multiple errors highlighted in a text message and a selection control. *Id.* at 3:12–18, 4:57–60. Identified errors (e.g., “graet,” “insside,” and “xperience”) are concurrently displayed on interface 150 with a different style (e.g., larger,

different color, bolded, and/or underlined text) than words not requiring correction. *Id.* at 5:13–17. Correction options are placed in suggestion control 170 in response to the user moving a mouse pointer over an identified error. *Id.* at 5:39–42. Suggestion control 170 lists spelling options 180 and other options 182 (e.g., “Ignore,” “Learn,” and “Edit”) for the user to select to correct the error. *Id.* at 5:54–66.

Petitioner contends Lunati qualifies as prior art under 35 U.S.C. § 102(e) based on its filing date of June 17, 2004. Pet. 8. Patent Owner does not contest the prior art status of Lunati.

We have no evidence of an invention date other than the earliest possible effective filing date of the challenged claims. Thus, we determine that Lunati qualifies as prior art under 35 U.S.C. § 102(e) because Lunati’s filing date of June 17, 2004, is before the earliest possible effective filing date of the challenged claims, which is May 25, 2006. Ex. 1001, code (63); Ex. 1007, code (22).

2. *Claim 1*

a. Preamble

The preamble of claim 1 recites “[a] computer-implemented method for use with a document tangibly stored in a first computer-readable medium.” Ex. 1001, 13:11–13. Petitioner maps the “computer-implemented method for use with a document” to Lunati’s interface that can be used to “modify various documents . . . including web page text, photo captions, server-based source code editing, documents in word processing programs, spreadsheets, or presentations, etc.” Pet. 35 (citing Ex. 1007, 9:14–18). For the “computer-readable medium,” Petitioner cites Lunati’s teaching about

computer code for implementing Lunati’s interface being “stored on a computer-readable media [sic], such as a compact disk, a tape, stored in a volatile or non-volatile memory, etc.” *Id.* (citing Ex. 1007, 9:31–34).

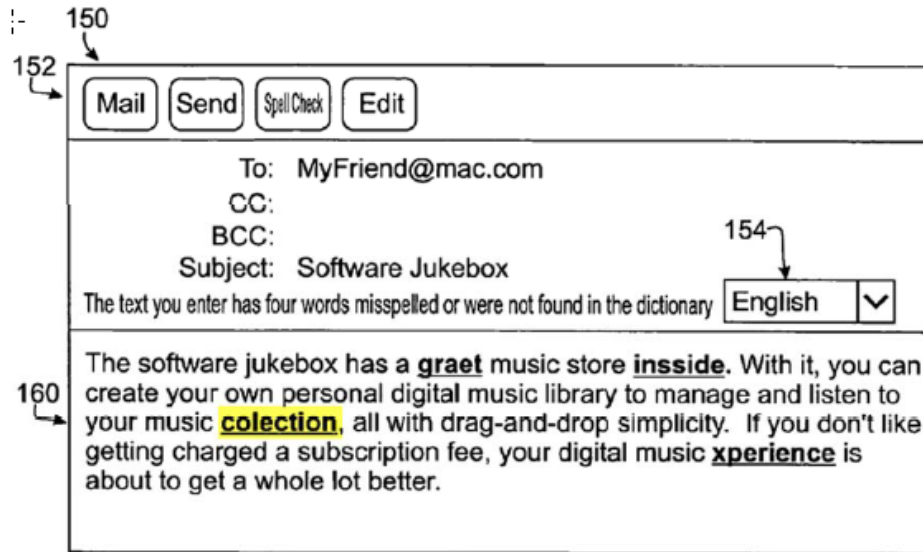
Patent Owner does not dispute Petitioner’s analysis of the preamble of claim 1. Neither party addresses whether the preamble is limiting. Because Petitioner has shown that Lunati teaches the preamble (*see, e.g.*, Ex. 1007, 9:12–18 (“error checking routine and interface” for “modify[ing] various documents”), 9:30–34 (“computer-readable media” for storing computer code)), we need not determine whether the preamble is limiting. *See Nidec*, 868 F.3d at 1017.

b. Step (A)

Claim 1 further recites “(A) accessing the first computer-readable medium to identify a first phrase within the document, the first phrase representing a first written form of a concept.” Ex. 1001, 13:14–16. Petitioner maps “identify[ing] a first phrase within the document” to the functionality of Lunati’s error checking routine, which can identify an error (i.e., a first phrase) in a text message. Pet. 35–36 (citing Ex. 1003, 64–65; Ex. 1007, 3:57–60, 3:66–4:2). For the “first computer-readable medium,” Petitioner notes that Lunati’s system includes client station 92 connected to remote server 94, to which the text is sent for error checking. *Id.* at 35 (citing Ex. 1007, 3:37–38, 3:66–4:2). Petitioner contends that an ordinarily skilled artisan would have understood that the text must be accessed on the client station (i.e., a “first computer-readable medium”) in order to be analyzed by the error checking routine. *Id.* at 35–36 (citing Ex. 1003, 64–65). Alternatively, Petitioner contends an ordinarily skilled artisan would

have understood that text is accessed for a discrete period of time on a temporary computer-readable medium of the server (e.g., RAM) when it is checked for errors. *Id.* at 36 (citing Ex. 1003, 65).

For the “first written form of a concept,” Petitioner points to an annotated version of Lunati’s Figure 6, which is reproduced below.



Id. at 37 (reproducing and annotating Ex. 1007, Fig. 6). Figure 6 depicts Lunati’s error correction interface showing multiple errors (in bold and underlined text) in a text message. Ex. 1007, 3:12–14. Petitioner has further highlighted in yellow the misspelling “colection,” which Petitioner contends an ordinarily skilled artisan would have recognized to be a first written form of “the concept of a collective, *e.g.*, a group of things or people, which in this specific example is a group of digital songs on a digital music library.” Pet. 37 (citing Ex. 1003, 65–67; Ex. 1007, Fig. 6). Dr. Sears testifies that the misspelled word “colection” is “not so badly misspelled as to lose its meaning or association with the concept” and is “still capable of communicating the intended meaning to a reader.” Ex. 1003, 66. Petitioner

likens these teachings from Lunati to the '524 patent's disclosure that "mappings between any two or more written forms of a concept . . . include alternate spellings of the same concept." Pet. 38 (quoting Ex. 1001, 11:10–15).⁵

Patent Owner argues "[a] misspelling is not properly considered a written form of a concept, unless by accident it is a proper spelling for *another* concept." PO Resp. 42. Dr. Anderson testifies similarly that misspellings

are not written forms of a concept at all: they are errors that must be corrected. Indeed, the spell-checker disclosed in Lunati provides best guesses as to what the user meant to type or say, but the suggestions are not alternative written forms of the concept in the misspelled word. This is by necessity because the system in Lunati cannot tell what the misspelled word was supposed to be—it can only provide best guesses.

Ex. 2003 ¶ 76.

As a matter of claim construction, we determine that the '524 patent does not exclude a misspelling from being a "written form of a concept" so long as the misspelling is associated with a concept. *See supra* § II.C.2. Petitioner cites the misspelling "colection" in Lunati's Figure 6 as representing the concept of a collective. Pet. 37. Dr. Sears testifies that, despite the misspelling, an ordinarily skilled artisan would have recognized that "colection" represents the concept of a collective because it "is not so badly misspelled as to lose its meaning or association with the concept" and

⁵ Petitioner provides further contentions regarding concepts expressed in different languages. Pet. 38–39, 42–44. We do not reach those contentions because the parties' positions regarding Lunati's Figure 6 and 8 embodiments are sufficient to dispose of the instant ground.

“it is still capable of communicating the intended meaning to a reader.”

Ex. 1003, 66. We are persuaded by this reasoning. Even though “colection” might be an error, as suggested by Dr. Anderson (Ex. 2003 ¶ 76), this fact does not prevent “colection” from representing the concept of a collective.⁶

Moreover, Dr. Anderson’s testimony is based on the false premise that Lunati must “identif[y] the concept underlying the misspelled word and then match[] it to the correctly spelled word” in order to teach step (A) of claim 1. *See id.* Yet claim 1 does not limit the process by which written forms are associated with a concept. The ’524 patent discloses a written form dictionary that is maintained so “the editing system 108 may determine, by reference to the dictionary, whether the displayed text is an alternate written form of a concept.” Ex. 1001, 5:33–39. As such, the ’524 patent contemplates that written forms are associated by a concept in a dictionary prior to processing text. This is exactly the same process taught by Lunati. *See* Ex. 1007, 5:56–59 (“[T]he user can select spelling options 180 and determine whether the word ‘colection’ should be changed to *words identified by the dictionary of the spell checking routine.*” (emphasis added)). Given that the ’524 patent also teaches mappings with “alternate spellings” (Ex. 1001, 11:10–15), we are persuaded that Lunati’s association of the misspelling “colection” in a dictionary with at least one other written form for the concept of a collective (e.g., “collection”) teaches a “first phrase representing a first written form of a concept.” *See* Ex. 1003, 65–66; Ex. 1007, Figs. 6, 8.

⁶ We further discuss whether a misspelling and a correct spelling may be “alternate written form[s] of the concept” in our analysis of step (B) below.

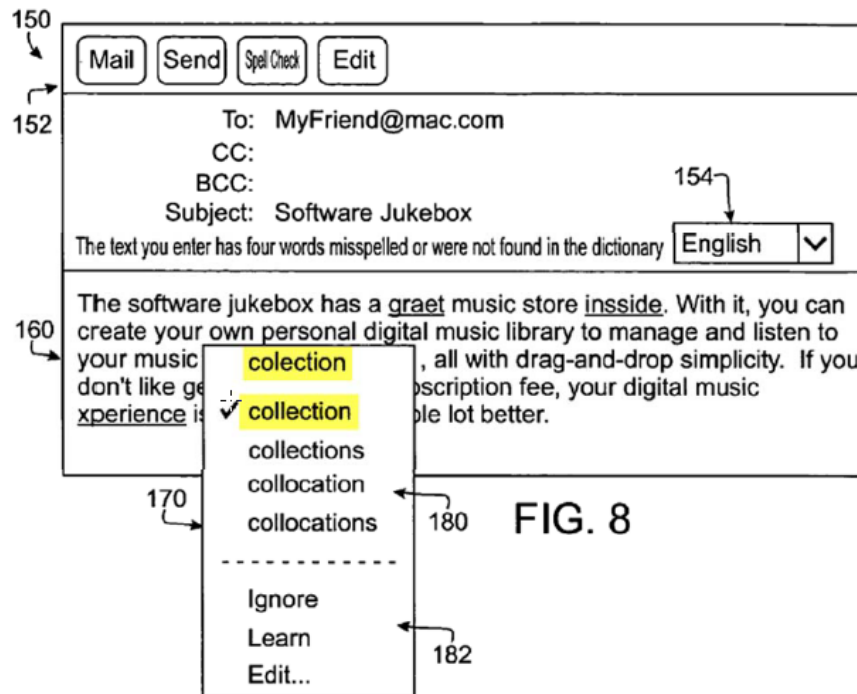
Patent Owner does not otherwise dispute Petitioner's analysis for step (A). Lunati teaches identifying an error (i.e., a "first phrase") in a text message (i.e., a "document"). Ex. 1007, 3:59–4:4. The text message "is sent to the disclosed error checking routine on the server or client station" (*id.* at 3:66–4:1, Fig. 4), and Petitioner persuasively shows that an ordinarily skilled artisan would have known that the text must be accessed at the client station (i.e., "first computer-readable medium") in order to perform such error checking. Ex. 1003, 64–65. Thus, we find that Lunati teaches step (A) of claim 1 in view of the knowledge of a person of ordinary skill in the art.

c. Step (B)

Claim 1 further recites "(B) identifying a plurality of phrases tangibly stored in a second computer-readable medium, each of the plurality of phrases representing an alternative written form of the concept." Ex. 1001, 13:17–20. Petitioner notes that Lunati's "error checking routine on the server" is done with reference to "a reference file [] which can constitute a user-selected or automatically-selected dictionary." Pet. 40 (citing Ex. 1007, 3:67–4:4). Petitioner likens the server to the recited "second computer readable medium" and contends an ordinarily skilled artisan would have understood that the dictionary or reference file is "contained on a form of non-volatile memory such as a hard disk drive, since the reference file would need to be constantly and permanently accessible in order to identify the plurality of alternative phrases." *Id.* (citing Ex. 1003, 68). Alternatively, Petitioner contends an ordinarily skilled artisan would have understood "the server's RAM to be a first computer-readable medium, and the server's non-

volatile memory (e.g., hard disk drive) to be a second computer-readable medium.” *Id.* at 40–41 (Ex. 1003, 68).

Petitioner argues an ordinarily skilled artisan would have understood “that the reference file disclosed by Lunati may be used to identify a plurality of phrases that represent alternate written forms of a concept.” Pet. 44 (citing Ex. 1003, 69–71). To explain the “alternative written form[s]” coming from the reference file, Petitioner provides an annotated version of Lunati’s Figure 8, which is reproduced below.



Id. at 41 (reproducing and annotating Ex. 1007, Fig. 8). Figure 8 depicts the selection control of Lunati’s error correction interface. Ex. 1007, 3:15–18. Petitioner has highlighted in yellow “colection” and “collection,” which Petitioner contends are alternative forms of the concept of a collective. Pet. 41–42 (citing Ex. 1003, 69; Ex. 1007, Fig. 8). In its Reply, Petitioner further contends the plural form “collections” in Figure 8 is an alternative written form of the concept of a collective. Pet. Reply 22–23. Petitioner

likens these teachings from Lunati to the '524 patent's disclosure that "mappings between any two or more written forms of a concept" may "include alternate spellings of the same concept." Pet. 38, 42 (citing Ex. 1001, 11:10–15).

Patent Owner argues that Petitioner at most identifies only one alternative written form of a concept, not the recited plurality. *Id.* at 40, 47–49; PO Sur-reply 20. Patent Owner also argues that a misspelling such as "colection" is not an alternative written form of a concept. PO Resp. 42; PO Sur-reply 19–20. Patent Owner further contends the four possible replacements for the misspelling "colection" shown in Figure 8—"collection," "collections," "collocation," and "collocations"—"are not alternative written forms of the *same concept* but rather written forms of *four different concepts* that are Lunati's best guess at what the user actually intended." PO Resp. 42 (citing Ex. 2003 ¶¶ 75–76); *see also id.* at 47 (same argument). Patent Owner additionally disputes Petitioner's argument (Pet. Reply 23) that the singular "collection" and plural "collections" represent the same concept because "they are words with similar spellings but different meanings." PO Sur-reply 21.

We do not agree with Patent Owner's arguments. As discussed above, we do not agree that the "the plurality of phrases representing an alternative written form of the concept" in step (B) must be distinct from the "first written form of the concept" in step (A). *See supra* § II.C.1. Thus, to the extent Patent Owner criticizes Petitioner's analysis based on Lunati for discussing only one alternative written form of a concept that is different than the first written form (*see* PO Resp. 40, 47–49), these arguments do not

undermine Petitioner's showing. Lunati's example of "colection" and "collection" in Figures 6 and 8 teaches the recited "plurality."

Furthermore, as discussed above, we determine that a misspelling is not excluded *per se* from the scope of a "written form of the concept" in claim 1 so long as the misspelling is associated with a concept. *See supra* § II.C.1. As discussed above, Petitioner persuasively shows that Lunati's misspelling of "colection" is associated with the concept of a collective. Pet. 37 (citing Ex. 1003, 65–67, Ex. 1007, Fig. 6). Petitioner likewise shows that "collection" represents the concept of a collective. *Id.* at 41–42 (citing Ex. 1003, 68–69⁷; Ex. 1007, Fig. 8). Although Patent Owner disputes that other written forms shown in Lunati's Figure 8 represent a collective, Patent Owner does not appear to dispute that "collection" does. *See* PO Resp. 42 (arguing only that "collection," "collections," "collocation," and "collocations" are "written forms of *four different concepts*"). Based on Petitioner's showing, we are persuaded that "colection" and "collection" in Figures 6 and 8 of Lunati are "alternative written form[s]" of the concept of a collective. *See* Ex. 1003, 68–69; Ex. 1007, Figs. 6, 8.

We also have considered Patent Owner's argument that "it would make no sense to identify or offer the user a misspelling as a potential replacement for a first written form of the concept." PO Resp. 43 (citing Ex. 2003 ¶¶ 75–77). As discussed above (*see supra* § II.C.1), however, the '524 patent teaches toggling between two alternative written forms (*see* Ex. 1001, 6:4–13, Figs. 9A–9C), and Dr. Anderson testified that the scope of claim 1 does not exclude a scenario where the user opts not to change the

⁷ Petitioner cites to page 69 of Dr. Sears's declaration, but the relevant discussion begins on page 68.

first phrase identified in step (A). Ex. 1022, 34:19–23. This undermines Patent Owner’s argument that it would make no sense to offer a misspelling as one of the alternative written forms of a concept.

Patent Owner does not otherwise dispute Petitioner’s analysis for step (B) of claim 1. We are persuaded by Petitioner’s showing that Lunati’s error checking is performed on a server with reference to a dictionary of alternative written forms. Ex. 1007, 3:67–4:4. We are further persuaded that an ordinarily skilled artisan would have understood that such a dictionary is contained in non-volatile memory (i.e., the “second computer-readable medium”). Ex. 1003, 68. Thus, we find that Lunati teaches step (B) of claim 1 in view of the knowledge of a person of ordinary skill in the art.

d. Step (C)

Claim 1 further recites “(C) displaying at least some of the plurality of phrases to a user.” Ex. 1001, 13:21–22. Petitioner cites Lunati’s teaching of displaying to the user “a dynamic page that . . . displays all the errors in the text.” Pet. 45 (citing Ex. 1007, 4:18–21). Petitioner points to the same annotated version of Lunati’s Figure 8 reproduced above to establish that the dynamic page “show[s] available options” (e.g., “colection” and “collection”) for the plurality of phrases. *Id.* at 45–46 (citing Ex. 1007, 5:45–48, Fig. 8). Patent Owner does not dispute Petitioner’s analysis of step (C). We are persuaded that Lunati’s Figure 8 display of alternative written forms teaches step (C) of claim 1.

e. Step (D)

Claim 1 further recites “(D) receiving, from the user, an instruction to -replace [sic] the first phrase with one of the plurality of phrases in the document on the first computer-readable medium, wherein the instruction does not include the one of the plurality of phrases.” Ex. 1001, 13:23–27. Petitioner cites Lunati’s teaching of the user “tak[ing] action to correct the highlighted word by moving his mouse pointer 156 over any highlighted word of his choosing (e.g., the misspelled word ‘colection’).” Pet. 47 (citing Ex. 1007, 5:27–29). Petitioner also cites Lunati’s teaching that “the user chooses his correction option from those displayed.” *Id.* at 47–49 (citing Ex. 1007, 5:35–38, Figs. 7–9). Referencing Dr. Sears’s testimony, Petitioner contends the user’s instruction of a correction option is accomplished by selecting the choice from Lunati’s displayed list, so the instruction does not include one of the plurality of phrases. *Id.* at 49 (citing Ex. 1003, 74–77). Patent Owner does not dispute Petitioner’s analysis of step (D). We are persuaded that Lunati teaches a user choosing a correction option from a list of displayed options. Ex. 1003, 74–77; Ex. 1007, 5:27–29, 5:35–38, Figs. 7–9. Thus, we find that Lunati teaches step (D) of claim 1.

f. Conclusion Regarding Claim 1

Based on the entire trial record, we are satisfied that Lunati teaches all of the limitations of claim 1 in view of the knowledge of a person of ordinary skill in the art. Thus, we determine Petitioner has shown by a preponderance of the evidence that the subject matter of claim 1 would have been obvious over Lunati under 35 U.S.C. § 103(a).

3. *Claim 9*

Claim 9 depends from claim 1 and recites that step (D) “further comprises receiving an instruction generated by the user using a single keystroke.” Ex. 1001, 13:49–51. Petitioner cites Lunati’s teaching that “a user may make ‘use of the keyboard to select a highlighted word of interest’ in connection with ‘choos[ing] his correction option from those displayed.’” Pet. 50 (quoting Ex. 1007, 5:30–35) (alteration by Petitioner). Petitioner acknowledges, however, that Lunati does not disclose that this involves the use of a single keystroke. *Id.* Supported by Dr. Sears’s testimony, Petitioner contends an ordinarily skilled artisan “would have known that this selection would be advantageously accomplished with a single keystroke because the use of single keystrokes in human-centered computing applications was well known by the earliest priority date of the [’]524 Patent.” *Id.* (citing Ex. 1003 ¶¶ 50–60, pp. 79–80). In further support of this contention, Petitioner cites two contemporaneous references that demonstrate the use of a single keystroke to make a selection from a list of options. *See id.* at 50–52 (citing, *inter alia*, Ex. 1009, 33; Ex. 1010, 21).

Patent Owner does not dispute Petitioner’s analysis for claim 9, and Patent Owner relies on the same arguments discussed above with respect to claim 1. *See* PO Resp. 26; PO Sur-reply 25 n.6. Based on Lunati’s teachings of choosing a correction option (Ex. 1007, 5:30–35), Dr. Sears’s undisputed testimony (Ex. 1003 ¶¶ 50–60, pp. 79–80), and the contemporaneous references’ teaching of single-keystroke selections in a user interface (Ex. 1009, 33; Ex. 1010, 21), we are persuaded that Lunati teaches the additional limitation in claim 9 in view of the knowledge of an ordinarily skilled artisan. Thus, we determine Petitioner has shown by a

preponderance of the evidence that the subject matter of claim 9 would have been obvious over Lunati under 35 U.S.C. § 103(a).

G. Obviousness Ground Based on Lunati and Roberts

Petitioner contends the subject matter of claims 5 and 9 would have been obvious over the combination of Lunati in view of the knowledge of a person of ordinary skill in the art and Roberts. Pet. 52–58; Pet. Reply 25–26. Patent Owner disputes Petitioner’s contentions. PO Resp. 26, 53–54; PO Sur-reply 24–25 & n.6.

1. Claim 5

Claim 5 depends from claim 1 and recites that step (C) “further comprises identifying the at least some of the plurality of phrases to display based on a context of the first phrase in the document.” Ex. 1001, 13:37–39. Petitioner’s analysis for this ground builds on its analysis of the Lunati ground discussed above. Petitioner notes that Lunati discloses identifying a plurality of phrases representing an alternative written form of the concept of a first phrase, but Petitioner acknowledges that Lunati does not disclose whether these phrases are selected based on the context of the first phrase. Pet. 55. For selection of phrases based on context, Petitioner cites Roberts’s teaching of the desirability of using “higher-level linguistic knowledge that predicts which words are most probable, based on the context.” *Id.* at 55–56 (citing Ex. 1008, 1:25–29, 3:67–4:1). Petitioner contends an ordinarily skilled artisan reviewing Lunati would have been motivated to look to other references that teach methods for improving the accuracy of suggested correction options. *Id.* at 52–53 (citing Ex. 1003 ¶ 61). In particular,

Petitioner contends an ordinarily skilled artisan would have combined Roberts with Lunati because Roberts’s “context-specific selection technique would improve the likelihood of selecting and displaying the desired correction options to the user.” *Id.* at 56 (citing Ex. 1003, 81).

Patent Owner argues Roberts does not disclose “identifying a plurality of phrases to display based on a context of the first phrase *in the document*.” PO Resp. 53. Nevertheless, Patent Owner concedes “Roberts discloses taking the immediately preceding words into account in suggesting words to the user.” *Id.* at 53 (citing Ex. 1008, 1:25–29, 3:67–4:1, 9:1–7); *see also id.* at 54 (“Roberts discloses using the immediately surrounding words in a phrase to predict the likelihood of a word in speech recognition.”).

Patent Owner’s arguments regarding claim 5 are related to its claim construction argument that “context . . . in the document” is related to “the format, parts, and/or sections of the document” (*id.* at 23–26), which we decline to adopt above. *See supra* § II.C.3. As acknowledged by Patent Owner (*see* PO Resp. 53–54), Roberts’s system considers context in a document, i.e., the words surrounding a phrase, to predict words that are presented to a user as part of an editing routine. Ex. 1008, 1:25–29, 3:67–4:4, 9:1–7. Thus, Roberts teaches the additional limitation in claim 5. We also are persuaded that an ordinarily skilled artisan would have been motivated to improve Lunati’s error-checking routine by incorporating Roberts’s teachings of word prediction based on context. Ex. 1003 ¶ 61, p. 81. Patent Owner does not dispute Petitioner’s reasons for combining Roberts with Lunati.

Patent Owner otherwise relies on the same arguments discussed above with respect to claim 1 of the Lunati ground. *See* PO Resp. 26; PO

Sur-reply 25 n.6. Based on the entire trial record, we determine Petitioner has shown by a preponderance of the evidence that the subject matter of claim 5 would have been obvious over the combination of Lunati in view of the knowledge of a person of ordinary skill in the art and Roberts under 35 U.S.C. § 103(a).

2. *Claim 9*

Petitioner's analysis for claim 9 (Pet. 56–58) and reasons to combine Roberts with Lunati (*id.* at 53–55) are similar to those for claim 9 of the Longé–Roberts ground discussed above. *See supra* § II.E.2. Petitioner establishes that Roberts teaches pick-choice commands using a single function key. Pet. 56–57 (citing Ex. 1008, 15:31–40, Fig. 36). We are persuaded by Petitioner's showing, as supported by Dr. Sears's uncontested testimony, that an ordinarily skilled artisan would have implemented Roberts's pick-choice commands in Lunati's system to improve the speed and efficiency of Lunati's user interface. *Id.* at 54–55, 57–58 (citing Ex. 1003 ¶¶ 61–65, pp. 82–83). Patent Owner does not dispute Petitioner's analysis for claim 9, and Patent Owner relies on the same arguments discussed above with respect to claim 1 of the Lunati ground. *See* PO Resp. 26; PO Sur-reply 25 n.6. Thus, we determine Petitioner has shown by a preponderance of the evidence that the subject matter of claim 9 would have been obvious over the combination of Lunati in view of the knowledge of a person of ordinary skill in the art and Roberts under 35 U.S.C. § 103(a).

III. CONCLUSION

Petitioner has shown, by a preponderance of the evidence, that (1) claims 1, 5, and 9 would have been obvious over Longé in view of the knowledge of a person of ordinary skill in the art; (2) claim 9 would have been obvious over the combination of Longé in view of the knowledge of a person of ordinary skill in the art and Roberts; (3) claims 1 and 9 would have been obvious over Lunati in view of the knowledge of a person of ordinary skill in the art; and (4) claims 5 and 9 would have been obvious over the combination of Lunati in view of the knowledge of a person of ordinary skill in the art and Roberts.⁸

IV. ORDER

Accordingly, it is

ORDERED that claims 1, 5, and 9 of the '524 patent are held to be unpatentable; and

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

⁸ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

In summary:

Claims	35 U.S.C. §	References/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1, 5, 9	103(a)	Longé	1, 5, 9	
9	103(a)	Longé, Roberts	9	
1, 9	103(a)	Lunati	1, 9	
5, 9	103(a)	Lunati, Roberts	5, 9	
Overall Outcome			1, 5, 9	

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