IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
LUFKIN DIVISION

ANASCAPE, LTD.	§	
	§	
Plaintiff,	§	
	§	Civil Action No. 9:06-CV-158
v.	§	
	§	
MICROSOFT CORP., AND	§	JUDGE RON CLARK
NINTENDO OF AMERICA, INC.	§	
	§	
Defendant.	§	

MEMORANDUM OPINION AND ORDER CONSTRUING CLAIM TERMS OF UNITED STATES PATENT NOS. 5,999,084; 6,102,802; 6,135,886; AND 6,343,991

Plaintiff Anascape, Ltd. ("Anascape") filed suit against Defendant Microsoft Corporation ("Microsoft") claiming infringement of United States Patent Nos. 5,999,084 ("the '084 patent"), 6,102,802 ("the '802 patent"), 6,135,886 ("the '886 patent"), and 6,343,991 ("the '991 patent"). These patents all relate to the switches and buttons on controllers used for video games.[1]

The court conducted a *Markman* hearing to assist the court in interpreting the meaning of the claim terms in dispute. Having carefully considered the patent, the prosecution history,

[1] Anascape's suit against Microsoft alleged infringement of U.S. Patent Nos. 6,208,271 ("the '271 patent"), 6,344,791 ("the '791 patent"), 6,347,997 ("the '997 patent"), 6,352,205 ("the '205 patent"), 6,400,303 ("the '303 patent") and 6,563,415 ("the '415 patent"). On February 23, 2007, the court granted stay pending reexamination before the U.S. Patent and Trademark Office ("PTO") as to the '791, '205 and '415 patents. On May 2, 2007, the parties agreed to stay the '271, '997 and '303 patents pending reexamination by the PTO. Anascape also filed suit against Microsoft and Nintendo of America, Inc. ("Nintendo") claiming infringement of U.S. Patent Nos. 6,222,525 ("the '525 patent") and 6,906, 700 ("the '700 patent"). The claim terms in the '525 and '700 patents will be construed in a later order.

the parties' briefs, and the arguments of counsel, the court now makes the following findings and construes the disputed claim terms.[2]

I. Claim Construction Standard of Review

Claim construction is a matter of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S. Ct. 1384 (1996) ("*Markman II*"). "The duty of the trial judge is to determine the meaning of the claims at issue, and to instruct the jury accordingly." *Exxon Chem. Patents, Inc. v. Lubrizoil Corp.*, 64 F.3d 1553, 1555 (Fed. Cir. 1995) (citations omitted), *cert. denied,* 518 U.S. 1020, 116 S.Ct. 2554 (1996).

"'[T]he claims of the patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.,* 415 F.3d 1303, 1312 (Fed. Cir. 2005)(*en banc*)(citation omitted), *cert. denied,* 546 U.S. 1170, 126 S.Ct. 1332 (2006). "Because the patentee is required to 'define precisely what his invention is,' it is 'unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.'" *Phillips*, 415 F.3d at 1312 (quoting *White v. Dunbar*, 119 U.S. 47, 52 (1886)).

The words of a claim are generally given their ordinary and customary meaning. *Phillips* 415 F.3d at 1312. The "ordinary and customary meaning of a claim term 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."[3]

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[2] The transcript of the hearing contains a number of representations and agreements of the parties and their answers to technical questions from the court, all of which will not be repeated here, but which assisted the court in reaching the conclusions set out in this Order. This Order governs in the event of any conflict between the Order and the court's preliminary analysis at the hearing. The transcript will be cited as Trans. p. __ ll. __.

[3] Based on the patents and their cited references, the tutorials, and the representations of the parties at the hearing, the court finds that "one of ordinary skill in the art" covered by these four patents is someone with the equivalent of a "four-year" degree from an accredited institution

Id. at 1313. Analyzing "how a person of ordinary skill in the art understands a claim term" is the starting point of a proper claim construction. *Id.*

A "person of ordinary skill in the art is deemed to read the claim term not only in 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. Where a claim term has a particular meaning in the field of art, the court must examine those sources available to the public to show what a person skilled in the art would have understood the disputed claim language to mean. *Id.* at 1414. Those sources "include 'words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.'" *Id.* (citation omitted).

"[T]he ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips*, 415 F.3d at 1314. In these instances, a general purpose dictionary may be helpful. *Id.*

However, the Court emphasized the importance of the specification. "[T]he 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 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). A court is authorized

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(usually denoted in this country as a B.S. degree) in mechanical or electrical engineering, and two years of experience working with developing electronic systems that include sensors and/or controllers for computers, robotics, video games and/or other electronic devices.

to review extrinsic evidence, such as dictionaries, inventor testimony, and learned treaties. *Phillips*, 415 F.3d at 1317. But their use should be limited to edification purposes. *Id.* at 1319.

The intrinsic evidence, that is, the patent specification, and, if in evidence, the prosecution history, may clarify whether the patentee clearly intended a meaning different from the ordinary meaning, or clearly disavowed the ordinary meaning in favor of some special meaning. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-80 (Fed. Cir. 1995); *aff'd,* 517 U.S. 370, 116 S.Ct. 1384 (1996). Claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated "clear intent" to deviate from the ordinary and accustomed meaning of a claim term by redefining the term in the patent specification. *Johnson Worldwide Assoc., Inc. v. Zebco Corp.*, 175 F.3d 985, 990 (Fed. Cir. 1999).

The "'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent." *Phillips*, 415 F.3d at 1321. However, the patentee may deviate from the plain and ordinary meaning by characterizing the invention in the prosecution history using words or expressions of manifest exclusion or restriction, representing a "clear disavowal" of claim scope. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002). If the patentee clearly intended to provide his own definitions, the "inventor's lexicography governs." *Phillips*, 415 F.3d at 1316.

II. PATENT BACKGROUND AND TECHNOLOGY

The '084, '802, '886 and '991 patents relate to pressure-sensitive sensors useful for control of action intensity of electronic imagery as physical pressure is applied to the control surfaces in a hand-held game controller.[4] When a user applies pressure to a button or like depressible surface (e.g., cross-shaped key pad or finger depressible trigger), the force is transferred to the pressure-sensitive variable-conductance material. '084 Patent, Abstract. The material alters its conductivity (resistance to the movement of an electrical charge) and thereby provides analog electrical output dependant on the applied pressure. *See* '802 Patent, Col. 2, l. 64 - Col. 3, l. 5, & '886 Patent, Col. 3, ll. 14-22

For example, in a video game console with the present invention, the user can lightly touch the depressive surface to have the character walk, increase pressure to have the character walk faster, or press hard on the depressive surface to have the character run. In one embodiment, the game controller is sized and shaped to be grasped and held simultaneously by two hands with the thumbs remaining substantially free. The thumbs can then be used to depress a plurality of depressible surfaces, allowing for "full involvement" of the user.

[4]The parties agreed that the terms in dispute have the same meaning in each of these patents, so references may be made to any of them.

III. CLAIM CONSTRUCTION[5]

The first two terms are closely related and used extensively throughout the patents. The first, "pressure-sensitive variable conductance material" ("PSVC material") refers to a substance. The second, "pressure-sensitive variable-conductance analog sensor" ("PSVC sensor") refers to a device. An exemplar use of the terms is seen in Claim 1 of the '802 Patent, stating in part, with the disputed terms in bold:

> 1. An improved controller of the type held in two hands simultaneously for controlling electronic imagery, said controller including a housing, a plurality of depressible surfaces at least in-part exposed on said housing with the depressible surfaces acting on electricity manipulating devices contained within said housing and controlled by depression of said depressible surfaces for manipulating electrical outputs at least useful for controlling electronic imagery; wherein the improvements comprise;
>
> at least one of said electricity manipulating devices is a **pressure-sensitive variable-conductance sensor** for creating an analog electrical output proportional to varying physical pressure applied to at least one depressible surface of the plurality of depressible surfaces;
>
> means for outputting a signal to an image generation machine, said signal at least representational of said analog electrical outputs;
>
> the at least one said sensor includes **pressure-sensitive variable-conductance material** means for changing electrical conductance defendant upon the pressure applied;
>
> a resilient dome cap operatively associated with said **pressure-sensitive variable-conductance material** means.

[5]The agreed definitions are set out in a separate order entered contemporaneously with this one.

1. "Pressure-sensitive variable conductance material." Used in '084 Patent, Claims 5-6, 11; '802 Patent, Claims 1, 7, 10; '886 Patent, Claim 7; '991 patent, claims 12, 29, 31, 50.

Introduction

Anascape proposed, "a conductive element that provides for variable electrical flow dependent upon the applied force." Microsoft suggested that this term means:

> Material that has a conductivity that changes due to a volume effect. As pressure on the material increases the material volume decreases. This decrease in volume of the material increases the internal conductivity through the material. As a result, the conductivity through the sensor increases.
>
> This does not include material utilizing a micro-protrusion surface area effect. In such material, as pressure on the material increases the surface area of contact between the micro-protrusions and the conductive elements increases. As a result, the conductivity through the sensor increases.

The main point of contention is whether the construction should exclude the surface effect - the increased flow of current as two conductors come into contact over a greater area. Because the specification describes a surface effect, it will not be excluded.

Analysis

The skilled artisan would know, and the parties agreed, that "conductivity" (resistance to the movement of an electrical charge) is the inverse of "resistivity." Trans. p. 9-10. In other words, as resistivity goes down, conductivity goes up. The parties also agreed that, as used in these patents, conductivity may refer to resistive or rectifying properties depending on the pressure sensor material utilized. *See* '802 Patent, Col. 3, ll. 2-3 & '991 Patent, Col. 3, ll. 7-8; Trans. p. 10-11.

This claim, like many others in the patents, says the material is "positioned as a variably conductive element." So Anascape's suggestion to define the "material," which can

be used or positioned as an element as "an element," could be misleading, or at the least redundant. Nothing in the patents hints that the PSVC material is a device, like a transistor or a relay in a circuit. It is a substance or compound, as described in detail at '802 Patent, Col. 6, l. 50 - Col. 7, l. 21.

The claim states that the electrical conductivity of the substance (the PSVC material) is altered relative to received force. '084 Patent, Col. 12, ll. 50-52. *See also* '802 Patent, Col. 2, l. 67 - Col. 3, l. 5. In other words, PSVC material "changes its conductivity with applied pressure to alter the conductance of the electrical path provided thereby . . . ." '802 Patent, Col. 6, ll. 24-26. *See also* '991 Patent, Col. 6, ll. 28-30.

Referring to "the present invention," the patentee stated "Compressive force against pressure-sensitive variable conductance material **30** causes it to become sufficiently conductive as to allow current flow therethrough, the degree of conductivity being dependant upon the applied, received, or transferred pressure or force." '084 Patent, Col 9, ll. 1-6.

In another patent, the PSVC material is labeled the "active element." '886 Patent, Col. 1, ll. 36-37. "The active element, while a moderate to poor conductor when not under compressive force, drops in resistivity when placed under compressive force, such drop in resistivity being related to the amount of compression of the active element." '886 Patent, Col. 3, ll. 16-20.

The patents describe PSVC material as formed from conductive particles in a rubbery or elastic type binder. The patents specifically refer to U.S. Patent No. 3,806,471 (Mitchell),

as having " [a]dditional information regarding such materials."[6] *See* '886 Patent, Col. 9, ll. 43-47; '084 Patent, Col. 7, ll. 8-12; '991 Patent, Col. 6, ll. 61-66, '802, Col. 6, ll. 57-62.

The '471 patent describes and diagrams the way in which the conductive elements in PSVC material are forced closer together as pressure is applied. This creates a greater number of electrical pathways between the conductive elements, thus increasing the conductivity of the material. *See* '802 Patent, Col. 6, l. 55 - Col. 7, l. 11; '471 Patent (Mitchell) Col. 2, l. 58 - Col. 3, l. 5, Fig. 3-6. This is sometimes referred to as the "volume effect."

Microsoft's proposed definition seeks to exclude "material utilizing a micro-protrusion surface area effect." This effect is explained in U.S. Patent No. 5,296,837 (Yaniger). Briefly, a thin coat of resin with conductive particles such as carbon mixed with particles of a less conductive material (stannous oxide in the preferred embodiment) is applied to a supporting ply, creating a base. The stannous oxide particles are larger than the more conductive particles and create "micro-protrusions." As flexible conductors on a flexible base are pressed down on the base, the conductors make contact with the conductive resin and the circuit is completed. As more pressure is applied, more of the flexible conductor material is pushed down around the micro-protrusions, resulting in more contact with the conductive resin and thus a greater flow of current.

The parties do not dispute that one skilled in the art would know that bringing two conductors into contact over a greater area will result in an increase in current flow, assuming voltage is constant. This will be referred to as the "surface area effect." Once good contact is

[6]Since the patents in dispute specifically refer to the Mitchell patent in the specification, it is intrinsic evidence. *LG Elec., Inc. v. Bizcom Elec., Inc.*, 453 F.3d 1364, 1375 (Fed. Cir. 2006), *cert. granted,* 128 S.Ct. 28 (2007)(No. 06-936, 2007 Term).

made between conductors of a material with low resistivity (high conductivity) such as copper, the change in resistance as surface area contact is increased might be insignificant, when compared to the overall resistance of the circuit. But with materials of higher resistivity (lower conductivity), such as the PSVC materials described in these patents, the increase in current flow resulting from increasing the area of contact between conductors (the surface area effect) can be significant. *See* '084 Patent, Col. 7, ll. 28-37.

The problem with expressly excluding a surface area effect in the definition of PSVC material is that Figures 7 and 8 of the '802 patent, and the accompanying text of the specification, describe additional current flow through the PSVC material caused by greater surface area contact between the PSVC material **36** and the circuit traces **32** and **34** (the open electrical contacts in the circuit) as the PSVC material is compressed and flattens across the traces. '802 Patent, Col. 8, l. 58 - Col. 9, l. 4, Fig. 7 & 8. In short, Microsoft's construction improperly limits the definition of the disputed claim term by excluding a preferred embodiment.

Of course, simply because a greater flow of current can be achieved between two electrical contacts by increasing pressure on them, or increasing the surface area of contact, does not mean either contact is made of a PSVC material. The metal used for car battery terminals and cable clamps would not fit the patent's description of a pressure-sensitive variable conductance material, nor would it be recognized as such by a skilled artisan. However, tightening the clamp on the terminal could still improve the flow of current. PSVC material, as described in the claims and specification, and as known to those skilled in the art, must itself change in conductivity as a result of pressure, even though in certain applications

increasing the surface area of contact may also increase the flow of current. The court will define this term as follows:

> **"Pressure-sensitive variable conductance material"** means: "a substance that changes in conductivity to allow a greater flow of electric current through it, as pressure is applied to it."

Microsoft stated this definition was acceptable and Anascape's only concern was that "changes in conductivity" was redundant and might be used in later arguments before a jury. Trans. p. 29-32. Since the specifications of the patents make it clear that the conductivity of the material itself changes, even if in some applications there is a surface effect, the slight redundancy is justified. Learned counsel are well equipped to handle a misleading argument before the jury.

2. "Pressure-sensitive variable-conductance analog sensor." Used in '802 patent, claims 1-4, 16-18, 23, 29, 32, 33, 35, 40-44, 66-72.[7]

Introduction

Anascape proposes that this term should mean "an electricity manipulating device for varying electrical output proportional to varying physical force."

Microsoft contends that this term should be defined as follows:

> A pressure-sensitive variable-conductance sensor has material to contact conductive elements. This type of sensor has a conductivity that changes due to a volume effect. As pressure on the material increases the material volume decreases. This decrease in

[7]Parties agree that the similar terms, "pressure-sensitive variable conductance sensor," "pressure-sensitive analog sensor," "pressure-sensitive variable conductance structural arrangement," "pressure-sensitive variable conductance structure," "pressure-sensitive variable sensor," and "pressure-sensitive . . . button sensor," which appear in the '802, '991, '525 and '700 patents should be construed the same way.

> volume of the material increases the internal conductivity through the material. As a result, the conductivity through the sensor increases.
>
> A pressure-sensitive variable-conductance sensor does not include a variable conductivity sensor utilizing a micro-protrusion surface area effect. In such a sensor, as pressure on the material increases the surface area of contact between the micro-protrusions and the conductive elements increases. As a result, the conductivity through the sensor increases.

Here, the central question is whether a PSVC sensor must utilize PSVC material. The patent uses language of requirement in this regard, and every embodiment described incorporates PSVC material. The court concludes that sensors using PSVC material are what the patents disclose.

Analysis

It is clear from the claim language that a sensor is an electricity manipulating device.[8] '802 Patent, Col. 12, ll. 29-30; '991 Patent, Col. 14, ll. 60-62. The specifications also describe a sensor as an "electricity manipulating device." *See* '802 patent, Col. 3, ll. 39-42. In differentiating the present invention from prior art, the specifications of the patents state that a "pressure sensitive variable conductance analog sensor" is different from a prior art on/off sensor due to its ability to vary electrical output or flow proportional to varying physical force. *Compare* '991 Patent, Col. 1, ll. 42-56 *with* '991 Patent, Col. 6, ll. 2-5, *See also* '084 Patent, Col. 2, ll. 8-12. Anascape's proposal includes these elements. Microsoft's wants to add the presence of PSVC material, and the absence of other material, as limitations.

Many of the claims in the patents state specifically that the PSVC sensor (or the means for creating an analog output proportional to varying physical pressure) utilizes PSVC

[8]The patents use the terms "sensor" and "switch" interchangeably. '084 Patent, Col. 1, l. 16, '886 Patent, Col. 1, ll 20-21.

material. These include: ‘802 Patent, Claims 1-4, 7, and 10; ‘084 Patent, Claims 1-11; ‘886 Patent, Claim 7.

Other claims refer to a PSVC sensor or a button which manipulates electric current or imagery relative to physical pressure (or means or a method for the same) but there is no express statement that PSVC material is utilized. These include: ‘802 Patent, Claims 5, 9, 12, 13, 14, 15, 16, and 17; ‘991 Patent, Claim 11, 23, 29, and 44 . Anascape therefore argues that claim differentiation mandates a construction by which the analog sensor may, or may not, have PSVC material. Claim differentiation is a guide to proper construction, not a card that trumps a careful review of the specification and prosecution history. *See Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380-1381 (Fed. Cir. 2006).

The real issue is whether a PSVC sensor must have in it, somewhere, at least some PSVC material as defined above. Here the court is faced with the familiar duel between powerful opposing canons of construction. Anascape argues that “limitations may not be imported from the specification to the claims.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 904 (Fed. Cir. 2004), *cert. denied,* 543 U.S. 925, 125 S.Ct. 316 (2004).

Even if a specification describes only a single embodiment, the claims “will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using “words or expressions of manifest exclusion or restriction.” *Id.* at 906. On the other hand, the same case recites that claims must be read in the context of the specification, and notes the “particular difficulties” which arise when the claim language is broad but the specification is narrow. *Id*. at 905. The importance of the specification has since been given even more emphasis. *Phillips*, 413 F.3d at 1315.

The specification of the '802 patent describes a sensor in which the flow of current through the PSVC material (Item **36** in fig. 7 & 8) is increased because "material **36** which is flexible deform[s] with additional applied pressure to somewhat flatten-out and contact additional surface area of both traces **32** and **34."** The results include "additional conductivity changes . . . by the additional surface contact area." *See* '802 Patent, Col. 8, 58 - Col. 9, l. 4, Fig. 7 & 8. There is increased conductivity through the PSVC material due to the surface effect.

Another specification explicitly describes an embodiment in which the intrinsic conductivity of the PSVC material does not change very much during deformation. The patentee points out that in the prior art a "carbon-rich conductive pill or disc" had been used as "simple On/Off momentary-On switches" but not to provide "action intensity control of electronic imagery." '991 Patent, Col 9, ll. 16-36. "Carbon-rich pills are typically made of granular carbon in high concentrations in a silicone rubber binder producing a resilient conductive material resistant to mechanical bouncing when depressed onto a surface." '991 Patent, Col. 9, ll. 28-31.

The patentee states he had discovered that such a carbon rich pill or disc could be used in his variable conductivity invention. '991 Patent, Col. 9, ll. 39-47. Anascape points out that the carbon-rich pill does not change its conductivity very much with deformation, so one skilled in the art would know that the surface effect would be a significant contributor to variable conductivity in such a device. '991 patent, Col. 9, ll. 43-60.

Resistivity in a device with a carbon-rich pill changes only within a narrow range of approximately 3 thousand ohms to a low value near 10 ohms. *Id.* In that particular

configuration, most of the change in conductivity of the sensor as a whole will come from the deformation of the domed/convex conductive material **36** as it presses against the contact wires - the surface effect.

Microsoft responds with "fire" from its own canon: claim language can not be read to exceed the scope of the unequivocal language of the specifications of the patents. *See Nystrom v. Trex Co. Inc.*, 424 F.3d 1136, 1143 (Fed. Cir. 2005), *cert. denied,* 547 U.S. 1055, 126 S.Ct. 1654 (2006). Microsoft argues that the specifications of the patents compel a construction of "pressure-sensitive variable conductance analog sensor" that excludes the possibility that electrical conductivity is modulated *only* by varying the surface area of contact between micro-protrusions and conductive elements, as for example explained in the Yaniger patent. Microsoft does not point to any clear disclaimer by the patentee of an embodiment which includes only a surface area effect.

Microsoft cites *Anderson Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1372 (Fed. Cir. 2004) and *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006) and argues that with regard to the presence of PSVC material in the sensors, the following statements in the specification of the patents use language of requirement, not preference:

> 1. In the "Summary of the Invention": "The present invention involves the use of structures (pressure sensors) having pressure-sensitive variable-conductance material across proximal circuit traces in order to provide variable output ." '802 Patent, Col. 2, ll. 55-58.
>
> 2. "Pressure-sensitive variable-conductance material **36** is an important aspect of the present invention." '802 Patent, Col. 6, ll. 49-50.
>
> 3. "With the present sensor in all embodiments shown and described herein, pressure-sensitive variable-conductance material **30** is positioned as a variably conductive element . . . ." '084 Patent, Col. 8, ll. 10-12.

4. “At this point in the disclosure it should be quite clear that the pressure-sensitive variable conductance material **30** is a very important aspect, as is the tactile feedback from the snap-through dome-cap **16** of the present invention.” ‘084 Patent, Col. 6, ll. 53-56.

5. In the “Summary of the Invention”: “The present invention involves the use of structures (pressure sensors) having pressure-sensitive variable-conductance material across proximal circuit traces in order to provide variable output.” ‘991 Patent, Col. 2, ll. 59-62.

6. “Pressure-sensitive variable-conductance material **36** is an important aspect of the present invention.” ‘991 Patent, Col. 6, ll. 53-54.

7. The ‘886 patent describes related prior art has having a dome cap with a conductive “pill” referred to as the “active element.” ‘886 Patent, Col. 1, ll. 36-37. The specification then goes on to say: “With applied varying pressure changes, the active element changes it’s conductivity . . . . This pressure-sensitive variable-conductance aspect of the active element in the . . . dome cap opens many new and valuable possibilities of use.” ‘886 Patent, Col. 3, ll. 14-23.

Microsoft’s argument is bolstered by the fact that every single embodiment described in the four patents is of a sensor that utilizes PSVC material. As discussed above, there are descriptions of the surface area effect when the PSVC material is flattened across contacts. That is always an additional effect, involving PSVC material. Even the description of the use of a carbon-rich pill with a narrow range of resistivity changes did not imply an embodiment with *no* PSVC material. Rather, that discussion concluded by pointing out that a greater range of resistivity change could be achieved by replacing the carbon with tungsten carbide. “Therefore, tungsten carbide is a preferred active material for use with the present invention.” ‘991 Patent, Col. 10, ll. 1-3.

Finally, two of the patents cite the ‘471 Patent (Mitchell) while discussing sensors ‘886 Patent, Col. 2, ll. 16-28; ‘084 Patent, Col. 2, ll. 13-22. As mentioned earlier, all four patents referred to the Mitchell patent as having information about PSVC material that

increased conductivity through the volume effect. It only teaches sensors that use such material.

The '886 Patent refers to Mitchell as "describing sensors which utilize pressure-sensitive variable-output material to produce analog output" but distinguished that invention only by noting that Mitchell did not use or suggest an elastomeric dome cap to carry the PSVC material, to transfer force, or to provide tactile feedback. '886 Patent, Col. 2, ll. 36-48.

The '084 Patent cites the Mitchell patent as describing sensors which use PSVC material, but distinguishes it only with: "Mitchell fails to anticipate any structuring useful for providing a tactile feedback discernible to a human user of his sensors." '084 Patent, Col. 2, ll. 20-22. These references to the PSVC sensors disclosed in the Mitchell patent, which all use PSVC material, have "particular value as a guide to the proper construction of the term" "PSVC sensor." *LG Elec., Inc. v. Bizcom Elec., Inc.*, 453 F.3d 1364, 1375 (Fed. Cir. 2006), *cert. granted,* 128 S.Ct. 28 (2007)(No. 06-936, 2007 Term).

The question is whether, in light of the foregoing, one of ordinary skill could read the patent and conclude that patentee was claiming sensors without PSVC material? In view of *Phillips* and the resulting line of decisions that have wrestled with the "don't import limitations" - "read claims in light of the specification" dichotomy, the court thinks not. Anascape argues that a skilled artisan would realize that a depressible sensor suitable for game controllers that varies electric current in response to varying pressure only by action of a surface effect, is equivalent to such a sensor with PSVC material. That is an argument for infringement by equivalents - a matter for trial, not claim construction. The court will construe this claim term as follows: .

> **"Pressure-sensitive variable-conductance analog sensor"** means: "an electricity manipulating device that uses pressure-sensitive variable conductance material. to vary electrical output as varying physical force is applied."
> The similar terms, "pressure-sensitive variable-conductance sensor," "pressure-sensitive analog sensor," "pressure-sensitive variable-conductance structural arrangement," "pressure-sensitive variable-conductance structure," "pressure-sensitive variable sensor," and "pressure-sensitive . . . button sensor," which appear in the '802, '991, '525 and '700 patents shall be construed the same way.

3. "Pressure-sensitive variable conductance of one of said buttons." Used in '802 patent, claim 11.

Anascape suggests that this term should be construed as "variable electrical flow produced by a button associated with an electricity manipulating device for varying electrical output proportional to varying physical force." Microsoft contends that this term should mean "the conductivity of a pressure-sensitive variable-conductance sensor."

The proposals are substantially similar. In the end the definition of this term really depends on the construction of the prior term, because there is no real dispute over what a button on a game controller is. *See* Trans. p. 68-71. The button, or dome cap **28,** with the pressure-sensitive conductance material together comprises the sensor. '802 patent, col. 8, ll. 36-45. The court will define this term as follows:

> **"Pressure-sensitive variable conductance of one of said buttons"** means: "the conductivity of a pressure-sensitive variable-conductance sensor associated with one of said buttons."

4. "Depressing at least one of said individual buttons with varying degrees of pressure ." Used in '802 patent, claims 12-13.
"Depressing said depressible individual button with varying degrees of pressure for varying the action intensity of the imagery proportional to the degree of depressive pressure." Used in '802 patent, claims 14-15.

Anascape proposes that no construction is necessary for these terms. Microsoft's proposed construction states that the buttons must include a pressure-sensitive variable conductance sensor.

In construing "pressure-sensitive variable-conductance sensor" the court discussed the reasons and authorities for its conclusion that the specification limits the literal scope of the apparatus claims to devices incorporating PSVC material. Anascape argues that the terms now under review are in method claims so that it would be improper to restrict their scope to specific devices.

Anascape first cites *RF Delaware v. Pacific Keystone Tech*, 326 F.3d 1255, 1262-1263 (Fed. Cir 2003), which held that it was error to construe a claim describing a filter layer to require multiple layers even though several layers were described in the specification's description of the preferred embodiment. This case was decided before the renewed emphasis on the specification mandated by *Phillips* and its progeny. Additionally, there was no suggestion that the specification described "the present invention," or all embodiments, as having multiple layers, nor that the advance over prior art was due to multiple layers.

Anascape also relies upon *Free Motion Fitness v. Cybex, Int'l*, 423 F.3d 1343 (Fed.Cir. 2005). This case was decided after *Phillips*, and held it was error to limit the scope of the claims to devices with a single cable when dependent claims described a single claim but independent claims did not. 423 F.3d at 1351. In that case the specification had been

amended in several places to write descriptions of embodiment in the singular rather than in the plural. But, that still left descriptions and claims with the phrase "a cable." The use of the indefinite article "a" has traditionally been understood to encompass plural embodiments in patent parlance. 423 F.3d at 1350.

The fact that the terms in question are method claims does not permit them to be broader that the invention described and enabled in the specification. *See On Demand Machine v. Ingram Industries*, 442 F.3d 1331, 1340 (Fed. Cir. 2006), *cert. denied,* 127 S.Ct. 683 (2006)(holding that merely because the patent did not specifically disavow the standard dictionary definition of customer, which is not limited to retail customers, the claim scope could not be broadened to include wholesale customers in light of a specification focused exclusively on retail consumers.)

In the present case, the court's construction does not depend on the presence or absence of an indefinite article, nor upon references to preferred embodiments. Rather, it is based upon an analysis of the claims read in the context of the complete specifications, which taken together lead to the inescapable conclusion that what was invented, and what is being described, are devices and methods that use pressure sensitive variable conductance material. That is not to say that valid arguments of infringement under the doctrine of equivalents can, or can not be made. Those are matters for a later time.

The complete phrases presented to the court do not need to be construed because the plain and ordinary meaning is clear. However the court will instruct the jury as follows:

> **"Individual buttons"** as used in '802 patent, claims 12-13, and **"individual button"** as used in '802 patent, claims 14-15, refer to: "One or more buttons on a pressure-sensitive variable conductance analog sensor."

Means-Plus-Function Clauses

The remaining terms the parties ask the court to construe in the patents involve means-plus-function clauses under 35 U.S.C. § 112(6). Where a claim includes the word "means," a presumption is invoked that § 112(6) applies. *See Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1248 (Fed. Cir. 2005). This presumption may be rebutted if the claim recites "sufficient structure for performing the claimed function . . . ." *Id.*

Determining the claimed function and the corresponding structure of means-plus-function clauses are matters of claim construction, so it is appropriate to deal with these issues at the *Markman* stage. *WMS Gaming Inc., v. Int'l Game Tech.*, 184 F.3d 1339 (Fed. Cir. 1999). Claim construction of a means-plus-function limitation involves two steps. *See Medical Instrumentation and Diagnostics v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003), *cert. denied,* 541 U.S. 959, 124 S.Ct. 1715 (2004). The court must first identify the particular claimed function, and then look to the specification and identify the corresponding structure for that function. *Id.* "Under this second step, 'structure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.'" *Id.* (citations omitted). "While corresponding structure need not include all things necessary to enable the claimed invention to work, it must include all structure that actually performs the recited function." *Default Proof Credit Card System, Inc. v. Home Depot U.S.A., Inc.,* 412 F.3d 1291, 1298 (Fed. Cir. 2005).

5. "Means for creating an analog [output proportional to][signal representing] varying applied physical pressure." Used in '802 patent, claims 5, 7, 9, and 10; '991 patent, claim 23.

The parties agree that this term is governed by 35 U.S.C. § 112, ¶ 6, and that the function is "creating an analog output proportional to varying applied physical pressure." The dispute is with respect to the corresponding structure. Anascape contends that the structure is: "a dome-cap with a convexed inner surface and conductive material able to contact circuit traces, and equivalents thereof." Microsoft states that the structure is "pressure-sensitive variable-conductance material able to contact circuit traces, and equivalents thereof."

As discussed in the analysis of the term "pressure-sensitive variable-conductance analog sensor," and its variants, the specifications of these patents limit the inventions to devices that use PSVC material. For example the specification of the '802 patent states that the "present invention involves the use of structures (pressure sensors) having pressure-sensitive variable-conductance material across proximal circuit traces in order to provide variable output." '802 patent, col. 2, ll. 55-58; *see also,* '802 patent, col. 6, ll. 39-48. Similarly, the '991 patent describes how the "pressure-sensitive variable-conductance material **36** . . . changes its conductivity with applied pressure to alter the conductance of the electrical path provided thereby between the first and second conductive traces . . .."

Anascape argues that the structure in these patents is merely a dome cap having an inner surface with a specific curved shape. Anascape does not point to, and the court does not find, any place in the specifications linking only a single specific shape of the inner surface buttons or dome caps to the function of creating an analog output. The patents link the dome cap to a different function, namely "providing a return spring lifting depressible surface **22**."

‘802 patent, col. 6, ll. 17-20; ‘991 Patent, Col. 6, ll. 21-25. The patents also state that the convex-curved shape on the underside of the dome cap is unnecessary. *See* ‘802 patent, col. 9, ll. 4-7, ‘991 Patent, Col. 9, ll. 8-11 (stating that “Material **36** in FIGS. 7 and 8 can be formed with a flat bottom surface and function adequately without the increasing surface area effect provided by the convexed shape shown.”)

Finally, the patents state that a variety of buttons, and four way rockers or key pads could be used. ‘802 Patent, Col 7, ll. 37-50; ‘991 Patent, Col. 7, ll. 41-55. There seems no reason to limit the structure to dome caps.

The ‘802 and ‘991 patents clearly link the function of creating or providing a variable, analog output to pressure-sensitive variable-conductance material across proximal traces. Whether Anascape can later show that Microsoft’s accused product infringes under the doctrine of equivalents is a separate issue that is not appropriate at the claim construction stage.

The court finds that the corresponding structure for this term is:

> **“a button, dome cap, rocker switch, or key pad that uses pressure-sensitive variable-conductance material to vary electrical output as varying physical force is applied, and equivalents thereof.”**

6. “Means for creating an On/Off output, and with varied pressure creating an analog output.” Used in ‘991 patent, claim 40.

The parties agree that this term is governed by 35 U.S.C. § 112, ¶ 6, and that the function is “creating an On/Off output, and with varied pressure creating an analog output.” The parties’ competing proposals for the corresponding structures are identical to the structure proposed for the “means for creating an analog output . . .”

For the reasons discussed above, the court finds that the corresponding structures for this term is:

> **"a button, dome cap, rocker switch or key pad that uses pressure-sensitive variable-conductance material to vary electrical output as varying physical force is applied, and equivalents thereof."**

7. "Electronics means for at least reading the signals of said electricity manipulating devices." Used in '991, claim 23.
"Electronics means further for reading said at least one of said electricity manipulating devices including means for creating an On/Off signal exclusively as an On/Off switch." Used in '991, claim 24.
"Electronics means is further for reading at least one of said electricity manipulating devices exclusively as an On/Off switch." Used in '991 patent, claim 28.
"Electronics means also is for outputting to a game console information representing the signals." Used in '991 patent, claim 30.
"Active electronic means for interpreting the analog output of said pressure-sensitive variable-conductance sensor." Used in '991 patent, claim 35.
"Active electronic means for at least interpreting the outputs of said pressure-sensitive variable-conductance sensor." Used in '991 patent, claim 40.
"Active electronic means for interpreting the electrical conductivity of said sensor." Used in '991 patent, claim 66.

Anascape contends that these limitations are not means-plus-function limitations under § 112, ¶ 6. Anascape states that if the court considers these limitations to be a means-plus-function limitation, it agrees with Microsoft that the corresponding function is the function listed after the "means for" language and that the corresponding structure is an "ASIC or micro-controller integrated circuitry, and equivalents thereof."

Each of the seven phrases incorporates the "means for" language that gives rise to a presumption that the patentee used the term advisedly to invoke §112 ¶6. *Rodime PLC v. Seagate Tech. Inc.*, 174 F.3d 1294, 1302 (Fed. Cir. 1999), *cert. denied,* 528 U.S. 1115, 120 S.Ct. 933 (2000). If a claim term recites no function this presumption disappears. *Id.* In each

of these claims the phrase "means for" is followed by a verb describing what the "means" does - a function of the invention.

The court must next determine whether the claim language recites sufficient structure for performing the function. *Id.* Anascape argues that "electronics" preceding "means" in four of the claims, and "active electronic" preceding "means" in the other three terms sufficiently recite the structure.

In *Rodime,* the "means for" language was followed by a list of structural items, which together performed the function. *See Rodime* 175 F.3d at 1303. In the present case none of the seven claims at issue recites such a list. Similarly, "a pair of rotatable shafts projecting downwardly from said frame means and defining a biaxial plane" sufficiently describes "gearbox means for rotating said blade means." *Allen Engineering Corp. V. Bartell Indus.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002). The seven claims at issue do not have such a description.

The term "second baffle means" was held to recite sufficient structure because the word "baffle" is a structural term. *Envirco Corp. v. Celestra Cleanroom, Inc.*, 209 F.3d 1360, 1364-65 (Fed. Cir. 2000). Anascape argues that the word "electronics," used in four of the claim terms, recites sufficient structure to overcome the means-plus-function presumption. The word "electronics" is a generic word that could refer to technology ranging from a vacuum tube to semiconductors. *See* McGraw-Hill Dictionary of Scientific and Technical Terms 627 (4th ed. 1989)(defining "electronics" as "study, control, and application of the conduction of electricity through gasses or vacuum or through semiconducting or conducting materials").

Anascape points to claim 70 of the '991 patent in support of its argument that "electronics" recites sufficient structure. The means-plus-function presumption can be overcome only if the "claim itself" recites sufficient structure "to perform entirely the recited function." *Sage Prods., Inc. v. Devon Indus.,* 126 F.3d 1420, 1427-28 (Fed. Cir. 1997). Claim 70 is a different claim that does not contain the "means for" language. Whether Claim 70 describes sufficient structure is irrelevant. Because the four terms that begin with "electronics means . . ." do not recite limited and definable structure, the court concludes that they are means-plus-function limitations. Given this finding, Anascape agrees with Microsoft that the structure is "ASIC or micro-controller integrated circuitry, and equivalents thereof."

The other three terms claims use "active electronic means for interpreting . . . ." Anascape states that this discloses sufficient structure to overcome the means-plus-function presumption. The specification defines the term: "Active electronics **46** (i.e., ASIC or micro-controller integrated circuitry, etc.) which in addition to having normal circuitry of a typical game controller such as a prior art controller also has circuitry for interpreting the analog output of sensor material **36** and converting it into a digital signal. . . ."
'991 patent, col. 11, ll. 10-15.

Microsoft argues that it is improper to look to the specification to determine whether a term in a phrase using "means" recites structure. A patentee can be his own lexicographer. There seems little difference between the *Enviroco* Court's discerning structure from a word with a common structural definition, such as "baffle, " and making the same use of a phrase defined in the specification. *Phillips* could be used to argue that looking to the specification for a definition is preferable to consulting a general use dictionary.

As with "baffle" in *Envirco*, "active electronic" imparts structure. The three claims that include "active electronic means" are not means-plus-function clauses. Evidently recognizing the definition in the specification, neither party argues for an alternative construction of "active electronic."

IV. CONCLUSION

The jury shall be instructed in accordance with the court's interpretations of the disputed claim terms in the '084, '802, '886 and '991 patent.

So **ORDERED** and **SIGNED** this **30** day of **November, 2007.**

Ron Clark, United States District Judge