United States District Court,
M.D. Florida, Jacksonville Division.

**TV/COM INTERNATIONAL, INC,**
Plaintiff.
v.
**MEDIAONE OF GREATER FLORIDA, INC.; Canal Plus Technologies, S.A.; Canal Plus U.S. Technologies, Inc.; and Soci'e9t'e9 Europ'e9ene De Contr'f4le D'Acc'e9s,**
Defendants.

No. 3:00-cv-1045-J-21HTS

**Aug. 3, 2001.**

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***ORDER***

RALPH W. NIMMONS, JR.**, District Judge.**

This cause comes before the Court on the parties' Joint Claim Construction Stipulation (Dkt.63), Plaintiffs Claim Construction Memorandum (Dkt.72), and Defendants' Claim Construction Memorandum (Dkts.83). The Court, by this order, construes the disputed patent claims with respect to the two subject patents.

## I. Introduction

Plaintiff is the successor in interest to two patents pertaining to the digital encryption of information signals. Patent number 4,531,020, (the "Wechselberger patent") and patent number 4,531,021, (the "Bluestein patent") **both** describe multi-layered encryption systems which can be used in the cable and satellite television industries. Both systems provide for a transmitter which would encrypt digital programming or information for delivery to customers and a receiver for each customer which would decrypt the programming or information for the customer's use.

Plaintiff contends that Defendants Canal Plus Technologies, S.A., Canal Plus U.S. Technologies, Inc., and Societe Europeene De Controle D'Acces (collectively, "Defendants") have distributed infringing cable encryption and decryption equipment through Defendant MediaOne of Greater Florida, Inc. ("MediaOne"),

a cable television provider in Northeast Florida.

Pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), the Court scheduled briefing by the parties on the claim construction issues in dispute. On June 26-27, 2001, the Court held an evidentiary hearing to assist it in determining the proper construction of the patent claims. FN1 Prior to the hearing, the Court required the parties to provide a Joint Claim Construction Stipulation (Dkt.63) and memoranda (Dkts. 72 & 83) setting forth which terms in the patents are disputed and each party's recommended construction.

FN1. Both sides have provided exhibits which were entered into evidence during the *Markman* hearing. In this Order, Plaintiff's and Defendants' *Markman* hearing exhibits will be referred to by the symbols "PM" and "DM," respectively. The transcript of the two-day hearing consists of two volumes, one for each day. The first day's transcript will be referred to as "Vol. 1." The second day's transcript will be referred to as "Vol. 2."

Before said hearing, Plaintiff filed its "Motion in Limine to Exclude Testimony of Dr. Lee A. Hollaar" (Dkt.93). In its motion and during the *Markman* hearing, Plaintiff argued that Hollaar was not capable of providing an opinion of what a person skilled in the art would understand the patent claims to mean at the time the patents were filed in the early 1980's. Plaintiff also filed its "Objections to Defendants' Markman Hearing Exhibits" (Dkt.69). After Defendants narrowed their proposed exhibits, Plaintiff withdrew one objection leaving objections only to Defendants' exhibits 34, 37, 100, and 101. Plaintiff's primary objection was that the disputed exhibits were improper extrinsic evidence which should not be admitted into evidence.

During the hearing, the Court denied Plaintiff's "Motion in Limine" (Dkt.93) and Plaintiff's "Objections to Defendants' Markman Exhibits" (Dkt.69), but stated that the Court may reexamine the motion and objections after the record became complete. *See* Key Pharmaceuticals v. Hercon Laboratories Corp., 161 F.3d 709, 716 (Fed.Cir.1999) (explaining that a trial court generally may *hear* extrinsic evidence, but may not *rely* on extrinsic evidence if the proper claim construction is evident from the intrinsic evidence). The record is now complete and the claim construction issues are ripe for determination.

**II. Testimony of Dr. Hollaar and Defendants' Exhibits**

According to the United States Patent and Trademark Office Board of Appeals, "[t]he person working in this art must be knowledgeable in the computer and communications arts as well as communications security and data encryption." PM 061; DM 004 at 55. Thus, the Board of Appeals concluded, "the artisan here must be highly skilled." The Court agrees with the Board of Appeals' assessment. Through the Court's work with the patents at issue in this case, it is apparent that one skilled in the art needs an understanding of computers, electronic circuits, communications technology (such as cable television systems), as well as data encryption.

Defendants' proffered expert, Dr. Lee Allen Hollaar, has a bachelor's degree in electrical engineering, a master's degree in computer science, and a Ph.D. in computer science. Vol. 1 at 168-69. During his education, he took courses in digital circuit design, and teaches courses in digital logic design. *Id*.

Without question, Hollaar is a qualified expert in computer science or electrical engineering. Nevertheless, his expertise does not extend to cable television systems or data encryption. This was made evident from

counsel for Plaintiffs voir dire and cross-examination of Hollaar. Vol. 1 at 187, *et seq;* Vol. 2 at 59, *et seq*.

Additionally, throughout his testimony, Hollaar opined about what he interpreted the patent claims to mean at the *present* time. The standard the Court must employ, however, is what a person skilled in the art would understand the patent claims to mean at the time the patents were filed in the early 1980's. *See* Envtl. Designs, Ltd. v. Union Oil Co. of Cal., 713 F.2d 693, 696-97 (Fed.Cir.1983). During voir dire and cross-examination, Plaintiff's counsel asked Hollaar questions about how the art was used in the early 1980's; Hollaar did not know. *See* Vol. 2 at 61, ll. 17-23; Vol. 1 at 190, l. 7-191, l. 7. Hollaar is wholly unfamiliar with subscription television systems in general and the use of data encryption in subscription television systems specifically. Accordingly, the Court finds that Hollaar is not capable of testifying as to what one skilled in the art would understand from the patent or what the relevant art was in the early 1980's.

Based on this conclusion, it would be improper for the Court to rely on Hollaar's testimony. Furthermore, even if he were qualified to testify as to the art in the early 1980's, he did not so testify. Hollaar opined about what the patent terms mean and how he construed the patent-a task for the Court. Much of Hollaar's testimony was the equivalent of a witness testifying as to what the words in a statute mean. Accordingly, Hollaar's testimony is unpersuasive.

Hollaar's testimony was useful to the Court, for educational purposes, to help follow the diagrams and explain the circuitry of the patent. For this reason, the Court will not strike the testimony and reaffirms its decision to allow Hollaar's testimony into evidence. Nevertheless, the Court does not rely on Hollaar's testimony in construing the patents.

The Court also reaffirms its decision regarding the admission into evidence of Defendants' exhibits. As further pointed out in Section III.A., *infra,* in claims construction, the *admission* of evidence and *reliance* on such evidence are two separate things. Pitney Bowes, Inc. v. Hewlett Packard Co., 182 F.3d 1298, 1308-09 (Fed.Cir.1999).

**III. Standards of Claim Construction**

**A. General Standards**

Determining whether an accused device infringes a patent claim entails a two-step process. Pitney Bowes, Inc., 182 F.3d at 1304. The first step is claim construction, which involves ascertaining the scope and meaning of the claims at issue. Kemco Sales, Inc. v. Control Papers Co., 208 F.3d 1352, 1359 (Fed.Cir.2000). Claim construction is a question of law for the Court to determine. Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996); Pitney Bowes, 182 F.3d at 1304. The second step is to determine infringement, which is an issue of fact. Kemco Sales, Inc. v. Control Papers Co., 208 F.3d 1352, 1360 (Fed.Cir.2000). It is the first step-claim construction-which is presently before the Court.

To determine the meaning of claims, the Court must first look to the intrinsic evidence: the claims, the written description or specification, and the prosecution history. Pitney Bowes, 182 F.3d at 1309; Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics Corp., 90 F.3d at 1582. Usually, examination of the intrinsic evidence alone will yield the correct construction of disputed claim language. Id. at 1583.

In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. The claims, specification, and file history, rather than extrinsic evidence, constitute the public record of the patentee's claim, a record on which the public is entitled to rely.... Allowing the public record to be altered or changed by extrinsic evidence introduced at trial, such as expert testimony, would make this right meaningless.

*Id*. at 1583. Thus, the Court must focus its examination on the intrinsic evidence.

Within the intrinsic evidence, "[t]he starting point for any claim construction must be the claims themselves." Pitney Bowes, 182 F.3d at 1305; Vitronics Corp., 90 F.3d at 1582. Nevertheless, while the Court is to rely primarily on the claim language, "[t]he written description, prosecution history, and admissible extrinsic evidence may supply context to understand the claim language." Overhead Door Corp. v. The Chamberlain Group, Inc., 194 F.3d 1261, 1272 (Fed.Cir.1999).

Claim terms receive their ordinary and customary meaning unless the patentee assigns a special meaning. Vitronics Corp., 90 F.3d at 1582. Generally, "the same word appearing in the same claim should be interpreted consistently." Pitney Bowes, 182 F.3d at 1310. Nevertheless, the written description can contain more than one definition of a claim term. *Id*. Courts should avoid definitions upon which the Patent and Trademark Office ("PTO") could not reasonably have relied when it issued the patent. Pitney Bowes, 182 F.3d at 1310.

The definitions selected by a patentee, which are clearly, deliberately, and precisely included within the specification, control over the ordinary or customary meaning of a term. Renishaw PLC v. Marposs Societa' Per Axioni, 158 F.3d 1243, 1249 (Fed.Cir.1998). It is often stated that a patentee can "choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." Vitronics Corp., 90 F.3d at 1582. Thus, a court must be careful to review the specification to determine the meaning of claim terms. *Id*. Since the specification may serve as a dictionary for claim interpretation, it is "always highly relevant" to claim construction. *Id*. "Usually it is dispositive; it is the single best guide to the meaning of a disputed term." Vitronics Corp., 90 F.3d at 1582.

A court, however, must apply caution and not impose upon the claim limitations contained only in the specification. *See* SciMed Life Systems, Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340 (Fed.Cir.2001) (describing the act of reading into the claims a limitation from the written description as "one of the cardinal sins of patent law"). "Where a specification does not *require* a limitation, that limitation should not be read from the specification into the claims." Intel Corp. v. U.S. Int'l Trade Comm'n, 946 F.2d 821, 836 (Fed.Cir.1991). A corollary to this rule is the caveat not to restrict the claim to the preferred embodiment, unless by its own language it specifically so states. Karlin Technology Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 973 (Fed.Cir.1999).

That is not to say, however, that claims should be interpreted in a vacuum. "Claims must be read in view of the specification, of which they are a part." Markman v. Westview Instruments, 52 F.3d 967, 979-80, *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996); *see also* Renishaw, 158 F.3d at 1248-49. Indeed, the specification may make clear that the patentee has limited the scope of the claim to not include a particular feature. SciMed Life Systems, Inc., 242 F.3d at 1341. "Claims are not correctly construed to cover what was expressly disclaimed." Id. at 1341-42, *quoting,* Cultor Corp. v. A.E. Staley Mfg. Co., 224 F.3d 1328, 1331 (Fed.Cir.2000). The specification provides guidance as to the meaning of the claims, thereby influencing the

manner in which the claims are to be construed. SciMed Life Systems, Inc., 242 F.3d at 1344; Renishaw PLC, 158 F.3d at 1248-49.

After analyzing the specification, a court may also consider the prosecution history of the patent, if available. Vitronics Corp., 90 F.3d at 1582. Included within this analysis may be an examination of the cited prior art. Id. at 1583. As with the specification, a court must not read limitations from the prosecution history into the claims, Intervet Amer., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed.Cir.1989), but should look to the prosecution history to inform itself as to the proper meaning of claim terms and specific disclaimers of a claim's scope. Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., 239 F.3d 1225, 1238 (Fed.Cir.2001). "The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Techs., Inc. v. Cardinal Co., 54 F.3d 1570, 1576 (Fed.Cir.1995).

If the intrinsic evidence does not provide the answer as to the proper construction of claim terms, then-and only then-the court may rely on extrinsic evidence. Pitney Bowes, 182 F.3d at 1308. "Extrinsic evidence is that evidence which is external to the patent and file history, such as expert testimony, inventor testimony, dictionaries, and technical treatises and articles." Vitronics Corp., 90 F.3d at 1584. There is no prohibition on courts from *hearing* evidence from experts. Pitney Bowes, 182 F.3d at 1308. "Rather, *Vitronics* merely warned courts not to *rely* on extrinsic evidence in claim construction to contradict the meaning of claims discernible from thoughtful examination of the claims, the written description, and the prosecution history-the intrinsic evidence." Id. at 1308. As previously mentioned, *admissibility* of extrinsic evidence is a separate issue from *reliance* on extrinsic evidence during claim construction. Id. at 1308, n. 2.

Thus, under *Vitronics,* it is entirely appropriate, perhaps even preferable, for a court to consult trustworthy extrinsic evidence to ensure that the claim construction it is tending to from the patent file is not inconsistent with clearly expressed, plainly apposite, and widely held understandings in the pertinent technical field.... [C]onsultation of extrinsic evidence is particularly appropriate to ensure that [the Court's] understanding of the technical aspects of the patents is not entirely at variance with the understanding of one skilled in the art.

Pitney Bowes, 182 F.3d at 1309.

Plaintiff argues that the doctrine of claim differentiation should be employed when construing some of the claims at issue. That doctrine embodies the idea that separate claims are meant to be different. *See* Wenger Mfg., Inc., 239 F.3d at 1233. Thus, interpretations which tend to make one or more claims repetitive of other claims are avoided. *See* Karlin Technology Inc., 177 F.3d at 971-72. The doctrine "normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend." Id. at 972.

Claim differentiation, while often argued to be controlling when it does not apply, is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims.

Wenger Mfg., Inc., 239 F.3d at 1231. The doctrine is a guide or presumption, not a rigid rule. Id. at 1231; Karlin Technology, 177 F.3d at 971-72.

**B. Means-plus-function claims**

Defendants have put at issue every one of the means-plus-functions clauses contained in the claims of the two patents. Therefore, the Court will set forth below the general standards of construing means-plus-function claims.

Whether a claim limitation is in means-plus-function format, pursuant to 35 U.S.C. s. 112, para. 6, is a matter of claim construction and, therefore, a question of law. Wenger Mfg., Inc., 239 F.3d at 1231; Kemco Sales, Inc., 208 F.3d at 1360. The Court must first determine whether a means-plus-function limitation is at issue. *Id*. If it is, the Court must then determine what the claimed function is. *Id*. Finally, the Court looks to the specification to determine the disclosed structure which corresponds to the "means" for performing the "function." *Id*.

Use of the term "means" in a claim limitation creates a presumption that s. 112, para. 6, has been invoked. Wenger Mfg., Inc. ., 239 F.3d at 1232; Kemco Sales, Inc., 208 F.3d at 1360. Conversely, the absence of the term "means" creates a presumption that s. 112, para. 6, does not apply. Wenger Mfg., Inc., 239 F.3d at 1232; Kemco Sales, Inc., 208 F.3d at 1360. "In deciding whether either presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of s. 112, para. 6." Personalized Media Communications, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 704 (Fed.Cir.1998).

The determination of corresponding structure for a means-plus-function claim is also a matter of claim construction. Overhead Door Corp., 194 F.3d at 1271. Section 112, para. 6, does not provide that *every means* which performs the specified function is covered with patent protection. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1356 (Fed.Cir.1991). Section 112, para. 6, mandates that the patentee must specify the corresponding structure in the patent specification. Atmel Corp. v. Info. Storage Devices, Inc., 198 F.3d 1374, 1382 (Fed.Cir.1999); In re Donaldson Co., 16 F.3d 1189, 1193, 1195 (Fed.Cir.1994). "Thus, section 112(6) rules out the possibility that any and every means which performs the function specified in the claim *literally* satisfies that limitation." *Laitram Corp.,* 939 F.2d at 1356 (internal quotation marks omitted).

When determining whether the specification adequately describes the corresponding structure pertaining to a means-plus-function claim, the Court must review the specification from the viewpoint of one skilled in the art at the time the patent was filed. *Budde,* 250 F.3d at 1376. "The specification must be read as a whole to determine the structure capable of performing the claimed function." *Id*. at 1379. This includes reading the summary, objects of the invention, and the preferred embodiment "in a manner that renders the patent internally consistent." *Id*. 250 F.3d at 1379-80. Nevertheless, "Under s. 112, para. 6, a court may not import functional limitations that are not recited in the claim, or structural limitations from the written description that are unnecessary to perform the claimed function." Wenger Mfg., Inc., 239 F.3d at 1233.

The requirements of s. 112, para. 6, cannot be avoided by the "mere addition of a dependent claim that recites the corresponding structure disclosed in the specification." Wenger Mfg., Inc., 239 F.3d at 1234. That is not to say, however, that a means-plus-function claim must be interpreted without regard to other claims. *Id*. Using the doctrine of claim differentiation, the other claims may provide guidance and context for interpreting disputed claim language, especially if the disputed means-plus-function claim contains an additional function or functions. *Id*.

Failure to disclose adequate corresponding structure in the specification for a means-plus-function claim results in the claim being indefinite, thus invalid. Budde, 250 F.3d at 1376. "A determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of

patent claims." Personalized Media Communications, LLC, 161 F.3d at 705; *see also* Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1376 (Fed.Cir.2001); Atmel Corp., 198 F.3d at 1378-79 (explaining that "an analysis of indefiniteness under [35 U.S.C.] s. 112, para. 2 is inextricably intertwined with claim construction," particularly in the context of a determination of adequate disclosure of structure for a means-plus-function claim under s. 112, para. 6). *But see* Intervet Amer., Inc., 887 F.2d at 1053 ("Ambiguity, undue breadth, vagueness, and triviality are matters which go to claim *validity* for failure to comply with 35 U.S.C. s. 112-para. 2, not to interpretation or construction.").

Since patent claims have a statutory presumption of validity when the patent issues, "overcoming the presumption of validity requires that any facts supporting a holding of invalidity must be proved by clear and convincing evidence." *Id*. at 1376; *accord* Intel Corp., 946 F.2d at 829.

Thus, a challenge to a claim containing a means-plus-function limitation as lacking structural support requires a finding, by clear and convincing evidence, that the specification lacks disclosure of structure sufficient to be understood by one skilled in the art as being adequate to perform the recited function.

Budde, 250 F.3d at 1376-77. The clear and convincing standard is not met where extensive inferences would have to be drawn from the evidence presented. Intel Corp., 946 F.2d at 830.

**C. Prosecution History Estoppel/File Wrapper Estoppel**

Defendants argue at various times that prosecution history estoppel-formerly known as file wrapper estoppel-prevents certain constructions of the claims. There is " 'a clear line of distinction' between using the prosecution history to construe disputed claim language, and applying the doctrine of prosecution history estoppel to prevent a patentee from obtaining under the doctrine of equivalents coverage of subject matter that was relinquished during prosecution." Wenger Mfg., Inc., 239 F.3d at 1238.

Claim interpretation in view of the prosecution history is a preliminary step in determining literal infringement, while prosecution history estoppel applies as a limitation on the range of equivalents if, after the claims have been properly interpreted, no literal infringement has been found.

Southwall Techs., Inc., 54 F.3d at 1576. The two uses of the prosecution history, however, are similar in that

"just as prosecution history estoppel may act to estop an equivalence argument under the doctrine of equivalence, positions taken before the PTO may bar an inconsistent position on claim construction under s. 112, para. 6." ... The relevant inquiry is whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter.

Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1457 (Fed.Cir.1998) (citing Alpex Compter Corp. v. Nentendo Co., 102 F.3d 1214, 1221 (Fed.Cir.1996)) Thus, although the doctrine of prosecution history estoppel is only invoked in order to reign in the use of the doctrine of equivalents, the prosecution history of a patent is important to claim construction because it is a contemporaneous exchange between the applicant and the examiner. Desper Prods., Inc. v. Qsound Labs, Inc., 157 F.3d 1325, 1336-37 (Fed.Cir.1998). The public has a right to rely on an applicant's remarks in seeking allowance of its claims; and therefore, a specific disavowal of subject matter contained in the prosecution history is relevant to the claim construction analysis. Id. at 1337.

**D. Doctrine of Equivalents Versus Equivalent Structure Pursuant to** s. 112**, para. 6**

In their claim construction arguments, Defendants also cite to cases dealing with the doctrine of equivalents. The doctrine of equivalents, however, and s. 112, para. 6, equivalents have separate origins and purposes. Valmont Indus. v. Reinke Mfg. Co., 983 F.2d 1039, 1043 (Fed.Cir.1993); *see also* Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997). Equivalence under s. 112, para. 6, operates to exclude the possibility that any and every means which performs the function specified in the claim literally satisfies that limitation and limits a claim to those means that are "equivalent." Intel Corp. ., 946 F.2d at 842.

[T]he word "equivalent" in s. 112 should not be confused, as it apparently was here, with the "doctrine of equivalents." In applying the doctrine of equivalents, the fact finder must determine the range of equivalents to which the claimed invention is entitled, in light of the prosecution history, the pioneer-nonpioneer status of the invention, and the prior art. It must then be determined whether the entirety of the accused device or process is so "substantially the same thing, used in substantially the same way, to achieve substantially the same result" as to fall within that range. Graver Tank & Mfg. Co. v. Linde Air Products Co., 339 U.S. 605, 610, 70 S.Ct. 854, 857, 94 L.Ed. 1097, 85 USPQ 328, 330 (1950). In applying the "means plus function" paragraph of s. 112, however, the sole question is whether the single means in the accused device which performs the function stated in the claim is the same or equivalent of the corresponding structure described in the patentee's specification as performing that function.

Intel Corp., 946 F.2d at 842. Unlike the doctrine of equivalents, it is not necessary to look to the prior art to make a determination of equivalence under s. 112, para. 6. Id. at 842. "Claim limitations may, and often do, read on the prior art, particularly in combination patents." Id. at 842.

"A key feature that distinguishes 'equivalents under section 112, paragraph 6 and 'equivalents' under the doctrine of equivalents is that section 112, paragraph 6 equivalents must perform the identical function of the disclosed structure, while equivalents under the doctrine of equivalents need only perform a substantially similar function." Kemco Sales, Inc., 208 F.3d at 1364.

Because the "way" and "result" prongs are the same for both types of equivalents, a structure failing the s. 112, para. 6, test under either or both prongs necessarily fails the doctrine of equivalents test for the same reason. Id. at 1364; *see also* Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., 145 F.3d 1303, 1309 (Fed.Cir.1998). In this respect, the two types of "equivalents" are similar.

**IV. The Bluestein Patent**

The parties first address the disputed claim terms in the Bluestein patent. The Court will do likewise.

**A. General Description**

The first sentence of the Bluestein Summary of the Invention, located at Column 1, line 8, of the specification, states: "The present invention relates to means for enciphering or encripting [sic] messages in digital format and which may have particular application to the communications industry." To facilitate understanding, the Court will describe the Bluestein patent in terms of a television system. As will be explored later, the parties dispute, among other things, whether the patent applies only to subscription television systems which transmit signals over the airwaves or also to cable television transmission systems. Moreover, the parties dispute whether the patent applies to only television programming content or also can

apply to digital information-carrying content.

Providers of pay television programming, whether it be via airwaves, cables, or satellites, need the signals they transmit to be protected from unauthorized reception and viewing. Persons who intercept the pay television signals without authorization are often referred to as "pirates." If providers cannot exclude non-paying persons from intercepting their signals, no one would pay for the programming being provided. Thus, systems for the encryption of television signals have been developed for many years.

Early on, the exclusion of non-paying persons from receiving the pay television signals was accomplished by scrambling the analog signal and providing de-scrambling equipment to the system's customers. Although most familiar to laymen in the context of the cable "box" sitting on top of a television in a subscriber's home, de-scramblers actually developed first in the context of transmission of scrambled television programs over the airwaves. Since everyone has access to signals transmitted via airwaves, cable television services were developed as another means of limiting access to potential pirates. Eventually, though, analog scrambling became very easy for average pirates to de-scramble. Conversion of analog signals into digital signals and subsequent encryption was then seen as the next answer to fight pirates. Digital encryption allows for the encryption of information through complex algorithms which are difficult to break. Therefore, a simple digital encryption system will receive the television programming, convert the analog signal to a digital signal, apply an encrypting code, and then transmit the television programming to the system's customers. The customers have receivers which will receive the encrypted information, decrypt it, convert it back to analog signals, and then send it to the customer's television.

Pirating technology has, however, kept pace with encryption technology; and pirates have equipment with which they can eventually gain access to the encryption code or "key." Once the pirate knows the key, he can view the programming just the same as a paying customer. To counteract the pirates, methods were developed to change the key on a regular basis. The change could be monthly, weekly, daily, hourly, or even by the minute, depending on the system's capabilities.

There are various methods of changing the key, some of which are contained in prior art patents cited in both the Bluestein and Wechselberger patents. The Bluestein patent changes the key through transmission of a signal, intertwined in the programming signal, which contains a new key. Even a novice, though, would recognize that it would serve no purpose to transmit to customers a new encryption key using the old encryption key. Since the pirate already knows the old encryption key, the pirate-just like the customers-can receive the new key and use it, too. Therefore, the Bluestein patent teaches a system for a second layer of encryption, using a second key. When a service provider wishes to change the programming key, a message intertwined in the television programming is sent to the receiver of each customer. The programming is encrypted in the first key. The message with the new key, however, is encrypted in a second, different key which is unique to each subscriber. Once the customer has received the second key, the receiver decrypts the new programming key, and the service provider begins encrypting its television programming in the new programming key. Programming is no longer sent encrypted in the old key.

The Bluestein patent speaks in terms of a first key and a second key. The first key is the key that encrypts the television programming. This key will eventually be changed; therefore, there can be old first keys, current first keys, or new first keys. The second key encrypts new first keys. The second key can also be changed, although this does not occur as often. Thus, there can be old second keys, current second keys, and new second keys.

**B. "Digital Information Bearing Signals"**

The first term in dispute appears in both claim 1 and claim 2 of the Bluestein patent.

Claim 1 states:

1. In a subscription television system for broadcasting enciphered digital information bearing signals, means for using a first key to encipher the digital signals, means for simultaneously broadcasting the first key enciphered digital signals to multiple subscription television subscribers,

means for changing said first enciphering key applied to said digital signals, means for enciphering, in a second enciphering key, an information message as to the change in said first enciphering key, said second enciphering key being different for each of said multiple subscription television subscribers, with said information message including an address for each of said plurality of receivers, and means for transmitting said enciphered information message, separately to each of said subscription television subscribers, each such enciphered information message being enciphered in a different second key.

Claim 2 states:

2. In a subscription television receiver for deciphering enciphered digital information bearing signals broadcast to multiple television subscribers, first deciphering means responsive to a subscriber common first deciphering key for deciphering said digital signals, means for changing said subscriber common first key including second deciphering means responsive to a message enciphered in a second key and which message includes a change in said first key, address means responsive to an address portion of said key change message for enabling said second deciphering means, said second deciphering means being responsive to a key peculiar to only one subscription television receiver, with each of the multiple subscription television receivers having a different second key.

Defendants argue that the term "digital information bearing signals" should be interpreted to be limited to subscription information signals; i.e., the information signal that is of interest to the subscriber. This information signal of interest to a subscriber could be television programming or computer data, but would always be created external to the encryption system. According to the Defendant, however, the information signal of interest to a subscriber would not include digital information generally, such as enciphered messages originating from a transmitter, a key change message, or authorization data.

Plaintiff argues that claim terms on their face apply to any type of information, whether it be video, audio, teletext, authorization data, new encryption keys, program identification codes, or the like. Plaintiff also argues that the specification supports such a broad meaning of "digital information bearing signals."

The Court finds that the plain meaning of the claim language for the term "digital information bearing signals" encompasses more than just "the information signal that is of interest to the subscriber." An expert in the field would understand that term to encompass any type of information which would be transmittable through digital signals. To hold otherwise would be to erroneously import into the claim a limitation from the preferred embodiment. Intel Corp., 946 F.2d at 836 ("Where a specification does not *require* a limitation, that limitation should not be read from the specification into the claims."); Karlin Technology Inc., 177 F.3d at 973 (explaining that a court should not restrict the claim to the preferred embodiment unless, by its own language, it specifically so states).

Moreover, to adopt the Defendant's proposed interpretation would insert ambiguity into the patent. A person trying to design around the patent would be forever wondering if certain digital information were of interest to subscribers. Categorization of different types of digital information into the two categories "of interest to the subscriber" and "not of interest to the subscriber" would be virtually impossible due to its subjectivity. The Court declines to insert such ambiguity to a claim term which-although broad-is clear on its face.

The specification is not to the contrary. The Bluestein specification explicitly states that the invention "has utility in the area of satellite transmissions, both of audio type signals, video signals and *other forms of information, such as data which can be transmitted in digital form*. (Col. 1, ll. 19-21, emphasis added). There is nothing narrowing about this description. *See also* Col. 1, ll. 64-65, 67-68.

Review of the prosecution history also does not yield a different result. Additionally, since it is not necessary to look beyond the intrinsic evidence in determining the proper construction of "digital information bearing signals," the court does not rely on any of the extrinsic evidence presented to it.

Defendant argues that the specification and title refer to a two-level encryption system; therefore, the claim construction should be prevented from including anything which would result in a three-level encryption system. The Court, however, will not restrict the meaning of the claims in order to support a limitation not indicated or supported by the claim terms themselves. *See* Intervet Amer., 887 F.2d at 1053 ("No matter how great the temptations of fairness or policy making, courts do not rework claims. They only interpret them."); *see also* Pitney Bowes, 182 F.3d at 1312 ("the purpose of the title is not to demarcate the precise boundaries of the claimed invention but rather to provide a useful reference tool for future classification purposes.").

Therefore, the Court finds that "digital" means that the information is in a numerical (usually binary) representation of the actual information being conveyed-"digital" usually being contrasted with "analog." "Information bearing signals" means any electronic signal that contains informational content, including but not limited to audio, video, teletext, authorization data, new encryption keys, and program identification information.

**C. "Broadcast" or "Broadcasting"**

The terms broadcast and broadcasting appear in both claims of the Bluestein patent. Claim 1 begins, "In a subscription television system for broadcasting enciphered digital information bearing signals...." Col. 4, ll. 11-12. The second means-plus-function limitation of claim 1 states: "means for simultaneously broadcasting the first key enciphered digital signals to multiple subscription television subscribers...." Col. 4, ll. 14-16. Claim 2 of the Bluestein patent begins, "In a subscription television receiver for deciphering enciphered digital information bearing signals broadcast to multiple television subscribers ...." Col. 4, ll. 30-32.

Defendants argue that broadcast or broadcasting is limited to strictly over-the-air transmissions. Thus, assert Defendants, the patent claims do not assert rights over a cable television system. Defendants base their argument on phrases in the specification which appear to use the term "broadcast" to distinguish over-the-air transmissions from cable and satellite transmission. *See* Col. 1, ll. 15-17; Col. 1, ll. 16-18; Col. 1, ll. 40-42. Defendants also argue that the prosecution history shows that the patentees gave up any claim to anything other than over-the-air broadcasts when they amended their claims in response to a final action rejecting them.

Plaintiff argues that there was no intention of establishing a narrowed meaning of broadcast or broadcasting in the specification, which the specification itself demonstrates. Plaintiff points to language in the specification which states that the "enciphering concept disclosed herein has application in a wide variety of communications systems. It is usable in satellite transmission, subscription television, subscription radio, cable systems and various other forms of data transmission." Col. 1, ll. 60-65. Plaintiff argues that the specification repeatedly asserts that any type of medium could be utilized for transmitting the broadcast. Plaintiff does admit, however, "that 'broadcast' is sometimes colloquially used to describe antenna broadcasts from a local TV or radio station." Plaintiff argues, however, that this use is not a special, limiting definition of the term "broadcasting" that restricts the scope of the claims. Plaintiff also argues that language of the claims themselves demonstrate that broadcast and broadcasting are used to mean one-to-many transmission, as opposed to point-to-point transmission. Finally, Plaintiff directs the Court to the prosecution history which, Plaintiff argues, plainly shows that broadcast and broadcasting were added to the claims to distinguish the one-to-many communication of the broadcast environment from the point-to-point communication of the computer art.

To resolve this dispute, the Court first turns to the claims themselves. The Court notes that broadcast is used in conjunction with "simultaneously," "to multiple subscription television subscribers," and "to multiple television subscribers." These words support an interpretation of broadcast or broadcasting which means one-to-many.

Turning to the specification, the Court notes the use of broadcast is only once clearly used to distinguish between types of media. *See* Col. 2, ll. 17-18 ("whether it be broadcast, cable or satellite"). The other passages cited by Defendants are not as easily susceptible to unambiguous readings. For example, the phrase "in some form of subscription radio or cable format" could just as likely be distinguishing between radio and television rather than between over-the-air and cable. Moreover, Defendants' attempt to distinguish "broadcast" from "transmit" (Col.1, l.42) is also not successful. Even local television stations which "broadcast" programs over the air use a "transmitter" situated on top of an antenna to do the broadcasting. It is equally likely that broadcast and transmitter are being used in an interchangeable manner. Interestingly, the use of "broadcast or transmit" could also equally signify a distinction between one-to-many and point-to-point. Lines 40 through 46 are describing the second encryption key-which would be unique to each receiver. The unique address for each receiver is the aspect most like point-to-point communication contained in the patent-as the prosecution history demonstrates.

While it is true that a patentee can use the specification to provide definitions of claim terms, those definitions must be explicit. Renishaw, 158 F.3d at 1249 ("The patentee's lexicography must, of course, appear 'with reasonable clarity, deliberateness, and precision' before it can affect the claim."). The Court finds that the use of the terms "broadcast" or "broadcasting" in the specification do not appear with sufficient clarity for the Court to conclude that the patentee intended to provide a limiting definition of the terms.

The Court next looks to the prosecution history. Defendants argue that the prosecution history shows that the PTO Board of Appeals' written opinion described a point-to-multipoint messaging example and stated that "[w]e recognize that this example does not involve 'broadcast' communications." Based on this, Defendants argue that Plaintiff is estopped from pursuing an argument that "broadcast" means one-to-many transmission. The Court disagrees.

Defendants misunderstand the Board of Appeals' opinion and the prosecution history in general. While it is true that the words "broadcast" and "broadcasting" were added to the claims in order to narrow them, the purpose was *not* to narrow the claim to include only over-the-air transmissions. The purpose of adding these words was to distinguish the one-to-many communication of the broadcast environment from the point-to-point communication of the computer prior art.

In their arguments to the PTO Board of Appeals, the patentees distinguished their application from the prior computer art by pointing out that the prior computer art always emphasized keeping communication between a computer and the host terminal absolutely secret. "In the case of Ehrsam and Campbell the whole purpose of encryption is to provide super-secret highly secure communications between two and only two parties." PM 048; DM 004 at 42. The patentees then argue that their system was distinguished from the prior art because it provided for communication from the host terminal to all other computers at the same time-i.e., broadcast.

The PTO Board of Appeals rejected the patentees' argument based on obviousness. The Board of Appeals disagreed with the patentees' assertions that the invention pertains exclusively to "broadcast" communications. PM 060; DM 004 at 54. The Board of Appeals rejected the patentees reasoning because, at the time of the appeal, the claims did *not* contain the word "broadcast." The Board of Appeals explained that the claims as submitted only required that the transmission of the first key enciphered signals be sent to a plurality of receivers-which might be as few as two and could still occur by transmitting messages one at a time. The Board commented:

None of the claims mentions "broadcast" communications. Claims 1 and 2 require transmission of the first key enciphered signals to a plurality of receivers, which might be as few as two. This recitation in the claims 1 and 2 hardly describes "broadcast" communications or precludes "private" communications. Claims 4 and 5 call for no more than one receiver albeit one that responds to a system common first deciphering key. Again, the language of the claims does not describe "broadcast" communications or preclude "private" communications.

* * *

In view of the evidence and the skill [required] of the artisan, we are convinced that it would have been patently obvious to use the Ehrsam and Campbell systems to transmit first key enciphered signals to several receivers and subsequent different second key enciphered signals to each receiver. Taking a bank system as an example, the main office of the bank might want to transmit in secrecy notice to all the branch offices of an impending interest rate change using first key enciphered signals that each receiver in the branch offices would respond to and then to transact business regarding individual accounts involving the main office and just one branch office using second key enciphered signals that only the receiver in the pertinent branch office would respond to. We recognize that this example does not involve "broadcast" communications, but the claims at bar are not so limited.
PM 060-061; DM 004 at 54-55. Therefore, the Board of Appeals reasoned that, while the patentees' invention *could* be used for broadcast communications, it was not so limited. Under the claims as phrased at that time, the Board explained that the language would not preclude someone from transmitting the first key enciphered signals to all the customers one at a time-such as in the banking example. Although transmitting to customers one at a time was not "broadcasting," the Board opined that the language of the claims did not restrict the meaning to preclude such one-at-a-time (or point-to-point) communication. Since the prior art concerned point-to-point communication, the patentees' claims were rejected based upon that prior art.

Defendants' characterization of the Board of Appeals' example as a "point-to-multipoint" example has the potential of being misleading. Point-to-multipoint can mean two different things. First, it can mean transmission from the source to all receivers *at the same time* (i.e., broadcasting). Second, it can mean transmission from the source to all other receivers *one at a time*. Therein lay the problem-according to the Board of Appeals' opinion-with the claims as first worded. Nothing in the originally worded claims restricted their meaning to the former definition and excluded the latter definition. Since the prior art made the latter definition obvious, the Board of Appeals upheld the examiner's final action rejecting the claims.

Later, the Bluestein patentees submitted a continuation application which did contain the words "broadcast" and "broadcasting" in response to the Board of Appeals' ruling. The PTO examiner rejected the continuation claims, based on the same computer prior art and additional cable television prior art. In their response to the rejection, the patentees not only distinguished their invention from the Ehrsam and Campbell prior art but also commented on the Board of Appeals ruling.

[I]n both [the Ehrsam and Campbell] references there is absolutely no hint or disclosure or teaching of a broadcast environment and more specifically of a television broadcast environment. We believe that the Board in its decision in Appeal 541-28 recognized that the art did not involve "broadcast" communication by the statement near the end of its opinion. We do not disagree with the Examiner as to what is shown in Ehrsam and Campbell. But we believe it is clear that these two references do not disclose the use of two level encryption in a broadcast environment, which is now specified in the claims herein.

PM 078; DM 004 at 71. Thus, the patentees narrowed their claims to exclude the secret point-to-point communication of the computer art and to specifically include a one-to-many broadcast of television. Thus, the patentees distinguished television from computers and one-to-many from point-to-point. The claims were allowed after this response. There is nothing in the prosecution history which-even indirectly-implies that the patentees added the terms "broadcast" and "broadcasting" in order to restrict their claims to over-the-air transmissions.

In conclusion, the specification does not clearly set forth that the patentees intended to be their own lexicographer and the terms "broadcast" and "broadcasting" are not defined in the specification. The prosecution history, however, clearly and explicitly shows that the patentees intended their invention to apply to one-to-many transmission and that both the patentees and the PTO Board of Appeals used the term "broadcast" to mean simultaneous one-to-many transmission. The claim language itself supports such an interpretation, since it also emphasizes "simultaneous" broadcasting to "multiple" subscribers. Therefore, the Court concludes that the terms "broadcast" and "broadcasting" mean simultaneous one-to-many transmission. FN2

FN2. The Defendants direct the Court to a declaration by Anthony Wechselberger-who is not a named inventor of the Bluestein patent-filed in the related litigation *TV/Com v. Echostar*. Defendants claim that paragraph 35 of said declaration contains a concession by Wechselberger that "broadcasting" or "broadcast" in the Bluestein patent distinguishes end-to-end (i.e., cable) communication systems and "a broadcast environment." Defendants also assert that paragraph 4 of the declaration supports their argument. Upon review of the *entire* declaration, however, the Court finds that the Defendants' arguments are wholly misplaced. In fact, Wechselberger's declaration wholly *supports* Plaintiff's interpretation of "broadcast" and "broadcasting." At best, Defendants' representations of the Wechselberger declaration are wrong; at worst, they are misleading. In any case, however, the Wechselberger declaration is extrinsic evidence which is not needed. Nevertheless, even if the Wechselberger declaration did, in fact, say what Defendants suggest, as

extrinsic evidence, it could not be used to alter the meaning of "broadcast" and "broadcasting" contained in the intrinsic evidence. Thus, the Court does not rely upon the Wechselberger declaration when construing the claims.

**D. Are the claims drafted in "Jepson" or "single means" format?**

A *Jepson* FN3 claim is one that lists in the preamble a general description of that which is old and "adds to that the part that is new." Ernest Bainbridge Lipscomb III, 3 *Walker on Patents* s. 11:17 (3d ed.1985). It is often used for improvement claims. *See* MPEP s. 2129. The structure of a *Jepson* claim is defined by 37 C.F.R. s. 1.75(e):

FN3. This type of claim is named after *Ex parte Jepson,* 1917 DC 62, 243 OG 525.

(e) Where the nature of the case admits, as in the case of an improvement, any independent claim should contain in the following order: (1) a preamble comprising a general description of all the elements or steps of the claimed combination which are conventional or known, (2) a phrase such as "wherein the improvement comprises," and (3) those elements, steps and/or relationships which constitute that portion of the claimed combination which the applicant considers as the new or improved portion.
The federal circuit has emphasized that a *Jepson* claim is defined by the use of transitional phrases such as "wherein the improvement comprises." Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1577 (Fed.Cir.1996).
Plaintiff argues that neither claim 1 nor claim 2 contains the requisite "wherein the improvement comprises" language or any equivalent language. Since the required language is not present, Plaintiff argues, the claims are not *Jepson* claims.

Although Defendants inserted the issues of whether the two Bluestein claims are in the *Jepson* or single means format into the Joint Stipulation (Jt. Stip. at 10, 12), Defendants failed to brief these issues in their claims construction memorandum. Furthermore, Plaintiff pointed out at oral argument that these issues had not been briefed and, thus, Plaintiff thought Defendants had waived them. Vol. 1 at 48-50. Defendants responded that, although they had not briefed the *Jepson* issue, it was still necessary for the Court to resolve it. Vol. 1 at 51; Vol. 2 at 106-07. Defendants also chose not to address either of these issues during oral argument.

After reviewing the claims language and the applicable authorities, the Court finds that the Bluestein claims are not drafted in *Jepson* format. There is no indication in the claims themselves that everything before "means for changing" in both the first and second claims are preambles that recite the prior art. The form of the instant claims just does not fit into the *Jepson* format.

Likewise, there is no indication in the specification that the claims are *Jepson* claims or improvements on prior patents. The prosecution history also does not so indicate. In fact, the prosecution history clearly spells out that the patentees believed their inventions to be wholly different from the prior art. The Bluestein claims are not *Jepson* claims.

The Court also finds that the Bluestein claims are not single means claims. A single means claim is a claim written in means-plus-function format that pertains to only a single element instead of to a combination. In

re Hyatt, 708 F.2d 712, 714 (Fed.Cir.1983) (finding that the words in the disputed claim are mere description of a single claimed means). The claims as a whole do not fall into this definition. Likewise, each individual means-plus-function limitation does not fall into this definition. As perhaps Defendants recognized, their position is not sustainable.

**E....means for using a first key to encipher the digital signals ... (Claim 1, Col.4, ll.12-13)**

Defendants argue that this means-plus-function claim language contained in the first claim requires the application of the first key to information external to the system. Defendant also argues that this structure would not allow the digitized audio source 10 in Figure 1 to be a key generator. Plaintiff's memorandum, which was submitted before Defendants' memorandum, only argues that the structure is not limited to *audio* information but, rather, includes all types of data. This issue is closely related to the immediately preceding issue in section II.B., *supra*.

In order for the system to operate, the digitized audio source 10 must be connected to the data port of data enciphering circuit 12. Nevertheless, the component that generates the digital information (digitized audio source 10) could be anything which has the capability of generating digital information which could be sent to the data port of audio enciphering circuit 12. In that sense, it would be external to the encryption system. For example, in the case of television programming signals, the source might ultimately come from a television studio. The studio production itself would, obviously, not be internal to the encryption system. The television program would pass through various equipment, some of which might be analog. What is important to this patent, however, is that the programming be digitized and sent to the data port of audio enciphering circuit 12.

The specification, however, clearly requires that the digitized audio source 10 be connected to the audio enciphering circuit 12. A connection must be made. The source of digital data is drawn in figure 1 and is described as sending digital audio information to the audio enciphering circuit 12. In this sense, the digitized audio source 10 is very much internal to the system.

From the evidence before it, the Court concludes that a clear, bright line between "internal" and "external" to the encryption system is not practicable in this instance. The Court also suspects that Defendants' desire for the Court to declare this structure as either "internal" or "external" has more to do with infringement issues than with claims construction. It is sufficient to say that the digitized audio source 10 sends digital information to the audio enciphering circuit 12 through its connection with the data port of the audio enciphering circuit 12.

The Court concludes that the structure of this means-plus-function limitation includes the audio enciphering circuit 12 and the key generator 14. While it is true that the digitized audio source 10 is attached to the data port of the audio enciphering circuit 12, the digitized audio source 10 is the *object* being acted upon-not the structure performing the function. As Plaintiff pointed out during oral argument, the patent discloses a system that needs each part in order to operate. This does not mean, however, that every individual structure is a part of every means-plus-function limitation.

Review of the prosecution history does not yield a different result. Moreover, even if the Court were inclined to rely on extrinsic evidence-which it is not-there is no extrinsic evidence which speaks to this issue.

Under this means-plus-function limitation, Defendants' arguments set forth in the Joint Stipulation mentions that the first key must be common to all subscribers. Defendant's memorandum, however, does not address the meaning of "first enciphering key." FN4 Defendants also did not touch upon this term during oral argument.

FN4. Despite the fact that Defendants' memorandum does not contain an argument as to the meaning of "first enciphering key," at page twenty-nine of their memorandum, Defendants refer to the proper definition of such term as being discussed "previously."

Plaintiff has fully briefed this issue. However, Plaintiff also argues that whether the first key must be common to all subscribers will not affect the infringement analysis in this case. Claims construction is a necessary task the Court must perform in order to develop jury instructions on the issue of infringement. Since whether the first key must be common to all subscribers will not affect the infringement analysis in this case-an assertion not disputed by Defendants-the Court declines to render an advisory opinion on this issue. If at a later date this issue becomes necessary to decide, the Court will do so at that time.

**F....means for simultaneously broadcasting the first key enciphered digital signals to multiple subscription television subscribers ... (Claim 1, Col. 4, ll. 14-16)**

The structure for this limitation is the signal combiner 16 and the modulator 18. The parties agree to this structure.FN5

FN5. The Court notes that in this instance Defendants have not argued that the structure for this limitation includes the audio enciphering circuit 12. Based on Defendants' argument regarding the means-plus-function limitation analyzed in part IV.E., *supra,* it would seem that Defendants would argue that the structure required to broadcast the first key enciphered digital signals would not be able to function without the digital signals themselves and, thus, should include the output from the audio enciphering circuit 12. Tellingly, the Defendant has not so argued.

**G....means for changing said first enciphered key applied to said digital Signals ... (Claim 1, Col. 4, ll. 17-18)**

The structure for this limitation is the initiate new key circuit 20 and the key generator circuit 14. The parties agree to this structure.

**H....means for enciphering, in a second enciphering key, an information message as to the change in said first enciphering key, said second enciphering key being different for each of said multiple subscription television subscribers, with said information message including an address for each of said plurality of receivers ... (Claim 1, Col. 4, ll. 18-24)**

The parties agree that the structure pertaining to this limitation includes the address sequencer 22, the subscriber data base 24, the key generator 26, and the audio key enciphering circuit 28. This structure is identified in the specification at column 2, lines 25-48.

While the parties agree as to the structure, there is disagreement as to whether the second key is an individual key unique to each subscriber and whether the phrase "said plurality of receivers" makes the

entirety of claim 1 indefinite. The Court will first address whether the second key is an individual key possessed by only one subscriber.

**1. Whether the second key is an individual key unique to each subscriber.**

Defendants argue that the second enciphering key is restricted to a key that is used by one, and only one, subscriber or receiver-explicitly excluding the possibility that the second key can be shared by more than one subscriber or receiver. Defendants concede that the specification disclosed that "[u]se of the term receiver should be understood to include a small group of receivers." Col. 1, ll. 25-26. While this would seem to defeat Defendants' proposed interpretation, Defendants point to the prosecution history in support of their position.

Defendants point out that, in response to the rejection by the PTO of the Bluestein claims, the patentees amended the first claim to include the phrase "with said information message including an address for each of said plurality of receivers" (PM 075; DM 004 at 68) and amended the second claim to include the phrase "second deciphering means being responsive to a key peculiar to only one subscription television receiver[s], with each of the multiple subscription television receivers having a different second key." (PM 029; DM 004 at 22).

Importantly, the PTO examiner rejected the continuation application claims of the Bluestein patent because of obviousness, based in part on the Guillou ' 921 patent.FN6 In the remarks section of the amendments filed in response to the office action, the patentee's attorney explained the differences between the Bluestein claims and the Guillou ' 921 patent:

FN6. The Guillou '921 patent is patent number 4,323,921, issued April 6, 1982.

In Guillou the subscriber's keys are not individual, but are determined on the basis of the type of subscription which one or more subscribers have taken out. Specifically, the subscriber keys are determined by the subscription plan (column 4, beginning at line 10).... Thus, there may be any number of subscribers who have chosen a particular subscription and thus will have a common subscriber's key. No individual subscriber has a key peculiar to that subscriber alone. The subscriber's keys are determined by the type of service, specifically the starting date and the duration. This is not a key directed to an individual, but directed to groups of individuals who have determined to take the same type of subscription.
We do not disagree that the Guillou reference discloses a system which may be considered similar. But what Guillou lacks is the ability to communicate with a specific subscriber and to change the key for that subscriber alone. That type of communication requires a key peculiar to a specific subscriber and an address for that subscriber and this is simply not disclosed in Guillou.

[T]here is no combination in the art of a subscription television broadcast system using two level encryption in which one of the encryption levels includes a key peculiar to each individual subscriber and each individual subscriber also has its own address which is included in any message directed to that subscriber.

(PM 077; DM 004 at 70). The patentees clearly distinguished the prior art by emphasizing that the second key in the Bluestein claims is a key *peculiar* to each subscriber and not shared by any other subscriber. This supports the language of claim 1 of the Bluestein patent which states "said second enciphering key being different for each of said multiple subscription television subscribers, with said information message

including an address for each of said plurality of receivers." (Col.4, ll.23-24).
During oral argument, the Plaintiff directed the Court to PM 018 (DM 004 at 11), which is a copy of the original application claims filed by the Bluestein patentees. Plaintiff pointed out that claim 2 on PM 018 is dependent on claim 1, and thus the original language did not restrict the second enciphering key to a key which is unique to each individual user. Plaintiff further pointed out that claim 6 was dependent on claim 4, with the same result.FN7 Plaintiff then made the following argument:

FN7. Claim 2 eventually became claim 1 and claim 4 eventually became claim 2, when the patent actually issued.

What we did in amending those original application claims is we took that claim 2, and it was added by amendment to claim 1. So when that claim 2 was added by amendment to claim 1, what had happened is *the patent owners gave up the right to claim that that second key was shared by any number of boxes*. But, still, it allows that key to be shared by one, meaning one or a small group, as defined in the specification.
Vol. 1 at 63, lines 3-9 (emphasis added).
Plaintiffs above-quoted argument is internally inconsistent. In the italicized portion, Plaintiff states that the amendment of the dependent claim into the independent claim resulted in the patent owner giving up the right to assert that the second key is shared by any number of boxes. Nevertheless, the very next sentence argues that the specification definition *still* allows the second key to be shared by multiple boxes. The second statement cannot logically follow the first.

Plaintiff appears to be attempting to make a distinction between the right to claim that "any number of boxes" could share the second key (no matter how large a group shared the second key) with the concept that the definition in the specification allows only one or a "small group" to share the second key. Such a distinction is not supported by the prosecution history. As the above-quoted portion of the prosecution history demonstrates, the Guillou '921 patent allowed for groups-even small ones. The patent owners distinguished the Guillou '921 patent on the basis of *individual* subscriber keys and addresses.

Even if the Court were to entertain the notion of large groups versus small groups, the distinction is unworkable. There is nothing in the claims, specification, or prosecution history which would shed light onto how many subscribers a "small" group could contain without being converted into a "large" group. Since the intrinsic evidence does not support such a reading, the Court will not go down that thorny path.

Additionally, Plaintiff's argument would mean that the Bluestein patent allows for a first key shared by all customers, a second key shared by a small group, and another "second" key unique to an individual subscriber. Review of the claims, however, does not support such a reading. The claims clearly provide for a first and second key. The "small group" key advocated by Plaintiff would seem to be a third type of key not indicated by the claim language at all.

Therefore, from examination of the intrinsic evidence alone, the Court concludes that the second key is an individual key unique to each subscriber.

**2. Whether "said plurality of receivers" makes claim 1 indefinite.**

The Court will now examine whether the phrase "said plurality of receivers" makes the entirety of claim 1 indefinite. Defendants argue that claim 1 is indefinite because there is no antecedent basis for the term "said

plurality of receivers." Since the plurality of receivers are not identified elsewhere in claim 1, Defendants argue that the claim must fail as indefinite.

Plaintiff argues that the meaning of claim 1 is clear on its face and one skilled in the art would not be confused by the lack of antecedent basis. Plaintiff points to the prosecution history of claim 1 to demonstrate that the inclusion of "said plurality of receivers" is left over from the original drafting of the claims and was inadvertently left in the claims upon submission of the continuation application to the PTO.

As stated previously, whether a claim is indefinite, and therefore invalid, is a question of law. Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed.Cir.1986). "A decision of whether a claim is invalid under s. 112, 2d para. requires a determination of whether those skilled in the art would understand what is claimed when the claim is read in light of the specification." Orthokinetics, 806 F.2d at 1576. The specification must be detailed enough to enable one skilled in the art to make and utilize the invention. In re Gay, 50 C.C.P.A. 725, 309 F.2d 769, 772 (C.C.P.A.1962). On the other hand, the specification is not meant to be a production specification; every last detail is not required. Id. at 774.

A patent is presumed valid when it issues. Orthokinetics, 806 F.2d at 1570. A party challenging the validity of a patent must prove invalidity by clear and convincing evidence. Intel Corp. v. U.S. Int'l Trade Comm'n, 946 F.2d 821, 829 (Fed.Cir.1991).

Under the law set by Congress, a jury or a court may reach a conclusion that a patent remains valid *solely* on the failure of the patent challenger's evidence to convincingly establish the contrary. A patent being presumed valid at birth, s. 282, a patentee need submit *no* evidence in support of a conclusion of validity by a court or a jury.

Orthokinetics, 806 F.2d at 1570.

The Court concludes that claim 1 is not indefinite. One skilled in the art would be able to make and utilize the invention based on the claim language present. The Court makes this conclusion based on the claim language itself. The Court's conclusion is supported by both the specification and the prosecution history.

First, the claim language itself is not indefinite. One skilled in the art would understand that each of the multiple subscription television subscribers would have a receiver which was used to receive and decrypt the digital information bearing messages-Defendants' argument that a "subscriber" and a "receiver" are different notwithstanding. A subscriber-as a person-would not be the structure performing the encrypting or decrypting. Likewise, the subscriber himself is not going to be personally receiving the messages or keys. A subscriber uses a receiver to perform this function, and one skilled in the art would understand that. Moreover, it is the receiver that would be recognizing the addresses meant for each individual subscriber.

Claim 2 supports this interpretation:

said second deciphering means being responsive to a key peculiar to only one subscription television receiver, which each of the multiple subscription television receivers having a different second key.

Col. 4, ll. 41-45. Clearly, a receiver with the above-described structure to decipher would be receptive to enciphered messages addressed to individual receivers.

The specification supports the Court's conclusion. The specification speaks in terms of both subscribers and receivers. "The invention will be described in the context of a separate deciphering key for each receiver." Col. 1, ll. 21-22. "The initiate new key signal is also applied to an address sequencer 22 which will effect a search of valid subscriber addresses stored in a random access memory or subscriber data base 24." Col. 2, ll. 25-28. "[E]ach message will include an address and an enciphered new key with the enciphering being done in a second key which is different for each receiver. This message is the output from circuit 28 and is connected to the signal combiner for subsequent transmission as described above." Col. 2, ll. 43-48.

One skilled in the art would read claim 1 in light of the specification-especially column 2, lines 25-54-and understand it. Defendants have not provided any evidence to the contrary. The Court has only Defendants' assertion that the claim is indefinite. Moreover, Plaintiff's citations to the prosecution history support the Court's interpretation.

Patent claims need to be definite enough to be understood by one skilled in the art. They need not be examples of grammatical perfection. Of course, the more grammatically correct a patent claim is, the more easily understood it will be. Nevertheless, grammatical errors do not *ipso facto* make a claim indefinite.FN8 *See* In re Altenpohl, 500 F.2d 1151 (CCPA 1974) (holding that lack of an antecedent basis in a claim *could* render it invalid under 35 U.S.C. s. 112); *see also* Slimfold Mfg. Co. v. Kinkead Indus. Inc., 810 F.2d 1113 (Fed.Cir.1987) (holding that a correction to a patent to add an antecedent for the term "said collar" did not change the scope of the claim). While "said plurality of receivers" is not preceded by a prior reference to a plurality of receivers, the lack of antecedent basis does not render the claim indefinite in this instance.

FN8. By way of analogy, the Court notes that in everyday life people often make grammatical errors in speech and writings. Nevertheless, in the vast majority of cases, the meaning is not harmed by the grammatical indiscretion.

**I....means for transmitting said enciphered information message, separately to each of said subscription television subscribers, each such enciphered information message being enciphered in a different second key. (Claim 1, Col. 4, ll. 24-29).**

The structure pertaining to this limitation is the signal combiner 16 and the modulator 18.FN9 The parties agree.

FN9. Again, the Court notes that Defendants do *not* make the argument that the structure which performs the function of transmitting cannot complete this function if there is nothing to transmit and, therefore, should include the audio key enciphering circuit 28.

**J....first deciphering means responsive to a subscriber common first deciphering key for deciphering said digital signals ... (Claim 2, Col. 4, ll. 32-34).**

Plaintiff argues that the structure supporting this limitation includes only the data deciphering circuit 36 and the memory 38. Defendants agree that the structure does include these two elements, but assert that it also includes the audio channel 34 and the half of the demultiplexer 32 that pertains to the audio channel.

Looking at the means-plus-function itself, the data deciphering circuit 36 is indisputably necessary for the limitation to function. Turning to the specification, the memory 38 is necessary to provide the key or code

for deciphering. As Plaintiff points out, though, these are the only two structures that actually *perform* the deciphering.

The Court is concerned with Defendants' assertion that the demultiplexer 32 and the audio channel 34 are part of the structure for this limitation. The audio channel 34 is the object upon which the deciphering circuit functions, not the structure that *performs* the function. Additionally, the argument that the audio channel 34 originates from the demultiplexer 32 is not entirely reassuring because, ultimately, the audio channel 34 can be traced back through a series of elements right through to digitized audio source 10, in figure 1. Restricting the analysis to claim 2's receiver pictured in figure 2, one must also ask why the demodulator 30 would not also be part of the structure if the demultiplexer 32 is included. As explained previously, the patent discloses a system that needs each part in order to operate. The structure pertaining to each means-plus-function limitation is ultimately connected to-and depends on-all the other structures in the system. This does not mean, however, that every individual structure is a part of every means-plus-function limitation.

Additionally, the Court is careful not to impose into the claim construction a limitation contained in the preferred embodiment which is not necessary for the function of the means-plus-function limitation. The Court, therefore, concludes that the structure pertaining to this means-plus-function limitation is the data deciphering circuit 36 and the memory 38.

**K....means for changing said subscriber common first key ... (Claim 2, Col. 4, l. 35).**

Both parties agree that this means-plus-function limitation is, in turn, defined by two other means-plus-function limitations: the second deciphering means and the address means. These two limitations will be discussed below. Of immediate interest, however, is the Defendants' argument that the structure also includes the control channel 40 and the demultiplexer 32. For the same reasons set forth in the immediately preceding section, the Court declines to adopt Defendants' argument.

**1....second deciphering means responsive to a message enciphered in a second key and which message includes a change in said first key ... said second deciphering means being responsive to a key peculiar to only one subscription television receiver, with each of the multiple subscription television receivers having a different second key. (Claim 2, Col. 4, ll. 36-38).**

Both sides agree that the structure for this limitation includes the data deciphering circuit 54 and the key in ROM 56. Defendants, however, also argue that the structure includes the data selector and buffer 44. Plaintiff does not agree because, it argues, the data selector and buffer is not necessary to perform the function of deciphering.

Defendants counter Plaintiff's assertion with the argument that the claim language itself requires that "said second deciphering means [be] responsive to a key peculiar to only one subscription television receiver ... having a different second key." Because the second deciphering means can only be responsive to a message addressed to one specific receiver, the Defendants assert that the data selector and buffer 44 is also necessary structure. The Court disagrees.

Consistent with the Court's previous analysis, the Court agrees with Plaintiff's argument that the structure which *performs* the function of "second deciphering means" is the data deciphering circuit 54-using the code stored in the key in ROM 56. *How* the second enciphered message gets to the data deciphering circuit 54 are details of the preferred embodiment which are not limited by the claim language itself.

The Court finds Defendants' argument troubling in other ways. The first concern is the infinite regression of structure found to be "necessary" which results when one follows Defendants' logic. Second, according to the specification, the data selector and buffer 44 works in tandem with the RAM 52. Col. 3, ll. 5-22. The data selector and buffer 44 selects the message portion of a control message and sends the enciphered key portion of the message to the RAM 52. The RAM 52 stores the enciphered key message there until it receives an "okay" signal from the comparator 46. So, while the data selector and buffer 44 initially "grabs" the enciphered key message, it does not hold onto it. It immediately passes the encrypted key message onto the RAM 52 for storage until the right time. If one asserts-as Defendants have-that the data selector and buffer 44 is necessary structure for the second deciphering means, one would also have to assert that the RAM 52 is necessary structure for this means-plus-function limitation-but Defendants have not.

Based on an analysis of the intrinsic evidence, the Court concludes that the structure pertaining to this limitation is the data deciphering circuit 54 and the key in ROM 56.

Regarding the ROM 56, Defendants argue that, because the specification says that it will have "a hard-wired key peculiar to a particular receiver" (Col.3, ll.23-24), the second key is permanent and not changeable. Plaintiff disputes this interpretation and argues that the term ROM is meant to connote non-volatile memory.FN10

FN10. Non-volatile memory is memory which retains its information when the box is turned off. Volatile memory is memory which loses its stored information when it is turned off.

ROM is an acronym for "Read Only Memory." That means that one cannot save new information to the memory; one can only read information from it. Therefore, when the specification states that the second key is stored in a ROM, this necessarily means that the second key is not changeable. The fact that the specification also states that the second key is "hard-wired" emphasizes the permanent nature of the second key. If the patentees intended ROM to mean only non-volatile memory, they could have written such into the specification.

**2....address means responsive to an address portion of said key change message for enabling said second deciphering means ... (Claim 2, Col. 4, ll. 39-41).**

Again, Plaintiff and Defendants are in agreement as to a portion of the structure pertaining to this limitation, but do not agree as to all. There is no dispute that the structure for this limitation includes the address in ROM 48 and the comparator 46. Defendants, however, argue that the structure also includes the data selector and buffer 42, the RAM 52, and the gate 50.

This limitation is not as basic as the previous limitations. Unlike the means for deciphering, there is no structure labeled "enabler." Thus, the Court must delve into the question of what "enables" the second deciphering means. Plaintiff argues that enablement consists of comparing the received address with the address in memory and sending a "yes" signal which allows the key-change message to pass through to the deciphering circuit. Therefore, Plaintiff asserts, the inclusion of the other three structures is not proper.

Defendants argue that the data selector and buffer 42 is necessary to recognize and "grab" the address for the particular receiver. The comparator 46 then verifies whether the address on the message does indeed

match the one stored in the address in ROM 48. If the result is a match, the comparator 46 sends a "yes" signal to the RAM 52 and the gate 50, which allows the message information from the data selector and buffer 44 to proceed to the data deciphering circuit 54.

The Court agrees that the function of "enabling" entails comparing the address received with the address in memory and sending the "yes" signal to allow the control message to pass to the data deciphering circuit 54. The structures necessary for comparing the address are the comparator 46 and the address in ROM 48. The comparator sends a signal, however, to the gate 50. This gate 50 controls whether the enciphered key message is allowed to enter the data enciphering circuit 54. By opening the door to the message, the gate 50 "enables" the second deciphering means. Thus, the Court concludes that this structure is also necessary.

The Court disagrees that the data selector and buffer 42 is necessary structure to "enable" the address means. *How* a message reaches the comparator circuit 46 is a result of the preferred embodiment and not demanded by the claim language itself. Likewise, the Court disagrees that the RAM 52 is necessary structure to perform the function of "enabling." The RAM 52 is part of *how* the enciphered key message gets to the gate and is also part of the preferred embodiment, but it is not necessary structure demanded by the claim language itself.

Therefore, the Court concludes that the structure pertaining to this means-plus-function limitation is the comparator 46, the address in ROM 48, and the gate 50.

As in the dispute concerning the ROM 56, Defendants argue that, because the specification says that it will have "a hard-wired address" in the ROM 48 (Col.3, ll.12-13), the address for each individual box is permanent and not changeable. Again, Plaintiff disputes this interpretation and argues that the term ROM is meant to connote non-volatile memory.

As explained previously, ROM is an acronym for "Read Only Memory ." That means that one cannot save new information to the memory; one can only read information from it. Therefore, when the specification states that the address for each receiver is stored in a ROM, it necessarily means that the address is not changeable. Again, the fact that the specification also states that the address is "hard-wired" emphasizes the permanent nature of the address.

**V. The Wechselberger Patent**

**A. In general**

The Wechselberger patent, like the Bluestein patent, teaches a two-level encryption system for the broadcast of encrypted information. Unlike the Bluestein patent, however, the Wechselberger patent describes various ways of communicating to subscribers and hence variations on the second level of encrypting. The broadcast signal containing the programming is called the service key. (This was known as the "first key" in the Bluestein patent.) A change in service key may be communicated through either the box key or the group key. (These would have been known as the "second key" in the Bluestein patent.) However, the group or box key can also be used to communicate messages to subscribers regarding the types of service the subscriber is authorized to receive and the different groups to which the subscriber belongs. The box key is specific to an individual subscriber. A group key will be shared by a group of subscribers having a common interest. Group keys may also be changed.

The Wechselberger patentees recognizedthatsendingindividualmessages to subscribers one at a time-as in

the Bluestein patent-took a long time to complete. Since such communications could take hours to complete, a sophisticated pirate could break the code before the key change had been communicated to all the provider's customers. Moreover, the stream of communications takes valuable cable space. Thus, in order to cut communication time, the Wechselberger inventors developed a system that would do the majority of communicating in group keys. Only if the provider suspected that a group key, or multiple group keys, had been compromised would it be necessary to send a message to all its subscribers one at a time in their box keys.

During normal operation, the provider would rely on group keys to change the service key. Yet, the provider could still communicate with an individual subscriber in order to adjust the subscriber's service. If a subscriber wanted to add a premium channel, the provider could add that service through a message to the subscriber's box containing the key to decipher the premium channel service key. Of course, since the subscriber would have at least one groupkey (and possibly many other group keys) as well as an address specific to each receiver, a message changing a subscriber's service could be sent encrypted in either the group key or the box key. Even if the message were sent encrypted in the group key, only the subscriber whose service was being changed would receive the message because the message would have an address unique to that subscriber.

**B. "Group" of subscribers**

Defendants argue that "group" must mean a subset of the total of all the subscribers in a given television system and can never mean all subscribers of a cable provider. Defendants also argue that a "group" must be one of multiple groups that coexist simultaneously and that the groups must be formed around a common interest in programming or channels and not be based on geographic area.

Plaintiff argues that the patent specification uses permissive-not mandatory-language when describing the types of groups possible in the system. Plaintiff argues that there is no limitation which restricts the number of groups-neither a maximum nor a minimum number of subscribers in a group. Plaintiff also argues that, while groups may be formed around channels or specific television shows, the specification also states that groups may be formed around geographic location.

The Court begins its analysis with the claims. Claim 1 states, in part, "a group enciphering key common to a group of subscribers having a common interest in the reception of broadcast signals of a particular type ...." The claim, however, does not define "type." The claim does not answer if the particular type of broadcast is a show, a channel, a signal type, or a broadcast to a particular area. Thus, the Court turns to the specification.

The specification does list examples of groups formed around channels or specific shows (Col.5, ll.28-31). Nevertheless, the specification explicitly states: "The group may be formed of those in a specific geographical area." There is hardly a clearer way to set forth the concept that groups may be formed around geographic boundaries. There is also no requirement that the geographic boundaries must be naturally occurring. Thus, the random assignment of blocks of subscribers would also fall within Claim 1.

Furthermore, as Plaintiff points out, the phrasing of the specification is written in permissive language. Thus, there *may* be groups formed around the program content. But, just as the next sentence reveals, there *may* be groups formed around geographic areas. The permissive language used when explaining the possible types of groups shows that a group may be as small as one (Col.3, ll.7-12) or as large as the entire list of

subscribers. There is no limitation. "The number and types of groups are almost infinite and normally each subscriber will be able to belong to a plurality of groups...." Col. 5, ll. 32-34. The requirement is that there be at least one group. There is no requirement as to how the group is formed. This makes sense, though, since the object of the cable provider is to use the system to enhance security of the broadcasts. From the point of view of the cable provider, it simply does not matter how the group or groups are formed.

One must keep in mind that the specification is required to set forth the best mode. 35 U.S.C. s. 112, para. 1. Thus, the specification describes the *preferred* embodiment. The patent claims define the maximum boundaries of the monopoly granted to the inventors. That does not mean, however, that the specification limits the patent claims to the best mode or preferred embodiment disclosed. To the contrary, the Court cannot impose limitations contained only in the specification upon the claim. *See* SciMed Life Systems, Inc. ., 242 F.3d at 1340 (describing the act of reading a limitation from the written description into the claims as "one of the cardinal sins of patent law"); Intel Corp., 946 F.2d at 836. A corollary to this rule is the caveat not to restrict the claim to the preferred embodiment, unless by its own language it specifically states to do so. Karlin Technology Inc., 177 F.3d at 973. In this case, the specification uses examples to explain the outermost reaches of the claimed art, while the concept of using just one group composed of all subscribers falls well inside the outer boundaries of the patent.

The patent teaches that higher security is gained through the use of multiple groups. Nevertheless, there is nothing in the claims or specification which says that one group consisting of all subscribers is prohibited. While such a configuration may not be exploiting the patent to the limits of its true potential, there is no requirement that such be done. The patent only requires that there be a service key, a group key, and box keys for each subscriber. There may be one group and that group may be defined by geography.

**C. Permanent Box Enciphering Key**

Plaintiff fully briefed this issue. Once again, however, Defendants did not brief it. However, from Defendants' remarks at oral argument, the Court cannot assume that the parties agree. Therefore, the Court construes this part of Claim 1.

Drawing from the claim language itself and the specification, the Court determines that the "permanent" box *en* ciphering key corresponds to the permanent box *de* ciphering key that is unique to each receiver. That is, the box enciphering key is permanent with regard to the deciphering box. Therefore, as Plaintiff points out, if a box is lost, stolen, or broken, the provider can give the subscriber a different box with a different permanent box key. The deciphering key stored in each box, though, cannot be changed because it is "hardwired" and "is not subject to change or revision." Col. 3, l. 3; Col. 5, l. 2.

**D. Which Key Encrypts a Group Key Change Message?**

Claim 1(c) reads:

changing the group enciphering key in at least a portion of the subscribers in a group *by communicating such change in the group enciphering key* to the selected subscribers in the group, with each communication to a subscriber in the group being preceded by an address to designated subscribers in the group.

(emphasis added). The italicized portion of part (c) is the portion in dispute.

Defendants argue that the italicized portion describes *how* the message is sent. That is, Defendants assert

that a message about a group key change is, itself, encrypted in the currently used group key (which Defendant refers to as the "old" group key). Defendants contend that the syntax of the claim supports their position.

Plaintiff, on the other hand, would have that portion to mean "by communicating such change *of* the group enciphering key." Plaintiff's position is that the phrase merely recites what the message is about, following the syntax of the other previous portions of Claim 1.

The Court finds that a reading of the claim itself is capable of supporting both arguments. The Court, therefore, turns to the specification. The specification, in turn, states many times that the group key currently in use is changed through encryption in that same group key. *See* Col. 2, ll. 41-44; Col. 3, ll. 49-53; Col. 4, ll. 10-12.

The prosecution history also so states. The remarks in the inventors' response to the only office action in the prosecution history states:

In the present instance, a group enciphering key, which group may be as small as a single individual or it may be substantially larger, is changed by communicating *to that group in the group enciphering key* with there being an address accompanying the message so that each individual subscriber in the group is in fact addressed to receive the message *in the group enciphering key which in fact changes the group enciphering key to a new key*.

PM 195; DM 002 at 101 (emphasis added).

Nevertheless, the cited specification passages and the prosecution history do not necessarily have to be describing Claim 1(c). There is no reason why those passages could not be describing Claim 3, for Claim 3 calls for changing a group key with the group key. Moreover, the specification unambiguously describes a system where the majority of communication is encrypted in group keys. Thus, a change in group key would be expected to be encrypted in the current group key-unless the provider had reason to believe that the group key had been compromised. *See* Col. 5, ll. 55-66. If the group key were changed often enough, the system could maintain group key integrity because a pirate would not have sufficient time in which to crack the code before the key is changed. As the specification teaches, group keys are more desirable for system security precisely because group key changes can be accomplished more quickly than individual box key communications. A system operator would want to send a message through the use of each subscriber's box key only when the group key has been compromised.

If the Court were to accept Defendants' interpretation, then Claim 2-which is dependent on Claim 1-would require that a message changing a group key be encrypted in *both* the group key and each individual box key. That just does not make sense. Moreover, Claim 3 would be superfluous.

Plaintiff's interpretation, however, harmonizes Claim 1 with its dependent Claims 2 and 3. Keeping in mind that the specification describes *alternate* methods of encrypting a change in the group key, Claims 2 and 3 are the alternatives. Claim 1, then, provides that a change in a group key is communicated to group members through messages addressed to those in the group. As pointed out by Plaintiff, Claim 1(c) provides only for the *addressing* of messages pertaining to a change in group key. This interpretation is supported by the specification, which states that all group key change messages have subscriber addresses as well as being encrypted (Col.4, ll.5-10). The choice is the method of encryption: with box keys or with group keys.

Therefore, Claim 1 provides for each step of the encryption system, up to and including the addressing of the group key change message. Dependent Claim 2 explains the method of encrypting group key changes in the box key and Dependent Claim 3 explains the method of encrypting group key changes in the group keys.

**E. The Use of "and/or" in Claims 2 and 3.**

Defendants assert that Claims 2 and 3 are indefinite because of the use of "and/or" in the claim. Defendants, however, do not explain how the claims are rendered indefinite. While using the format "and/or" in a claim may not be ideal, it does not *ipso facto* render a claim indefinite. Moreover, since claims acquire a presumption of validity when the patent issues, Defendants must present clear and convincing evidence to show that a claim is indefinite. Defendants have not presented *any* evidence tending to show that the claims are indefinite, let alone clear and convincing evidence. Therefore, the Court finds that the term "and/or" does not render Claims 2 and 3 indefinite. The term "and/or" has the meaning normally attributed to such phrase in common usage. *See* Leon v. State, 695 So.2d 1265, 1267 n. 2 (Fla. 4th DCA 1997). In this instance, it means: either changing the group key, forming a new group of subscribers, or both.

**F. Memory Storage Means**

In Claim 4, the following means-plus-function limitation is present:

(b) memory storage means for retaining an individual subscriber box deciphering key, at least one changeable group deciphering key, and one or more addresses specific to a subscriber and its specified group or groups, ...

Col. 6, ll. 63-67. Both parties agree that the structure pertaining to this means-plus-function limitation is the memory table 52 pictured in Figure 2. The characteristics of memory table 52 are disputed.

The Court agrees with Defendants that the memory table 52 is contained within the receiver. Regarding the type of memory, the specification states that the memory table 52 "may be a non-volatile storage area for collection of the group identifications and the group keys resident within the box. The permanent box key for a specific subscriber box is permanently stored in the memory table and is not subject to revision or change." From this language, Defendants argue that the memory table must be half non-volatile and half permanent.

Whether Defendants' argument is correct depends on the meaning of the phrase "subject to." If the phrase means that the box key is *incapable* of being changed, then Defendants' interpretation is correct. If, however, the phrase means that the box key *will not* be changed, then Defendants' interpretation is incorrect because it would not be *necessary* that the memory be a permanent memory.

The phrase "subject to" is used as a verb (in passive tense) in the sentence "is not subject to revision or change." The verb "subject" is defined thusly:

**1 a:** to bring under control or dominion: SUBJUGATE **b:** to make (as onself) amenable to the discipline and control of a superior **2 a:** to make liable: PREDISPOSE **b:** to make accountable <refused to ~himself to their judgment> **3:** to cause to undergo or submit to <unwilling to ~himself to any inconvenience>

*Webster's New Collegiate Dictionary* 1159 (1977). The third definition is the most applicable for the instant

analysis. That definition-"to cause to undergo or submit to"-substituted in the phrase at issue here results in the following sentence: "The permanent box key for a specific subscriber box is permanently stored in the memory table and is not 'caused to undergo or submit to' revision or change." The sentence thus framed means that the box key *could* be changed but *will not* be changed. The Court further notes that the examples contained within the dictionary definition ("refused to subject himself" and "unwilling to subject himself") demonstrate a situation where the actor is *capable* yet *unwilling,* thus lending further support to the Court's construction. Based on this reasoning, therefore, the Court finds that the memory table 52 *must* have a component which is non-volatile. The box key will be stored in that memory and will never be changed.

The Court also finds that Claim 4(b) is not indefinite. Once again, Defendants have not shown any evidence to support their allegation that Claim 4(b) is indefinite. Since the claim is cloaked in a presumption of validity, the Court finds that the claim is not indefinite.

**G. Control Channel Decryptor**

Defendants also contest the meaning of Claim 4(c) and assert that the claim is indefinite. Claim 4(c) reads:

... a control channel decryptor having a control channel input and being connected to said memory storage and service data decryptor, comparison means for determining if a control channel message is addressed to a specific subscriber, said control channel decryptor using the box deciperhing [sic] key or a group of [sic] deciphering key to decipher a control message as to a change in the service deciphering key or a change in or formation of a group deciphering key.

Col. 6, l. 67-Col. 8, l. 2. As is evident, the claim language contains two typographical errors. Defendants argue that these "multiple" grammatical errors render the entire claim indefinite under 35 U.S.C. s. 112, para. 2. Defendants also argue that the claim language requires the box key to change the service key. The Court concludes that the claim simply does not support their asserted interpretation.

First, although it is preferable not to have any typographical errors in a claim-or, indeed, in any writing-someone skilled in the art reading the claim would understand that the misspelling "deciperhing" was intended to be "deciphering." There is nothing ambiguous about this typographical error. Secondly, someone skilled in the art, after reading the preceding claims and the specification, would understand that the word "of" on line 7 of Column 7 should be deleted. In fact, even without reading the specification, a reader would mentally take out the "of" from the sentence in order to make the sentence meaningful.

Defendants argue at length over the use of the word "or" in Claim 4(c) and the resulting meaning. In their memorandum, Defendants somehow come to the conclusion that the claim language and prosecution history mandates that the claim be interpreted so that **"both** the box key and the group key are required to decrypt control messages." Def. Mem. (Dkt.83) at 55. In view of the preceding claims, the specification, and the prosecution history, Defendants' argument is wholly unpersuasive.

In the description of the preferred embodiment, the specification explains that the box key is used to change a group key. *See* Col. 5, ll. 59-62; Col. 3, ll. 3-6. The specification also states that a group key is used to change the service key. Col. 2, l. 31. As explained above, a new group key can also be used to change the current group key or add new group keys. Col. 2, ll. 41-44. Thus, when reading Claim 4(c) and confronted with the word "or," one takes that word at its normal meaning: the control channel decryptor will use either the box key or the group key to decipher a control message about a change in service deciphering key, a

change in a group key, or the formation of a new group key. The control channel decryptor uses the appropriate key (either the box key or a group key) according to the type of control channel message. The specification sets forth as much.

The prosecution history is not to the contrary. Nowhere in the prosecution history did the patentees ever state that the box key must be used to change the service key. Moreover, the quoted portion of the prosecution history appearing on page fifty-five of Defendants' memorandum is inapposite to the proposition for which it is cited. That quoted portion (PM196; DM 002 at 102) only speaks to changing a *group* key-not the service key: "the possibility of reforming or changing or creating new groups." Moreover, the quoted portion clearly states that the communication of a change in group key is accomplished "in *either* a box key or in a group key." PM 196; DM 002 at 102 (emphasis added). To later argue that this quoted portion supports an interpretation that *both* the box and group keys are *required* to decrypt *all types of* control messages and that the prosecution history precludes an interpretation that requires only one key to decrypt control messages is a *non sequitur*.

Nevertheless, while the patent does not *mandate* that the box key *must* be used to change the service key, the box key *could* be used to change the box key. Column 1, lines 27-30 explicitly says that the box key *could* be used to change the service key: "... a service key which is common for a specific broadcast and which may be changed from time to time through either the group or box keys." Furthermore, Column 3, lines 7-12 state: "In a general sense, there need not be a logical distinction between group keys and box keys, or group addresses and box addresses. The box address/box key pair simply constitutes another subscriber subset (group) to which there happens to be only a single member." Thus, an attempt to state that the box key is *incapable* of changing the service key would be wrong because, in the grand scheme of things, box keys can be viewed as group keys with only one member of the "group." Nevertheless, a mental distinction between group keys and a box key must be maintained because there is one box key for each receiver which is permanent and not changed.

The Court finds that claim 4(c) means, in part, that the control channel decryptor will use either the box key or the group key to decipher a control message about a change in the service deciphering key, a change in a group key, or the formation of a new group key.

Defendants also challenge the means-plus-function limitation: "comparison means for determining if a control channel message is addressed to a specific subscriber." Defendants claim that the limitation is indefinite as to the structure. Again, the Defendants have offered no evidence to support their assertion that the disclosed structure is indefinite. The Court finds that this means-plus-function claim is not indefinite. Furthermore, the structure pertaining to this limitation is the compare 50 and the memory table 52.

**H.... a receiver data processor connected to said memory storage means for adding and/or deleting and/or replacing addresses in said memory storage means.**

The Defendants list, in the Joint Stipulation, this claim limitation of Claim 5 as one requiring interpretation by the Court. Defendants' only comments in the Joint Stipulation regarding this claim limitation are: "that claim terms must be construed in view of the patent specification and prosecution history. For example,' receiver data processor' means the receiver data processor of Figure 2." Plaintiff concurs that the receiver data processor 46 of Figure 2 is part of the structure of this claim. Plaintiff asserts, however, that the memory table 52 is also part of the structure of this limitation.

At the *Markman* hearing, Defendants asserted that the use of the phrase "and/or" makes this claim indefinite. Defendants did not, however, explain why they believe the claim indefinite. The Court is aware of case law which criticizes the use of the term "and/or" in legal writing.FN11 Nevertheless, the use of such phrase has become widespread, with even the Federal Circuit and the United States Court of Claims having occasion to use the phrase in some of their written opinions. *See e.g.* In re Save Venice New York, Inc., 259 F.3d 1346, 2001 WL 849136 *1, n. 1 (Fed.Cir. July 27, 2001); Technical Develop. Corp. v. United States, 1978 WL 14846 (Ct. Cl.1978 Feb. 23, 1978). The Court is not inclined to hold as a matter of law that a claim which contains such language is necessarily indefinite. *See* section V.E., *supra*.

FN11. Many years ago, the colorful Florida Supreme Court jurist, Justice Glen Terrell, had this to say about use of the phrase "and/or":
In the matter of the use of the alternative, conjunctive phrase 'and/or,' it is sufficient to say that we do not hold this to be reversible error, but we take our position with that distinguished company of lawyers who have condemned its use. It is one of those inexcusable barbarisms which was sired by indolence and damned by indifference, and has no more place in legal terminology than the vernacular of Uncle Remus has in Holy Writ. I am unable to divine how such senseless jargon becomes current. The coiner of it certainly had no appreciation for terse and concise law English.

Cochrane v. Fla. East Coast Ry. Co., 107 Fla. 431, 435, 145 So. 217, 218-19 (Florida 1932).
In common usage, the phrase "and/or" has come to mean "A or B or both." *See* Leon, 695 So.2d at 1267 n. 2. This is the meaning the Court will apply to Claim 5. Thus, the phrase "for adding and/or deleting and/or replacing addresses" means:

for adding or deleting or replacing, *or*

for adding and deleting or replacing, *or*

for adding or deleting and replacing, *or*

for adding and replacing or deleting, *or*

for adding and deleting and replacing.

The Court acknowledges that the allowance of the various combination of the three terms creates a fairly long list of alternative combinations. The Court is confident, nevertheless, that this is precisely why the drafters of the claim chose to use the "and/or" phrase; the term is not indefinite as a result of its use.

**VI. Issues Not Addressed in the Memoranda**

The Court has noted that there are various issues set forth by Defendants in the Joint Stipulation which were not briefed by Defendants. At oral argument, Defendants acknowledged that they did not brief these issues, but insisted that they did not waive the issues and that the Court should-indeed is *required*-to construe the claims with regard to these non-briefed issues. To the extent Plaintiff briefed the issues, the Court has endeavored to construe the disputed language. Nevertheless, where both parties have not briefed an issue, the Court declines to construe the claim language.

Federal courts do not have jurisdiction to render advisory opinions. Where there is no indication that a dispute actually exists with regard to claim language, the Court will not delve into its own claim construction and, thus, render an advisory opinion. Moreover, the Court finds that the non-briefed issues have been waived, unless a party can show the Court a substantial reason why the issue was not brought to the Court's attention at the appropriate time. The Court scheduled a *Markman* hearing and briefing at Defendants' behest. Any arguments regarding claim interpretation should have been included in the memoranda and oral argument of the parties. Given the chance to folly explain its claims construction position once, the Court will not entertainsubsequentattempts to change or add additionally "discovered" disputed terms unless a party can show a substantial reason justifying such.

Upon consideration of the forgoing, it is **ORDERED** that the claim construction issues regarding the Wechselberger patent, number 4,531,020, and the Bluestein patent, number 4,531,021, are hereby resolved as set forth above.

**DONE AND ORDERED.**

M.D.Fla.,2001.
TV/Com Intern., Inc. v. Mediaone of Greater Florida, Inc.