United States District Court,
E.D. Texas, Marshall Division.

ARBITRON, INC,
Plaintiff.
v.
INTERNATIONAL DEMOGRAPHICS INC., et al,
Defendants.

Civil Action No. 2:06-CV-434 (TJW)

Jan. 8, 2009.

MEMORANDUM OPINION AND ORDER

T. JOHN WARD**, District Judge.**

After considering the submissions and the arguments of counsel, the Court issues the following order concerning the claim construction issues:

I. Introduction

Arbitron, Inc. ("Arbitron") filed this suit against defendants International Demographics, Inc. d/b/a The Media Audit, IPSOS, S.A., IPSOS America, Inc. and IPSOS UK, Ltd. (collectively "defendants" or "Ipsos"), on October 10, 2006, alleging infringement of its patents, U.S. Patent Nos. 5,787,334 ("the '334 patent"), 5,574,962 ("the '962 patent") and 5,483,276 ("the '276 patent"), all in the field of electronic audience measurement.

On the '276 patent, Arbitron alleges infringement of claims 1 through 66. The following claims are independent: Claims 1, 7, 8, 15, 17, 22, 26, 28, 29, 34, 35, 52, 53, 57, 58, 63, 64, and 65. The remaining are dependent claims. These claims relate to the system that tracks and promotes an audience member's compliance with requirements of the survey. On the '334 patent, Arbitron alleges infringement of claims 1 through 9. Claims 1, 6 and 7 are independent. The remaining are dependent claims. These claims relate to the portable device carried by the audience member and how broadcast related information is stored in the device. On the '962 patent, Arbitron alleges infringement of claims 1 through 3. All three claims are independent and relate to the actual encoding of messages into the audio signal to be broadcast.

II. Background of the Technology

The patents in suit relate to electronic audience measurement. The system involves audience members willing to take part in these audience measurements, who are provided with portable broadcast detection devices that help with tracking their listening and viewing habits. One of Arbitron's inventions is related to technology used to watermark audio broadcasts such that the detection devices can monitor the broadcasts the participant is listening to throughout the day, without the participant having to do any manual recording

of his/her listening habits. The portable devices store data indicating detection of various broadcasts and upload such data back to the centralized data processing facility. They also track whether the participant's usage is in compliance with the required predefined usage of the portable device. The system determines whether a participant's use of the device meets predetermined usage criteria, and provides indications and rewards for proper use of such portable detection devices by the participant.

1. The '276 Patent

The '276 patent describes a system for promoting compliance by audience members who carry portable monitoring device used in audience measurements. Conventional methods required the participants in audience measurement studies to keep track of what broadcasts they were watching or listening to by making notes in diaries or by pushing buttons on simple devices that uploaded the responses to a central processing system. The invention described in '334 and ' 962 patents provides for a system that passively tracks broadcasts that the participant is exposed to as long as the participant complies with requirement of carrying as well as docking the device based on the requirements of the monitoring program. The '276 patent discloses a method to encourage such compliance by the participant. It discloses a system that senses whether the device is being carried, docked, etc. and verifies such usage against predefined usage criterion. The patent also discloses a system that provides various indications to a participant based on the operating status of the device, and also generates and announces rewards to the participant based on compliance.

The abstract of the patent states:

Systems and methods are provided for promoting use by an audience member of a portable broadcast exposure monitoring and/or recording device in accordance with a predetermined usage criterion. A sense signal is provided indicating whether the device is being carried with the person of the audience member, and a time signal corresponding with the sense signal is also provided. An indication to the audience member of whether the audience member's usage of the device has been in accordance with the predetermined usage criterion is provided based on the sense signal and the corresponding time signal.

'276 Patent, at Abstract.

2. The '334 Patent & '962 Patent

The '334 patent and the'962 patent share the same specification. The invention relates to a method and apparatus that allows automatic identification of a radio or television broadcast or a recording being played. These two patents disclose a method for encoding radio or television signals with an inaudible message by altering the energy of the sound signal in a selected narrow band of frequencies. The inaudible message would contain the identity of the broadcasting station as well other details of the program, including the time of broadcast. With the help of portable decoder devices that are installed permanently in audience listening areas, or are carried by the audience member, this invention enables measurement of radio and television broadcast audiences.

The abstract common to both the patents states:

A method and apparatus for automatically identifying a program broadcast by a radio station or by a television channel, or recorded on a medium, by adding an inaudible encoded message to the sound signal of the program, the message identifying the broadcasting channel or station, the program, and/or the exact date. In one embodiment the sound signal is transmitted via an analog-to-digital converter to a data

processor enabling frequency components to be split up, enabling the energy in some of the frequency components to be altered in a predetermined manner to form an encoded identification message, and with the output from the data processor being connected via a digital-to-analog converter to an audio output for broadcasting or recording the sound signal. In another embodiment, an analog band pass filter is employed to separate a band of frequencies from the sound signal so that energy in the separated band may be thus altered to encode the sound signal. The invention is particularly applicable to measuring the audiences of programs that are broadcast by radio or television, or that are recorded.

'334 Patent, at Abstract.

III. General Principles Governing Claim Construction

"A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention." Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1340 (Fed.Cir.1999). Claim construction is an issue of law for the court to decide. Markman v. Westview Instruments, Inc., 52 F.3d 967, 970-71 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370 (1996).

To ascertain the meaning of claims, the court looks to three primary sources: the claims, the specification, and the prosecution history. Markman, 52 F.3d at 979. Under the patent law, the specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. A patent's claims must be read in view of the specification, of which they are a part. *Id*. For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id*. "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." Watts v. XL Sys., Inc., 232 F.3d 877, 882 (Fed.Cir.2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee's claims. Otherwise, there would be no need for claims. SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 (Fed.Cir.1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. Intellicall, Inc. v. Phonometrics, 952 F.2d 1384, 1388 (Fed.Cir.1992). And, although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiments. Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed.Cir.1994).

This court's claim construction decision must be informed by the Federal Circuit's decision in Phillips v. AWH Corporation, 415 F .3d 1303 (Fed.Cir.2005) (en banc). In *Phillips,* the court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that "the *claims* of a patent define the invention to which the patentee is entitled the right to exclude." 415 F.3d at 1312 (emphasis added) (*quoting* Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1115 (Fed.Cir.2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id*. 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, i.e., as of the effective filing date of the patent application." Id. at 1313. This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention. The patent is addressed to and intended to be read by others skilled in the particular art. *Id*.

The primacy of claim terms notwithstanding, *Phillips* made clear that "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*. Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of "a fully integrated written instrument." *Id*. at 1315 (*quoting* Markman, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id*. at 1314-17. As the Supreme Court stated long ago, "in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims." Bates v. Coe, 98 U.S. 31, 38 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed.Cir.1998):

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. The prosecution history helps to demonstrate how the inventor and the PTO understood the patent. Phillips, 415 F.3d at 1317. Because the file history, however, "represents an ongoing negotiation between the PTO and the applicant," it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id*. Nevertheless, the prosecution history is intrinsic evidence. That evidence is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims.

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion made by Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193 (Fed.Cir.2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes. *Id*. at 1319-24. The approach suggested by *Texas Digital*-the assignment of a limited role to the specification-was rejected as inconsistent with decisions holding the specification to be the best guide to the meaning of a disputed term. *Id*. at 1320-21. According to *Phillips,* reliance on dictionary definitions at the expense of the specification had the effect of "focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of the claim terms within the context of the patent." *Id*. at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id*. What is described in the claims flows from the statutory requirement imposed on the patentee to describe and particularly claim what he or she has invented. *Id*. The definitions found in dictionaries, however, often flow from the editors' objective of assembling all of the possible definitions for a word. *Id*. at 1321-22.

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id*. at 1323-25. Rather,

Phillips held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

The patents in suit include claim limitations that fall within the scope of 35 U.S.C. s. 112 para. 6. Section 112 para. 6 states "[a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure ... in support thereof, and such claim shall be construed to cover the corresponding structure ... described in the specification and equivalents thereof." 35 U.S.C. s. 112 para. 6 (2007). The first step in construing a means-plus-function limitation is to identify the recited function. *See* Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250 1258 (Fed.Cir.1999). Then, the court must identify in the specification the structure corresponding to the recited function. *Id*. The "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." Medical Instrumentation and Diagnostics, Corp. v. Elekta AB, 344 F.3d 1205, 1210 (Fed.Cir.2003) (*citing* B. Braun v. Abbott Labs, 124 F.3d 1419, 1424 (Fed.Cir.1997)).

The patentee must clearly link or associate structure with the claimed function as part of the quid pro quo for allowing the patentee to express the claim in terms of function pursuant to s. 112 para. 6. *See* id. at 1211; *see also,* Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1377 (Fed.Cir.2001). The "price that must be paid" for use of means-plus-function claim language is the limitation of the claim to the means specified in the written description and equivalents thereof. *See* O.I. Corp. v.Tekmar Co., 115 F.3d 1576, 1583 (Fed.Cir.1997).

If a patent purports to use software as the structure to perform the claimed function, a failure to associate that software with the recited function constitutes a failure to particularly point out and claim that particular structure as a means of performing the function. *See* Medical Instrumentation and Diagnostics Corp., 344 F.3d at 1211. Further, it is "important to determine whether one of skill in the art would understand the specification itself to disclose the structure, not simply whether that person would be capable of implementing the structure. *See* Atmel Corp. v. Info. Storage Devices, Inc., 198 F.3d 1374, 1382 (Fed.Cir.1999). Fundamentally, it is improper to look to the knowledge of one skilled in the art separate and apart from the disclosure of the patent. *See* Medical Instrumentation and Diagnostics Corp., 344 F.3d at 1211. The court now turns to a discussion of the disputed claim terms.

IV. Terms in Dispute-the '276 Patent

A. Agreed Constructions

1. means for providing an audible indication

The parties agree that the term "means for providing an audible indication" is a meansplus-function claim limitation. The corresponding means for this limitation is "sound generator 144."

B. Disputed Constructions

1. means for providing a sense signal (Claims 1, 8, 15, 26, 28, 58, 63)

Both parties agree on the function of the means-plus-function claim limitation: "providing a sense signal indicating whether the device is being carried with the person of the audience member." The parties dispute the construction of the means corresponding to the function. Plaintiff Arbitron argues that the three corresponding structures defined in the specification, namely the pressure detector 134, the motion detector 136 and the temperature detector 138, are each alternative supporting structures, each capable of providing sense signals indicating whether the device is being carried by an audience member. Ipsos argues that the specification recites that each of these detectors need to "be adapted" to provide the three types of sense signals to the processor that determines if the device is being carried. *See* '276 patent, 6:60-7:14. Arbitron argues that defendants fail to explain what the "adaptations" are and therefore this ambiguous phrase cannot be included in the recited structures. Further, plaintiff argues that definition of the structure itself includes the adaptation to be made. For instance, the specification recites that the "[m]otion detector 136 is adapted to provide an indication of its own movement, and thus, movement of the monitoring device." '276 patent, 6:65-67. Plaintiff argues that the feature of indicating movement is deemed adapted in the motion detector. As support for its argument, it points to the similar usage of the term 'adapted' by the inventor in the specification. For example, the plaintiff notes that the "[v]ibrator 142 is adapted to gently vibrate the monitoring device ...." '276 patent, 7:39-40. The Court is persuaded that there is no further adaptation needed for the supporting structures recited in the specification, so long as these structures are capable of providing these signals. Therefore, the Court construes the means as "one or more of a pressure detector 134, motion detector 136, or temperature sensor 138, capable of producing sense signals, or equivalents thereof."

2. sense signal (Claims 29, 32, 34, 64 and 65)

Arbitron asks the Court to adopt the ordinary and customary meaning of "a sense signal" as "a signal indicating that something is sensed." Arbitron notes that wherever the term is used in the claim language, it describes what is being sensed: "whether the device is being carried with the person of the audience member."

The '276 patent claims include several disputed terms with parallel usage in a means plus function format and non-means plus function format. FN1 As defendants point out, the format used by the apparatus claims includes a claim element written in means plus function format, such as: *means for providing [a specific signal] [to perform a specific function]*. The parallel method claim uses the same term in a non-means plus function format, such as: *providing [a specific signal] [to perform a specific act]*. Defendants argue that where the same term is used in such parallel claims, the non-means-plus-function method claim term, *[a specific signal],* should be construed consistently with the other related means plus function term. To this end they argue once the Court has construed the supporting structure for the means plus function term, the parallel non-means plus function term should simply be construed as the output of such structure. For instance, in this case, Ipsos asks the Court to construe 'sense signal' as "the output of either one or more of a pressure detector, motion detector, or temperature sensor." Their construction is based on their proposed means definition for the related means plus function limitation "means for providing a sense signal." In support of its approach to the construction of such related terms, defendants cite Federal Circuit case law requiring courts to give same terms appearing in different portions of the patent claims the same meaning, unless the specification and prosecution history make clear otherwise. *See* PODS, Inc. v. Porta Stor, Inc., 484 F.3d 1359, 1366 (Fed.Cir.2007); *see also* Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed.Cir.1995) ("The fact that we must look to other claims using the same term when interpreting a term in an asserted claim mandates that the term be interpreted consistently in all claims."); Georgia-Pacific Corp. v. U.S. Gypsum Co., 195 F.3d 1322, 1331 (Fed.Cir.1999) ("Unless the patent otherwise provides, a claim

term cannot be given a different meaning in the various claims of the same patent."). Further, defendants argue the requirement of construing a term in context of the entire claim mandates such an approach. *See* Pause Technology, LLC v. Ti Vo, Inc., 419 F.3d 1326, 1331 (Fed.Cir.2005). Although the Court agrees with the defendants with regard to consistently construing same terms, the Court finds that these related terms are in no way the "same" terms. The Federal Circuit has made clear the distinction between the scope entitled to means plus function claim terms as compared to non-means-plus-function claim terms. *See* O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576, 1580-81 (Fed.Cir.1997) (explaining this difference). Adopting the defendants' approach would simply limit the scope of these non-means-plus-function terms to the disclosed embodiments. This approach has been rejected by the Federal Circuit. *See* SciMed Life Sys. Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340 (Fed.Cir.2001) (describing "reading a limitation from the written description into the claims" as "one of the cardinal sins of patent law"); Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed.Cir.1994) ("[A]lthough the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments.").

FN1. The parties agree on the function part of most of the means plus function limitations in this claim construction.

Finally, in support of their argument, defendants contend that the inventors in this case acted as their own lexicographer, defining and limiting the meaning of the non-means-plusfunction terms through such use. *See* Sinorgchem, Co., Shandong v. Int'l Trade Comm'n, 511 F.3d 1132, 1138 (Fed.Cir.2007) ("We have frequently found that a definition set forth in the specification governs the meaning of the claims."). The Court finds nothing in the specification of the '276 patent that indicates that the inventors intended to limit these related terms to specific structures or define these related terms in any manner.

The Court concludes that in each of these cases, there is no reason to limit these nonmeans-plus-function terms to the embodiment disclosed in the patent. Therefore, this and all other constructions proposed by the defendants for such related terms are rejected. The Court adopts plaintiff's construction: "A signal indicating that something is sensed."

3. means for providing a time signal corresponding with the sense signal (Claims 1, 8, 15, 26, 28 and 17, 22 FN2**)**

FN2. Claims 17 and 22 use the same term with a slightly different claim language: "means included in the device for providing a time signal corresponding with the sense signal."

Both parties agree on the recited function of this means-plus-function claim limitation: "means for providing a time signal corresponding with the sense signal." The parties also agree on most of the included means to support this function. The dispute is over how much of the flow chart from Figure 2 needs to be included in this means. Arbitron argues that only the "blocks" that record the time when motion is sensed or when no motion is sensed need to be included. Defendants argue that all blocks from 542-566, related to determination of the time need to be included. The Court notes that this includes the logic to determine whether a record needs to be made and even the logic to delete records. These logic blocks are not in any way related to "providing a time signal ." The Court finds that means for providing a corresponding time signal is well encapsulated by the description at 7:25-32 and only the logic to record such time needs to be

included from the flowchart in Figure 2. Plaintiff's proposed construction is hereby adopted as: "Clock 118; processor 120 and associated algorithm described at 7:25-32 and in Figure 2 blocks 554, 558, 566."

4. corresponding time signal (Claims 28, 29, 32, 34 and 65)

Since this term is related to the preceding means plus function term, defendants propose that this should be the output of the means defined for the previous term. As discussed earlier, the Court rejects this approach.

Plaintiff's proposed construction is reasonable. The specification indicates this is the time that corresponds to receipt of the "sense signal" that is recorded by the device. Although it is true that recordings are made only when signal changes, the claim language does not include this limitation for the term, "corresponding time signal." *See, e.g.,* '276 Patent, Cl. 65. Therefore, the Court construes this term as: "A signal indicating the time when the sense signal is received."

5. data storage means (Claim 1)

Plaintiff argues that even though this limitation includes the word "means," this need not be construed as a means plus function limitation. "If, in addition to the word 'means' and the functional language, the claim recites sufficient structure for performing the described functions in their entirety, the presumption of s. 112 para. 6 is overcome-the limitation is not a means-plusfunction limitation." TriMed, Inc. v. Stryker Corp., 514 F.3d 1256, 1259 (Fed.Cir.2008) (citing Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1360 (Fed.Cir.2004)). The Federal Circuit has also held that if a term, as the name for a structure, has a reasonably well understood meaning in the art, there may be sufficient structure recited by such a term. Watts v.. XL Sys., Inc., 232 F.3d 877, 880-81 (Fed.Cir.2000). Arbitron argues that term "data storage means" is reasonably well understood in the art and should be construed to mean "a memory." In support of its argument, it points to the fact that the Federal Circuit has previously held that the term "storage" has a reasonably well understood meaning in the art as "[a] device capable of receiving data, retaining them for an indefinite period of time, and supplying them upon command." Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n, 383 F.3d 1352, 1372 (Fed.Cir.2004). It argues that the term "data storage" here should also fall within the definition provided by *Gemstar*.

Defendants note that the Federal Circuit did not decide a dispute over a s. 112(6) term in *Gemstar* and therefore argue that this Court is required to presume a means plus function limitation here. *See* CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed.Cir.2002) ("A claim limitation that actually uses the word 'means' will invoke a rebuttable presumption that s. 112 para. 6 applies."). It insists that the claim language alone needs to disclose sufficient structure to perform the entirety of the described function before a court can find that s. 112(6) does not apply. *See* Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1375 (Fed.Cir.2003) ("This [means plus function] presumption can be rebutted where the claim, in addition to the functional language, recites structure sufficient to perform the claimed function in its entirety"). The defendants' proposed construction for the means supporting the function is "A physical memory device 116."

The Court agrees with the defendants. In *Gemstar,* the Federal Circuit construed the term "storage means in a data processor" to mean "a device capable of retaining data located within a data processing device or system." Gemstar-TV, 383 F.3d at 1372. First, as defendants point out, neither party in that case had argued that there could be s. 112 para. 6 presumption, or how such a presumption could be overcome. Second, the Federal Circuit noted that there was abundant prosecution history to indicate that the inventor of that patent had intended to define "storage means" as an electronic memory. *See* id. at 1371 (noting that the inventor

had unsuccessfully proposed several reexamination amendments attempting to define "storage means" as an electronic memory). There is no such support for Arbitron's argument here. Finally, the Federal Circuit in *Gemstar* had included in its analysis the fact that ITC had failed to consider whether the specific expression, "data processor" had an ordinary meaning to one skilled in the art that would have provided insight and context for the claim language "storage means in a data processor." *Id*. at 1372. In this case, the term is used in conjunction with the "device for storing the sense signal and the corresponding time signal." '276 Patent, Claim 1. Here, the Court has considered the ordinary meaning of "device" to one skilled in the art and concludes that there is not sufficient structure defined by the term "data storage means" to overcome the presumption that it is a means plus function limitation. TriMed, Inc. v. Stryker Corp ., 514 F.3d 1256, 1259-60 (Fed. Cir2008) ("Sufficient structure exists when the claim language specifies the exact structure that performs the functions in question without need to resort to other portions of the specification or extrinsic evidence for an adequate understanding of the structure."). Hence, construing "data storage means" simply as "a memory" would be contrary to Federal Circuit law.

Lastly, the parties dispute the possible locations of the corresponding means for this term. Plaintiff proposes that the means include the physical memory in the docking station as well as that in the device. However, both the claims as well as the specification recite that the storage means is included with the device. Arbitron argues that "with the device," is not the same as "in the device," and that the docking station, as a part of the system, is provided "with" the device. However, this is a stretched construction of the word "with" as used in this context. The defendants' proposed construction is hereby adopted for his term: "A physical memory device 116, or equivalents thereof"

6. data transfer system (Claim 17)

Defendants contend that the inventors have provided a specific definition of this term in the specification and Court should adopt this definition. Defendants propose that the inventors have defined a "data transfer system" as "a docking station and hub including a power source, battery charger, battery status detector, backup battery, communications interface to the device, clock processor, memory, bus switch, sound generator, LCD, LED and communication interface to the PSTN." Arbitron argues that the specification discloses many ways of transferring data, including cellular telephony as well as physically delivering the devices to the centralized data processing facility. '276 Patent, 4:49-50. Further, they argue that the customary meaning of "data transfer system" is well known in the art and the Court should adopt that meaning. The court agrees. *See* Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005) (stating that it is "an evasion of the law to construe [a claim] in a manner different from the plain import of its terms."). Given the clear disclosure in the specification, defendants' argument that inventors defined data transfer means as a narrow collection of communication components is not persuasive. The Court construes this term as "a system or mechanism that transfers data."

7. indication means (Claims 1, 8, 15, 17, 22, 28 and 24 FN3)

FN3. Dependant claim 24 has the following claim language: "the means for providing an indication of whether the audience member's usage of the device has been in accordance with the predetermined usage criterion."

The parties agree on the function part of this means plus function term: "providing an indication to the audience member based on the sense signal and the corresponding time signal whether the audience member's usage of the device has been in accordance with the predetermined usage criterion." With regard

to the supporting structure, Arbitron attempts to differentiate "indication means" from "compliance signal means." It argues that even though the claims that include "indication means" recite "providing an indication to the audience member based on the sense signal and the corresponding time ...," the associated structure is only that related to "providing the indication." It argues that the structure associated with the "compliance signal means" is responsible for the determination internally of whether the indication needs to be provided and that supporting structure includes utilization of the processor. In contrast, it contends, the "indication means" makes no such determination; it simply uses the compliance signal to make the indication to the user, without any utilization of the processor. On the other hand, Ipsos argues that structure to support the determination of whether an indication is needed should also be included in the structure required to support the "indication means."

Further, the parties dispute whether the indication can come from the device alone, or from the docking station as well. The specification discloses that either the device or the docking station may provide an indication to the audience member. '276 patent, 9:35-38. Therefore, the Court finds that sound generator, LED and LCD from the docking station should also be included as alternative structures in the corresponding means. Plaintiff's proposed construction is adopted for the supporting structure: "one or more of vibrator 142, sound generator 144, LCD 146, LED 148, sound generator 222, LCD 224, and LED 226, or equivalent structures thereof."

Defendants argue that the Court should provide a different construction for the limitation "means for providing an indication" in claim 24. Plaintiff argues that this limitation in dependent claim 24 is preceded by the word "the," giving this term in dependent claim 24 clear antecedent basis to the "indication means" recited in independent claim 22. The Court agrees. Even though the term is worded differently, when considered in context of the entire claim, it is clear that this term refers to the same "indication means." *See* Hockerson-Halberstadt, Inc. v. Converse Inc., 183 F.3d 1369, 1374 (Fed.Cir.1999) ("[P]roper claim construction, however, demands interpretation of the entire claim in context, not a single element in isolation"). The Court will therefore not separately construe the "indication means" limitation of claim 24.

8. indication (Claims 29, 32, 34)

As with other limitations related to means plus function limitations, defendants argue that an "indication" must limited to the output of the supporting structure defined for the related "indication means." As discussed above, this is just another way to argue that a term should be limited to its disclosed embodiments. Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed.Cir.1994) ("[A]lthough the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments.").

The specification clearly discloses multiple ways of indicating to the audience member whether the audience member's usage of the device has been in accordance with the predetermined usage criterion. '276 patent, 7:33-38. Therefore, plaintiff's proposed construction is adopted by the Court. "Indication" means "a communication to the audience member."

9. Compliance signal means (Claims 2, 15, 17 and 22 FN4)

FN4. Claim 22 has slightly different claim language, specifying the location of the compliance signal means. The Claim reads: "compliance signal means located at a centralized data processing facility."

The parties agree on the function part of this means plus function term: "providing a compliance signal indicating whether the audience member's usage of the device has been in accordance with the predetermined usage criterion based on the sense signal and the corresponding time signal." With regard to the means, Arbitron proposes that the Court find recited structure to support this functionality in three different places: (1) the device itself; (2) the docking station; and (3) the central data processing facility.

Both parties agree that the structure to support this function in the docking station has been detailed out in the specification. Ipsos points to Figure 3 as disclosing the associated software/algorithm, while Arbitron points to the written text at 5:8-47, 7:25-38 and 10:1-16, along with block 618 of Figure 3. The Court finds that supporting structure found in the docking station includes "processor 214 and associated algorithms described at 5:8-47 and 10:1-16, or equivalents thereof."

With regard to finding support in the device itself and in the central data processing facility, Ipsos argues that there is no recited structure in the device or at the facility that is "clearly linked" with this function. *See* Aloft Media, LLC v. Adobe Systems Inc., 570 F.Supp.2d 887, 892 (E.D.Tex.2008) ("[T]he focus of the 'corresponding structure' inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is 'clearly linked or associated with the [recited] function.' " quoting Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc., 248 F.3d 1303, 1311 (Fed.Cir.2001)).

Arbitron points to various sections of the specification that indicate that the device is capable of performing this function. For instance, the specification states, "It will be appreciated that, alternatively or additionally, the monitoring device 100 may perform analysis on the collected data and provide indication of the results of its analysis." '276 Patent, 5:35-38. Ipsos, on the other hand, points to the claim language itself: "means for transmitting the sense signal ... from the device for provision to the compliance signal means." It argues that the claim, by using the from/to language, differentiates the compliance signal means as being away from the device itself. The Court is not persuaded that just because the sense signal is disclosed as transmitted from the device to the compliance signal means, this necessarily requires that the compliance signal means not be within the device itself. The Court therefore finds supporting structure for compliance signal means within the device as well. This alternate structure includes "processor 120 and associated algorithms described at 5:8-47 and 7:25-38, or equivalents thereof."

Finally, Arbitron argues that supporting structure has been disclosed to exist at the central data processing facility. However, the only description that it can point to is a disclosure of the method of determination of rewards at the centralized facility which would result in notification of a reward to the user. '276 Patent, 5:17-21. There is very little textual description of the logic used and no references to any such processing in the figures disclosed. The only "block" in Figure 3 that Arbitron points to is the one that lists the logic for displaying the information returned from the central facility to the user. In light of this ambiguity in the specification, the Court is not persuaded that this shows alternative supporting structure. The Court rejects Arbitron's argument that clear disclosure in the specification is not needed because this limitation would be understood as having a supporting structure at the central facility by any person having ordinary skill in the art. Intel Corp. v. VIA Techs., Inc., 319 F.3d 1357, 1366 (Fed.Cir.2003) (holding that the internal circuitry of an electronic device need not be disclosed in the specification if one of ordinary skill in the art would understand how to build and modify the device). "It is not proper to look to the knowledge of one skilled in the art apart from and unconnected to the disclosure of the patent." Medical Instrumentation and Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1212 (Fed.Cir.2003). The Court is not convinced that that one of skill in

the art would have been able to implement the generation of a compliance signal simply based on the disclosure of the '276 patent. *See* id. ("The correct inquiry is ... not simply whether one of skill in the art would have been able to write such a software program"). Therefore, the Court finds no supporting structure for this term at the central data processing facility.

Claim 22 refers specifically to "compliance signal means located at a centralized data processing facility." Ipsos similarly argues that there is no support in the specification for such a structure at the facility and therefore, this limitation is indefinite in this claim. The Court agrees. As explained above, the only disclosed structure for the "compliance signal means" is the entire central data processing facility and the specification fails to disclose any details or algorithms for performing the generation of the signal at the central data processing facility. *See* WMS Gaming, Inc. v. Int'l Game Tech., 184 F.3d 1339, 1349 (Fed.Cir.1999) ("In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.").

Arbitron cites *Alt v. Medtronic, Inc.,* No. 2:04-CV-370, D.E. No. 97, at (E.D.Tex. Nov. 30, 2005), arguing that this Court has previously held that where a non-programmable special purpose circuit is at issue, such structure is not covered by *WMS Gaming*. It contends that here too the central facility could include many possible hardwired logic structures or special purpose circuits that are not programmable. However, Arbitron's reliance on *Alt* is misplaced. In *Alt,* the court addressed the issue of whether the corresponding structure should be construed to include an algorithm that was programmed into the logic circuit, so as to limit the structural element to that algorithm per *WMS Gaming*. *Id* . The court there noted that the functionality of hard wired logic circuit was sufficiently described in the specification, and therefore ruled there was no need to further limit the construction of the means plus function term. *Id*. Here, there is no indication here that inventors contemplated use of special purpose circuitry or any type of logic circuit as part of their invention. Secondly, the Court finds nothing whatsoever in the specification that discloses how the compliance signal generation can be accomplished at the central facility. Therefore, the Court holds that Claim 22 is indefinite. *See* Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1367 (Fed.Cir.2008) (affirming district court's finding of indefiniteness where the claim recited a "bank computer" but nothing in the written description expressly described what was going on inside that bank computer); *Techs*. Australia Pty Ltd. v. Int'l Game, 521 F.3d 1328, 1333-38 (Fed.Cir.2008) (rejecting arguments similar to those made by the plaintiff in this case).

10. Compliance signal (Claim 30)

As with other limitations related to a means plus function limitation, defendants argue that a compliance signal must be construed as the output of the corresponding means for the related means plus function term "compliance signal means." Here too, the Court rejects defendants' proposed construction. The specification clearly discloses a signal that is generated based on the whether the audience member's usage of the device has been in accordance with the predetermined usage criterion. Therefore, plaintiff's proposed construction is adopted as follows: "A signal that indicates device usage in accordance with a predetermined usage criterion."

11. means for transmitting the sense signal and corresponding time signal (Claims 15, 17 and 22)

This means plus function limitation is directly related to the compliance signal means. The parties agree on the stated function for the term, "transmitting the sense signal and the corresponding time signal from the device for provision to the compliance signal means." Arbitron proposes that the compliance signal means

can be found in the docking station as well as the central data processing facility. It therefore argues that the communication interfaces connecting the device to both the docking station as well as the central facility should be included in the construction of the corresponding means here. On the other hand, Ipsos argues that the compliance signal means is only located in the docking station and the transmitting means can only be construed as the interface between the device and the docking station. Defendants' proposed construction of the means for this function is "an electrical or optoelectrical interface to permit bidirectional communications between the device and the docking station." As discussed, the Court finds that the patent specification does not disclose a compliance signal means located at the central facility. Therefore, the Court finds the corresponding means for this term to be "buses 122 and 218, and communication interfaces 150 and 210, or equivalents thereof."

12. means for providing notification (Claim 14)

The parties agree on the function recited by this term, "providing notification to an audience member that a reward has been awarded to another audience member." Ipsos argues that because the specification only details out how reward notification messages are transmitted from the central data processing facility to the docking station, these messages can only be displayed on the docking station. Therefore, it contends the court should narrowly construe the structure supporting the agreed function. Defendants' proposed construction is "a docking station, with a processor running special purpose software as disclosed in Fig. 3 of the '276 patent, equipped with sound generator 222, LCD 224 or LED 226 ." The Court does not agree. There is sufficient support in the specification to show that the structure to display these notifications to the user may also be found in the device itself. Specifically, the inventors have disclosed that "the monitoring device 100 may ... provide indications." '276 Patent, 5:35-38. Although this part of the specification refers to the indication based on the compliance signal, there is no reason to discriminate between the types of indications that can be provided on the device as compared to the ones on the docking station.

Ipsos also proposes that there is processing involved in providing the notification, which means the processor and related software should to be included in the recited structure. The Court finds that this would be an unnecessary addition. This term relates only to provision of the notification to the user. The specification discloses all processing related to the determination of this reward notification to be done at the central processing facility. For both reasons, the plaintiff's proposed construction of the corresponding means for this term is appropriate here, and the Court adopts it as "one or more of vibrator 142, sound generator 144, LCD 146, LED 148, sound generator 222, LCD 224, and LED 226, or equivalent structures thereof."

13. means for providing an operational state signal (Claim 58, 63 and 59 FN5)

FN5. Claim 59 recites the "indication means" for the operational state signal, similar to indications for other signals. The claim language for claim 59 reads: "means for providing an indication that the device is operative to detect and store broadcast exposure data."

The function of this limitation is agreed upon by both parties as "providing an operational state signal indicating whether said device is in an operating state for monitoring broadcast exposure." Ipsos argues however, that this means plus function limitation is indefinite because the specification fails to identify a structure clearly linked to the recited function. Kemco Sales, Inc. v. Control Papers Co., Inc., 208 F.3d 1352, 1361 (Fed.Cir.2000) (stating that failure to disclose adequate structure would result in the claim being rendered invalid as indefinite under section 112, paragraph 2).

Arbitron argues that given the textual description of the operational state signal and the corresponding means of generating the signal, a person of ordinary skill could understand that the processor 120 generates a signal to cause the LED 148 to blink. *All Voice* Computing PLC v. Nuance Communications, Inc., 504 F.3d 1236, 1245 (Fed.Cir.2007) (*citing* Intel Corp. v. VIA Techs., Inc., 319 F.3d 1357, 1366 (Fed.Cir.2003) (holding that the internal circuitry of an electronic device need not be disclosed in the specification if one of ordinary skill in the art would understand how to build and modify the device)). In *AllVoice,* the Federal Circuit ruled that in software cases, algorithms in the specification need only disclose adequate defining structure to render the bounds of the claim understandable to one of ordinary skill in the art. *Id*. Similarly, in *Intel Corp.,* the Federal Circuit held that generic description without disclosure of any circuitry sufficed to find the supporting structure in the specification. Intel Corp., 319 F.3d at 1366. Here, Arbitron has a sufficiently detailed description reciting how the signal works. Plaintiff's proposed construction of this term is adopted by the Court. The corresponding means for this term are "processor 120 and associated algorithm, described at 7:53-8:19, or equivalents thereof."

With regard to Claim 59, Arbitron notes that this claim depends from claim 58. Claim 59 further recites a "means for providing an indication" included in the "means for providing the operational state signal." Therefore, Arbitron proposes that the supporting structure be the same as that it has proposed for other indication means. Ipsos stands by its indefiniteness argument for this term. Since the Court has rejected Ipsos' argument on indefiniteness for the "operational state signal means," it adopts a consistent construction for the indication means related to that signal. The agreed function is "providing an indication that the device is operative to detect and store broadcast exposure data." The corresponding means is construed as "one or more of vibrator 142, sound generator 144, LCD 146 and LED 148, or equivalents thereof."

14. operational state signal (Claims 64, 65)

As with other limitations related to a means/function limitation, defendants attempt to link the construction of this term to corresponding structure for the related means plus function term, "means for providing an operational state signal." Further, in this case, defendants argue that it should be limited to the output of just one of the multiple structures listed in specification. Defendants' proposed construction of the corresponding means is "A periodic output from a processor running special purpose software that drives an LED to blink at a specific rate." Once again, the Court rejects Ipsos's proposed construction as unnecessarily limiting. Plaintiff's proposed construction is adopted as "a signal that indicates the operating state of device."

15. means for providing a plurality of indications (Claims 58, 63)

The recited function agreed to by the parties is "providing a plurality of indications to the audience member, each of the plurality of indications being provided at a different respective time, each of the plurality of indications indicating that the device is in the operating state based on the operation state signal and the sense signal." The only disputed issue on this term is whether the vibrator, sound generator, LCD or LED need to be "adapted to provide a plurality of indications." Ipsos argues that components such as a vibrator, sound generator, LCD or LED alone are incapable of performing the recited function and they must therefore be adapted to provide a plurality of indications. For instance, it notes that an LED is incapable of displaying different colors unless adapted to do so. It points out that the specification mentions that these components are "adapted" to provide various indications. Plaintiff argues that the feature of providing indications is deemed adapted in the structure itself. The Court is convinced that there is no further adaptation needed for the supporting structures recited in the specification, so long as these structures are capable of providing these indications. As explained earlier, definitions of these structures themselves

include the adaptation to be made. The specification need not disclose detailed circuitry of the supporting structure. Intel Corp., 319 F.3d at 1366. Therefore, the corresponding structure for this term is found to be "one or more of vibrator 142, sound generator 144, LCD 146 or LED 148, capable of providing a plurality of indications, or equivalents thereof."

16. providing a plurality of indications (Claim 64)

Ipsos argues again that since there is a related means plus function term, "means for providing a plurality of indications," the construction of this term should simply be the output of the supporting means for that term. The specification discloses that a "plurality of indications" includes at least four different methods of communicating with the user of the device. Therefore, "providing a plurality of indications" means "providing more than one communication."

17. means for generating and for transmitting reward signals (Claim 23)

The parties agree that 35 U.S.C. s. 112 para. 6 applies, but they disagree as to the number of means-plus-function terms at issue, the functions of the limitations, and the corresponding structures. Ipsos argues that this clause comprises two means-plus-function limitations: means "for generating reward signals" and means "for transmitting the reward signals." Ipsos argues that Federal Circuit law mandates that when two "for" function phrases are joined by the conjunction "and," the specification must identify a single corresponding structure that is clearly linked to each of the two recited functions. *Cf.* Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc., 296 F.3d 1106, 1115 (Fed.Cir.2002). In *Cardiac Pacemakers,* the Federal Circuit dealt with a similarly structured limitation and concluded that such language "does not merely recite dual functions; it also requires the same means to perform them both ." *Id.* (citing Medtronic, Inc. v. Advanced Cardiovascular Systems, Inc., 248 F.3d 1303, 1313 (Fed.Cir.2001)) (noting that a structure may perform two functions, and a single function may be performed by two structures, but that there must be a clear link between the claimed function and the corresponding structure). Here, the Court agrees with Ipsos that there are two functions, but there can only be a single means that supports both these functions. Arbitron argues that such structure is found in the combination of the central processing facility, the communication interface and associated algorithm described textually, as well as shown in Figure 3 of the specification. In *Cardiac Pacemakers,* the Federal Circuit noted that it could not find one single means that accomplished both of the listed functions and therefore affirmed district court's invalidation of the related claims. *Id.* at 1119. Here, however, the centralized data processing facility 400 includes the communication interface 410, thereby allowing the same recited structure to accomplish both the functions listed by this term.

Ipsos further argues that there is no structure that recites how "generating reward signals" is done. It contends that the general statements in the specification regarding the reward generation done at the central facility fall short of the required disclosure of a specific algorithm in WMS Gaming, Inc. v. Int'l Game Tech., 184 F.3d 1339 (Fed.Cir.1999). The Court notes that contrary to Ipsos's argument, the specification explains in fair detail how the central processing facility generates these messages. '276 Patent, 5:47-6:5. The specification also explains that reward notification is transmitted to the winning audience member, as well as other audience members. *Id.* The Court believes that the textual description provided in the specification of the ' 276 patent is sufficient "to render the bounds of the claim understandable to one of ordinary skill in the art." *All Voice* Computing PLC, 504 F.3d at 1245; *see also Techs.* Australia Pty Ltd., 521 F.3d at 1338 ("[The inventor] was not required to produce a listing of source code or a highly detailed description of the algorithm to be used to achieve the claimed functions in order to satisfy 35 U.S.C. s. 112 para. 6."). The Court therefore adopts Arbitron's proposed construction of the corresponding structure: "Central data processing facility 400 with communications interface 410 and associated algorithm described

at 5:38-6:51; 8:20-24; 10:1-16, or equivalents thereof."

18. promoting use by an audience member (Claims 1, 8, 15, 17, 22, 26, 28, 32, 34, 58, 63, 64, 65)

This term appears in the preamble of the listed claims. Arbitron argues that this term does not breathe life and meaning into the claims and has no limiting effect. Therefore, it contends this term requires no construction by the Court. The Court agrees. *See* Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed.Cir.1999) ("If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim."). "Promoting use" appears to be the intended use of the invention. The Federal Circuit has made clear that if the preamble "merely states, for example, the purpose or intended use of the invention, then the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation." *Id*. (citing Rowe v.. Dror, 112 F.3d 473, 478 (Fed.Cir.1997)). The Court therefore denies defendants' request to construe this term.

V. Terms in Dispute-the '334 Patent

A. Agreed Constructions

1. information representing the detected identification codes and the signals indicating that the portable monitoring device is being carried by a person (Claim 7)

The parties have agreed on the construction of this term as being: "Data representing (1) the identified identification codes and (2) the signals indicating whether the personal monitoring device is being carried a person."

B. Disputed Constructions

1. carry detection transducer (Claim 1)

Arbitron's proposed construction of the term is "a transducer that detects whether the device is being carried by a person." Ipsos proposes that based on the prosecution history, the Court should construe this term as "a transducer being either a motion detector or temperature detector that detects whether the device is being carried by a person." Ipsos notes that during prosecution of the patent the inventors stated to the examiner that the carry detection transducer "reads alternately on the motion detector 54 and the temperature detector 55." Ipsos argues that by stating this to the examiner, the inventors limited this term to those two embodiments of the transducer.

Arbitron contends that it did not disavow any meaning of this term. It argues that claims always "read on" embodiments of a patent, but this axiom provides no basis for limiting the claims. It contends that the inventors' statements merely identified the relevant written description support and had no limiting effect. *See* Cordis Corp. v. Medtronic Ave, Inc., 511 F.3d 1157, 1177 (Fed.Cir.2008) (stating that a binding disavowal of claim scope in the course of prosecuting the patent will be found only if the inventor's statements constitute clear and unmistakable surrenders of subject matter). Further, Arbitron argues that dependent claims 2 and 3 recite a carry detection transducer comprising either a motion detector or a temperature detector, and therefore the doctrine of claim differentiation requires that these structures not be

once again read into claim 1. *See* Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1369 (Fed.Cir.2007) ("different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope"). The Court agrees with Arbitron and adopts plaintiff's proposed construction of this term. "Carry detection transducer" means "a transducer that detects whether the device is being carried by a person."

VI. Terms in Dispute-the '962 Patent

A. Disputed Constructions

1. Inaudible (Claim 1)

Plaintiff Arbitron proposes that the Court adopt the Random House dictionary definition of the term "inaudible" as being "incapable of being heard." Ipsos points to the background section of the patent to argue that the inventors understood inaudible to mean below 40 Hz or in the range of -50 to -60 db. It further points to an amendment filed with the USPTO during prosecution to argue this narrow understanding of the term by the inventors during prosecution.

Arbitron contends that the same amendment included definitions of "audibility" and "inaudible," and explained to the examiner that a sound can be inaudible based either on the frequency, the signal level or when it is masked by other sounds. The Court concludes, however, that by listing a range in their specification, the inventors have defined the scope of this term.

The Court therefore construes "inaudible" as "a sound signal that is too faint, meaning that it is approximately 50dB to 60dB below the level of its accompanying sound signals or a sound signal whose frequency is outside the range of audible frequencies, meaning that it is approximately below 40 Hz."

2. separating into frequency components (Claim 1)

Arbitron argues that this term means "splitting up the digital sound signal to frequency components by digital transform processing ." Ipsos argues for a narrow construction of this term, proposing that the Court specifically identify the type of digital transform processing used to split up the digitized signal. It proposes the following construction of this term: "splitting up the digitized signal into multiple frequency bands by a Fourier or wavelet transform." Such a construction would unnecessarily limit the scope of the claims to the embodiment disclosed and is rejected. Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed.Cir.2004) ("This court has expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment."). The specification recites that splitting is "conventionally performed by a Fourier transform, or else by a wavelet transform." '962 patent, 6:12-16. It states that "the data processing means 14 are designed to perform an operation of splitting up the digitized signal provided by the converter into frequency components" Id. Given this broad disclosure, the Court is persuaded to adopt plaintiff's proposed construction. This term means "splitting up the digital sound signal to frequency components by digital transform processing."

3. modulating the energy (Claim 1)

Arbitron argues that "modulating the energy" simply means "varying the energy of at least one of the

frequency components." The point of contention here is the construction of the term "modulating" as it relates to adding the encoded message onto the audio signal. Ipsos uses the McGraw-Hill dictionary to define "modulation" as "[t]he process or result of the process by which some parameter of one wave is varied in accordance with some parameter of another wave." Ipsos argues that Arbitron's proposed construction ignores the fact that there is a second signal that determines the modulation of the first signal. In this case, it contends, the second signal is the message containing identifying information that is being added to the audio signal. Ipsos therefore proposes the following construction: "Varying the energy of at least one of the frequency components in accordance with the message to be encoded."

Arbitron argues that the meaning of the word "modulation" is well-known in the art. It refers to the IEEE standard dictionary's definition for modulation: "A process whereby certain characteristics of a wave, often called the carrier, are varied or selected in accordance with a modulating function." Here, it contends that it has not ignored the second signal; the fact that there is a second modulating signal is captured by the phrase "adding the encoded message" in the claim language. However, neither the claim language nor Arbitron's proposed construction makes clear how the encoded message is added. The Court therefore finds that the term "modulating the energy" means "varying the energy of at least one of the frequency components in accordance with the message to be encoded."

VII. Conclusion

The court adopts the constructions set forth in this opinion for the disputed terms of the patents. The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the court.

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