United States District Court,
D. Massachusetts.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Plaintif,
MASSACHUSETTS INSTITUTE OF TECHNOLOGY Plaintiff.
v.
LOCKHEED MARTIN GLOBAL TELECOMMUNICATIONS, INC., Comsat Corporation, Lockheed Martin Global Telecommunications, LLC, and Lockheed Martin Corporation,
Defendants.

No. CIV.A.01-11618-WGY

Jan. 31, 2003.

In patent litigation, the District Court, Young, Chief District Judge, held that the patent at issue, claiming a method of "analyzing each frame of samples to extract a set of variable frequency components having individual amplitudes" was properly interpreted to mean that the invention did not resort to any voiced/unvoiced decision during the analysis and extraction phases.

Ordered accordingly.

Courts may look to the file wrapper to interpret claims because the patent approval process is a public one and the public has a right to rely on such definitive statements made during prosecution.

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MEMORANDUM AND ORDER

YOUNG**, Chief Judge.**

I. INTRODUCTION

On October 24, 2002, this Court held a hearing pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). As requested by the Massachusetts Institute of Technology ("MIT") and Lockheed Martin Global Telecommunications, Inc., Comsat Corporation, Lockheed Martin Global, Telecommunications, LLC, and Lockheed Martin Corporation ("Lockheed"), this

Court now issues a *Markman* construction that addresses how, if at all, Claim 1 FN1 of MIT's patent, U.S. Patent RE 36,478 ("the '478 Patent"),FN2 is limited. MIT argues that, at most, its claim is limited to a technique for processing acoustic waveforms that operates independently of voiced/unvoiced distinctions only *as to an entire frame*. FN3 Lockheed, however, argues that MIT's claim is limited to a technique that operates independently of *any* voiced/unvoiced distinctions.

FN1. In pertinent part, the patent claims a method of "analyzing each frame of samples to extract a set of variable frequency components having individual amplitudes." U.S. Patent No. Re 36,478, Col. 15, ln. 20-22 (reissued Dec. 28, 1999).

FN2. On April 18, 1989, U.S. Patent Application Serial No. 07/339,957 (the " '957 Application") entitled "Processing of Acoustic Waveforms," was filed, naming Robert J. McAulay and Thomas F. Quateri, Jr. as inventors. The '957 Application was a continuation of U.S. Patent Application Serial No. 06/712,866, filed on March 18, 1985. The '957 Application duly issued on December 5, 1989 as U.S. Patent No. 4,885,790 (the " '790 Patent"), which named MIT as the Assignee. On April 12, 1996, U.S. Reissue Patent Application Serial No. 08/631,222 (the " '222 Application") for the '790 Patent was filed. The '222 Application reissued on December 28, 1999 as U.S. Patent RE 36,478 (the " '478 Patent"), which named MIT as the assignee. *See* Pl.'s Mot. for Partial Summ. J. [Docket No. 27] at 3 n. 1.

FN3. A "frame" is a compilation of samples derived from a particular waveform. *See* Col. 15, ln. 17-19.

As a preliminary matter, the Court notes that Lockheed argued during the *Markman* hearing that the word "variable" in the disputed patent language required definition. Upon further reflection and consideration, however, the Court concludes that the words "analyzing" and "extract"-not "variable"-require construction. The parties contest not how to describe the frequency components or define "variable," but rather what the patented system does (or does not do) during the analysis and extraction phases of the process claimed. FN4 Therefore, the Court adopts the plain and ordinary meaning of the word "variable" FN5 and looks to the specification and file wrapper FN6 to construe the terms "analyze" and "extract" and consider how-if at all-MIT has limited its claim.

FN4. This debate is clear in the transcripts from the *Markman* hearing and the submissions by the attorneys.

FN5. The specification and file history make clear that the plain meaning of the word "variable" should govern. Therefore, the Court interprets "variable" frequency components to mean that the frequency components vary from frame to frame.

FN6. The Court will look to the prosecution history of both the reisssue '478 Patent and the original '790 patent. This analyis is in keeping with 35 U.S.C. s. 251 because Claim 1 was reissued without amendment. *See* Fromson v. Anitec Printing Plates, Inc., 132 F.3d 1437, 1443 (Fed.Cir.1997) ("The prosecution history when a patent is reissued is part of the framework in which the patent is construed, as is the prosecution history of the original patent."), *abrogated on other grounds by* Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1456 (Fed.Cir.1998).

II. DISCUSSION

[1] MIT and Lockheed agree that the Court may look to the specification and the prosecution history to construe a claim properly. *See, e.g.,* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996) ("It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history."); SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1118 (Fed.Cir.1985) (noting that a claim is construed in light of the claim, the specification, and the prosecution history); Autogiro Co. of America v. United States, 181 Ct.Cl. 55, 384 F.2d 391, 397 (Ct.Cl.1967) ("In deriving the meaning of a claim, we inspect all useful documents ... [including] the specification, the drawings, and the file wrapper.").

MIT argues, however, that no such examination is needed in this case. It asserts that Claim 1 of the <478 Patent, on its face, does not limit its method in any way and, therefore, that the language of the claim should be given its plain and ordinary meaning. Pl.'s Mot. For Partial Summ. J. [Docket No. 27] at 15-16. In the alternative, MIT further argues that if any limitation inheres at all in Claim 1, it is only that the technique works independently of voiced/unvoiced decisions with respect to *an entire frame* because, when such decisions are made, data is potentially discarded or separated out. *See Markman* Hearing Tr. [Docket No. 60] at 5, 9-12. Thus, MIT argues that if a technique makes some voiced/unvoiced decisions, but does not do so for an *entire* frame, that technique is still covered by Claim 1 of its patent. The Court disagrees with MIT on both counts.

[2] A court may look to the specification and file wrapper when it needs to determine whether the patentee has limited the scope of claims. *See, e.g.,* SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed.Cir.2001) (noting that claims can be given a narrow construction in light of the written description and explaining that one reason to look to the specification is to determine if the patentee has limited the scope of the claims); Watts v. XL Systems, Inc., 232 F.3d 877, 882-883 (Fed.Cir.2000) (noting that "[o]ne purpose for examining the specification is to determine if the patentee has limited the scope of the claims" and explaining that "even if [the terms] are clear on their face, [a court] must consult the specification to determine if the patentee redefined any of those terms"); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed.Cir.2002) (explaining that the presumption that the claim's ordinary meanings prevail can be overcome by showing that a patentee limited its claim in the specification or prosecution history); Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378 (Fed.Cir.1998) (noting that it is appropriate to look to "explicit statements made by the patent applicant" in the prosecution history to narrow the scope of the claim). The Court concludes that a review of the specification and file wrapper is appropriate in this case.

A. The Specification

The '478 Patent's "Summary of the Invention" begins with an introductory paragraph summarizing the invention as working "independent of the speech state"-that is, it does not make voiced/unvoiced decisions.FN7 Col. 1, ln. 66-67; Col. 2, ln. 1-3. Immediately thereafter, the '478 Patent outlines the basic method of the new invention which, by deduction, includes this general description. Unlike its references with respect to other aspects of the invention, the specification does not state that the technique "can" work independently of voicing decisions or that "one way of using" the technique is not to resort to a voiced/unvoiced decision.FN8 Instead, the technique is described as one that simply works independently of

such decisions.FN9 The fact that the technique works "independently of the speech state" is repeated and held constant when different ways to utilize the invention are described. Col. 2, ln. 39; *see also* Col. 3, ln. 23-26. Moreover, the fact that the invention works independently of voicing decisions is never specifically limited to voiced/unvoiced decisions *as to an entire frame*.

FN7. The prosecution history makes clear that the words "independent of the speech state" mean the system does not resort to voiced/unvoiced decisions. For example, in an Amendment filed May 20, 1988, MIT stated: "For speech, the representation is independent of the speech state, thus avoiding the need for voicing decisions ...." File Wrapper, Ex. 2, Tab. D at 10.

FN8. In reference to other aspects of the invention, the specification does use this kind of language. *See, e.g.,* Col. 3, ln. 63-64 (noting that "[v]arious coding techniques *can also* be used interchangeably with those described below") (emphasis added); Col. 10, ln. 24-50 (stating that " *One way to do this* is to force all of the frequencies to be harmonic .... *As a practical matter it is preferable* to estimate the fundamental frequency that characterizes the set of frequencies in each frame, ... For example, pitch extraction *can be accomplished by* selecting the fundamental frequency that characterizes the set of frequencies in each frame, which in turn relates to pitch extraction.... *Other pitch extraction techniques can also be employed*.") (emphasis added). This is precisely the specific limitation on a disclaimer that is lacking with regard to voiced/unvoiced decisions.

FN9. Had MIT intended this feature of the technique to be a preferred embodiment, one would think it would have expressed this intention more carefully, as it did with regard to "pitch extraction." *See supra,* note 8.

MIT argues that Claim 1 "literally applies" to a system that makes voiced/unvoiced determinations and that it is not "inappropriate or unacceptable to make voiced/unvoiced decisions" when practicing their invention. Pl's. Mot. for Partial Summ. J. at 16-18. While the language of Claim 1, when read without reference to the specification, may be considered broad enough to encompass methods that make some kind of voiced/unvoiced decisions, "[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent ...." SciMed, 242 F.3d at 1341. Here, the specification clearly demonstrates that the technique does not include the making of voicing decisions, and, therefore, techniques that do make such decisions are outside the scope of Claim 1, lines 20-22, of the '478 Patent.

[3] MIT responds that the specification merely represents a preferred embodiment of the invention and should not limit the claim. The Court agrees that the specification of a patent usually sets forth the preferred embodiment of the invention and that this does not normally restrict the claims. "[W]here the patentee describes an embodiment as being the invention itselfand not only one way of utilizing it," however, it can aid interpretation. Autogiro, 384 F.2d at 398; *see also* Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed.Cir.1996) (noting that "when the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment").FN10 In describing an embodiment of the < 478 Patent, the specification states that "recourse is *never* made to a voice-unvoiced decision" and that "[a]s a consequence, *the invention* is robust in noise and can be applied at various data transmission rates simply by changing the rules of the bit allocation."

Col. 3, ln. 20-26 (emphasis added). In essence, then, this is not a preferred embodiment of the invention, but an integral aspect of the invention itself. Although every embodiment of the invention need not be stated in the specification, the claims cannot "enlarge what is patented beyond what the inventor has described as the invention." Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed.Cir.2001) (limiting the claim despite the argument presented during litigation that the invention *could* work in a different way).

FN10. *Modine* was abrogated on other grounds by Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558 (Fed.Cir.2000), but the Supreme Court subsequently vacated that decision in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 122 S.Ct. 1831, 152 L.Ed.2d 944 (2002).

MIT argues that, at most, the *only* limitation it has placed on its patent is the making of voiced/unvoiced decisions *as to an entire frame* because, when this is done, valuable data may be discarded or separated out. *See Markman* Hearing Tr. at 5, 9-12. To support this, MIT claims that the specification distinguishes its invention from the binary model. It explains that, at the time of the invention, the binary model made voiced/unvoiced decisions as to an entire frame. MIT suggests that therefore, each time the specification states that the invention works independently of voiced/unvoiced decisions or speech state, it is doing so in counter-reference to the binary model; in other words, these references imply that the new invention does not make a voicing decision as to an entire frame.

This interpretation of the specification, however, is unsupported. While it is true that the specification distinguishes the new invention from the binary model, the distinction derives primarily from the fact that the binary model relies on the speech state-not from the fact that it makes a voicing decision for an entire frame. The specification begins by describing the binary model as follows: It "use[s] a speech production model in which speech is viewed as the result of a glottal excitation waveform," in which the "glottal excitation can be in one of two possible states corresponding to voiced or unvoiced speech." Col. 1, ln. 20-27.FN11 The specification then details the limitations that are caused by the binary model's reliance on the speech state. The fact that the binary model "requires that each frame of data be classified as either voiced or unvoiced" is merely one of these limitations. Col. 1, ln. 39-42.

FN11. It is clear that these lines are in reference to the binary model as the next paragraph begins: "While *this* binary model has been ...." Col. 1, ln. 34 (emphasis added).

Furthermore, the specification's emphasis is on the making of a voiced/unvoiced decision itself and how "particularly difficult" this is to do. Col. 1, ln. 41-42. No emphasis is placed on the fact that the binary method employs a *single* decision for an entire frame versus *multiple* decisions. No reference is made to the potential for wasted data that occurs with a single decision per frame. Instead, the specification broadly suggests that it is the difficulty of making a voiced/unvoiced decision *in itself* that MIT's new invention sidesteps. Col. 1, ln. 66-67 and Col. 2, ln. 1-3. The invention's ability to skip the voiced/unvoiced determination altogether is what makes it "a new analysis-synthesis technique" FN12 that is different and "better" than the binary model. Col. 2, ln. 4-5; Col. 1, ln. 57.FN13 The binary system is summarized in the specification FN14 as one that relies on the speech state, i.e., that makes voiced/unvoiced decisions. MIT's invention, on the other hand, is summarized throughout as one that works independently of the speech state, i.e., that *does not* make voiced/unvoiced decisions. When the patentee distinguishes its invention from the binary model, the Court interprets it to be doing so in reference to the fact that the binary method relies on voicing decisions, while MIT's technique does not do so at all. The specification suggests, therefore, that

Claim 1, lines 20-22, is limited to a technique that does not resort to any voiced/unvoiced decisions.

FN12. This is supported further by the specification. For example, it states: "Although pitch is used to provide side information for the coding algorithm, the standard voice-excitation model for speech is not used. *This means* that recourse is never made to a voice-unvoiced decision." Col. 3, ln. 20-26 (emphasis added). Here the specification clearly defines the standard binary model as relying on the speech state. MIT's invention, by not relying on the speech state, skips a voice/unvoiced decision entirely.

FN13. In the prosecution history, the inventor makes the same point-its new invention does not have to make the difficult voiced/unvoiced decision. "Like the Fulgham system, Hedelin relies on an initial voiced/unvoiced analysis. (In many instances, it is difficult to make the voicing decision in real time; if the voicing decision is wrong for a particular frame, the synthesized speech is faulty, and the result is an unpleasant and unnatural sound to the listener's ear)." File Wrapper, Ex. 2, Tab D at 15.

FN14. The binary method is summarized similarly in the file wrapper. *See, e.g.,* File Wrapper, Ex. 2, Tab D at 17 (explaining that the Taguchi system is "a conventional binary (voiced/unvoiced) analysis system employing linear predictive analysis of the voiced segments").

B. The Prosecution History

[4] The prosecution history similarly compels the conclusion that Claim 1, lines 20-22, of the <478 Patent is limited to such a technique. Arguments made during the prosecution to differentiate a new invention from prior art, or to convince the Patent and Trademark Office to approve a patent, may circumscribe a claim's scope. *See, e.g.,* Spectrum, 164 F.3d at 1378 (noting that "explicit statements made by a patent applicant during prosecution to distinguish a claimed invention over prior art may serve to narrow the scope of the claim"); Southwall Technologies Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir.1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution."); Alpex Computer Corp. v. Nintendo Co. Ltd., 102 F.3d 1214, 1220 (Fed.Cir.1996) (noting that prosecution history is "relevant ... for construing the meaning and scope of the claims"); Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304 (Fed.Cir.1997) ("An argument contained in an IDS which purports to distinguish an invention from the prior art thus may affect the scope of the patent ultimately granted.").

In the case of the <478 Patent, the inventors distinguished their invention before the Patent and Trademark Office based on the structural difference between a speech analysis system that does not resort to voicing decisions and one that does. In an amendment filed May 20, 1988, the applicants stated that the " *most important* " distinction between their invention and Fulgham's is that "Fulgham neither teaches nor suggests applicant's system for analysis of acoustic waveforms in which the waveform is sampled to extract a series of variable frequency components directly from each frame (*independent of voicing state,* pitch or channel constraints)." File Wrapper, Ex. 2, Tab D at 14 (emphasis added). Subsequently, the applicants distinguished their invention from Hedelin because "[l]ike the Fulgham system, Hedelin relies on an initial voiced/unvoiced analysis.... There is no teaching in the Hedelin reference of any system for analyzing a waveform ... without regard to voicing decisions or the base band." Id. at 15-16.

Similarly, in a supplemental Information Disclosure Statement before the Patent and Trademark Office on May 20, 1988, the inventor distinguished prior art because, "unlike the present invention, the [prior art] is driven by voiced/unvoiced decisions." File Wrapper, Ex. 2, Tab C at 2.

Because MIT's invention was clearly distinguished from prior art based on the grounds that it does not resort to voiced/unvoiced determinations, the '478 Patent does not cover a technique that makes any voiced/unvoiced determinations. *See* Ekchian, 104 F.3d at 1304 ("[b]y distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, [and] he is by implication surrendering such protection."). In essence, MIT is asking this Court now to construe the claim differently for infringement purposes than MIT itself did to obtain the patent. Such construction, however, is impermissible. Alpex, 102 F.3d at 1221 (noting that "[j]ust as prosecution history estoppel may act to estop an equivalence argument under the doctrine of equivalents, positions taken before the PTO may bar an inconsistent position on claim construction"); *see also* Southwall, 54 F.3d at 1576.

Furthermore, any argument that it was not necessary for the inventors to make such extensive disclaimers for approval of the patent-because they might well have prevailed even had they only disclaimed voiced/unvoiced determinations for an entire frame-would fail. Claims cannot be construed in a more limited way for approval of the patent and then more broadly in claim construction even if the statements were not necessary for approval. *See, e.g.,* id. at 1576 ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution."); Standard Oil Co. v. Am. Cyanamid Co. 774 F.2d 448, 452 (Fed.Cir.1985) ("[A]ll express representations made by or on behalf of the applicant to the examiner to induce a patent grant or ... to reissue a patent" can limit interpretation of claims); KX Industries, L.P. v. PUR Water Purification Prod., 18 Fed.Appx. 871, 876, 2001 WL 902507 (Fed.Cir.2001) (unpublished opinion) ("[w]hether the limiting assertions made were necessary for allowance of the claims is not dispositive as to whether a patentee has disclaimed certain subject matter.") FN15 For example, in *Ekchian,* the patentee distinguished his invention from prior art preemptively to prevent the Patentand Trademark Office from rejecting the patent. *See* Ekchian, 104 F.3d at 1304. The patentee was later estopped from asserting a broader construction of the claim. *See id.* The determining factor is whether the patentees have clearly excluded a broader interpretation. *See, e.g.,* Northern Telecom Ltd. v. Samsung Elec. Co., Ltd., 215 F.3d 1281, 1294-95 (Fed.Cir.2000) (analyzing whether the patentee "with reasonable clarity and deliberateness" excluded a broader interpretation of the claims in the prosecution history); KX Industries, 18 Fed.Appx. at 876 ("What is determinative is whether the patentee has defined a claim term as excluding a broader interpretation with reasonable clarity and deliberateness."). In the "Remarks" of the May 20, 1988 Amendment, the patentees clearly articulated that its invention worked "independent of the speech state, thus avoiding the need for voicing decisions," *see* File Wrapper, Ex. 2, Tab D, at 10, and they repeatedly distinguished their invention from prior art based on this broad characterization.

FN15. For the propriety of citing an unpublished opinion, see Anastasoff v. United States, 223 F.3d 898, 899-905 (8th Cir.2000) (Arnold, J.) (holding that unpublished opinions have precedential effect), *vacated as moot,* 235 F.3d 1054 (8th Cir.2000) (en banc), Giese v. Pierce Chem. Co., 43 F.Supp.2d 98, 103 (D.Mass.1999) (relying on unpublished opinions' persuasive authority), and Richard S. Arnold, Unpublished Opinions: A Comment, 1 J.App. Prac. & Process 219 (1999). *See also* Richard L. Neumeier, *Ethics of Appellate Advocacy: Unpublished Opinions* (Oct.2001) (unpublished seminar paper, on file with author).

MIT argues that extrinsic evidence shows that the only art known at the time the patent was sought and

amended was a binary method that made a voiced/unvoiced decision for an entire frame and, therefore, that this must necessarily constitute the extent of the claim limitation. This argument requires the Court to delve into extrinsic evidence-evidence to which resort ought be had only "if necessary." Vitronics, 90 F.3d at 1583. Even if it were necessary and, thus, appropriate for this Court to consider extrinsic evidence about what art existed at the time-and the Court believes it is not-MIT's argument would still fail.

As an initial matter, it is not clear that MIT's characterization of what art existed at the time is accurate. Lockheed has presented extrinsic evidence suggesting that multiple voicing decisions within a frame were known to those skilled in the art prior to 1985.FN16 Whether sufficient evidence exists to support this contention, however, is a moot question because MIT's argument fails for two other reasons.

FN16. The patent was originally sought in 1985 and then abandoned. The inventors then filed for the patent in April of 1989.

[5] First, as stated in *Autogiro,* "it is not the prior art that provides the guidelines, but the applicant's acquiescence with regard to prior art. In its broader use as a source material, the prior art cited in the file wrapper gives clues as to what the claims do not cover." Autogiro, 384 F.2d at 399. Although here the Court is not dealing with traditional file wrapper estoppel as was the *Autogiro* court, the same reasoning applies.FN17 In the prosecution history of the < 478 Patent, the emphasis is placed on the prior art's reliance on voiced/unvoiced decisions generally. The primary distinction the inventor makes consistently with respect to the prior art in the file wrapper is that the system works "independent of the speech state, thus avoiding the need for voicing decisions." File Wrapper, Ex. 2, Tab D at 10. Moreover, the differentiating aspect of the conventional binary system that is highlighted by the inventors in the prosecution history (and in the specification) is that it makes voiced/unvoiced decisions-not that it makes a single decision for the entire frame. For example, in reference to Taguchi, MIT points out that it "is a conventional binary (voiced/unvoiced) analysis system employing linear predictive analysis of the voiced segments" as opposed to MIT's "analysis system based on sinusoidalrepresentation of a speech waveform." Id. at 17.

FN17. Other courts have applied file wrapper estoppel theories to claim construction. *See, e.g.,* Alpex, 102 F.3d at 1221.

Admittedly, there are at least two references to the prior art's determination of whether an *entire frame* of speech is voiced or unvoiced in the file wrapper. *See, e.g., id.* at 14, 15. These two cursory references, however, are insufficient to convince the Court that the inventor did not clearly disavow a system that resorts to any voiced/unvoiced decisions. FN18

FN18. In one of these instances, the inventor pointed out that the most important difference was that the system worked "independent of voicing state, pitch, or channel constraints." File Wrapper, Ex. 2, Tab D at 14.

[6] Second, MIT could and should have been clearer about what it was disclaiming. Courts may look to the file wrapper to interpret claims because the patent approval process is a public one and "[t]he public has a right to rely on such definitive statements made during prosecution." Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1347 (Fed.Cir.1998); *see also* Ekchian, 104 F.3d at 1304 (noting that "the courts and the

public may rely" on an information disclosure statement to interpret the claims.) "Notice is an important function of the patent prosecution process, as reflected by the statute itself ... and recently confirmed by the Supreme Court." Digital Biometrics, 149 F.3d at 1347 (internal citations omitted), *citing* Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997). Even had MIT not known of the other voiced/unvoiced techniques, it might well have mentioned in the prosecution that its system is *compatible* with voiced/unvoiced decisions or that it was *not* disclaiming *all* systems that use any voiced/unvoiced decisions.

III. CONCLUSION

For the foregoing reasons, the Court interprets Claim 1, lines 20-22, of the <478 Patent to mean that the invention does not resort to any voiced/unvoiced decision during the analysis and extraction phases. Accordingly, the Court concludes that the appropriate interpretation of the language of Claim 1, lines 20-22, of the <478 Patent is as follows:

Analyzing each frame of samples and extracting therefrom a set of variable frequency components that have individual amplitudes, without regard to voiced/unvoiced decisions.

SO ORDERED.

D.Mass.,2003.
Massachusetts Institute of Technology v. Lockheed Martin Global Telecommunications, Inc.