UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

VOICE DOMAIN TECHNOLOGIES, LLC **Plaintiff,** **v.** **APPLE INC.,** **Defendant.**	**CIVIL ACTION** **NO. 13-40138-TSH**

ORDER AND MEMORANDUM OF DECISION ON CLAIM CONSTRUCTION

August 4, 2015

HILLMAN, D.J.

This is a patent infringement suit involving voice recognition technology. Plaintiff Voice Domain Technologies, LLC ("Voice Domain") seeks a judgment that Defendant Apple Inc. ("Apple") infringes at least one claim of its patent, U.S. Patent No. 6,281,883 (the "'883 Patent"), in violation of 35 U.S.C. § 271. Apple seeks declarations of non-infringement, invalidity, and unenforceability of the '883 Patent. The parties seek construction of the following ten claim terms:

(1) "peripheral"

(2) "processing system"

(3) "coupling mechanism for providing said microphone signal, said command notification signal, said data notification signal and said cursor signal to said processing system"

(4) "microphone interpretation mechanism which, in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data"

(5) "cursor position transducer"

(6) “command notification signal”

(7) “data notification signal”

(8) “voice data button”

(9) “voice command button”

(10) “in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data”

I. Background

During the 1990s, inventor Bruce Barker developed a user-interface system for having voice data and voice commands executed on a processing system. Mr. Barker filed the patent application that became the ‘883 Patent in September 1994. Initially, the patent examiner rejected Barker’s claims as unpatentable. The Board of Patent Appeals eventually overruled that decision, and the Patent Office duly issued the ‘883 Patent, titled “Data Entry Device,” to Barker on August 28, 2001. Barker, in turn, assigned the ‘883 Patent to his one-man technology company, Voice Domain Technologies, LLC. In general, the invention of the ‘883 Patent is a handheld data entry controller that allows a user to communicate information to a computer. In the preferred embodiment of the invention, the user can speak into a handheld device to have a textual transcript of the user’s speech displayed on a computer screen. The user can then manipulate the text by sending commands from the controller to the computer. The invention includes a handheld “peripheral” containing a microphone, buttons to indicate when the user’s speech is voice data and when it is a voice command, and a cursor position transducer for positioning a cursor on a screen. It also includes a “processing system” with a display screen, and a mechanism for determining when the microphone signal sent by the user is data and when it is a command.

Voice Domain filed this action on November 25, 2013, alleging that Apple's iPhone and other devices running the Siri voice recognition program infringe the '883 Patent. (Docket No. 1). On March 7, 2014, Apple counterclaimed for non-infringement, invalidity and unenforceability. (Docket No. 28). On January 13, 2015, the Court held a Markman hearing at which the parties proposed constructions for disputed claim terms.

II. Legal Framework

Claim construction is a question of law decided by the courts. See Markman v. Westview Instruments, Inc., 517 U.S. 370, 372, 116 S. Ct. 1384 (1996). The goal of claim construction "is to determin[e] the meaning and scope of the patent claims asserted to be infringed." 02 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd., 521 F.3d 1351, 1360 (Fed. Cir. 2008). District courts have a duty to construe terms when the parties present a fundamental dispute regarding the scope of a claim term. Id. at 1362. However, courts are not required to construe every limitation present in a patent's asserted claims, and may assign a claim term its ordinary meaning if it resolves the dispute between the parties. Id. at 1361-62. A court correctly construes a patent claim when the construction "stays true to the claim language and most naturally aligns with the patent's description of the invention." Phillips v. AWH Corp., 415 F.3d 1303, 1316 (Fed. Cir. 2005). When courts construe a claim's meaning, they follow a hierarchical order of sources by magnitude of deference beginning first with "the words of the claims themselves, [then] the remainder of the specification, [followed by] the prosecution history, and [finally] extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." Id. at 1314 (citing Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1116 (Fed. Cir. 2004)).

The Claim Language

Claim construction analysis begins with the words of a patent's claims. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). "It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" Phillips, 415 F.3d at 1312 (citing Innova/Pure Water, 381 F.3d at 1115). In many instances, how a term is used "within the claim provides a firm basis for construing the term." Id. at 1314. The underlying principle of claim construction is that claim terms "are generally given their ordinary and customary meaning"—that is, "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips, 415 F.3d at 1312-13 (citing Vitronics, 90 F.3d at 1582; Innova/Pure Water, 381 F.3d at 1116). There are two exceptions to this plain-meaning 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) (citing Vitronics, 90 F.3d at 1580).

The Specification Language

The claim language does not stand alone. It is well-established that "the claims '[are] read in view of the specification, of which they are a part.'" Meyer Intellectual Properties Ltd. v. Bodum, Inc., 690 F.3d 1354, 1368 (Fed. Cir. 2012) (quoting Markman, 52 F.3d at 979). The specification language serves the "purpose of better understanding the meaning of the claim; but not for the purpose of changing it, and making it different from what it is." White v. Dunbar, 119 U.S. 47, 51-52, 7 S. Ct. 72 (1886). The specification "is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term." Phillips, 415 F.3d at 1315. This is because the specification "may reveal a

special definition given to a claim term . . . [or] an intentional disclaimer, or disavowal, of claim scope by the inventor." Phillips, 415 F.3d at 1316.

Although courts must interpret the meaning of a claim in light of the specification, it is improper to import limitations from the specification into the claims. See Phillips, 415 F.3d at 1323. The claims themselves, "not specification embodiments, define the scope of patent protection." Kara Tech. Inc. v. Stamps.com Inc., 582 F.3d 1341, 1348 (Fed. Cir. 2009). The Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Phillips, 415 F.3d at 1323. To avoid improperly importing limitations from the specification into the claims, courts must recall "that the purposes of the specification are to teach and enable those of skill in the art to make and use the invention." Id. "[T]he line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms." Id.

The Patent Prosecution History

In construing claim terms, courts should also consider the patent's prosecution history. Phillips, 415 F.3d at 1317. The prosecution history is the final record of negotiation between the applicant and the United States Patent and Trademark Office and refers to the prior art throughout the patent examination. Id. The file history can inform a claim term's meaning "by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Id. However, because the file history represents an ongoing negotiation between the PTO and the inventor, rather than the final product of that negotiation, "it often lacks the clarity of the

specification and thus is less useful for claim construction purposes." Netcraft Corp. v. eBay, Inc., 549 F.3d 1394, 1401 (Fed. Cir. 2008) (quoting Phillips, 415 F.3d at 1317). As with the specification, courts must "not rely on the prosecution history to construe the meaning of the claim term to be narrower than it would otherwise be unless a patentee limited or surrendered claim scope through a clear and unmistakable disavowal." 3M Innovative Properties Co. v. Tredegar Corp., 725 F.3d 1315, 1322 (Fed. Cir. 2013).

Extrinsic Evidence

The final level of the claim construction framework is extrinsic evidence, which is "all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Phillips, 415 F.3d at 1317. This type of evidence helps guide courts in "determin[ing] what a person of ordinary skill in the art would understand claim terms to mean." Id. at 1319. "[C]onsultation of extrinsic evidence is particularly appropriate to ensure that [a judge's] understanding of the technical aspects of the patent is not entirely at variance with the understanding of one skilled in the art." Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1309 (Fed. Cir. 1999). Extrinsic sources, however, are less reliable than intrinsic evidence for several reasons. See Phillips, 415 F.3d at 1318-19. These include the fact that extrinsic evidence is independent from the patent document, creates a risk of potential bias, and may be of marginal relevance. See id. (describing reasons extrinsic evidence is less reliable than the patent and its prosecution history).

III. Claim Construction Analysis

The '883 Patent concludes with three claims. The parties identify ten claim terms for construction, all of which are contained in independent Claim 1 of the '883 Patent. Claim 1, with the disputed terms emphasized, reads:

> 1. A data entry system comprising a handheld peripheral and a processing system, wherein
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> said handheld peripheral comprises:
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> a microphone signal representative of a user's voice,
>
> a voice command button for providing a command notification signal indicating whether said voice command button is asserted,
>
> a voice data button for providing a data notification signal indicating whether said voice data button is asserted,
>
> a cursor position transducer for providing a cursor signal representative of a desired cursor position on a display screen of said processing system, and
>
> a coupling mechanism for providing said microphone signal, said command notification signal, said data notification signal, and said cursor signal to said processing system; and wherein
>
> said processing system comprises:
>
> said display screen, and
>
> microphone interpretation mechanism which, in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data

U.S. Patent No. 6,281,883, col.4 ll.25-49 (filed Sep. 8, 1994) (hereinafter "'883 Patent, col._ ll.__"). Each of the disputed terms are discussed, in turn, below. For ease of reference, the disputed terms and constructions of each party are displayed in chart form.

A. "peripheral" and "processing system"

Disputed Term	Apple's Construction	Voice Domain's Construction
"peripheral"	"device for providing communication or inputs to a separate and distinct computer"	plain meaning; alternatively, "a device that provides communications or inputs"
"processing system"	"a computer which receives inputs or communication from a separate and distinct peripheral"	plain meaning; alternatively, "a system of one or more processors that receives inputs or communications from a peripheral"

"Peripheral" appears in Claim 1 of the '883 Patent, and "processing system" appears in Claims 1, 2, and 3. The claim construction analysis of these two terms involves substantial overlap. Accordingly, the Court addresses the terms together. The parties agree that a "peripheral" is a device for providing communications or inputs, and that a "processing system" is a device that receives inputs or communications from a peripheral. The dispute over these terms is limited to (1) whether the claimed "peripheral" must be separate and distinct from the claimed "processing system;" and (2) whether "processing system" means a computer.

With respect to the first issue, Apple contends that the plain meaning of "peripheral," as claimed in the '883 Patent, requires it to be "separate and distinct" from the processing system. The Court declines to adopt this construction. The Federal Circuit has repeatedly held that, absent clear lexicography or disclaimer, "it is improper to read a limitation from the specification into the claims." Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 904 (Fed. Cir. 2004). Even where the specification describes a single preferred embodiment, courts must not read patent claims restrictively unless the inventor "has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion." See id. at 906 (internal quotations omitted). Yet Apple's proposed construction runs afoul of this principle by importing from the

preferred embodiment the requirement that the peripheral is both "separate and distinct" from the processing system.

It is true that the specification describes two different components—a handheld data entry device and a computer—that are connected by a transmission cable. See '883 Patent, col.1 ll.60-66; figs. 1 & 3. But the specification does not expressly restrict the patent's scope to its preferred embodiment or other written descriptions. The Court sees nothing in the claim language that draws in the phrase "separate and distinct." This is fatal to Apple's proposal, because a party wishing to narrow a patent's scope by way of statements in the written description must identify a textual hook in the claim language. See NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1310 (Fed. Cir. 2005). The technical definitions offered by Apple do not go so far as to require the "separate and distinct" limitation. See, e.g., The New IEEE Standard Dictionary of Electrical and Electronics Terms (5th Ed. 1993), Docket No. 68-9, Ex. 8 (defining "peripheral device" as "[a] device connected to another device (host) that, in turn, controls its operation"). Indeed, Apple's acknowledgement at the Markman hearing that the words "separate and distinct" are somewhat redundant suggests that a person of ordinary skill in the art would not understand the claimed peripheral and processing system in such a way. See Tr. of Markman Hr'g, Docket No. 86 at 50:24-51:8.

The Court draws additional support from Federal Circuit precedents establishing that separately claimed components need not be separate structures. For example, in In re Papst Licensing Digital Camera Patent Litigation, the Federal Circuit found that the district judge improperly construed the claim term "interface device" as a "stand-alone device . . . that is physically separate and apart from" its host computer. 778 F.3d 1255, 1262 (Fed. Cir. 2015). The court concluded that the district court's narrow construction was unwarranted because nothing in

the claim language or intrinsic record forbid the two components from being housed in the same structure. See id. at 1262-64; see also NTP, Inc., 418 F.3d at 1309-10 (rejecting argument that two separately claimed components had to reside in "separate and distinct" housing or structure because the claim language did not support such an interpretation); Gen. Elec. Co. v. I*nt'l Trade Comm'n*, 685 F.3d 1034, 1044-46 (Fed. Cir. 2012) (rejecting argument that two components must be physically separate because nothing in the claim language or specification supported such a narrow construction). Apple attempts to skirt the significance of these cases by arguing that its construction does not foreclose the possibility that the peripheral and processing system could be housed in the same structure. This argument belies the reality that the phrase "separate and distinct" unnecessarily suggests that the claimed components are in different physical locations. The claim language of the '883 Patent contains no such restriction.

Conversely, Voice Domain's proposal—"a device that provides communications or inputs"—is too broad. The claim language, read in view of the specification, suggests that the peripheral and processing system are two different components that must be connected to one another. Significantly, Claim 1 recites a "coupling mechanism" that provides signals from the peripheral to the processing system. See '883 Patent col.4 ll.39-43. The claimed "coupling mechanism" suggests that the peripheral and processing system must be linked. The specification further describes the coupling mechanism as a transmission cable "connected between the data entry device and a processing device," or a wireless transmitter that transmits data and commands from the peripheral to the processing system. Id. at col.1 ll.65-2:5.

The file history and extrinsic evidence suggest that the peripheral and processing system must be connected. The file history establishes that that Barker envisioned a handheld microphone linked to a processing system. See, e.g., Appellant's Br. on Appeal, Docket No. 68-

5, Ex. 4 at 3 ("The handheld peripheral includes a microphone . . . to allow the user to control the processing system with a convenient handheld device."). Technical dictionaries from the early 1990s define "peripheral" with the word "connected." See, e.g., Microsoft Press Computer Dictionary (1991), Docket No. 68-12, Ex. 11 (defining "peripheral" as "a term used for devices . . . that are connected to a computer and are controlled by its microprocessor). Accordingly, the Court will include "connected" in its constructions to describe the relationship between the peripheral and the processing system. This approach is consistent with Voice Domain's own assertion that "the term 'peripheral' has long referred to an input or output device connected to a processor." See Pl.'s Responsive Claim Constr. Brief, Docket No. 76 at 8.

Regarding the parties' second dispute, the Court rejects Apple's contention that "processing system" means "a computer." Although the specification uses the word "computer" as a synonym for "processing device," see '883 Patent, col.1 ll.66-67, the use of the term system in all three claims connotes a broader meaning. Therefore, the Court declines to limit the claimed "processing system" to "a computer." See Hill-Rom Servs., Inc. v. Stryker Corp., 755 F.3d 1367, 1371 (Fed. Cir. 2014) ("[W]e do not read limitations from the embodiments in the specification into the claims."). Instead, the Court will adopt Voice Domain's proposed phrase "a system of one or more processors."

For the reasons stated above, the Court will construe "peripheral" as "a device that provides communications or inputs to a connected processing system." The Court will construe "processing system" as "a system of one or more processors that receives inputs or communications from a connected peripheral."

B. "coupling mechanism for . . ." and "microphone interpretation mechanism which . . ."

Apple contends that two elements claimed in the '883 Patent, (1) "coupling mechanism for . . ." and (2) "microphone interpretation mechanism which . . .", are means-plus-function limitations subject to analysis under 35 U.S.C. § 112, ¶ 6. Voice Domain argues that these terms are not means-plus-function limitations and proposes an alternative construction for each. To provide a framework for analysis of these terms, the Court begins with a description of means-plus-function claiming.

Means-Plus-Function Claiming

The Patent Act requires that a patent specification "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter" which the inventor regards as the invention. 35 U.S.C. § 112, ¶ 2 (emphasis added).[1] To meet this definiteness requirement, "a patent's claims, viewed in light of the specification and prosecution history, [must] inform those skilled in the art about the scope of the invention with reasonable certainty." Nautilus v. Biosig Instruments, Inc., --- U.S. ---, ---, 134 S. Ct. 2120, 2129 (2014). Typically, the definiteness requirement of § 112, ¶ 2 prohibits a patentee from describing the invention merely in terms of function. See, e.g., United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 234, 63 S. Ct. 165 (1942). In other words, "the patentee may not by claiming a patent on the result or function of a machine extend his patent to devices or mechanisms not described in the patent." Holland Furniture Co. v. Perkins Glue Co., 277 U.S. 245, 257, 48 S. Ct. 474 (1928). However, §

[1] Following enactment of the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284 (2011), paragraphs 1-6 of § 112 became designated as § 112(a)-(f). However, "[t]he amended versions of those provisions are inapplicable to patent applications filed before September 16, 2012 . . . ." See Nautilus, Inc. v. Biosig Instruments, Inc., --- U.S. ---,---, 134 S. Ct. 2120, 2125 n.1 (2014). Because the application resulting in the '883 Patent was filed in 1994, this claim construction order refers to provisions of the Patent Act predating the AIA amendments. See also Williamson v. Citrix Online, LLC, No. 2013-1130, 2015 WL 3687459, at *1 n.2 (Fed. Cir. Jun. 16, 2015).

112, ¶ 6 creates an exception to this general rule. It provides:

> [a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, ¶ 6. This is known as "means-plus-function" claiming. It is a convenience for patentees that allows the expression of claim limitations in functional terms "without requiring the patentee to recite in the claims all possible structures" that could be used as a means in the invention. Med. Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1211 (Fed. Cir. 2003). In return for this drafting convenience, patentees pay the price of having to disclose, in the specification, a corresponding structure for performing the claimed function. See Noah Sys., Inc. v. Intuit Inc., 675 F.3d 1302, 1318 (Fed. Cir. 2012). "If the specification is not clear as to the structure that the patentee intends to correspond to the claimed function, then the patentee has not paid the price but is rather attempting to claim in functional terms unbounded by any reference to structure in the specification." Med. Instrumentation, 344 F.3d at 1211. This is impermissible, because a failure to disclose a corresponding structure is "in effect [a] fail[ure] to particularly point out and distinctly claim the invention as required by" the definiteness requirement of § 112, ¶ 2. See In re Donaldson Co., Inc., 16 F.3d 1189, 1195 (Fed Cir. 1994).

When faced with construction of means-plus-function claim terms, courts must make a threshold determination that the claim terms are indeed functional in nature and therefore subject to treatment under § 112, ¶ 6. See Williamson v. Citrix Online, LLC, 2015 WL 3687459, at *4-5 (Fed. Cir. June 16, 2015). If so, courts construe means-plus-function terms according to a two-step process. Id. at *9. First, the court identifies the claimed function. Id. Second, the court determines whether adequate corresponding structure is disclosed in the specification. Id. With this framework in place, the Court turns to analysis of the disputed terms.

1. "coupling mechanism for providing said microphone signal, said command notification signal, said data notification signal and said cursor signal to said processing system"

Disputed Term	Apple's Construction	Voice Domain's Construction
"coupling mechanism for providing said microphone signal, said command notification signal, said data notification signal and said cursor signal to said processing system"	Subject to § 112, ¶ 6 Function: "providing said microphone signal, said command notification signal, said data notification signal and said cursor signal to said processing system" Structure: transmission cable or wireless transmitter	"an electrical connection, wired or wireless, to the processing system from the peripheral"

"Coupling mechanism for . . ." appears in Claims 1 and 3 of the '883 Patent. Apple proposes that the term is a means-plus-function limitation subject to analysis under 35 U.S.C. § 112, ¶ 6. Apple argues that the claimed function is "providing said microphone signal, said command notification signal and said cursor signal to said processing system;" and that the corresponding structure disclosed in the specification is "transmission cable or wireless transmitter." Voice Domain argues that the term is not a means-plus-function limitation, and that it should be construed as "an electrical connection, wired or wireless, to the processing system from the peripheral."

Whether § 112, ¶ 6 applies

The Court first addresses the threshold question of whether "coupling mechanism for . . ." is a means-plus-function limitation subject to § 112, ¶ 6. In determining whether § 112, ¶ 6 applies, the Federal Circuit "has long recognized the importance of the presence or absence of the word 'means.'" Williamson, 2015 WL 3687459, at *6. Where, as here, the disputed claim terms do not include the word "means," there is a rebuttable presumption that § 112, ¶ 6 does not

apply.[2] Id. That presumption can be overcome "if the challenger demonstrates that the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" Id. (quoting Watts v. XL Sys., Inc., 232 F.3d 877, 880 (Fed. Cir. 2000)). The essential inquiry is "whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure." Id. (citing Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996)).

The Court concludes that "coupling mechanism for . . ." does not connote sufficiently definite structure and thus must be treated as a means-plus-function limitation under § 112, ¶ 6. First, the claim limitation at issue is not merely "coupling mechanism," but the entire phrase "coupling mechanism for providing said microphone signal, said command notification signal, said data notification signal and said cursor signal to said processing system." This format is "consistent with traditional means-plus-function claim limitations," because it replaces the word "means" with "mechanism," and recites a function to be performed by the "coupling mechanism." See Williamson, 2015 WL 3687459, at *8. Although the claim language does not include the word "means," the term "mechanism" is "simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term 'means for.'" Welker Bearing Co. v. PHD, Inc., 550 F.3d 1090, 1096 (Fed. Cir. 2008) (quoting Lighting World v. Birchwood Lighting, Inc., 382 F.3d 1354, 1360 (Fed. Cir. 2004)).

"Claim language that further defines a generic term like 'mechanism' can sometimes add sufficient structure to avoid [§] 112, ¶ 6." Massachusetts Inst. of Tech. and Elecs. for Imaging, Inc. v. Abacus Software, 462 F.3d 1344, 1354 (Fed. Cir. 2006). In this case, the modifier

[2] In Williamson v. Citrix Online, the Federal Circuit abandoned its previous characterization of the presumption as "strong." 2015 WL 3687459, at *7.

"coupling" describes the function of the claimed mechanism. For example, a 1991 Random House dictionary defines "coupling" as "the act of a person or thing that couples." See Random *House Webster's College Dictionary* (1991), Docket 68-15, Ex. 14. To be sure, the fact that a device is expressed in functional terms does not mean that it cannot have a structural meaning. In Greenberg v. Ethicon Endo-Surgery, Inc., the Federal Circuit found that the term "detent mechanism" was not subject to § 112, ¶ 6 because, despite being defined in functional terms, the word "detent" had a generally understood meaning in the mechanical arts as a word for structure. See 91 F.3d at 1583. In this regard, "detent" was akin to other devices that take names from functions they perform, like "filter," "brake," "clamp," or "screwdriver." Id. Unlike in Greenberg, however, definitions for "coupling" do not suggest that one skilled in the art would understand the term's structure. To the contrary, technical dictionaries confirm that, in the context of electrical engineering, the word lacks structural meaning. See Academic Press Dictionary of Science and Technology (1992), Docket 68-13, Ex. 12 (defining "coupling" as "a means for transferring power") (emphasis added); The New IEEE Standard Dictionary of Electrical and Electronics Terms (5th Ed. 1993), Docket No. 68-14, Ex. 13 (defining "coupling" as "the association of two or more circuits") (emphasis added). Thus, the presence of the modifying word "coupling" does not impart structural significance to the term "mechanism."

Nor does the specification teach a sufficiently definite structure. The written description does not use the phrase "coupling mechanism" a single time. The little context that is provided does not imbue the claim term with a structural meaning commonly known to those skilled in the art. The specification discloses two completely different structures for "coupling" the data entry device to the processing system—a simple wire (the "transmission cable") and a complex electrical circuit (the wireless transmitter). See '883 Patent, col.1 ll.65-2:2; col.1 ll.57-78; col.2

ll.20-25; figs. 3 & 4. Although the fact that a claim term may encompass a multitude or broad class of structures does not require application of § 112, ¶ 6, see Lighting World, 382 F.3d at 1360-61, the complete structural difference between a transmission cable and a wireless transmitter suggests that "coupling mechanism" is not a common term for structure in the electronic arts. Id. at 1361. The expert declaration of Dr. Richard Stern confirms this conclusion. See Decl. of Dr. Richard Stern, Docket No. 68-21, ¶ 27 (hereinafter "Stern Decl. ¶ __"). Dr. Stern states that many devices, covering a wide variety of structural designs, can be used to transmit signals between a peripheral and a processing system. See Stern Decl. ¶¶ 29-30. These include conventional closed circuit communications systems (such as wireless microphones), fiber optic links, Bluetooth, and WiFi. See id. Thus, Dr. Stern opines that one skilled in the art would not understand "coupling mechanism" to have a well-understood structural meaning. See Stern Decl. ¶ 27. The Court credits this evidence as it pertains to "coupling mechanism."

Voice Domain has not submitted any expert declaration or technical evidence to show that "coupling mechanism" is understood to connote structure, but asserts that the fact that nine patent professionals examined the application and failed to identify "coupling mechanism for . . ." as a means-plus-function limitation is evidence that § 112, ¶ 6 does not apply. Yet Voice Domain cites no cases in which a court drew such a negative inference from the prosecution history to conclude that a claim term was not a means-plus-function limitation.[3] In fact, Federal

[3] Voice Domain's argument on this point is further weakened by the Federal Circuit's intervening decision in Williamson v. Citrix Online, LLC, No. 2013-1130, 2015 WL 3687459 (Fed. Cir. Jun. 16, 2015). Voice Domain contends that the reason the examiners did not identify "coupling mechanism" as a means-plus-function limitation is that the application lacked the magic words "means for," which creates, as a matter of law, a "strong presumption" that the inventor was not invoking § 112, ¶ 6. See Tr. of Markman Hr'g, Docket No. 86 at 105-06. However, this "magic words" concept is undercut substantially by Williamson, where the Federal Circuit abandoned "characterizing as 'strong' the presumption that a limitation lacking the word 'means' is not subject to § 112, ¶ 6." See Williamson, 2015 WL 3687459, at *7. In so doing, the court concluded that such a heightened burden inappropriately "plac[ed] a thumb on the scale" against finding that claim terms constitute a means-plus-function limitation. Id. Therefore, the Court declines to infer from the prosecution history that "coupling mechanism" had an understood structural meaning in the art.

Circuit precedents in which the court found that claim terms were not means-plus-function limitations have consistently looked to evidence of structural meaning found in the claim language and specification, see, e.g., Apple Inc. v. Motorola, Inc., 757 F.3d 1286, 1302-04, (Fed. Cir. 2014); Lighting World, 382 F.3d at 1361, Flo Healthcare Solutions, LLC v. Kappos, 697 F.3d 1367, 1374-75 (Fed. Cir. 2012), or dictionary definitions. See, e.g., CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002); Greenberg, 91 F.3d at 1583.

In this case, the specification, dictionary definitions, and expert declaration all confirm that "coupling mechanism" does not have an understood structural meaning to those skilled in the art. Thus, the Court finds that "coupling mechanism for . . ." fails to connote sufficiently definite structure. See Aspex Eyewear, Inc. v. Altair Eyewear, Inc., 288 Fed. App'x. 697 (Fed. Cir. 2008) (finding claimed "retaining mechanism" did not connote definite structure where modifying word "retaining" had broad dictionary definition and expert testimony confirmed that term had no common meaning in the field). This conclusion is consistent with other Federal Circuit decisions finding that claim terms lacking the word "means" were nonetheless subject to § 112, ¶ 6. See, e.g., Williamson, 2015 WL 3687459, at *8 (finding "distributed learning control module" to be a means-plus-function limitation); Welker Bearing Co., 550 F.3d at 1096 (finding "mechanism for moving said finger" to be a means-plus-function limitation); Massachusetts Inst. of Tech., 462 F.3d at 1354 (finding "colorant selection mechanism" to be a means-plus-function limitation).

Apple has demonstrated that "coupling mechanism for . . ." fails to recite sufficiently definite structure. Therefore, the Court finds that the presumption against means-plus-function claiming has been rebutted, and the limitation will be analyzed under § 112, ¶ 6.

Construction under § 112, ¶ 6

Having concluded that "coupling mechanism for . . ." is a means-plus-function limitation, the Court turns to construction of the claim term under § 112, ¶ 6. Construing a means-plus-function claim term involves two steps. "First, the court must determine the claimed function. Second, the court must identify the corresponding structure in the written description of the patent that performs the function." Noah Sys., Inc., 675 F.3d at 1311 (Fed. Cir. 2012) (quoting Applied Med. Res. Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1332 (Fed. Cir. 2006)). "Structure disclosed in the specification qualifies as a 'corresponding structure' if the intrinsic evidence clearly links or associates that structure to the function recited in the claim." Williamson, 2015 WL 3687459, at *10.

Apple contends that the claimed function of the "coupling mechanism" is "providing said microphone signal, said command notification signal and said cursor signal to said processing system;" and that the corresponding structure disclosed in the specification is the "transmission cable or wireless transmitter." Voice Domain does not challenge Apple's positions on function or corresponding structure. The Court agrees that Apple's proposals are correct. Claim 1 makes clear that the coupling mechanism is to be used to provide the claimed signals to the processing system. See '883 Patent, col.4 ll.39-43. Furthermore, the specification plainly associates the disclosed "transmission cable" and "wireless transmitter" with that function. See '883 Patent, col.1 ll.65-2:2; col.1 ll.57-78; col.2 ll.20-25; figs. 3 & 4.

For the reasons stated above, the Court will construe "coupling mechanism for . . ." as a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6. The function of the "coupling mechanism" is: "providing said microphone signal, said command notification signal and said

cursor signal to said processing system." The corresponding structure in the specification is: "transmission cable or wireless transmitter."

2. "microphone interpretation mechanism which, in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data"

Disputed Term	Apple's Construction	Voice Domain's Construction
"microphone interpretation mechanism which, in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data"	Subject to § 112, ¶ 6 Function: "in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data" Structure: no corresponding structure is disclosed	"software and/or hardware for the processing system that recognizes when the data button or command button has been selected or asserted"

"Microphone interpretation mechanism which . . ." appears in Claims 1 and 2 of the '883 Patent. Claim 1 recites that the microphone interpretation mechanism is one of two components that the claimed processing system comprises (the other being a display screen). See '883 Patent, col.4 ll.43-48. Apple again argues that this term is a means-plus-function limitation subject to § 112, ¶ 6. Apple proposes that the claimed function is "in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data," and that no corresponding structure is disclosed in the specification. Voice Domain contends that the term is not a means-plus-function limitation, and that it should be construed as "software and/or hardware for the processing system that recognizes when the data button or command button has been selected or asserted."

Whether § 112, ¶ 6 applies

As with "coupling mechanism for . . .", the claim language "microphone interpretation mechanism which, in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data" is drafted in traditional means-plus-function format. It replaces the word "means" with the nonce word "mechanism," and recites the function that the "microphone interpretation mechanism" is meant to perform. See Williamson, 2015 WL 3687459, at *8. The modifier "microphone interpretation" does not impart sufficient structure to avoid application of § 112, ¶ 6. Although "microphone" has an understood structural meaning, the same is not true for "microphone interpretation." The phrase has no dictionary definition and is not defined in the claims of the '883 Patent. See Massachusetts Inst. of Tech., 462 F.3d at 1354 (noting that the modifier "colorant selection" had no dictionary definition in concluding that "colorant selection mechanism" was a means-plus-function limitation). The specification does not include the words "microphone interpretation mechanism." Instead, the written description states generally that "the computer" can "identify" or "be programmed to recognize" the microphone's spoken commands, and separately describes "speech recognition software" to recognize voice data. See '883 Patent, col.4 ll.6-14; col.2 ll.23-25; col.4 ll.49-54. These descriptions fail to identify the mechanism within the claimed processing system used to interpret the microphone signals, let alone imbue it with structural significance. The expert declaration of Dr. Stern provides additional evidence that there is no well-known structural meaning of "microphone interpretation mechanism" to those skilled in the electronic arts.[4] See Stern Decl. ¶¶ 41-42.

[4] Again, Voice Domain provides no expert evidence or technical definitions to support its contention that "microphone interpretation mechanism" connotes definite structure to those skilled in the art. To the extent that Voice Domain relies on the fact that nine patent professionals failed to identify the term as subject to § 112, ¶ 6 during prosecution, the Court rejects the argument for the same reasons as for "coupling mechanism . . ."

Voice Domain argues that the specification demonstrates that "microphone interpretation mechanism" refers to the "software and/or hardware structure that recognizes, interprets, and responds to signals from a user's input." See Voice Domain Opening Claim Constr. Br., Docket No. 69 at 22. In a processing system, however, everything is implemented in "hardware and/or software." See Stern Decl. ¶ 43. Thus, in the context of electrical engineering, Voice Domain's interpretation of the specification provides no meaningful structural limitation and supports the conclusion that "microphone interpretation mechanism" is drafted in merely functional terms—i.e. a means for the processing system to determine when microphone signals represent data and when they represent command. See Aristocrat Techs. Au*stralia Pty Ltd. v. Int'l Game* Tech., 521 F.3d 1328, 1333 (Fed. Cir. 2008) (observing that "disclos[ing] only a general purpose computer as the structure designed to perform [a particular] function amounts to pure functional claiming").

The Court also rejects Voice Domain's contention that the '883 Patent's incorporation by reference of U.S. Patent No. 5,036,539 (the "'539 Patent") provides evidence that the claimed "microphone interpretation mechanism" has a well-understood structural meaning. The '539 Patent does not recite or teach a "microphone interpretation mechanism." Instead, the '539 Patent generally relates to speech recognition systems, and describes control programs for interpreting keyboard input. See U.S. Patent No. 5,036,539, col.1 ll.7-12; col.5 ll.64-68 (filed Jul. 6, 1989) (hereinafter "'539 Patent, col._ ll.__"). However, the functions of these programs are distinct from that of the '883 Patent's "microphone interpretation mechanism." Nothing in the claims or specification of the '539 Patent suggest that its keyboard interpretation program can also interpret microphone signals. Moreover, the '539 Patent's speech recognition systems are not relevant to the structure of the '883 Patent's "microphone interpretation mechanism." This is

evident from the '883 Patent claims, which recite a "speech recognition mechanism" separately from the "microphone interpretation mechanism." See '883 Patent, col.4 ll.45-55. Thus, speech recognition in the '883 Patent is achieved by a different component than the "microphone interpretation mechanism." See Becton, Dickinson and Co. v. Tyco Healthcare Group, LP, 616 F.3d 1249, 1254 (Fed. Cir. 2010) ("Where a claim lists elements separately, the clear implication of the claim language is that those elements are distinct components of the patented invention."). Consequently, the incorporation of the '539 Patent does not inform the structural meaning of "microphone interpretation mechanism."

Apple has demonstrated that "microphone interpretation mechanism which . . ." fails to recite sufficiently definite structure. Therefore, the Court finds that the presumption against means-plus-function claiming has been rebutted, and the limitation is subject to § 112, ¶ 6.

Construction under § 112, ¶ 6

Voice Domain does not dispute Apple's assertion that the function of the "microphone interpretation mechanism" is: "in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data." Apple further contends that no corresponding structure is disclosed in the specification of the '883 Patent. The Court agrees.

The only component identified in the specification for determining when the microphone signals represent data and when they represent command is "the computer." See '883 Patent, col.4 ll.1-15. That word is used in the specification to describe the claimed "processing system," of which the claimed "microphone interpretation mechanism" is a part. See id. at col.1 ll.66-67. This is insufficient. For means-plus-function limitations involving special-purpose computer functions, the Federal Circuit "has consistently required that the structure disclosed in the

specification be more than simply a general purpose computer or microprocessor." Aristocrat Tech., 521 F.3d at 1333. Instead, the '883 Patent must disclose an algorithm that performs the particular function of determining when the microphone signals represent command and data. See id.; see also Harris Corp. v. Ericsson Inc., 417 F.3d 1241, 1253 (Fed Cir. 2005) ("A computer-implemented means-plus-function term is limited to the corresponding structure disclosed in the specification and equivalents thereof, and the corresponding structure is the algorithm."). In this case, Apple has demonstrated that the specification does not disclose an algorithm. See Stern Decl. ¶ 45. At best, it restates the claimed function of the microphone interpretation mechanism. See '883 Patent, col.4 ll.1-15 (teaching that "the computer examines the microphone signal to identify the spoken command"). This does not constitute an algorithm that satisfies the requirements of § 112, ¶ 6. See Encyc. Britannica, Inc. v. Alpine Elecs., Inc., 355 Fed. App'x 389, 394-95 (Fed. Cir. 2009) (finding that a specification that merely restates the function of the special-purpose computer does not disclose an algorithm).

Voice Domain does not dispute that the specification does not disclose an algorithm, but argues that no algorithm is required because the function of the microphone interpretation mechanism can be performed by a general purpose computer. The Federal Circuit has limited the holding of Aristocrat to those cases where an inventor has claimed "a specific function performed by a special purpose computer." In re Katz Interactive Call Processing Patent Litigation, 639 F.3d 1303, 1316 (Fed. Cir. 2011). Where the inventor has merely recited general computer functions like "processing," "receiving," or "storing," he need not "disclose more structure than the general purpose processor that performs those functions." Id. In this case, however, the "microphone interpretation mechanism" does not perform generic computer functions. As the claim language itself recites, the mechanism performs the specific function of

differentiating between types of microphone signals to determine when they represent command and when they represent data. See '883 Patent, col.4 ll.46-49. Therefore, Aristocrat applies and an algorithm must be disclosed in the specification. Because no algorithm appears in the written description, the '883 Patent specification does not disclose adequate corresponding structure, and the claimed "microphone interpretation mechanism" is indefinite. See Robert Bosch, LLC v. Snap-On Inc., 769 F.3d 1094, 1097 (Fed. Cir. 2014) (stating that if courts are unable to identify corresponding structure for a means-plus-function limitation, "the claim term is indefinite").

For the reasons stated above, the Court will construe "microphone interpretation mechanism which . . ." as a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6. The function of the "microphone interpretation mechanism" is: "in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data." However, the specification does not disclose adequate corresponding structure. As a result, the claimed "microphone interpretation mechanism" is indefinite.

C. "cursor position transducer"

Disputed Term	Apple's Construction	Voice Domain's Construction
"cursor position transducer"	"input device for converting mechanical motion of the device into an electrical signal to direct the movement of a cursor on a remote display"	plain meaning; alternatively, "a user input device or component that converts a user's input for manipulating the position of a cursor on a display"

The term "cursor position transducer" appears in Claim 1 of the '883 Patent. Apple proposes that the plain meaning of the claimed "transducer," is a device for converting mechanical motion into an electrical signal to control a cursor on a remote display. Voice Domain objects to this construction, arguing that it improperly restricts the claim language.

It is true, as Apple argues, that the preferred embodiment of the '883 Patent's specification describes a handheld trackball that remotely controls a cursor by converting the user's mechanical motion into an electrical signal. The file history confirms that Barker understood his invention this way. See, e.g., Second Preliminary Amendment, Docket No. 68-3, Ex. 2 at 4 (stating that the peripheral includes "a cursor position control device (e.g., a trackball device)"). But neither the specification nor the file history restrict "cursor position transducer" to this embodiment, and the claim language itself does not require Apple's limitations. See Williamson, 2015 WL 3687459, *4-5 (rejecting district court's narrow construction where the specification did not limit claim terms to its embodiments or examples).

To the contrary, the intrinsic evidence demonstrates that "cursor position transducer" should be read more broadly. With respect to Apple's "mechanical motion" and "electrical signal" limitations, the specification makes clear that a trackball is not the only type of transducer that is claimed. The written description teaches that "[o]ther types of input transducers can be used to manipulate the cursor." See '883 Patent, col.2 ll.36-38 (emphasis added). The specification elsewhere acknowledges that various kinds of transducers existed at the time of Barker's invention. See id. at col.2 ll.6-10 (stating that the handheld device's buttons "can be electromechanical switches, membrane switches or any type of transducer known to those skilled in the art which can be used to accept a user's input") (emphasis added). These references to multiple types of transducers suggest that the plain meaning of the claim term includes more than just those transducers that convert mechanical energy into electrical energy.

Moreover, nothing in the intrinsic record suggests that the claimed transducer only controls a cursor on a "remote" display. Apple's own U.S. Patent No. 5,202,961, filed in 1990, establishes that a touch screen—a type of "input device" that does not use a remote display—was

known in the art when the '883 Patent application was filed. See U.S. Patent No. 5,202,961, col.4 ll.25-29 (filed Jun. 8, 1990) ("[T]he user can then control the display of the video information 35 through operation of the control device 19, such as a mouse, trackball, keyboard, touch screen, or any type of X-Y axis input device.") (emphasis added). Although they are separately recited components, the '883 Patent's cursor position transducer and display screen need not be structurally separated from one another. See Gen. Elec. *Co. v. Int'l Trade Comm'n*, 685 F.3d 1034, 1045 (Fed. Cir. 2012). Thus, Apple's construction of "cursor position transducer" would improperly limit the ordinary meaning of "transducer" as recited.[5]

Voice Domain proposes that "cursor position transducer" be assigned its plain meaning. The Court need not construe claim terms if the term's ordinary meaning can be readily understood by laypersons and it resolves the dispute. See 02 Micro, 521 F.3d at 1360-61; see also U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997) (stating that claim construction "is not an obligatory exercise in redundancy"). Given the technical nature of the term "transducer," however, the Court concludes that construction will be helpful to the jury. Voice Domain's alternative proposal is "a user input device or component that converts a user's input for manipulating the position of a cursor on a display." This is substantially similar to Apple's construction, except that it omits the above-described restrictions. Therefore, the Court

[5] The Court has carefully considered the Stern Declaration, the 1991 Microsoft Press Computer Dictionary definition of "transducer," and Apple's contention that arguments made by Voice Domain in prior litigation support Apple's construction regarding "cursor position transducer." See Stern Decl. ¶¶ 46-48; Microsoft Press Computer Dictionary (1991), Docket No. 68-16, Ex. 15 (defining "transducer" as "a device that converts one form of energy into another"); Voice Domain's Mem. in Support of Claim Constr. (Philips Litig.), Docket No. 68-18, Ex. 17. However, in light of the intrinsic record, the Court gives little weight to this extrinsic evidence as it pertains to "cursor position transducer." See Phillips, 415 F.3d at 1318-19 (explaining that extrinsic evidence—including expert testimony and dictionary definitions—are generally less reliable than the intrinsic record in determining how to read claim terms); Vanderlande Indus. Nederland BV v. I.T.C., 366 F.3d 1311, 1322 (Fed. Cir. 2004) (suggesting that litigation theories advanced in a separate patent proceeding are deserving of "little—if any—weight in claim construction").

will adopt the alternative construction, subject to the revision that Voice Domain's proposed phrase "a user input device or component" will be shortened to "an input device."

For the reasons stated above, the Court will construe "cursor position transducer" as "an input device that converts a user's input for manipulating the position of a cursor on a display."

D. "command notification signal" and "data notification signal"

Disputed Term	Apple's Construction	Voice Domain's Construction
"command notification signal"	"electrical signal indicating that the voice command button has been pressed"	plain meaning; alternatively, "a signal indicating that the command button has been selected or asserted"
"data notification signal"	"electrical signal indicating that the voice data button has been pressed"	plain meaning; alternatively, "a signal indicating that the data button has been selected or asserted"

"Command notification signal" and "data notification signal" appear in Claims 1 and 3 of the '883 Patent. The Court addresses these terms together. The parties dispute whether (1) the claimed notification signals must be electrical; and (2) whether the buttons that generate the notification signals must be pressed. Apple argues that the plain meanings of "command notification signal" and "data notification signal," as used in the '883 Patent, require the Court to include the words "electrical" and "pressed" in its constructions. Voice Domain again contends that these words improperly limit the claim language.

For substantially the same reasons as the Court rejects Apple's "cursor position transducer" arguments, the Court declines to adopt Apple's proposed use of the word "electrical." To be sure, the preferred embodiment of the '883 Patent describes "circuitry which produces electrical signals" to notify the processing system when the command and data buttons have been engaged by the user. See '883 Patent, col.2 ll.38-44 (emphasis added). However, neither the specification nor the file history confine the '883 Patent's "notification signal" to one

that is electrical. Absent a clear statement limiting claim scope, the Court is "constrained to follow the language of the claims, rather than that of the written description." See Falana v. Kent State Univ., 669 F.3d 1349, 1355 (Fed. Cir. 2012) (quoting Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1328 (Fed. Cir. 2002)). Thus, a construction using the word "electrical" would erroneously import a limitation from the specification. The ordinary meaning of the claimed "notification signal" does not require such a restriction.

Furthermore, the claim text and the specification do not support Apple's contention that the buttons that generate the notification signals must be "pressed." The claim language itself recites that the command and data notification signals indicate when the voice command and data buttons are "asserted." See '883 Patent, col.4 ll.30-36 (emphasis added). The teaching of the specification is consistent with this language. Although the written description uses "press" twice and "release" once to describe how a user engages the invention's buttons in the preferred embodiment, see '883 Patent, col.3 ll.15, 34; col.2 l.60, it does so interchangeably with the word "assert." In fact, the specification uses "assert" far more often. See '883 Patent, col.2 ll.41, 44, 49, 53; col.3 ll.12, 19, 24, 27, 30, 39, 43; col.4 ll.1, 4, 6, 11. Consequently, the Court will not adopt Apple's proposed use of the word "pressed."

As with "cursor position transducer," the technical nature of "command notification signal" and "data notification signal" suggests that construction will be helpful to the jury. The Court therefore declines Voice Domain's invitation to assign the terms their plain meaning. See 02 Micro, 521 F.3d at 1360-61. In the alternative, Voice Domain proposes that the command and data buttons can be either "selected or asserted." However, the word "selected" does not appear in the claim language, and the use of the term is not supported by the '883 Patent's specification. Therefore, the Court will exclude "selected" from its construction.

For the reasons stated above, the Court will construe "command notification signal" as "a signal indicating that the command button has been asserted." The Court will construe "data notification signal" as "a signal indicating that the data button has been asserted."

E. "voice data button" and "voice command button"

Disputed Term	Apple's Construction	Voice Domain's Construction
"voice data button"	"a physical button that, when pressed by the user, emits a signal indicating that the voice input is data only and not command"	plain meaning; alternatively, "a user control that can emit an output indicating that the voice input is data"
"voice command button"	"a physical button that, when pressed by the user, emits a signal indicating that the voice input is command only and not data"	plain meaning; alternatively, "a user control that can emit an output indicating that the voice input is a command or instruction"

"Voice data button" and "voice command button" appear in Claim 1 of the '883 Patent. The Court addresses these terms together. The controversy over each of these terms involves two primary disputes. First, the parties disagree about whether the claimed buttons should be construed, as Apple argues, as physical buttons that are pressed. Voice Domain insists instead that the claimed buttons should be characterized simply as user controls.[6] Second, Apple contends that the voice command button must provide a notification signal that indicates command only and not data, and that voice data button must provide a notification signal that indicates data only and not command. Voice Domain objects to this "only and not" construction.

With respect to the first dispute, the Court agrees with Apple that the claim language supports use of the word "button." The '883 Patent's claims recite "buttons," not user controls.

[6] Once again, and as explained in greater detail in this section, the technical nature of these claim terms leads the Court to conclude that construction will assist the finder of fact. Thus, the Court rejects Voice Domain's argument that "voice data button" and "voice command button" be assigned their plain meanings, and instead considers Voice Domain's alternative proposals. See 02 Micro, 521 F.3d at 1360-61.

Although the specification contemplates that the claimed buttons can be "electromechanical switches, membrane switches, or any type of transducer known to those skilled in the art," see '883 Patent, col.2 ll.8-9, this language is not so broad as to teach that the buttons can be any type of "user control." Voice Domain cites no other intrinsic or extrinsic evidence to support the use of the amorphous concept "user control." Such an open-ended construction would impermissibly read "button" out of the claim. See Innova/Pure Water, 381 F.3d at 1119 (observing that "all claim terms are presumed to have meaning in a claim").

The Court will omit Apple's additional qualifiers "physical" and "press." Apple is correct that the specification describes a preferred embodiment in which the user "presses" and "releases" physical buttons. See '883 Patent, col.3 ll.14-15; col.3 ll.33-35; col.2 ll.59-60. However, the ordinary meaning of the word "button," viewed in light of the specification, does not require such a narrow interpretation. The specification expressly reflects that the invention can have multiple types of buttons that detect input in different ways. See '883 Patent, col.2 ll.6-10 (stating that "[b]uttons 18-26 can be electromechanical switches, membrane switches, or other types of transducers"). This understanding is supported by the specification's consistent preference for the verb "assert" to describe how the user engages the claimed buttons.[7] Furthermore, at the time Mr. Barker filed his application, "virtual" buttons—as opposed to those that are "physical"—were known in the art. See U.S. Patent No. 4,914,624 (filed May 6, 1988, entitled "Virtual Button for Touch Screen"). Finally, the intrinsic evidence does not include clear language restricting the meaning of the claimed buttons to ones that are "physical" and

[7] As explained above, although the specification uses the verbs "press" twice in conjunction with the claimed buttons, and "release" once, it describes the user as "asserting" the buttons over a dozen times. See '883 Patent, col.2 ll.41, 44, 49, 53; col.3 ll.12, 19, 24, 27, 30, 39, 43; col.4 ll.1, 4, 6, 11. For this reason, the Court will use "assert" to describe how the claimed buttons are engaged by the user. This is consistent with the Court's constructions of "command notification signal" and "data notification signal."

"pressed." Disavowal of claim scope requires that the specification or prosecution history "make clear that the invention does not include a particular feature." Hill-Rom Servs., 755 F.3d at 1372. No disclaimer is present here. Consequently, the Court will not read Apple's "physical" and "press" limitations into the claimed buttons.

The dispute over Apple's proposed "only and not" requirement is a closer question. During prosecution, Mr. Barker repeatedly argued that his invention was novel over prior art because "the claimed data and command buttons . . . unambiguously distinguish[] spoken commands from data." See Appellant's Br. on Appeal, Docket No. 68-5, Ex. 4 at 5; see also Response to Office Action, Docket No. 68-19, Ex. 18 at 9 (arguing that prior art "does not notify the system whether the microphone signal represents command or data. . . . The claimed command and record button avoid such ambiguity."); Preliminary Amendment, Docket No. 68-4, Ex. 3 at 12 (stating that the "purpose of the voice command transducer . . . is to distinguish voice commands from other types of voice input"). The parties agree that this evidence supports the simple proposition that the claimed command button is used to indicate a command to the processing system; and that the claimed data button is used to indicate data. The specification also supports this interpretation. See, e.g., '883 Patent, col.3 ll.56-4:4 (teaching that, in the preferred embodiment, the invention "includes a voice command button which, when asserted, . . . [notifies] the computer that that the microphone signal represents a spoken command").[8]

Apple's construction goes one step further. Apple insists that the import of the intrinsic record is that the plain meaning of the claimed "command button" is that it indicates command only and not data; and the plain meaning of the claimed "data button" is that it indicates data

[8] Although the Court gives little weight to extrinsic evidence derived from previous litigation theories, arguments made by Voice Domain in a prior infringement lawsuit also suggest that the command button indicates command, and that the data button indicates data. See Voice Domain's Mem. in Support of Claim Constr. (Philips Litig.), Docket No. 68-18, Ex. 17.

only and not command. Considering the file history just described, there is an attractive logic to this construction. Seemingly implicit in an invention that separately recites a "command button" and a "data button," and is meant to unambiguously distinguish between command and data, is a design in which the command button indicates command only, and the data button indicates data only. In other words, it would be counterintuitive that the "command button" could signal both command and data, or that the "data button" could signal both data and command.

However, just because the file history implicitly suggests that a particular embodiment of the invention is not the most likely, it does not follow that that the ordinary meaning of the claim term itself must exclude that embodiment. "It is the claims that define the metes and bounds of the patentee's invention." Phillips, 415 F.3d at 1313; Apple Inc. v. Motorola, Inc., 757 F.3d 1286, 1298 (Fed. Cir. 2014) ("The name of the game is the claim."). In this case, the operative claim language is simply "data button" and "command button." The file history's implicit suggestion that the claimed buttons indicate only one type of information and not the other is insufficient to narrow the ordinary meaning of these bare words, because absent clear lexicography or disavowal, "[t]he patentee is free to choose a broad term and expect to obtain the full scope of its plain and ordinary meaning." Thorner, 669 F.3d at 1367. Thus, read in view of the intrinsic record, the ordinary meaning of the claimed "voice command button" is just as it sounds: a button that indicates that voice input is command. Similarly, "voice data button" means a button that indicates that voice input is data. Nothing more is required.

Nor does the intrinsic record meet the exacting standard required for the Court to find that Barker disclaimed "dual hatted" buttons capable of indicating both data and command. In order to disavow claim scope the inventor must demonstrate "a clear intention to limit the claim scope using words of manifest exclusion or restriction." See Hill-Rom Servs., 755 F.3d at 1372.

No such words are present in the specification or file history. All that the prosecution history for the '883 Patent requires is that the claimed buttons "unambiguously distinguish" between data and command. Without more, this does not clearly disavow buttons capable of simultaneously indicating both data and command, and differentiating between the two types of signals.[9] See Thorner, 669 F.3d at 1366 (stating that "[m]ere criticism of a particular embodiment encompassed in the plain meaning of a claim term is not sufficient to rise to the level of clear disavowal" of claim scope); Spine Solutions, Inc. v. Medtronic Sofamor Danek USA, Inc., 620 F.3d 1305, 1315 (Fed. Cir. 2010) (explaining that even where the specification observes that a particular structure makes it "particularly difficult" to achieve the intended benefits of the invention, it does not constitute clear disavowal of that structure).

Finally, although not argued or briefed in detail, the parties differ on whether the claimed buttons emit a "signal" (as Apple suggests) or an "output" (as Voice Domain suggests). The claim language recites, and the specification consistently teaches, that the purpose of the claimed buttons is to provide "notification signals" to the processing system. See, e.g., '883 Patent, col.4 ll.30-36; col.1 ll.33-41. Accordingly, the Court will construe the claimed buttons to "emit a signal."

For the reasons stated above, the Court construes "voice data button" as "a button that, when asserted by the user, emits a signal indicating that the voice input is data." The Court construes "voice command button" as "a button that, when asserted by the user, emits a signal indicating that the voice input is a command."

[9] As a result, Apple's "only and not" restriction is not required for the Court's construction to remain faithful to the file history's teaching that the claimed buttons unambiguously distinguish between data and command. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) (cautioning that "[c]laims may not be construed one way in order to obtain allowance and in a different way against accused infringers").

F. "in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data"

Disputed Term	Apple's Construction	Voice Domain's Construction
"in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data"	"determines whether the microphone signal represents only command or only data based upon whether the command notification signal or data notification signal has been received"	plain meaning

This term appears in Claim 1 of the '883 Patent. As explained in the Court's discussion of "microphone interpretation mechanism which . . .", the phrase "in response to said command and data notification signals, determines when . . ." recites the function of the claimed microphone interpretation mechanism. Apple seeks a clarifying construction that the microphone interpretation mechanism, "in response to said command and data notification signals, determines whether the microphone signal represents only command or only data based upon whether the command notification signal or data notification signal has been received." Voice Domain objects to Apple's proposed construction, and urges the Court to assign the phrase its plain meaning.

Once again, Apple attempts to restrict the claim language by characterizing the transmission of notification signals between the claimed buttons and the claimed microphone interpretation mechanism as data only, or command only, but not both. For the same reasons the Court rejects Apple's "only and not" requirement in the construction of "voice command button" and "voice data button," the Court will not adopt Apple's clarifying construction here. To do so would improperly import a limitation from the specification and file history into the claim language. The claim language speaks for itself, and no construction is necessary. See U.S.

Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997) (stating that claim construction "is not an obligatory exercise in redundancy").

Accordingly, the Court will assign "in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data" its plain meaning.

Conclusion

For the foregoing reasons, the disputed claim terms are construed as follows:

(1) The term "peripheral" means "a device that provides communications or inputs to a connected processing system."

(2) The term "processing system" means "a system of one or more processors that receives inputs or communications from a connected peripheral."

(3) The term "coupling mechanism for providing said microphone signal, said command notification signal, said data notification signal and said cursor signal to said processing system" is a means-plus-function limitation subject to 35 U.S.C. § 112, ¶ 6. The function of the "coupling mechanism" is: "providing said microphone signal, said command notification signal and said cursor signal to said processing system." The corresponding structure in the specification is: "transmission cable or wireless transmitter."

(4) The term "microphone interpretation mechanism which, in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data" is a means-plus-function limitation subject to 35 U.S.C. § 112, ¶ 6. The function of the "microphone interpretation mechanism" is: "in response to said command and data notification signals, determines when said microphone signal represents command and when

it represents data." The specification does not disclose adequate corresponding structure. Therefore, the term is indefinite.

(5) The term "cursor position transducer" means "an input device that converts a user's input for manipulating the position of a cursor on a display."

(6) The term "command notification signal" means "a signal indicating that the command button has been asserted."

(7) The term "data notification signal" means "a signal indicating that the data button has been asserted."

(8) The term "voice data button" means "a button that, when asserted by the user, emits a signal indicating that the voice input is data."

(9) The term "voice command button" means "a button that, when asserted by the user, emits a signal indicating that the voice input is a command."

(10) The term "in response to said command and data notification signals, determines when said microphone signal represents command and when it represents data" is assigned its plain meaning.

SO ORDERED.

/s/ Timothy S. Hillman
TIMOTHY S. HILLMAN
DISTRICT JUDGE