No. 2020-1271

United States Court of Appeals for the Federal Circuit

KEYNETIK, INC.

Appellant,

v.

SAMSUNG ELECTRONICS CO., LTD

Appellee.

On Appeal From The Final Written Decision Of The Patent Trial and Appeal Board Of The U.S. Patent And Trademark Office, IPR2018-00986

COMBINED PETITION FOR PANEL REHEARING AND REHEARING EN BANC OF APPELLANT KEYNETIK, INC.

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February 26, 2021

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

CERTIFICATE OF INTEREST

Case Number 2020-1271

Short Case Caption KEYnetik. Inc. v. Samsung Electronics Co., LTD.

Filing Party/Entity KEYnetik, Inc.

Instructions: Complete each section of the form. In answering items 2 and 3, be specific as to which represented entities the answers apply; lack of specificity may result in non-compliance. **Please enter only one item per box; attach additional pages as needed and check the relevant box**. Counsel must immediately file an amended Certificate of Interest if information changes. Fed. Cir. R. 47.4(b).

I certify the following information and any attached sheets are accurate and complete to the best of my knowledge.

Date: 02/26/2021

Signature: /s/Edward F. Behm, Jr.

Name: Edward F. Behm, Jr.

1. Represented Entities. Fed. Cir. R. 47.4(a)(1).	**2. Real Party in Interest.** Fed. Cir. R. 47.4(a)(2).	**3. Parent Corporations and Stockholders.** Fed. Cir. R. 47.4(a)(3).
Provide the full names of all entities represented by undersigned counsel in this case.	Provide the full names of all real parties in interest for the entities. Do not list the real parties if they are the same as the entities.	Provide the full names of all parent corporations for the entities and all publicly held companies that own 10% or more stock in the entities.
☐ None/Not Applicable	☐ None/Not Applicable	☐ None/Not Applicable
KEYnetik, Inc.		

☐ Additional pages attached

4. Legal Representatives. List all law firms, partners, and associates that (a) appeared for the entities in the originating court or agency or (b) are expected to appear in this court for the entities. Do not include those who have already entered an appearance in this court. Fed. Cir. R. 47.4(a)(4).

☐ None/Not Applicable ☐ Additional pages attached

ARMSTRONG TEASDALE LLP Edward F. Behm, Jr., Esq.	ARMSTRONG TEASDALE LLP Marc W. Vander Tuig, Esq.	ARMSTRONG TEASDALE LLP Mark W. Halderman, Esq.
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5. Related Cases. Provide the case titles and numbers of any case known to be pending in this court or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal. Do not include the originating case number(s) for this case. Fed. Cir. R. 47.4(a)(5). See also Fed. Cir. R. 47.5(b).

☐ None/Not Applicable ☐ Additional pages attached

KEYnetik, Inc. v. Samsung Electronics Co. LTD. and Samsung Electronics America, Inc., 2:17-cv-02794-JLL-JAD (D.N.J.)		

6. Organizational Victims and Bankruptcy Cases. Provide any information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees). Fed. Cir. R. 47.4(a)(6).

☑ None/Not Applicable ☐ Additional pages attached

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STATEMENT OF COUNSEL

Based on my professional judgment, I believe the Panel's decision:

(1) is contrary to the claim construction precedents of this Court, including *Kaken Pharmaceutical Co. v. Iancu*, 952 F.3d 1346 (Fed. Cir. 2020); *Personalized Media Communications, LLC v. Apple Inc.*, 952 F.3d 1336 (Fed. Cir. 2020); *TF3 Ltd. v. Tre Milano, LLC*, 894 F.3d 1366 (Fed. Cir. 2018); *In re Power Integrations, Inc.*, 884 F.3d 1370 (Fed. Cir. 2018); *MasterMine Software, Inc. v. Microsoft Corp.*, 874 F.3d 1307 (Fed. Cir. 2017); *In re Smith International, Inc.*, 871 F.3d 1375 (Fed. Cir. 2017); *Liberty Ammunition, Inc. v. United States*, 835 F.3d 1388 (Fed. Cir. 2016); *In re Varma,* 816 F.3d 1352 (Fed. Cir. 2016); *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292 (Fed. Cir. 2015); *Fenner Invs., Ltd. v. Cellco Partnership*, 778 F.3d 1320 (Fed. Cir. 2015); *Harari v. Lee*, 656 F.3d 1331 (Fed. Cir. 2011); *Dippin' Dots, Inc. v. Mosey*, 476 F.3d 1337 (Fed. Cir. 2007); *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945 (Fed. Cir. 2006); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); *Astrazeneca AB v. Mutual Pharmaceutical Co.*, 384 F.3d 1333 (Fed. Cir. 2004); *Middleton, Inc. v. Minnesota Mining & Manufacturing Co.*, 311 F.3d 1384 (Fed. Cir. 2002); and *Brown v. 3M*, 265 F.3d 1349 (Fed. Cir. 2001); and

(2) raises a question of exceptional importance—i.e., whether the introduction of extra-record evidence and new arguments by the Panel violated

KEYnetik's due process rights and this Court's and the Supreme Court's precedents concerning the scope of appellate review—contrary to precedents found in: *Freytag v. Commissioner*, 501 U.S. 868 (1991); *Camp v. Pitts*, 411 U.S. 138 (1973); *In re Google Technology Holdings LLC*, 980 F.3d 858, 863 (Fed. Cir. 2020); *Rovalma, S.A. v. Bohler-Edelstahl GmbH & Co. KG*, 856 F.3d 1019 (Fed. Cir. 2017); *Apple Inc. v. Samsung Electronics Co., Ltd.*, 839 F.3d 1034 (Fed. Cir. 2016) (*en banc*); and *In re Gartside*, 203 F.3d 1305 (Fed. Cir. 2000).

Dated: February 26, 2021

Respectfully submitted,

/s/ Edward F. Behm, Jr.

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INTRODUCTION AND POINTS OF LAW OVERLOOKED OR MISUNDERSTOOD BY THE MAJORITY

The Majority misapprehended or overlooked Federal Circuit authority governing the interpretation of patent claims when it affirmed the Patent Trial and Appeal Board's (the "Board's") constructions of U.S. Patent No. 8,370,106 (the "'106 Patent"). Panel rehearing or *en banc* review is necessary to ensure uniformity in claim construction jurisprudence and to resolve questions of exceptional importance. Indeed, Judge O'Malley's thorough and well-reasoned dissent highlights the Majority's misapplication of the broadest reasonable interpretation ("BRI") standard, which "infected the obviousness analysis across all claims." Dissent at 2. The BRI of claims must be consistent with the specification—the correct analysis does not ask "'whether the specification proscribes or precludes some broad reading of the claim term adopted by the examiner.'" *Id.* at 7 (quoting *In re Smith Int'l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017) (emphasis in original))[1]. In adopting the Board's constructions of the Orientation Detector[2] and the Sequence Limitations, [3] the Majority deviated from the BRI standard, as well as this Court's other fundamental claim construction precedents.

[1] All emphasis added unless otherwise indicated.
[2] Appx183, at 12:43–44; Appx184, at 13:37–38.
[3] Appx183, at 12:45–48.

The Majority also ignored this Court's precedents when it proffered its own arguments and evidence that were never raised by the parties. Consequently, the Majority deprived KEYnetik of a rebuttal opportunity in violation of its due process rights. The Majority's reliance on its new arguments and extra-record evidence departs from this Court's precedent that "review of the Board's decision is confined to the 'four corners' of that record." *Smartdoor Holdings, Inc. v. Edmit Indus., Inc.*, 707 F. App'x 705, 708 (Fed. Cir. 2017) (quoting *In re Gartside*, 203 F.3d 1305, 1314 (Fed. Cir. 2000) (citations omitted)). This issue is of exceptional importance and review is necessary to ensure proper procedural protections.

BACKGROUND

The Board found the claims of the '106 Patent unpatentable as obvious—a decision that stemmed from erroneous constructions of the Orientation Detector and Sequence Limitations. Appx10–85. Although the Majority affirmed the Board's constructions, the Dissent correctly recognized they were legally erroneous. Maj. at 16; Dissent at 11.

In addressing the Orientation Detector Limitation, which recites "detect orientation towards gravity for each slow motion phase," the Majority misapplied this Court's BRI standard. The Majority relied primarily on Samsung's expert testimony at the expense of the intrinsic record. Maj. at 7–8. As the Dissent confirmed, this Court has recognized "that 'conclusory, unsupported assertions by

experts as to the definition of a claim term are not useful to a court.'" Dissent at 7 (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005)). Although the Majority acknowledged that Figure 3 shows the detection of a single orientation for each slow motion phase, it agreed with the Board that "the specification provides no basis to limit the claims" to Figure 3. Maj. at 7. Contrary to the BRI standard, however, the Majority pointed to no teaching that is consistent with multiple orientations being detected during a single phase. *Id.* The Majority further ignored this Court's claim construction precedents in concluding that the term "orientation" ("in singular form without any article") does not support KEYnetik's construction that only a single orientation is detected for a slow motion phase. *Id*.

The Majority also strayed from the ordinary definition of "each" in construing the Orientation Detector Limitation. *Id*. at 7–8. As the Dissent recognized, "[t]he Board's construction, which the majority again accepts, is inconsistent with the intrinsic record and defies common English usage of the word 'each.'" Dissent at 8. Indeed, the Majority ignored record evidence (including multiple dictionaries) and, as the Dissent highlighted, gave no weight to a Federal Circuit decision construing "each" consistently with KEYnetik's interpretation—one which requires orientation be detected for two or more slow motion phases. *Id.* at 7–8 (citing *Alcohol Monitoring Sys., Inc. v. Actsoft, Inc.*, 414 F. App'x 294,

299–300 (Fed. Cir. 2011)); *see also* Appx2778 ("Each" is "used to refer to every one of two or more people or things. . . "). Instead, the Majority gave unwarranted deference to the Board's construction, which was based on a grammatically incorrect hypothetical and conclusory expert testimony. Maj. at 8–9. To buttress the Board's unsupported finding, the Majority introduced and relied on improper extra-record dictionary evidence, leaving KEYnetik with no rebuttal opportunity. *Id.*

Likewise, the Majority ignored well-established claim construction principles in affirming the Board's construction of the Sequence Limitation (i.e., "maintain a sequence of the detected orientations towards gravity, each orientation in the sequence being limited to a slow motion phase"). The Majority agreed that the limitation "does not preclude two or more orientations in the sequence being limited to *the same* slow motion phase." *Id*. at 9 (emphasis in original). As the Dissent recognized, however, the Majority disregarded this Court's precedent because limiting the sequence to the same slow motion phase (i.e., not requiring intervening fast motion) eviscerated the invention's fundamental feature—a fault-resilient gesture recognition technique that works by assessing two or more orientations separated by fast motion. Dissent at 9–10.

Moreover, the Majority "agree[d] with the Board that . . . 'claim 1 allows continuously maintaining orientations during both fast motion and slow motion

phases, provided a sequence of orientations *is* maintained (i.e., merely consecutive orientations corresponding to slow motions) that is limited to slow motion phases.'" Maj. at 11 (quoting J.A. 42) (italics in original). In doing so, the Majority read "being limited to a slow motion phase" out of the limitation, which as the Dissent confirmed, violated this Court's precedent. Dissent at 9. The Majority's interpretation is also based on a misunderstanding of the prosecution history, which disclaimed maintaining sequences that include both fast and slow motion orientations. Maj. at 11–12. At the very least, the Majority improperly discounted this Court's precedent that the prosecution history—even if not amounting to disavowal—informs claim construction. Here, the Patentee's amendments and remarks during prosecution are consistent with KEYnetik's interpretation of the Sequence Limitation, and contradict the construction adopted by the Majority.

ARGUMENT

I. Panel Rehearing Or *En Banc* Review Is Necessary.

Panel rehearing or *en banc* review is necessary to ensure uniformity in the law because the Majority disregarded this Court's well-established claim construction principles in affirming the Board's constructions, which are inconsistent with the ordinary meanings of the disputed limitations and divorced from the intrinsic record. Indeed, the Majority failed to reconcile that the Board's constructions eviscerated the key feature of the invention, as confirmed by the

Dissent. Equally problematic, to support the Board's erroneous constructions, the Majority required extra-record evidence, undermining KEYnetik's due process rights and ignoring fundamental precedents limiting appellate review to the record.

A. The Majority Overlooked Fundamental Claim Construction Principles.

This Court has held that the BRI standard requires claims be given their ordinary and customary meanings in light of the specification as understood by a person of ordinary skill in the art at the time of the invention (a "POSITA"). A proper construction "cannot be divorced from the specification and the record evidence and must be consistent with the one that those skilled in the art would reach." *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297–98 (Fed. Cir. 2015) (quoting *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010) (citations omitted)); *Smith*, 871 F.3d at 1382. Indeed, this Court has expressly rejected the claim construction analysis applied by the Majority and the Board. *See Smith*, 871 F.3d at 1383 ("[F]ollowing [the Board's] logic, any description short of an express definition or disclaimer in the specification would result in an adoption of a broadest **possible** interpretation of a claim term, irrespective of repeated and consistent descriptions in the specification that indicate otherwise."); *TF3 Ltd. v. Tre Milano, LLC*, 894 F.3d 1366, 1372–73 (Fed. Cir. 2018) ("it is not reasonable to read the claims more broadly than the description in the specification").

As recognized by the Dissent, the Majority overlooked many of this Court's longstanding claim construction principles. Specifically, in affirming the Board's construction of the Orientation Detector Limitation, the Majority's decision ignored this Court's precedent that:

(1) claim terms are construed consistently with their plain and ordinary meanings. *See Brown v. 3M*, 265 F.3d 1349, 1352 (Fed. Cir. 2001) (affirming the plain reading of a non-technical term where there was "no basis in the specification or prosecution history" to the contrary); *Phillips*, 415 F.3d at 1312–13 ("the words of a claim 'are generally given their ordinary and customary meaning'" (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996))). Here, the term, "orientation" (singular) requires a single orientation—not multiple orientations—be detected for each phase classified as slow; and the term "each" requires "two or more"—not "one or more"—slow motion phases). *See* Appeal at 27–29; Reply at 2–6.[4] Indeed, the Dissent agreed that "nothing in the claim language itself permits detection of multiple orientations during a single slow motion phase." Dissent at 3.

(2) "the most important indicator of the meaning of [a claim term] is its usage and context within the claim itself." *Middleton, Inc. v. Minn. Mining & Mfg. Co.*, 311 F.3d 1384, 1387 (Fed. Cir. 2002); *see also TF3*, 894 F.3d at 1372 ("'The

[4] Appellant's Appeal (Dkt. 11) ("Appeal"), Appellant's Reply Brief (Dkt. 29) ("Reply").

terms used in patent claims are not construed in the abstract, but in the context in which the term was presented and used by the patentee. . . .'" (quoting *Fenner Invs., Ltd. v. Cellco P'ship*, 778 F.3d 1320, 1322–23 (Fed. Cir. 2015))). This Court has held that a patentee's use of both singular and plural language in a claim suggests the singular use carried only a singular meaning. *Harari v. Lee*, 656 F.3d 1331, 1341 (Fed. Cir. 2011). Here, as confirmed by the Dissent (at 3), the subsequent limitation's use of the term "orientations" (plural) indicates that "orientation" carries a singular meaning. *See also* Appeal at 27–29; Reply at 2–6.

(3) claims must be interpreted consistently with the specification. *Smith*, 871 F.3d at 1382–83; *see also In re Power Integrations, Inc.*, 884 F.3d 1370, 1377 (Fed. Cir. 2018) ("Although the '876 patent does not expressly exclude a circuit ... such an arrangement is inconsistent with both the specification . . . and the plain claim language."). As the Dissent explained, the "'patentee's choice of preferred embodiments can shed light on the intended scope of the claims.'" Dissent at 4 (quoting *Astrazeneca AB v. Mut. Pharm. Co.*, 384 F.3d 1333, 1340 (Fed. Cir. 2004)). Here, the Majority disregarded disclosures in the specification that even the Board agreed "may 'support' Patent Owner's construction" (Dissent at 4; Appx40) and pointed to nothing in the specification consistent with the affirmed construction. Instead, as the Dissent recognized:

a) the specification only supports the detection of a single orientation for each slow motion phase. *See* Dissent at 4 ("But even the majority recognizes that Figure 3 . . . shows detection of a single orientation for each slow motion phase." (citing Maj. at 7)); *id.* at 6 ("on its face, Figure 2 shows one possible 'orientation event'" (quoting '106 Patent at 2: 49–50)); Appeal at 30–31, 36–37; and

b) the specification only includes embodiments with "two or more" slow motion phases. *See* Dissent at 7 ("without any support in the intrinsic record, the Board found that the orientation detector limitation's use of the word 'each' . . . can refer to 'one or more' slow motion phases");Appeal at 41; Reply at 20.

Likewise, in affirming the Board's erroneous construction of the Sequence Limitation, the Majority ignored this Court's claim construction tenets, including that:

(1) a construction that renders a claim limitation meaningless is rarely correct. *See Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 951 (Fed. Cir. 2006) (holding that a construction that reads out limitations is "contrary to the principle that claim language should not [be] treated as meaningless"). As the Dissent acknowledged, "the Board's construction is inconsistent with the intrinsic record and improperly reads 'being limited to a slow motion phase' out of the sequence limitation." Dissent at 9; *see also* Appeal at 45–47; Reply at 26.

(2) claims must be interpreted consistently with the specification. *Smith*, 871 F.3d at 1382; *see also Power Integrations*, 884 F.3d at 1375–77; *TF3*, 894 F.3d at 1372–73. Contrary to the Majority's decision, the specification does not teach a "sequence" of orientations pertaining to the same slow motion phase (Maj. at 9–12), but rather, as the Dissent recognized, "the claim requires the detection of two or more slow motion phases, which necessarily requires an intermittent fast motion phase" and "[t]he specification confirms this interpretation." Dissent at 9; Reply at 27–28.

(3) "[a] patent's statement of the described invention's purpose informs the proper construction of claim terms," including when identifying the BRI. *Kaken Pharma. Co. v. Iancu*, 952 F.3d 1346, 1352 (Fed. Cir. 2020); *see also Power Integrations*, 884 F.3d at 1377 (finding construction that included a "bulky" component unreasonable because the patent "strives to eliminate unnecessary components and create a more compact circuit"). As highlighted by the Dissent, the Majority's decision "would eviscerate a key feature of the claimed invention" because it permits a series of consecutive orientation signals corresponding to a single orientation (without any intervening fast motion) and therefore, cannot confirm that the sequence is the product of intentional user action (i.e., is not fault resilient) as described in the specification. *See* Dissent at 9–10 ("[T]he Board's

construction is both inconsistent with the claim language and the objective of the claimed invention."); Appeal at 49–51; Reply at 27.

(4) the prosecution history informs claim construction even where the statements do not rise to disavowal. *See Personalized Media Commc'ns, LLC v. Apple*, 952 F.3d 1336, 1340 (Fed. Cir. 2020) ("[E]ven where 'prosecution history statements do not rise to the level of unmistakable disavowal, they do inform the claim construction.'" (quoting *Shire Dev., LLC v. Watson Pharm., Inc.*, 787 F.3d 1359, 1366 (Fed. Cir. 2015))); *MasterMine Software, Inc. v. Microsoft Corp.*, 874 F.3d 1307, 1312 (Fed. Cir. 2017). The Majority improperly discounted that the claim limitation "being limited to a slow motion phase" was added to distinguish the invention from prior art that permitted maintaining sequences based on all motion phases. Maj. at 11–12. Even if not disavowal, the prosecution history supports KEYnetik's construction and is inconsistent with the affirmed construction, which permits sequences with fast motion orientations. Appeal at 47–49; Reply at 28; Dissent at 9.

To avoid confusion in the law and correct the Majority's conflicts with this Court's claim construction precedents, rehearing or *en banc* review is necessary.

B. The Majority Improperly Relied On New Arguments And Extra-Record Evidence.

The Majority overlooked this Court's precedents by introducing and relying on new arguments and extra-record evidence to support the Board's claim

constructions, depriving KEYnetik of due process. First, the Majority introduced a new dictionary definition for "each" to bolster the deficient record. *See* Maj. at 8 (defining "each" as "to give the same sense in relation to individual members of an identifiable set as all or both before a plural noun give in relation to the aggregate" (citing *Oxford English Dictionary*)). The Majority was forced to rely on this extra-record evidence because the Board failed to cite record evidence (with the exception of conclusory expert testimony and a hypothetical that the Dissent agreed was "grammatically suspect"[5]) that "each" can mean "one or more" in the context of the claims. Even with the Majority's new definition, it required another new dictionary definition to explain that the word "set" (as used in its definition of "each") need "not consist of multiple things and may consist of nothing, i.e., an 'empty set.'" Maj. at 8–9.

The Majority's reliance on new definitions violated this Court's precedents because KEYnetik was given no opportunity (either at briefing or oral argument) for rebuttal. *See*, *e.g.*, *Rovalma, S.A. v. Bohler-Edelstahl GmbH & Co. KG*, 856 F.3d 1019, 1029 (Fed. Cir. 2017) (holding that the patentee must be given an opportunity "'to submit rebuttal evidence, and to conduct such cross-examination as may be required for a full and true disclosure of the facts'" (quoting 5 U.S.C. §§ 554, 556)); *In re Google Tech. Holdings LLC*, 980 F.3d 858, 864 (Fed. Cir. 2020)

[5] Dissent at 8.

("In sum: we are, as an appellate court, charged in this instance with *reviewing* the Board's conclusions. 'The very word review presupposes that a litigant's arguments have been raised and considered in the tribunal of first instance.'" (quoting *Freytag v. Comm'r*, 501 U.S. 868, 895 (1991) (quotation marks omitted) (emphasis in original))); *Camp v. Pitts*, 411 U.S. 138, 142 (1973) ("[T]he focal point for judicial review should be the administrative record already in existence, not some new record made initially in the reviewing court."). Indeed, this Court sitting *en banc* has prohibited supplementing the record with extrinsic dictionary definitions in determining the plain meanings of claim terms. *See Apple Inc. v. Samsung Electronics Co., Ltd.*, 839 F.3d 1034, 1039 (Fed. Cir. 2016) ("[T]he appellate court cannot rely on extra-record extrinsic evidence in the first instance or make factual findings about what such extrinsic evidence suggests about the plain meaning of a claim term in the art . . . .").

Importantly, this Court has also held that "[t]he fact that [a claim term] has multiple dictionary meanings does not mean that all of these meanings are reasonable interpretations in light of [the] specification." *PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 747, 752 (Fed. Cir. 2016). Because the Majority introduced dictionary evidence for the first time in its Decision, KEYnetik could not explain—let alone offer a POSITA's testimony—that the new definitions are unreasonable in the context of the patent. Indeed, a POSITA would

understand that the new definitions are unreasonable. The definition of "set" requires "[a]n assemblage of distinct entities" (plural), and only refers to an "empty set" as a mathematical concept, stating "[t]here is only one empty set. All empty sets are equal." Maj. at 8 (quoting *Set, Oxford English Disctionary,* https://www.oed.com/view/Entry/176794 (last visited Feb. 19, 2021)). There is, however, no record evidence that a POSITA would understand "detect orientation for each slow motion phase" as referring to the mathematical concept of "empty sets," such that the limitation could permit the detection of orientation for a set of nothing (i.e., no slow motion phases). And such a definition is nonsensical in context because the claims require a "sequence of the detected orientations." If "each" can refer to an "empty set," then there need not be any slow motion phase, making a sequence of orientations for such phases impossible.

The Majority also relied on its own claim construction argument that was not raised below, in the parties' briefing, or at oral argument. Specifically, in buttressing the Board's construction of the Sequence Limitation, the Majority explained that: "Claims 1 and 12 use the signal 'comprising,' . . . 'which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.'" Maj. at 11. The Majority used this "comprising" argument to support the Board's finding that "'claim 1 allows continuously maintaining orientations during both fast motion and slow motion

phases, provided a sequence of orientations *is* maintained . . . that is limited to slow motion phases.'" *Id*. (emphasis in original).

Again, KEYnetik never had a rebuttal opportunity. While it is true that the term "comprising" can create a presumption that a claim may include additional unclaimed elements, it does not permit broadening of existing claim limitations. *Liberty Ammunition, Inc. v. U.S.*, 835 F.3d 1388, 1399 (Fed. Cir. 2016). This Court has explicitly "warned against using terms such as 'comprising,' or 'including,' as 'weasel word[s] with which to abrogate claim limitations.'" *Id*. (quoting *Dippin' Dots, Inc. v. Mosey*, 476 F.3d 1337, 1343 (Fed. Cir. 2007) (citations omitted). It is improper to broaden claim scope by adding another so-called "limitation" that, in effect, renders an existing limitation a nullity. *See In re Varma,* 816 F.3d 1352, 1362 (Fed. Cir. 2016) (holding the "term 'comprising'…does not render each limitation or phrase within the claim open-ended").

This is precisely the situation here. By allowing the maintenance of orientations detected during fast motion—so long as a subset of maintained orientations are limited to slow motion phase (as in the Board's hypothetical)—the Majority rendered the term "being limited to a slow motion phase" a nullity. That is, the Majority's ruling permits the addition of new claim limitations such that the scope can encompass a larger sequence that is not limited to slow motion phases. Moreover, as recognized by the Dissent, the Majority's position ignored that "the

claim requires the detection of two or more slow motion phases, which necessarily requires an intermittent fast motion phase" and "[t]he specification confirms this interpretation." Dissent at 9. Contrary to this express teaching of the patent, the Board's hypothetical (which the Majority accepted) does not require an intermittent fast motion phase.

In short, rehearing or *en banc* review is necessary to resolve the proper procedural protections afforded on appeal, which is of exceptional importance to all parties.

CONCLUSION

KEYnetik respectfully asserts that rehearing or *en banc* review is warranted and necessary.

Dated: February 26, 2021

Respectfully submitted,

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Counsel for Appellant, Keynetik, Inc.

ADDENDUM

NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

KEYNETIK, INC.,
Appellant

v.

SAMSUNG ELECTRONICS CO., LTD.,
Appellee

2020-1271

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2018-00986.

Decided: January 27, 2021

MARK W. HALDERMAN, Armstrong Teasdale, LLP, Philadelphia, PA, argued for appellant. Also represented by EDWARD F. BEHM.

NAVEEN MODI, Paul Hastings LLP, Washington, DC, argued for appellee. Also represented by CHETAN BANSAL, STEPHEN BLAKE KINNAIRD, JOSEPH PALYS.

Before DYK, CLEVENGER, and O'MALLEY, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* DYK.

Opinion concurring-in-part and dissenting-in-part filed by *Circuit Judge* O'MALLEY.

DYK, *Circuit Judge*.

KEYnetik, Inc. ("KEYnetik") appeals from a final decision of the Patent Trial and Appeal Board ("Board") holding that claims 1–20 of U.S. Patent No. 8,370,106 ("the '106 patent") are unpatentable as obvious. We *affirm* the Board's claim construction and obviousness determination as to claims 1–3, 5–6, 8–14, 16–17, and 19–20. We also *affirm* the Board's finding of a motivation to combine as to dependent claims 4, 7, 15, and 18. However, we *vacate* the Board's obviousness determination as to claims 4, 7, 15, and 18 and *remand* for the Board to make a determination of reasonable expectation of success.

BACKGROUND

KEYnetik is the assignee of the '106 patent. The '106 patent discloses an invention that "comprises a system, method, and article for processing motion." '106 patent, col. 1 ll. 54–55. The system includes a "processor," which "acquire[s] movement data" from a "motion sensor," *id.* col. 1 ll. 56–61, and "detectors," which can "detect[] motion such as movement and rest" and "orientation towards gravity from a rest position," *id.* col. 1 ll. 61–67. The system also includes an "inference state machine," which "maintains a sequence of the detected motion conditions, produces a profile description for the sequence of the detected motion, and outputs an event corresponding to the profile description." *Id.* col. 2 ll. 2–5.

An exemplary embodiment of the claimed invention, shown in Figure 3 of the '106 patent below, allows the user to answer an incoming call to a handheld phone by moving the phone through a sequence of "five states" or steps. *Id.* col. 6 l. 60–col. 7 l. 1.

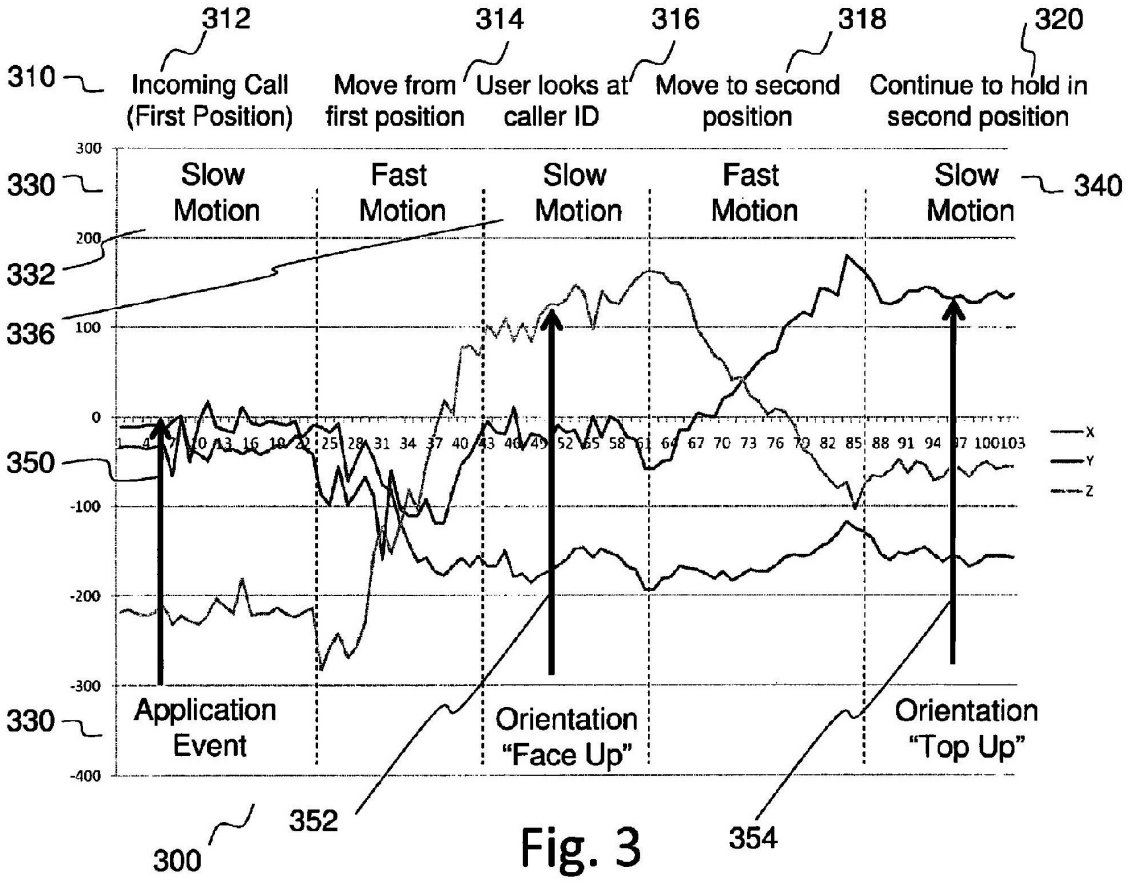

Fig. 3

As shown in Figure 3, a user first receives "an incoming call" (312), which is described as involving "Slow Motion"; the user then "mov[es] the handheld [phone] from [its] prior position" (314), described as "Fast Motion"; the user "look[s] at the visual display of the handheld [phone]" (316), described as involving "Slow Motion" and "Orientation 'Face Up'"; the user "mov[es] the handheld [phone] to a second position [in] response to the received call" (318), described as "Fast Motion"; and the user "continu[es] to hold the handheld [phone] in the second position" (320),

described as involving "Slow Motion" and "Orientation 'Top Up.'" *Id.* Fig. 3 & col. 6 l. 56–col. 7 l. 1. The system recognizes this sequence as a "Motion Profile," which results in a command to "answer . . . the call for the handheld device." *Id.* col. 8 ll. 2–12.

Independent claim 1 of the '106 patent recites:

> 1. A motion based input system comprising:
>
> a processor in communication with a memory;
>
> a motion sensor in communication with the processor;
>
> the processor to acquire movement data from the motion sensor;
>
> a manager configured to execute on the processor and to control motion and orientation detectors, including:
>
> a motion detector to detect motion, including identification of a fast motion phase and a slow motion phase, wherein the motion is classified as slow and fast based upon comparing a magnitude of a motion vector with a magnitude of gravity; and
>
> an orientation detector to detect orientation towards gravity for each slow motion phase; and
>
> an inference state machine in communication with the manager configured to: maintain a sequence of the detected orientations towards gravity, each orientation in the sequence being limited to a slow motion phase;
>
> produce a profile description for the sequence of the detected orientations; and
>
> output an event corresponding to the profile description.

Id. col. 12 ll. 31–51. Independent claim 12 claims "[a]n article for processing motion data" with similar limitations as claim 1. *Id.* col. 13 l. 25–col. 14 l. 7. Dependent claims 4, 7, 15, and 18 include various other limitations. KEYnetik does not argue that these limitations are pertinent to the patentability of the dependent claims.

Samsung Electronics Co., Ltd. ("Samsung") filed a petition for inter partes review of claims 1–20 of the '106 patent. The Board instituted inter partes review and found that all of the challenged claims would have been obvious to a person of ordinary skill in the art. KEYnetik appeals the Board's construction of certain claim terms and the ultimate obviousness determination. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A) and 35 U.S.C. § 141(c).

DISCUSSION

In reviewing the Board's claim construction, "[w]e review underlying factual determinations concerning extrinsic evidence for substantial evidence and the ultimate construction of the claim de novo." *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1280 (Fed. Cir. 2015). "If, as here, the [inter partes review] stems from a petition filed before November 13, 2018, the claims are given the 'broadest reasonable interpretation' consistent with the specification." *Game & Tech. Co. v. Wargaming Grp. Ltd.*, 942 F.3d 1343, 1351 (Fed. Cir. 2019); *see also Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016); *Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board*, 83 Fed. Reg. 51340 (United States Patent and Trademark Office, Oct. 11, 2018).

The Board's ultimate determination on obviousness is a legal determination that we review de novo, although we review any underlying factual findings for substantial

evidence. *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015).[1]

I

KEYnetik challenges the Board's construction of two limitations that appear in both claim 1 and claim 12, the only independent claims of the '106 patent. These arguments are largely repeated in the dissent.

A

We first address the orientation detector limitation. This limitation is "an orientation detector to detect orientation towards gravity for each slow motion phase" (the "orientation detector limitation"). '106 patent, col. 12 ll. 43–44 (claim 1); *see also id.* col. 13 ll. 37–38 (claim 12). Under the Board's construction, this limitation "encompasses multiple orientation detections for a given slow motion phase and does not preclude orientation detection for fast motions phases." J.A. 26–27.[2]

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[1] Congress amended 35 U.S.C. § 103 when it enacted the Leahy–Smith America Invents Act ("AIA"). Pub. L. No. 112-29, § 3(c), 125 Stat. 284, 287 (2011). Because the application that led to the '106 patent has an effective filing date before March 16, 2013, the pre-AIA version applies. *Id.* § 3(n)(1), 125 Stat. at 293; *see In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1329 n.2 (Fed. Cir. 2016).

[2] Claim 12 contains an additional limitation not found in claim 1: "instructions to detect orientation towards gravity for each slow motion phase and *absent detecting orientation towards gravity during fast motion phases*, wherein the motion is classified as slow and fast based upon comparing a magnitude of a motion vector with a magnitude of gravity." '106 patent, col. 13 ll. 37–42 (emphasis added). The Board construed "absent detecting orientation towards gravity during fast motion phases" to

First, KEYnetik and the dissent argue that "the plain claim language does not permit multiple orientations to be detected during a single slow phase," relying on the use of the term "for," the use of the term "orientation" in the singular without any article in the reference, and the use of the term "orientation condition" in claim 12. Appellant's Br. 27–32. As the Board found, none of these linguistic arguments supports KEYnetik's position, nor does the specification. The use of the word "orientation" without an article does not suggest that the reference is limited to a single orientation. Though KEYnetik notes that examples in the specification, such as Figure 3, show one orientation detected during slow motion phases, as the Board concluded, the specification provides no basis to limit the claims to those examples, and the claim language under the broadest reasonable interpretation standard is not so limited.

The Board credited Samsung's expert testimony that "the orientation detector limitation does not preclude multiple detected orientations for each slow motion phase because it is consistent with the Specification." J.A. 27–28. By contrast, the Board found that KEYnetik's expert testimony "[did] not include a persuasive explanation" in support of KEYnetik's position that "the word 'for' would inform a POSITA that 'orientation' is detected for the phase itself . . . not merely an orientation during the phase." *Id.* at 27 (internal quotation marks omitted). The dissent argues that the word "for" suggests "an orientation representative of the condition of the motion phase," Dissenting Op. 3 (quoting Appellant's Br. 27), but as the Board noted, the word "for" has broader definitions that fall within the broadest reasonable interpretation of this

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mean "without detecting orientation towards gravity for fast motion." J.A. 47. KEYnetik does not appeal this construction.

limitation. *See* J.A. 27, 3013 ("Definition of For by Merriam-Webster" includes "used as a function word to indicate the object or recipient of a perception, desire, or activity" and "with respect to").

KEYnetik and the dissent argue that the Board erred for another reason. KEYnetik contends that "[t]he plain English definition of the word 'each' would inform a POSITA that orientation must be detected for two or more slow motion phases." Appellant's Br. 40 (emphasis omitted). On this point, the Board credited Samsung's expert testimony that "the orientation detector limitation could be satisfied by only one slow motion phase because, in the context of the claims, 'each' can refer to one or more." J.A. 32. The Board also credited Samsung's expert testimony that "[a]pplying the plain and ordinary meaning, this claim language does not require there to be more than one slow motion phase" and that "if there was only one slow motion phase and orientation was detected for that one slow motion phase; then the claim is satisfied because an orientation is detected for 'each' slow motion phase." *Id.* (alteration in original).

The Board's construction is consistent with ordinary English usage of the term "each." "Each" indicates there is a set with potentially multiple members, and that each of these potential members of the set has defined characteristics. This is made clear by the more general definitions in the Oxford English Dictionary. The word "each" used as an adjective can mean "to give the same sense in relation to individual members of an identifiable set as all or both before a plural noun give in relation to the aggregate." *Each*, *Oxford English Dictionary*, https://www.oed.com/view/Entry/58924 (last visited Jan. 26, 2021).

The word "set" can mean "[a]n assemblage of distinct entities, either individually specified or which satisfy certain specified conditions." *Set*, *Oxford English Dictionary*,

https://www.oed.com/view/Entry/176794 (last visited Jan. 26, 2021). A "set" need not consist of multiple things and may consist of nothing, i.e., an "empty set." *Id.*[3]

Considering the intrinsic and extrinsic evidence, we see no error in the Board's construction of the orientation detector limitation.

B

We next address the sequence limitation. The sequence limitation is "an inference state machine . . . configured to: maintain a sequence of the detected orientations towards gravity, each orientation in the sequence being limited to a slow motion phase" ("the sequence limitation"). '106 patent, col. 12 ll. 45–48 (claim 1); *see also id.* col. 14 ll. 1–3 (claim 12). Under the Board's construction, this limitation "does not preclude two or more orientations in the sequence being limited to *the same* slow motion phase," J.A. 34–35, and "the inference state machine maintains the sequence for slow motion and does not preclude maintaining orientations for both slow motion and fast motion, provided at least consecutive orientations correspond to a slow motion phase," *id.* at 47.

KEYnetik and the dissent argue that "[t]he broadest reasonable interpretation of 'being limited to a slow motion phase' of the Sequence Limitation requires 'precluding

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[3] KEYnetik relies on *Alcohol Monitoring Sys., Inc. v. Actsoft, Inc.*, 414 F. App'x 294 (Fed. Cir. 2011). In that case we considered a claim limitation that required "transmitting each of" certain "measurement results." *Id.* at 296.

We held that the limitation as properly construed "require[d] transmitting every measurement result . . . in a way that the measurement results are 'separately identifiable.'" *Id.* at 300 (emphases omitted). Our holding turned on the definition of "each" meaning "distinct" rather than meaning one of a plurality. *Id.* at 299–300.

orientations detected during fast motion' from being maintained in the claimed sequence." Appellant's Br. 45 (emphases omitted). KEYnetik argues that "the claimed 'motion based input system' (claim 1) or 'article' (claim 12) must itself be configured to limit the maintained sequence to only those orientations detected during a slow motion phase." *Id.* (emphases omitted).

The Board disagreed, finding that "although the claim recites that the inference state machine is configured to *maintain* the sequence of detected orientations, the plain meaning of 'each orientation in the sequence being limited to a slow motion phase' does not require the inference state machine to have orchestrated the limiting of the orientations to those corresponding to slow motion." J.A. 37. In other words, the sequence limitation "does not require the inference state machine to actively limit the maintained sequence to slow motion phases." *Id.* at 57.

The Board provided an example of the following "long sequence of detected orientations that has been maintained by a hypothetical inference state machine, together with the motion classification during which the orientation was detected for each." *Id.* at 35–36.

Sequence No.	1	2	3	4
Motion	Fast	Slow	Slow	Fast
Orientation	*	$Down^{T1}$	$Down^{T2}$	*

The Board noted that "[w]ithin the larger sequence 1–4, consecutive sequence numbers 2-3 constitute a 'sequence' of orientations," where the two orientations are each limited to a slow motion phase. *Id.* at 36.

We see no reason why a system that can maintain a sequence of only 2–3 cannot be within the claim limitation even though the sequence of 1–4 does not fall within the claim limitation. We agree with the Board that, under the broadest reasonable interpretation standard, "claim 1 allows continuously maintaining orientations during both fast motion and slow motion phases, provided a sequence of orientations *is* maintained [i.e., merely consecutive orientations corresponding to slow motions] that is limited to slow motion phases." J.A. 42 (alteration in original) (quoting *id.* at 332 (institution decision)). Claims 1 and 12 use the signal "comprising," '106 patent, col. 12 l. 31, col. 13 l. 26, "which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim." *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed. Cir. 1997).

KEYnetik contends that the Board's interpretation of the sequence limitation is inconsistent with the prosecution history. KEYnetik notes that "[d]uring prosecution, the examiner initially rejected the claims as obvious under *Huang* and *Marvit*," and "[i]n response, the Patentee amended the claims, including by adding 'each orientation in the sequence being limited to a slow motion phase' to the Sequence Limitation." Appellant's Br. 47 (emphasis omitted). The applicant stated in the prosecution history that "neither [*Marvit*] nor *Huang* teach the aspect pertaining to classifying motion into fast and slow motion phases and calculating orientation towards gravity only for the slow motion phases." J.A. 41 (alteration in original) (quoting J.A. 1081) (emphasis omitted). According to KEYnetik, the amendment was added "to distinguish [the] invention over both *Huang* and *Marvit*" because the "[e]vent profiles of *Marvit* and *Huang* are based on all motion phases and are not limited to orientations for slow motion phases." Appellant's Br. 47 (alteration in original) (quoting J.A. 1080–81). KEYnetik argues that this amendment "disclaimed maintaining sequences based on 'all motion phases.'" *Id.*

The Board was "not persuaded these statements amount to a clear disclaimer of claim scope such that the claims must be interpreted to mean orientation is detected and maintained for slow motion phases only." J.A. 41. The Board noted that the statement in the prosecution history used the term "calculating orientation," rather than either "detect[ing] orientation" or "maintain[ing] . . . orientations," as used in claim 1. J.A. 41 (alterations in original) (quoting '106 patent, col. 12 ll. 31–51).[4] The Board further noted that "the word 'only' does not appear in claim 1," *id.*, nor does it appear in claim 12, *see* '106 patent, col. 13 l. 24–col. 14 l. 7, thus suggesting that the sequence limitation in those claims does not prohibit detecting and maintaining (as opposed to calculating) orientations during fast motion phases.[5]

We see no error in the Board's construction of the sequence limitation.

II

KEYnetik next argues that the Board erred in finding a motivation to combine two of the prior art references,

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[4] The specification refers to the lack of calculating (or processing) orientation during fast motion phases in describing Figure 2 of the '106 patent, noting that "if a fast motion is detected . . . , the motion data is not communicated (and therefore not shown) to the orientation detector . . . for processing." '106 patent, col. 6 ll. 50–52.

[5] By contrast, claim 4, which depends from claim 1, recites "instructions to avoid detecting orientation during a fast motion condition." '106 patent, col. 12 ll. 61–63. Claim 15, which depends from claim 12, recites "instructions to avoid detecting orientation during a fast motion condition." *Id.* col. 14 ll. 17–18.

Linjama[6] and *Tosaki*,[7] which the Board relied on in concluding that claims 4, 7, 15, and 18 were invalid.[8]

Linjama provides "computer program products . . . to sense orientations or sequence of orientations, i.e. gestures, of mobile devices." J.A. 1208 ¶ 7. "The orientation or sequence of orientations control components and/or functions of the mobile device." *Id.* In one embodiment of *Linjama*, a "mobile terminal" may comprise "one or more motion sensors" that "are configured to determine whether the mobile terminal is moving." J.A. 1211 ¶ 52. For example, the motion sensor may determine "that the mobile terminal is substantially stationary," and an "orientation sensor" may signal "that the mobile terminal is in a downward orientation." *Id.* "This combination of substantially stationary and downward orientation may correspond to a predefined gesture," which is recognized by a "gesture detector." *Id.* The gesture detector then sends a "control signal" that "correspond[s] to inactivating the audible sounds of the mobile terminal." *Id.*

Tosaki discloses "[a]n input device in which a player moves the whole of the input device and a game processing device for processing a simulated game." *Tosaki*, Abstract. "The input device includes detecting means for detecting

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[6] U.S. Patent Application Publication No. 2008/0229255 A1.

[7] U.S. Patent No. 6,312,335 B1.

[8] The Board relied on the combination of *Linjama*, *Tosaki*, and *Lehrman*, U.S. Patent No. 6,703,939 B2, as the sole grounds for finding claims 4, 7, 15, and 18 invalid as obvious. KEYnetik only contests the Board's finding of a motivation to combine and reasonable expectation of success as to *Linjama* and *Tosaki*. KEYnetik does not dispute motivation to combine or reasonable expectation of success as to the other combinations relied on by the Board in finding that the other claims were invalid as obvious.

physical quantities corresponding to the movement of the input device as a whole and converting the physical quantities to a detection signal which is output." *Id.* One embodiment of *Tosaki* is a game that "simulates fishing . . . to an input device and processing technology for [the] same which simulates a fishing rod . . . without the mechanical constraints associated with a fishing line." *Id.* col. 1 ll. 8–12.

The Board found that Samsung provided a motivation to combine *Linjama* and *Tosaki* such that *Linjama's* gesture detector would "only detect[] orientation during a slow motion phase" because such a modification "would have helped ensure that unintended movements (e.g., when the mobile terminal is not substantially stationary) do not result in identification of gestures that the user did not intend . . . [thus making] the combined system more user-friendly." J.A. 72 (alteration in original) (quoting J.A. 918). The Board also cited Samsung's additional rationale to modify *Linjama* in light of *Tosaki* "to save power." *Id.*; *see also id.* at 918. The Board noted that Samsung's "'power saving' motivation" was "unrebutted" and supported by "convincing" expert testimony. *Id.* at 75.

KEYnetik argues that "*Linjama* teaches detecting motion AND orientation at the same time, which *Tosaki* prohibits because it teaches detecting orientation OR movement, but never detects both motion and orientation," and therefore, the references teach away from each other. Appellant's Br. 61.

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). KEYnetik provides no rationale as to why a person of ordinary skill would be discouraged from applying *Tosaki* to *Linjama*, or that the combination of the two

would result in a direction divergent from that taken by the patentee. We see no error in the Board's determination of a motivation to combine.

III

KEYnetik argues that "the Board erred in concluding that [Samsung] met its burden in showing that a POSITA would . . . have a reasonable expectation of success in combining *Linjama* and *Tosaki*." Appellant's Br. 59. As discussed earlier, this alleged error affects only the Board's determination of invalidity only for claims 4, 7, 15, and 18. KEYnetik argues that the Board committed legal error in stating that "Petitioner has no such 'burden' to show that a POSITA would have had a reasonable expectation of success in combining the references." *Id.* (quoting J.A. 76). We agree with KEYnetik and remand to the Board to make a determination of reasonable expectation of success in combining *Linjama* and *Tosaki* with respect to claims 4, 7, 15, and 18.

"[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan 'would have had a reasonable expectation of success from doing so.'" *Arctic Cat Inc. v. Bombardier Recreational Prod. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1069 (Fed. Cir. 2012)). It was Samsung's "burden" to demonstrate "that the skilled artisan would have had a reasonable expectation of success" in combining references. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (quoting *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1360 (Fed. Cir. 2012)).

The Board erred in assigning no burden to Samsung and making no finding as to reasonable expectation of success in combining the contested references. We vacate the Board's final determination of obviousness as to claims 4, 7, 15, and 18, and remand to the Board to make a

determination of whether there was reasonable expectation of success in combining *Linjama* and *Tosaki*.

CONCLUSION

We affirm the Board's claim construction, determination of motivation to combine *Linjama* and *Tosaki*, and obviousness determination as to claims 1–3, 5–6, 8–14, 16–17, and 19–20. We vacate the portion of the Board's decision regarding reasonable expectation of success and its obviousness determination as to claims 4, 7, 15, and 18, and we remand for the Board to make a determination of reasonable expectation of success to combine *Linjama* and *Tosaki*.

AFFIRMED-IN-PART, VACATED-IN-PART, AND REMANDED

COSTS

No costs.

NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

KEYNETIK, INC.,
Appellant

v.

SAMSUNG ELECTRONICS CO., LTD.,
Appellee

2020-1271

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2018-00986.

O'MALLEY, *Circuit Judge*, concurring in part and dissenting in part.

The Board found all claims of the '106 patent unpatentable as obvious in view of the prior art. *Samsung Elecs. Co. v. KEYnetik, Inc.*, No. IPR2018-00986, 2019 Pat. App. LEXIS 13034 (P.T.A.B. Dec. 18, 2019) ("*Board Decision*"). I agree with the majority that the Board's analysis of claims 4, 7, 15, and 18 was fundamentally flawed because it applied an incorrect legal standard. As to those claims, the Board stated that Samsung had no burden to establish a reasonable expectation of success from combining the prior art references at issue. We have held the exact

opposite. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359,1367–68 (Fed. Cir. 2016) (It is the petitioner's "burden to demonstrate both 'that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.'"). The Board's error on this point could not be clearer.

Although I agree with the majority's decision to remand to correct that error, there are other errors which the majority lets stand. In particular, I believe the Board erred in construing the "orientation detector" limitation and the "sequence" limitation—terms that appear in both claim 1 and claim 12, the only independent claims at issue—and that those errors infected the obviousness analysis across all claims. In my view, the claim construction should be reversed and the Board's obviousness analysis, which relies on that construction, should be vacated and remanded to correct those errors as well.

I.

Claim 1 of the '106 patent recites "an orientation detector to detect orientation towards gravity for each slow motion phase" ("the orientation detector limitation"). '106 patent, col. 12, ll. 43–44.[1] The Board concluded that this limitation "does not preclude detecting orientation during fast motion phases and also does not preclude multiple orientations being detected during a slow motion phase, which could be the only slow motion phase." *Board Decision*, 2019 Pat. App. LEXIS 13034, at *24. In reaching this construction, the Board expressly found that: (1) "multiple orientations may be detected for a single 'phase' of slow

[1] Claim 12 includes similar language: "instructions to detect orientation towards gravity for each slow motion phase . . . ." '106 patent, at col. 13, ll. 37–39.

motion;" (2) "no disclosure in the Specification [] precludes the motion detector from continuously providing accelerator data to the orientation detector during a single period of slow motion;" and (3) the "orientation detector limitation" "does not preclude only one slow motion phase" because the word "each" in the phrase "for each slow motion phase" "can refer to one or more." *Id.* at *20–24. While the majority accepts these conclusions, as explained below, the Board's findings are inconsistent with both the plain language of the claim and the specification, and its construction of the word "each" defies common English usage.

Turning first to the claim language, as KEYnetik points out, the orientation detector limitation's use of the singular word "orientation" and the word "for" suggests that "a single 'orientation' is detected for the phase itself—i.e., an orientation representative of the condition of the motion phase that had been previously identified as 'slow' by the 'motion detector.'" Appellant's Br. 27. Although the Board concluded that the orientation detector limitation "does not preclude multiple orientations being detected during a slow motion phase," nothing in the claim language itself permits detection of multiple orientations during a single slow motion phase. *Board Decision*, 2019 Pat. App. LEXIS 13034, at *22.

Importantly, the claim does not recite "detect orientations" (plural) for each slow motion phase—it recites detect "orientation," which is singular. And, as KEYnetik points out, the subsequent sequence limitation recites that "a sequence of the detected orientations" (plural) is maintained in the inference state machine, confirming that the preceding use of "orientation" (singular) was intended to be singular. *See Harari v. Lee*, 656 F.3d 1331, 1341 (Fed. Cir. 2011) (noting the patentee's use of both singular and plural language in the claims suggests the singular use carried only a singular meaning). As such, the claim language supports KEYnetik's view that a single orientation is detected for each slow motion phase.

Turning to the specification, although the Board conceded that it "may 'support' [KEYnetik's] construction," the Board concluded that KEYnetik "does not persuade us that the narrower construction is required by the Specification." *Board Decision*, 2019 Pat. App. LEXIS 13034, at *33. Relying on Figure 3, the Board reasoned that, because "slow motion includes conditions of changing orientation . . . [i]t is [] axiomatic that a period of slow motion may include different orientations." *Id.* But even the majority recognizes that Figure 3—which depicts an exemplary embodiment of the claimed invention—shows detection of a single orientation for each slow motion phase. Maj. Op. at 7.

While it is, of course, "improper to limit the claims to the particular preferred embodiments described in the specification," we have recognized that the "patentee's choice of preferred embodiments can shed light on the intended scope of the claims." *Astrazeneca AB v. Mut. Pharm. Co.,* 384 F.3d 1333, 1340 (Fed. Cir. 2004). Here, Figure 3—which explicitly illustrates how the invention of the '106 patent works—sheds light on the intended scope of the claims and makes clear that there is only one orientation detected for each slow motion phase.

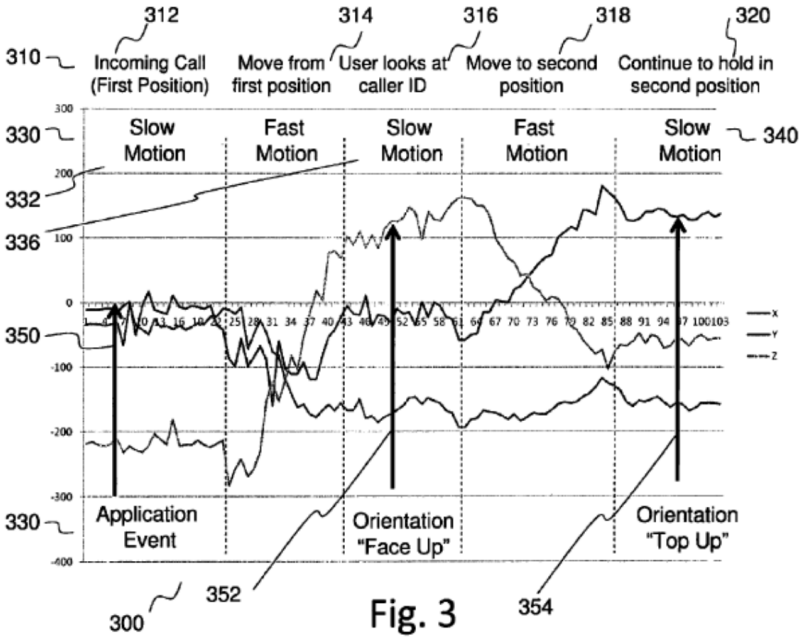

Fig. 3

The specification explains that "[t]he motion profile depicted in Fig. 3 is as follows: Rest, Motion, Rest, Orientation Face Up, Motion, Rest, Orientation Top Up." '106 patent, at col. 7, ll. 12–14. After the "application event" is recognized, Figure 3 shows two slow motion phases with an intervening fast motion phase. The specification states that "there are two orientation conditions detected, includ[ing] viewing the visual display (352), and maintaining the handheld in the final position (354)." *Id.* at col. 7, ll. 10–12. As KEYnetik points out, although orientation is *measured* multiple times, Figure 3 clearly shows only one orientation (i.e., "Face Up" or "Top Up") *detected* for each slow motion phase.

As the majority notes, the Board credited Samsung's expert testimony that "the orientation detector limitation does not preclude multiple detected orientations for each slow motion phase because it is consistent with the Specification." *Board Decision*, 2019 Pat. App. LEXIS 13034, at *20. Samsung's expert was relying on Figure 2, shown below, which the patent describes as "a state diagram

illustrating the interworking of the motion detector with a client application." '106 patent, col. 2, ll. 49–50.

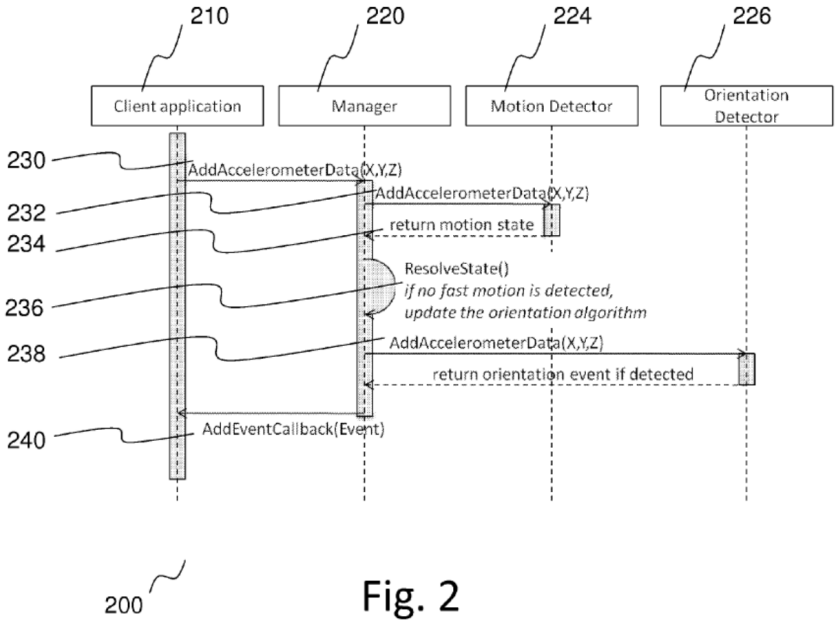

Fig. 2

As KEYnetik points out, Figure 2 does not fully illustrate the claimed sequence of detected orientations. Instead, it shows how a stream of motion data (specifically, x, y, and z acceleration data) passes through the detectors and returns a single "orientation event," "if such an event is programmed in the inference state machine (not shown)." *Id.* at Fig. 2; *id.* at col. 6, ll. 52–55. Therefore, on its face, Figure 2 shows one possible "orientation event" returned to the manager, which is consistent with Figure 3's depiction of only one orientation maintained by the inference state machine for each slow motion phase. *See id.* at col. 6, ll. 47–55. Nothing in Figure 2 supports detection of multiple orientations during a single slow motion phase.

In any event, the Board's analysis on this point was flawed. The Board said that it saw "no disclosure in the Specification that precludes the motion detector from continuously providing accelerator data to the orientation detector during a single period of slow motion." *Board*

Decision, 2019 Pat. App. LEXIS 13034, at *22. As this court has explained, however, "[t]he correct inquiry in giving a claim term its broadest reasonable interpretation in light of the specification is *not* whether the specification proscribes or precludes some broad reading of the claim term adopted by the examiner." *In re Smith Int'l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017) (emphasis added). The Board was required to interpret the claims consistently with the specification—not assess whether Samsung's overly broad reading of the orientation detector limitation was expressly precluded.

Finally, without any support in the intrinsic record, the Board found that the orientation detector limitation's use of the word "each" in the phrase "detect orientation towards gravity for each slow motion phase" can refer to "one or more" slow motion phases. *Board Decision*, 2019 Pat. App. LEXIS 13034, at *22–24. In reaching this construction, the Board credited the conclusory opinion of Samsung's expert, who testified that, "in the context of the claims, 'each' can refer to one or more." *Id.* at *23–24. We have recognized, however, that "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005). Indeed, Samsung presented no evidence to support its interpretation of "each," and conceded during oral argument before the Board that it had not "tried that hard" to find any evidence. J.A. 729 at ll. 4–9.

The Board then provided its own example of "each" meaning "one or more," stating that, "if one addressed a room full of people and asked each WW1 veteran to stand and only one person stood, each WW1 veteran would have stood." *Board Decision*, 2019 Pat. App. LEXIS 13034, at *24. But we have expressly recognized that the plain meaning of "each" refers to "two or more" people or things. *Alcohol Monitoring Sys., Inc. v. Actsoft, Inc.*, 414 F. App'x 294, 299–300 (Fed. Cir. 2011) ("We agree with the district court that the plain meaning of 'each' is defined as 'being

one of two or more distinct individuals . . . .'" (quoting Merriam-Webster's Collegiate Dictionary, 390 (11th ed. 2007)). That the Board came up with an example where the term "each" might be used differently cannot overcome its general usage in the English language, especially where the Board's example is grammatically suspect. The proper phrasing, using the Board's example, would ask any or all WW1 veterans to stand, which would account for the possibility of there being only one (or none).

The Board's construction, which the majority again accepts, is inconsistent with the intrinsic record and defies common English usage of the word "each." In my view, the broadest reasonable interpretation of the "orientation detector limitation" consistent with the specification is detect orientation (singular) of two or more slow motion phases.

II.

Claim 1 also recites "an inference state machine . . . configured to: maintain a sequence of the detected orientations towards gravity, each orientation in the sequence being limited to a slow motion phase" ("the sequence limitation"). '106 patent, col. 12, ll. 45–48.[2] Given its construction of the orientation detector limitation, the Board found that "the plain meaning of the sequence limitation does not preclude two orientations detected for a single slow motion phase being maintained as the sequence of detected orientations, each orientation limited to a slow motion phase (which may be the same slow motion phase)." *Board Decision*, 2019 Pat. App. LEXIS 13034, at *26–27. According to the Board, "the inference state machine maintains the sequence for slow motion and does not preclude

[2] Claim 12 includes similar language: "instructions to maintain a sequence of the detected orientations, each orientation towards gravity in the sequence being limited to a slow motion phase." '106 patent, at col. 14, ll. 1–3.

maintaining orientations for both slow motion and fast motion, provided at least consecutive orientations correspond to a slow motion phase." *Id.* at *39. The majority once more accepts the Board's interpretation. Once more, I cannot. As explained below, the Board's construction is inconsistent with the intrinsic record and improperly reads "being limited to a slow motion phase" out of the sequence limitation.

First, although the Board's construction allows both fast motion and slow motion orientations in the sequence, the claim expressly states that each detected orientation must be "limited to a slow motion phase." The Board's construction improperly reads this language out of the claim, rendering it meaningless. *See Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 951 (Fed. Cir. 2006) (holding a patent claim construction that reads limitations out of a claim is "contrary to the principle that claim language should not [be] treated as meaningless").

As explained above, the claim requires the detection of two or more slow motion phases, which necessarily requires an intermittent fast motion phase. The specification confirms this interpretation. In discussing Figure 3, the specification explains that, "as an incoming telephone call is received, the handheld device can be in any position. During the incoming sequence processing, the user can move the handheld in any way, and the signal processing will identify the gesture *as long as two orientation conditions intermitted by motion conditions are met*." '106 patent, col. 7, ll. 18–30 (emphasis added). In other words, the specification expressly requires a fast motion phase separating the slow motion phases.

Given the intrinsic evidence, I agree with KEYnetik that the broadest *reasonable* interpretation of "being limited to a slow motion phase" in the sequence limitation requires precluding orientations detected during fast motion from being maintained in the claimed sequence. To find

otherwise would eviscerate a key feature of the claimed invention. As we recently reiterated, "[a] patent's statement of the described invention's purpose informs the proper construction of claim terms, including when the task is to identify the broadest reasonable interpretation." *Kaken Pharma. Co. v. Iancu*, 952 F.3d 1346, 1352 (Fed. Cir. 2020); *see also In re Power Integrations, Inc.*, 884 F.3d 1370, 1376–77 (Fed. Cir. 2018) (because the patent at issue "strives to eliminate unnecessary components and create a more compact circuit," the Board's construction that would include a "bulky" component was "unduly broad" and "inconsistent" with the patent's "focus").

Here, the specification explains that,

> As the call is received the signal processing to search for a sequence of conditions is started. By using a sequence of orientation conditions of the handheld device, the signal processing generates a fault resilient command absent complex analysis during periods of fast motion. The presence of one or more periods of fast motion serves as confirmation that the sequence is a product of intentional user action(s).

'106 patent, col. 7, ll. 23–30.

By maintaining a "sequence of orientation conditions" with each orientation in the sequence limited to a slow motion phase, the '106 patent is able to confirm that a user's gesture "is a product of intentional user action(s)." '106 patent, col. 7, ll. 25–30. If, as the Board found, the scope of the claimed "sequence" included a series of consecutive orientation signals corresponding to a single orientation of a stationary device—without any intervening fast motion—there would be no way to confirm that the sequence is the product of intentional user action. Put simply, the Board's construction is both inconsistent with the claim language and the objective of the claimed invention.

III.

For these reasons, I believe the Board's constructions were flawed. As a result, the Board's obviousness determinations should be vacated, and the case should be remanded for further proceedings consistent with the proper construction of the "orientation detector limitation" and the "sequence limitation," as well as for the reasons outlined by the majority. I must respectfully dissent in part.

United States Court of Appeals for the Federal Circuit

KEYNETIK, INC.,
Appellant

v.

SAMSUNG ELECTRONICS CO., LTD.,
Appellee

2020-1271

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2018-00986.

JUDGMENT

THIS CAUSE having been considered, it is

ORDERED AND ADJUDGED:

AFFIRMED-IN-PART, VACATED-IN-PART, AND REMANDED

ENTERED BY ORDER OF THE COURT

January 27, 2021

/s/ Peter R. Marksteiner
Peter R. Marksteiner
Clerk of Court

FORM 19. Certificate of Compliance with Type-Volume Limitations **Form 19**
July 2020

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATIONS

Case Number: 2020-1271

Short Case Caption: KEYnetik. Inc. v. Samsung Electronics Co., LTD.

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