United States District Court,
C.D. California.

ACTIVISION PUBLISHING, INC,
Plaintiff.
v.
GIBSON GUITAR CORP,
Defendant.

No. CV 08-1653-MRP (SHx)

Sept. 16, 2008.

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CLAIM CONSTRUCTION FOR CLAIM TERMS "MUSICAL INSTRUMENT" AND "INSTRUMENT AUDIO SIGNAL"

MARIANA R. PFAELZER**, District Judge.**

In this action for declaratory relief, Plaintiff Activision Publishing, Inc. ("Activision") seeks judgment that its "Guitar Hero"-branded video games and associated peripherals (collectively, "Guitar Hero") do not infringe Defendant Gibson Guitar Corp. ("Gibson")'s U.S. Patent No. 5,990,405 ("the ' 405 Patent").

The parties agree that at least two claim terms of the '405 Patent, "musical instrument" and "instrument audio signal," require the Court's construction to resolve this action. FN1 The Court directed the parties to propose constructions for the two terms and submit briefs in support of their positions by August 28, 2008. It conducted a hearing on the matter on September 3. At the hearing, the Court agreed to entertain a request for additional briefing. The parties submitted additional briefing on September 12. The Court now construes the terms before it.

FN1. The Court notes that other claim terms could ultimately require claim construction. At the time of the August 4, 2008 teleconference, however, the parties had not yet reached agreement on any such terms. The Court decided, after discussion with the parties, to proceed first with the two agreed-upon terms in order to resolve promptly the most apparent disputes in claim construction.

I.

BACKGROUND

The complete background of this case has been described in detail in the Court's previous orders. *See, e.g.*, Order Denying Plaintiff's Motion for a Preliminary Injunction, May 20, 2008.

The '405 Patent, entitled "System and Method for Generating and Controlling a Simulated Musical Concert Experience," contains thirty claims. Gibson asserts that Guitar Hero infringes claims 1, 13-15, 23, and 28. Claims 1, 13, 21, 25, and 28 are independent claims; claims 14-15 depend on claim 13; and claim 23 depends on claim 21. At issue are two claim terms, "musical instrument" and "instrument audio signal," FN2 which appear frequently in the claims and in the remainder of the specification.

FN2. The patent uses the term "audio signal" in claims 25 and 28 and "electrical audio signal" within the specification. The parties have agreed that these terms are synonymous with "instrument audio signal" for purposes of the '405 Patent. Activision Claim Constr. Br., at 8 n. 4; Sept. 3 Hearing Tr. at 38:1-38:3; id. at 64:14-64:17.

As general background, the invention relates to a system whereby a musician can control a "simulated musical concert experience" using a musical instrument as the control device. '405 Patent at col. 1:8-1:12. Claims 1, 21, 25, and 28-that is, all the independent claims except 13-disclose a system where a musical performance is pre-recorded on at least two separate sound tracks: one for a "specific musical instrument" and one for the remaining instruments and other sound components. *See* id. at col. 1:63-2:14. A user plays a musical instrument "corresponding to the specific musical instrument." Id. at col. 2:15-2:17. The instrument outputs an "instrument audio signal," which a "system interface device" then uses to vary some characteristic of the specific instrument track. Id. at col. 2:23-2:27. *See also* id. at cl. 1(f). A mixer combines the "controlled instrument sound track"-that is, the "specific musical instrument" sound track-with the other instrument tracks and ultimately outputs audio for the user to hear. *See* id. at col 2:32-2:38. The remaining independent claim, claim 13, does not require a separate "controlled" or "specific" instrument sound track. That claim requires only that the instrument audio signal control "at least one characteristic" of a pre-recorded musical performance. *See* id . at cl. 12.

With the exception of claim 21,FN3 each of the independent claims in the ' 405 Patent (claims 1, 13, 25, 28) uses the term "musical instrument" to describe the device used to control the simulation and "instrument audio signal" to describe the signal the device outputs to control the simulation.

FN3. Claim 21 uses the narrower term "guitar" instead of the more general term "musical instrument." Though the term "guitar" is not before the Court, the Court at this juncture is strongly inclined to consider "guitar" a subset of "musical instrument," incorporating all the limitations of "musical instrument" as well as any additional limitations that may be entailed by the term "guitar." This accords with the term's usage in the rest of the patent: both claims 1 and 13, which use "musical instrument," have dependent claims that disclose a system "where in the musical instrument is a guitar." '405 Patent at cls. 3, 15. Thus, the rest of the patent treats "guitar" as a species of "musical instrument."

Claim 1, for example, explains that "in response to operation of the musical instrument by the user," a "system interface device" controls a characteristic of an audio signal representing an audio portion of a pre-

recorded musical instrument. '405 Patent at cl. 1. This is accomplished through an "instrument audio signal," which inputs to that "system interface device" and "var[ies] in response to the operation of the instrument by the user of the system." Id.

The other independent claims employing these terms do so in a roughly analogous way. *See e.g.,* id. at cl. 13 ("[t]he musical instrument producing instrument audio signals at an instrument audio output when the instrument is played" and "whereby at least one characteristic of the audio portion of the pre-recorded musical performance is controlled by playing of the musical instrument by the user"); id. at cl. 25 ("varying ... at least one parameter of the instrument sound track in response to audio signals generated by a musical instrument when played by a musician"); id . at cl. 28 ("a musical instrument having an instrument audio output ... and a signal conditioning circuit responsive to audio signals generated by the musical instrument when the instrument is played.").

II.

LEGAL STANDARD

"The claims of a patent define the invention to which the patentee is entitled the right to exclude." Phillips v. AWH Corp ., 415 F.3d 1303, 1312-13 (Fed.Cir.2005) (en banc), *cert. denied,* 546 U.S. 1170 (2006). (citations omitted). Construction of the terms of art within the claims is exclusively the province of the Court. Markman v. Westview Instruments, Inc., 517 U.S. 370, 372 (1996). During this construction, "[t]he words of a [patent] claim are generally given their ordinary and customary meaning," which is "the meaning that the term would have to a person of ordinary skill in the art in question ... as of the [patent's] effective filing date." Phillips, 415 F.3d at 1313. "Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id*. The patent's specification is "the single best guide to [its] meaning." *Id*. at 1315.

The court must not, however, import an improper limitation from the specification into a claim by, for example, confining a claim to the embodiments listed in the specification when it is not warranted. *Id*. at 1323; *see also* E.I. DuPont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed.Cir.1988). Thus, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention [in the specification] will be, in the end, the correct construction." Phillips, 415 F.3d at 1316 (quoting Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1250 (Fed.Cir.1998)).

In construing claim terms, a court should also consider any other evidence intrinsic to the patent file, including "the complete record of the proceedings before the PTO [and] the prior art cited during the examination of the patent." Id. at 1317. As with the specification, the prosecution history may demonstrate how the PTO and the applicant understood the patent, as "well as whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id*. However, the file evidence should not be given undue weight because the statements in it are part of "an ongoing negotiation" between the patent office and the inventor and thus "often lack[ ] the clarity" of the final product. *Id*.

Finally, the court may also consider relevant extrinsic evidence, which is "all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Id*. The Court uses this type of evidence with caution as the Federal Circuit has explained that evidence is generally

"less significant than the intrinsic record in determining the legally operative meaning of claim language." *Id* . (citations omitted). When used, extrinsic evidence cannot "vary or contradict" claim language, Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed.Cir.2003), but it can be useful "for a variety of purposes, such as to provide background [and] to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person with skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." Phillips v. AWH Corp., 415 F.3d 1303, 1318 (Fed.Cir.2005)

III.

DISCUSSION

The task before the Court is to provide these two terms "the meaning that [they] would have to a person of ordinary skill in the art in question" in the context of the entire patent. Phillips, 415 F.3d at 1313. The parties essentially agree that a "musical instrument" must be capable of producing an "instrument audio signal." FN4 The Court is left to determine (1) what type of devices the term "musical instrument" captures and (2) what type of "instrument audio signals" they must be capable of producing.

FN4. Both parties propose constructions that capture this requirement, albeit in slightly different ways.

Gibson proposes a broad construction of the terms. It would require that a "musical instrument" need only "indirectly produce music" and perhaps have no more than a mere appearance "that corresponds to a specific type of instrument used in the musical performance." In Gibson's view, the musical instrument need only be capable of producing an "instrument audio signal" that is "representative of the sounds intended to be made by operating the musical instrument" or "corresponds to the instrument used to create a separated soundtrack."

Activision proposes a much narrower construction. It would define "musical instrument" as a "traditional musical instrument," though Activision never provides a coherent definition of "traditional." Under Activision's construction, an "instrument audio signal" must be both "audible" and representative of the sounds made by the instrument.

The Court concludes that the '405 Patent requires that a "musical instrument" must be capable of (1) making "musical sounds," *see, e.g.,* id. at col. 2:1-2:2 ("musical sounds that would be made ... by a specific musical instrument"); and (2) either directly, or indirectly through an interface device, producing an instrument audio signal representative of those sounds. FN5 *See, e.g.,* id. at col. 5:14-5:16 ("musical instruments which either directly, or indirectly through an interface device, will produce electrical audio signals"). The Court also determines that the patent establishes that the two requirements are distinct; and, in particular, that the instrument must be capable of making musical sounds independent of the mechanism that outputs the instrument audio signal.

FN5. The Court notes that the "musical instruments" contemplated in the '405 Patent exclude some conventional musical instruments. The parties agree on this point, as they both propose constructions of this term that include the capability to generate and output electrical signals. Instruments without this capability (*e.g.,* a standard trombone) would not constitute a musical instrument under the Patent and, indeed, would not work for purposes of this invention.

Given this detailed definition of "musical instrument" (and its inherent constraint on the signals produced), the Court finds that an "instrument audio signal" need only be construed as "an electrical signal output by a musical instrument." *See* id. Thus, to summarize:

'405 Patent		
	"musical instrument"	"instrument audio signal"
Activision's Proposed Construction	a traditional instrument that generates instrument audio signals	an audible signal generated by a musical instrument that is representative of the sounds made by the instrument
Gibson's Proposed Construction	a device which can be used to directly or indirectly produce music and is capable of outputting an instrument audio signal (as that term is defined below) and has an appearance that corresponds to a specific type of instrument used in the musical performance	an electrical signal output by the musical instrument (as defined above) that is representative of the sounds intended to be produced by operating the musical instrument, either directly or indirectly after the signal is processed by an interface device
Court's Construction	an instrument that is capable of making musical sounds, and either directly, or indirectly through an interface device, producing an instrument audio signal representative of those sounds	an electrical signal output by a musical instrument

The Court explains its construction by considering the claim language, the specification, and the patent's distinctions over the prior art. It also evaluates the parties' proposals and arguments in turn.

A. Claim Language

Claim construction must begin with-and remain centered on-the claim language itself, for that is the language the patentee has chosen to particularly point out and distinctly claim the subject matter which the patentee regards as his invention. Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1116 (Fed.Cir.2004) (citations omitted) (reaffirmed in Phillips, 415 F.3d at 1312). The claim language here does not provide much help in resolving the claim construction issues before the Court, as those issues generally turn on distinctions not made in the claims. Most important, the claim language, read in isolation, might not necessarily foreclose the broad construction that Gibson proposes because some claims contemplate a simulation where the user's play is not directly played back to the user.

A simple example illustrates the point. A user may operate one embodiment of the patent by playing an electric guitar while wearing a headset that receives play back from a mixer. When the user strums the strings in some sequence, he produces musical sounds represented in a signal that the guitar outputs via its "instrument audio output" to the "system interface device." The "system interface device" also has available an audio track of a pre-recorded song.FN6 The system interface device may disregard entirely all "musical" characteristics of the instrument audio signal, so long as it controls one characteristic of the pre-recorded track in response to the operation of the guitar. It might, for example, control play back of the pre-recorded track at a volume fluctuating in response to the force by which the user strikes the strings. *See, e.g.,* ' 405 Patent at col. 2:34-2:38. Thus, irrespective of the user's choice of strings, frets, or notes, he will hear, through the headset, precisely the same music, varying only in volume depending on how forcefully he

strikes the strings of the guitar.

FN6. This is accomplished using a "source audio signal" representing that pre-recorded song.

In this example, the simulation does not actually play back the user's guitar play. Claim 1 does not require such a feature, and the other relevant independent claims are roughly analogous. Because the independent claims lack such a requirement,FN7 they may appear on a superficial reading to be consistent with a control device that does not have actual musical sound-making ability at all.

FN7. Dependent claim 5 describes a "bypass mode" where the system does play back directly the user's play. It is thus inconsistent with a control device that cannot independently make musical sounds. However, as it is a dependent claim, the Court will not import its requirements into the independent claims that express no such limitation.

Gibson's proposed constructions seek to capture such devices. In relevant part, it construes musical instruments to include devices that "indirectly make music" by outputting an instrument audio signal representative of the sounds the user "intended" to make by operating the instrument.

B. The Remainder of the Specification

Of course, claims are not to be "read ... only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification ." Phillips, 415 F.3d at 1313. The Court now turns to the remainder of the specification-in particular, statements made in the written description and distinctions made with respect to the prior art-to provide context.FN8 The Court finds that these sources preclude the broad construction Gibson proposes, even if the claim language read in isolation does not.

FN8. The Court finds that the patent itself decisively mandates the conclusions it reaches. It has examined the other sources cited by Gibson, including its reexamination request, but concludes without further discussion that those statements cannot overcome the statements made in the patent. *Cf.* Honeywell Int'l, Inc v. ITT Industries, Inc., 452 F.3d 1312, 1319 (Fed.Cir.2006) ("Where, as here, the written description clearly identifies what his invention is, an expression by a patentee during prosecution that he intends his claims to cover more than what his specification discloses is entitled to little weight."). No differently, the Court finds unpersuasive different definitions adopted by Gibson's witness, Mr. Richard Gembar, and citations to other patents that define "musical instruments" more broadly. *See, e.g.,* Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1318 (Fed.Cir.2005) ("A patentee may define a particular term in a particular way, and in that event the term will be defined in that fashion for purposes of that particular patent, no matter what its meaning in other contexts."); Phillips, 415 F.3d at 1318 ("[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.").

a. Statements in the Specification

The written description very clearly describes specific embodiments of this invention that are controlled by (1) an electric guitar; and (2) an amplified acoustic guitar. These guitars, of course, produce musical sounds directly when a user manipulates them without any other components.FN9 However, it would be improper

to "confin[e] a claim to the embodiments listed in the specification when it is not warranted." Phillips, 415 F.3d at 1323.

FN9. To be clear, an electric guitar may use external devices to amplify the sounds it has made. However, it directly makes musical sounds in the first instance. Both parties agree on this point, each having represented to the Court that an electric guitar produces musical sounds even without an amplifier or other external devices. *See* Decl. of Activision's proffered expert Dr. Gareth Loy para. 49 ("Because the instrument audio signals have a waveform that is analogous to the sounds generated by the musical instrument, the instrument audio signals will cause the speakers to vibrate analogously to the acoustic sounds the instrument generates"); Decl. of Gibson's Mr. Richard Gembar para. 10 (referring to "the sounds made" when the strings of an unplugged electric guitar vibrate-sounds that an amplifier merely "amplifie[s]" rather than generates).

It is certainly not warranted here, as the written description expressly states that the system is not limited to those two examples. The specification explains that "[a]lthough [the system] is shown and described for use with an electric or amplified acoustic guitar, it can be used with a variety of other musical instruments which either directly, or indirectly through an interface device, will produce electrical audio signals representative of the sounds made by the instrument." '405 Patent at col. 5:12-5:17. The specification has thus defined the world of "musical instruments" that can be used by the system. The Court finds this highly instructive to defining the claim term "musical instrument." *See* Phillips, 415 F.3d at 1321 (explaining that the specification "acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication") (citations omitted).

This statement indicates that a "musical instrument" under the '405 Patent must be capable of making musical sounds-if it could not, the instrument certainly could not produce electrical audio signals representative of the musical sounds made. Likewise, in summarizing the invention elsewhere, the specification describes the "musical sounds that would be made ... by a ... musical instrument." '405 Patent at col. 1:67-2:3; *accord* claim 1(a) (using the same phrase). *See also* id. at col. 2:10-2:12 (describing the "concert sound track" as containing "music from other ... instruments").

The statement also establishes that the musical instrument makes musical sounds independent of the "instrument audio signal." This is because the "musical instrument" represents the sounds it made in its instrument audio signal. Thus, the Court's construction, which describes an instrument that is capable of producing an instrument audio signal representative of *those* sounds (the sounds the instrument made) is consistent with this statement.

Any construction that seeks to capture a device that can only make musical sounds following processing of its instrument audio signal FN10 does not align with this description, and is therefore incorrect. *See* Phillips, 415 F.3d at 1316 (explaining that "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention [in the specification] will be, in the end, the correct construction") (citations omitted). Gibson proposes a construction that is very clearly unaligned with this axiom. Gibson inserts the words "indirectly" and "intended" into its definition, thereby attempting to include as a "musical instrument" any device that "indirectly" produces music by generating an "instrument audio signal" representative of the sounds "intended" to be produced by operating the instrument. Gibson's proposed construction thus captures a device that only makes sounds subsequent to processing of its instrument audio signal (which represents the user's intent). *See* Gibson's Claim Constr. Br. at 17.

FN10. The patent discloses some systems with a headset that would prevent the user from hearing the sounds made by the musical instrument itself. Col 4:61-65. Gibson's Reply Brief correctly points out that in such embodiments the user never hears the instrument, but that observation misses the point: such a system still presupposes that the musical instrument generates something the user can listen to without activating the bypass mode. That is, the musical instrument of this system must still be able to make musical sounds on its own.

The Court finds that Gibson's use of "indirectly" and "intended" impermissibly distorts the meaning of this statement. The specification does not use those terms, and a natural reading precludes the use of those terms because the signal must be representative of the sounds made by the instrument-irrespective of the user's intent.FN11

FN11. Certainly, the musical sounds made by the instrument may be related to the user's intent. However, that is not necessarily the case, and the patent ties the instrument audio signal to the actual sounds made and not to the user's intent. The Court further notes that, coupled with Gibson's expansive definition of "musical instrument," using the word "intended" in a definition for "instrument audio signal" essentially writes the term "musical instrument" out of the patent. Combining the two proposed constructions make a musical instrument out of any device that outputs any signal that a downstream component can interpret and make into music. It matters not what that device is because the user can "intend" to produce virtually any musical sounds by operating the device, even though it is not until later that those sounds are actually made. For example, a user could push the "play" button on a stereo, which causes the button to output a signal "representative" of the music the user intended to "play." As the button "indirectly produced" music, the "play" button would have to be deemed a "musical instrument" (assuming it was of appropriate appearance). Quite obviously, these constructions operating together expand the scope of this terms to things that could not conceivably be musical instruments under any reasonable definition of that term.

Further, this conclusion does not change because, according to the specification, musical instruments "either directly, or *indirectly through an interface device,* will produce electrical audio signals." '405 Patent at col. 5:15-5:17 (emphasis added). Even if an instrument uses an interface device, the instrument audio signal it produces must be "representative of the sounds made by an instrument." Id. Thus, the presence of an interface device does not affect the two requirements here (1) that the instrument is capable of making sounds; and (2) that it is capable of producing an electrical audio signal representative of those sounds. The Court nonetheless adopts the phrase "directly, or indirectly through an interface device" verbatim into its construction because that clause informs how the instrument audio signal is produced.

The Court must clarify some confusion over the patents' use of "interface" and "signal" that became evident at the hearing. At the hearing on this matter, Gibson proposed that an "interface device" is a device used by the instrument to produce music. *See* Sept. 3 Hearing Tr. at 44:13-44:20. However, a musical instrument must be capable of directly outputting the requisite "instrument audio signal" regardless of whether it uses an interface device to "produce" such a signal indirectly. Such a conclusion is necessitated by the claim language, which requires that the musical instrument "generate[s] an instrument audio signal at an instrument audio output." *See, e.g,* '405 Patent at cl. 1(a). The instrument audio output is part of the musical instrument. *See* id. at col. 2:15-2:20 ("a musical instrument ... has [an] audio output."); fig. 1 col. 4:5-4:10 (depicting and describing the musical instrument's "instrument audio output"). Thus, the role of the interface

device has no bearing on the notion that the musical instrument directly outputs an instrument audio signal at its instrument audio output.FN12 It therefore also does not affect the requirement that the instrument be capable of producing "musical sounds" (which are, by definition, represented in the "instrument audio signal").

FN12. The Court finds merit in Activision's example of an amplified acoustic guitar (which is discussed in the very same sentence as the "interface device") as an instrument that uses an interface device to produce a signal. Sept. 3 Hearing Tr. at 28:5-28:23. More generally, any "transducer" could serve as an "interface device" if it converted the sounds made by the instrument into an "instrument audio signal" representative of those sounds. *See* Section III.C, infra (defining transducer). Thus, the musical instrument generates an "instrument audio signal" indirectly through an "interface device," the transducer. In the example in note 5, *supra,* the Court explains that a standard trombone could not be a "musical instrument" under the '405 Patent because it cannot output an instrument audio signal. If, however, the trombone was coupled with a microphone that could output a signal "representative of the sounds made" by the trombone, the trombone-plus-microphone combination would qualify as a musical instrument. Importantly, in that example, the patent requires that the microphone be considered a part of the musical instrument because it contains the "instrument audio output" for outputting the "instrument audio signal." *See* '405 Patent at cl. 1(a).

As a consequence of this reasoning, the aforementioned interface device is necessarily distinct from the "system interface device" and "interface box" described elsewhere in the patent and in the claims. The latter terms refer to devices that input the "instrument audio signal" from the musical instrument and use it to control another signal that represents the pre-recorded instrument track. They can be viewed as a different part of the system because they input the fully formed "instrument audio signal" and essentially have nothing to do with generating the instrument's output of the signal prior to that (which is precisely what the "interface device" purports to do). *See, e.g.,* '405 Patent at cl. 1(e)-(f) (describing a "system interface device having a first audio input electrically connected to the instrument audio output" and a circuit "responsive to the instrument audio signal"); id. at col. 2:15-2:19 ("a musical instrument ... has its audio output connected to an instrument input on a system interface box"). This is a distinction that Gibson would not make at the hearing, where, immediately after discussing at length the "interface device" from col. 5:15-5:17 in the '405 Patent, Gibson's counsel stated that "what the inventors have done is they have used the signal that comes out of the musical instrument and that signal is fed into what the patent calls an interface." Sept. 3 Hearing Tr. at 45:17-45:19. *See also* id. (stating that "[w]hat the patent describes is using the signal that comes out of the musical instrument, putting that into an *interface* and then that *interface* affects the way prerecorded music is played back.") (emphasis added). The "interface" Gibson is referring to cannot be the same as an "interface device."

In sum, Gibson's argument that the "interface device" somehow serves to capture a whole new class of instrument, is unavailing. The "interface device" described in the specification at col. 5:12-5:17 serves neither to narrow nor broaden the scope of the term "musical instrument" as construed because, whether or not the instrument uses an interface device to assist in producing a signal, it must output the instrument audio signal representative of the sounds it made directly.

The Court next considers Activision's proposed construction. Activision asserts that a musical instrument under the '405 Patent must be a "traditional" musical instrument. The term "traditional musical instrument" captures a subset of instruments captured by the Court's construction and thus represents a narrower construction of the term than the Court has provided. The word "traditional" appears nowhere in the patent.

There is nothing to suggest that this patent only covers "traditional" instruments, and not, for example, variants of traditional musical instruments or even wholly new musical instruments. Moreover, the Court finds the word "traditional" too vague to be useful-an electric guitar is expressly covered by the patent but many would not consider it "traditional." *See, e.g.,* id. at col. 1:48-1:49 ("a musical instrument, such as an electric guitar").FN13 The Court concludes that so long as the instrument is capable of making musical sounds and producing the requisite "instrument audio signal," it is of no consequence to the ' 405 Patent whether the instrument is also "traditional," in any sense of the word.

FN13. The Court recognizes that Activision may have intended "traditional" to convey something similar to the Court's construction of musical instrument, but the Court still emphatically rejects the term as excessively narrowing the patent and inviting subjective distinctions. *See* Sept. 3 Hearing Tr. at 8:9-8:16 (advocating that a "traditional" musical instrument is capable of making sounds on its own without additional processing).

The Court concludes that its construction comports with the definitional statement in the written description of the '405 Patent and all the claims. The parties' proposals, by contrast, impose or remove conditions and distort the meaning of the terms provided by the specification.

b. Distinctions of Prior Art

Because a "musical instrument" serves as the "control device" in the simulation claimed in the '405 Patent, *see* '405 Patent at col. 1:10-1:12 ("this invention pertains to ... the control of a simulated concert experience ... using a musical instrument as the control device"), the Court now considers how the specification of the '405 Patent distinguishes the "control devices" in the prior art.

The specification distinguishes in some detail the invention from U.S. Pat. No. 5,513,129 ("'129 Patent"), which it describes as "system ... controlled by one or more input devices, such as a head tracker and manipulator glove." '405 Patent at col. 1:38-1:41. The '405 Patent criticizes the '129 Patent for its control devices and notes that an advantage of this invention over the '129 Patent is that it "use[s] a musical instrument as the control device." Id. at col. 1:8-1:11. *See also* id. at 1:45-1:49; id. at 1:55-1:56. In doing so, it disavows certain types of devices that have been used in the '129 Patent and other virtual reality systems.

The Court reaches this conclusion only after the careful analysis that follows. It is mindful that "general statements, without more, will not be interpreted to disclaim *every* feature of the prior art." Ventana Med. Sys. v. Biogenex Labs., Inc., 473 F.3d 1173, 1181 (Fed.Cir.2006) (emphasis added). However, where there is something "more" than general statements, such as where the "general summary or description of the invention describes a feature of the invention ... and criticizes other products ... that lack that same feature," courts may conclude the patent makes "a clear disavowal of these other products." AstraZeneca AB v. Mut. Pharm. Co., 384 F.3d 1333, 1339-40 (Fed.Cir.2004). The statements in the '405 Patent are not *Ventana's* "general statements by the inventors indicating that the invention is intended to improve upon prior art," which cannot be read to disclaim features of prior art devices. To the contrary, the "control device" distinction made in the "Background" section in the '405 Patent is specific; it is targeted towards the absence of a particular feature of the prior art, the "actual operation of a musical instrument" as a control device. *See* '405 Patent at col. 1:45-1:49. This distinction must be accounted for in claim construction. Accordingly, the construction of "musical instrument" must be sufficiently narrow so as to avoid contradicting the

specification's distinction of the ' 129 Patent and its control devices.

The '129 Patent discusses at length different types of control devices that cause another device to produce music. The '129 Patent describes, for example, a prior art "virtual drum kit":

In this system, the user wore a glove and a hand tracker and moved the gloved hand to manipulate virtual objects which were in turn linked to various synthesizer parameters. Thus, by manipulating virtual objects (as taught, for example, by U.S. Pat. 4,988,981, issued Jan. 29, 1991), sounds of different qualities could be created. A skilled user could create modern sounding musical interludes. These ideas have been carried forth by people such as Jaron Lanier who has given a number of public performances in which he manipulates virtual objects to create a musical performance. Research and exploration along these lines is expected to continue (the virtual "air guitar" and the like will probably be developed). In all VR systems of this type, manipulation of a virtual object causes the sound or music to change.

'129 Patent at 2:50-2:65 (citing '981 patent, which is also cited in the '405 Patent). *See also* id. at 3:17-3:22 ("[A] VR system has been used as a virtual musical instrument, so that the user must 'play' the virtual instrument (by manipulating an input device) to hear anything. This means that the system creates music, and that the system's musical output is limited by the user's ability to 'play' the 'instrument.' "); '405 Patent at col. 1:20-1:27 ("Typically, a virtual reality system further includes one or more input devices and interface software so that the user of the system can interact with the virtual environment that is being recreated, such as to simulate the user movement in the environment or manipulation of virtual objects reproduced in the virtual environment.").

The specification expressly criticizes the '129 Patent and its control devices because that invention does not allow a musician to control the virtual environment through the "actual operation of a musical instrument such as an electric guitar." '405 Patent at col. 1:45-1:49. *See also* id. at col. 1:55-56 (stating that a musician can "control the sound portion of the concert through operation of the guitar or other instrument."). It is without question that control by "actual operation of a musical instrument" is precisely the characteristic the '129 Patent and other virtual reality systems lacked.

This is an important distinction that warrants further analysis. In order to control a virtual instrument with the prior art devices described in the ' 405 Patent, the system necessarily had to process the input signal heavily to determine what sounds to play. For example, where the user wore a glove with sensors as the control device, the system had to process the user's movements to determine the appropriate response within the virtual reality. *See, e.g.,* ' 129 Patent at col. 8:18-8:32. In the "virtual" instrument context, this was a necessity because the input signal was not representative of musical sounds. Rather it was representative of the user's actions, such as the user's motion or the forces and torques the user exerted on the device. *See* id.

By emphasizing "actual operation of a musical instrument" to control the simulation, the '405 Patent was able to distinguish the prior art because the signal output by the control device was more than just indicative of the user's movement. Rather, it was "representative of the sounds made by the instrument," '405 Patent at col. 5:16-5:17, which enabled the '405 Patent to simulate the musical concert far more easily than the prior art. This view is confirmed by several statements in the specification that laud the simplicity of the system and the absence of a computer as principal advantages. *See, e.g.,* '405 Patent at col. 1:57-1:60 (explaining that unlike the '129 Patent, the invention "would minimize the use of complex and expensive hardware and software."); id., at Col. 1:16-1:20 (describing conventional virtual reality systems as "quite complex" due to the combination of hardware, software, and peripheral devices); id., at Col. 5:59-5:60 ("One advantage of

this system is that no computer is needed to operate or control it.").

The rest of the patent shores up the foregoing analysis. Figure 2 depicts an interface box composed of simple analog circuitry, in contrast to a computerized system, that appears to presume that the input signal is not representative of the user's motions. Figure 2 and dependent claim 5 disclose a system that plays back the instrument audio signal directly to the user in bypass mode. Id. This would not be possible if the signal were representative only of the user's "intent."

Despite all of this language in the specification, Gibson proposes a definition of "musical instrument" that captures devices that "indirectly" produce music by outputting a signal representative of the user's intent. Gibson seeks to include such devices that have an "appearance that corresponds to a specific type of instrument used in the musical performance." Under Gibson's definition, a control device of appropriate appearance could be a "musical instrument" under the '405 Patent, even if it only produces music indirectly by controlling a virtual reality.

The Court finds Gibson's suggested appearance-based constraint FN14 insufficient to overcome the specification's discussion of the ' 129 patent and its control devices. As a preliminary matter, the patent says nothing about the appearance of the instrument. Gibson's appearance-based limitation, however, draws from the "simulation" purpose of the patent, which is achieved in part by "operation of a musical instrument corresponding to the specific musical instrument represented by the pre-recorded instrument sound track." '405 Patent at col. 2:15-2:18. However, it is not enough that the control device simply looks different from the ' 129 Patent's control devices, as Gibson proposes. The language cited above indicates that it must actually operate differently, by outputting a signal representative of the sounds actually made by the instrument and not of the user's motions or intent. Gibson's suggested appearance-based constraint cannot alter that analysis. FN15 Indeed, the substance of the instrument audio signal and the complexity that it necessitates is entirely unaffected by and unrelated to the appearance of the input device. It is the functional characteristics of musical instruments in independently making musical sounds and outputting a signal representative of those sounds that distinguish it from the prior art input devices that could not do so.

FN14. Indeed, at the hearing, Gibson appeared to recognize how unwarranted an "appearance" distinction is by backing away somewhat from this extreme position taken in the papers. Sept. 3 Hearing Tr. at 56:16-56:22.

FN15. With its appearance-based constraint, Gibson imposes a condition that is neither necessary nor sufficient to turn "devices" into "musical instruments" in order to simulate participation in a concert. Some musical instruments may appear completely different than the "musical instrument" captured on the instrument track, but may still "correspond" if the instrument can be made to sound or otherwise operate precisely like that instrument. There seems to be no reason, for example, that a user could not effectively simulate a guitar track by playing a piano. The patent confirms the importance of sound to the simulation in stating that the "the level of simulated participation" is "enhanc[ed]" if the musician can hear himself playing the instrument in synchronization with the concert video track and the left and right concert sound tracks. '405 Patent at col. 2:45-2:50.

In sum, the Court concludes that a musical instrument must be an instrument that functions as a musical instrument in making musical sounds independent of its function as a control device of a virtual reality or

simulation. The Court thus reaches independently the same result as the previous section: a device is not separately a musical instrument if it can only make musical sounds by controlling other devices via its instrument audio signal. It does so here after an evaluation how the patent explicitly distinguished the prior art.

This conclusion is entirely consistent with the remainder of the written description and the claims. For example, the specification lauds the advantages of the "actual operation" of "musical instruments" to control such environments because (1) it would be entertaining to professional and amateur musicians; and (2) it would "assist musical instrument manufacturers in promoting the sale of their instruments." '405 Patent at col. 1:49-1:60. Each of these statements squarely aligns with instruments that function as instruments apart from their connection to a virtual reality device. Finally, it is uncontested here that one feature of the dependent claims is a "bypass mode" where the audio signal of the musical instrument is connected "directly" to the mixer so that "the musician can hear himself play." Id. at col. 2:38-2:50. While this alone cannot settle the issue, it certainly contributes, along with all of the other statements in the specification, to the Court's conclusion that a musical instrument operates in making musical sounds distinct from its purpose as a control device.

C. Other Issues

The Court now addresses the other limitations that Activision seeks to impose on the two terms. Activision would require that "instrument audio signals" are "audible" signals, which, by definition, are analog and constrained to frequencies that can be heard. Activision uses the term "audible" signals in contrast to digital signals, which necessarily require additional electronic processing before producing sounds. *See* Activision Claim Constr. Br., at 17.

The Court finds some merit in Activision's arguments based (1) on dictionary definitions of "audio signal" as "any signal within the audio frequency range," id. at 15; (2) the repeated use of electric and amplified acoustic guitars as examples, both of which output audible signals; (3) Figure 2 in the specification, which depicts analog circuitry; (4) statements in the specification that laud the advantage of not needing a computer to operate the simulation, *see, e.g.,* '405 Patent at col. 5:59-5:60 ("One advantage of this system is that no computer is needed to operate or control it."); (5) a reference in describing a preferred embodiment to "amplif[ying]" an audio signal; and (6) the optional "bypass" mode, described in claim 5, which appears to require an audible signal in order to function, *see, e.g.,* id. at cl. 5 ("the user can listen to the instrument audio signal").

The Court, however, declines to limit the instrument audio signal and the patent in the way Activision proposes. Thus, the Court finds it sufficient that the signal is *representative* of the sounds made (*i.e.,* representative of the [analog] sound waves), regardless of whether the representation is analog or digital. In essence, it is the substance of the signal that is important in contrast to its form, and the Court's construction and discussion in the previous sections describes what is required of the "instrument audio signal." A musical instrument could directly produce analog sound waves *and* output a digital representation of those sounds.

The Court sees no reason, at this time, to exclude a musical instrument that falls into that class. The arguments referenced above describe analog or audible signals or the advantages thereof, but they do not limit the instrument audio signal to analog form. For instance, it does not seem appropriate to exclude digital signals from "audio signal" because the definition of "audio signal" appears to vary.FN16 No

differently, that a musical instrument may have "one or more pick-ups or other transducers that will generate electrical audio signals ... at an instrument audio output" is unhelpful. ' 405 Patent at col. 2:64-2:67. A transducer ("[a] ... device ... that converts input energy of one form into output energy of another") could be a device that converts analog sound waves into a digital signal. AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed.2000). Thus, contrary to Activision's suggestion at the hearing, the use of a "transducer" does not foreclose the possibility that the instrument audio signal is digital: a musical instrument could output analog sound waves while a transducer on the instrument converts the analog signal into a digital instrument audio signal at the instrument's output. This is the situation the "directly or indirectly through the use of an interface device," explained above, covers.

FN16. *See, e.g.,* '129 Patent at col. 7:53-7:56 ("The term 'audio signal' is used herein in a broad sense to include not only sound waves but also electrical, optical, or other signals representing sound waves (such as the electrical output of a transducer in response to sound waves.)").

In addition, unlike the clear disavowal of scope described with respect to the control devices, there is no such disclaimer of the prior art that focuses on the form of the instrument audio signal. General statements about the advantage of not requiring a computer (or other necessarily "complex" systems) cannot be read as a disavowal of systems that utilize a digital signal or a computer.FN17 Ventana Med. Sys., 473 F.3d at 1181 (explaining that "general statements, without more, will not be interpreted to disclaim every feature of every prior art" described in the background of the invention). Instead, these statements simply explain one way that the ' 405 Patent attempts to improve on the state of the art: embodiments of the Patent might " *[p]referably ... minimize* the use of complex and expensive hardware and software"-not eliminate it. ' 405 Patent at col. 1:57-1:60 (emphasis added). This is precisely the situation the Ventana Court addressed. 473 F.3d at 1181 (admonishing courts not to over-read "general statements by the inventors indicating that the invention is intended to improve upon prior art.")

FN17. The Court does not purport to define or limit what constitutes a "computer"; it concludes only that the '405 Patent does not preclude the use of a computer or other electronics if necessary to process a digital signal. That conclusion, however, does not broaden the definition of "musical instrument" because it still must possess the two capabilities described above.

Activision has presented further one argument that merits brief consideration. It argues that by citing U.S. Patent No. 5,393,926 ("'926 Patent" or "Johnson Patent"), Gibson necessarily limited "musical instrument" to devices that do not produce digital signals or require a computer to interpret the signals. The '926 Patent, in relevant part, states that its control device, a MIDI guitar, "generates a serial stream of data that identifies what string was struck and with what force." '926 Patent, at Col. 5:13-5:15. That system required the use of a computer to interpret the "serial stream of data," which is a digital signal.

The Court finds it unnecessary to narrow its construction to exclude systems using computers or digital signals on the basis of this reference alone. The Court's constructions already draw a line between the '405 Patent and the ' 926 Patent because its '405 constructions exclude instruments where the audio signal can be decoupled from the musical sounds-if any FN18-made by the instrument. The ' 926 Patent appears to have no such limitation.

FN18. Indeed, the claims of the '926 Patent speak only of " *virtual* musical instruments" and nowhere

appears to contemplate that the virtual musical instrument make any sounds itself. '926 Patent at cols. 10-12 (emphasis added).

IV.

CONCLUSION

The Court thus adopts the foregoing constructions of the two claim terms of the '405 Patent at issue.

IT IS SO ORDERED.

C.D.Cal.,2008.
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