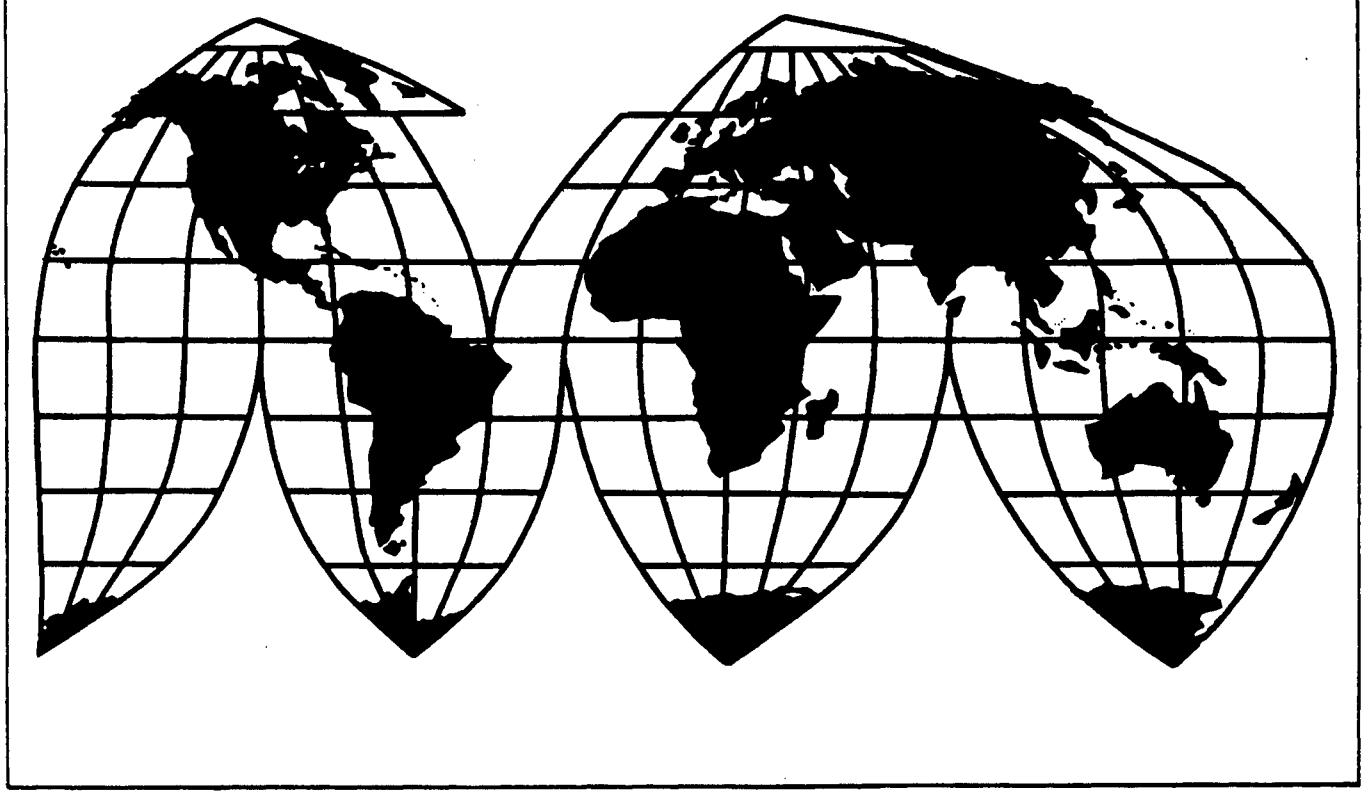
Certain Set Top Boxes and Components Thereof

Investigation No. 337-TA-454

Publication 3564 **November 2002**

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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U.S. International Trade Commission

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Certain Set Top Boxes and Components Thereof

Investigation No. 337-TA-454

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CORRECTED

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

In the Matter of	)	
CERTAIN SET-TOP BOXES AND COMPONENTS THEREOF	)	**Inv. No. 337-TA-454**

NOTICE OF DECISIONS TO REVIEW IN PART, TAKE NO POSITION IN PART, AND NOT REVIEW IN PART THE ADMINISTRATIVE LAW JUDGE'S FINAL INITIAL DETERMINATION; NOTICE OF DECISIONS TO AFFIRM THREE RULINGS OF THE ADMINISTRATIVE LAW JUDGE; NOTICE OF DETERMINATION OF NO VIOLATION OF SECTION 337 OF THE TARIFF ACT OF 1930

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined to review in part, to take no position in part, and to not review in part the final initial determination ("final ID") issued by the presiding administrative law judge ("ALJ") on June 21, 2002, finding no violation of section 337 of the Tariff Act of 1930, 19 U.S.C. § 1337, in the above-captioned investigation. Specifically, the Commission determined to review the issue of the technical prong of the domestic industry as it relates to claim 42 of U.S. Letters Patent 4,706,121 for the purpose of making a finding as to claim 42 of that patent that was omitted by the ALJ. The Commission also determined to take no position on the issue of patent misuse and to not review the remainder of the final ID. Finally, the Commission determined to affirm three ALJ rulings (involving ALJ Order No. 62, an ALJ ruling excluding evidence concerning the doctrine of equivalents, and an ALJ ruling limiting the testimony time of one witness) that were appealed to the Commission by the complainants. In light of these determinations, the Commission determined that there is no violation of section 337 in this investigation.

FOR FURTHER INFORMATION CONTACT: Michael Liberman, Esq., or David Wilson, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephones (202) 205-3115 or (202) 708-2310, respectively. Copies of the public versions of the final ID and all other nonconfidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 205-2000. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 205-1810. General information concerning the Commission may also be

obtained by accessing its Internet server (*http://www.usitc.gov*). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS -ON-LINE) at http://dockets.usitc.gov/eol/public.

SUPPLEMENTARY INFORMATION: The Commission instituted this patent-based investigation, which concerns allegations of unfair acts in violation of section 337 of the Tariff Act of 1930 in the importation and sale of certain set-top boxes, on March 14, 2001. 66 *Fed. Reg.* 15887 (2001). Complainants Gemstar-TV Guide International, Inc. of Pasadena, California, and StarSight Telecast, Inc. of Fremont, California, named Pioneer Corporation, Pioneer North America, Inc., Pioneer Digital Technologies, Inc., Pioneer New Media Technologies, Inc., Scientific-Atlanta, Inc., EchoStar Communications Corporation, and SCI Systems, Inc. as respondents.

The ALJ held an evidentiary hearing from December 3, 2001, through December 19, 2001, and issued his final ID on June 21, 2002, in which he concluded that there was no violation of section 337, based on the following findings: (a) complainants have failed to establish that the asserted claims 18-24, 26-28, 31-33, 36, 42-43, 48-50, 54, 57, 59-61, and 66 of U.S. Letters Patent 4,706,121 (the '121' patent); claims 1, 3, 8, and 10 of United States Patent 5,479,268 (the '268 patent); and claims 1, 3, 8, and 10 of U.S. Letters Patent 5,809,204 (the '204 patent) are infringed by respondents; (b) respondents have failed to establish that the asserted claims are not valid; (c) respondents have established that the '121 patent is unenforceable for failure to name a co-inventor; (d) complainants have engaged in patent misuse with respect the '121 patent; (e) no industry exists in the United States, as required by subsection (a)(2) of section 337, that exploits each of the '121, 268, and '204 patents in issue; and (f) there has been an importation of the set-top boxes which are the subject of this investigation.

On July 5, 2002, all parties to this investigation, including the Commission investigative attorney, filed petitions for review of various portions of the final ID. On July 12, 2002, all the parties filed responses to the petitions for review.

Having examined the record in this investigation, including the final ID, the petitions for review, and the responses thereto, the Commission determined that there is no violation of section 337 in this investigation.

This action is taken under the authority of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) and Subpart G of Part 210 of the Commission's Rules of Practice and Procedure (19 C.F.R. Subpart G, Part 210).

By order of the Commission.

Marilyn R. Abbott
Secretary

Issued: August 30, 2002

CERTAIN SET-TOP BOXES AND COMPONENTS THEREOF 337-TA-454

PUBLIC CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **NOTICE OF DECISIONS TO REVIEW IN PART, TAKE NO POSITION IN PART, AND NOT TO REVIEW IN PART THE ADMINISTRATIVE LAW JUDGE'S FINAL INITIAL DETERMINATION; NOTICE OF DECISIONS TO AFFIRM THREE RULINGS OF THE ADMINISTRATIVE LAW JUDGE; NOTICE OF DETERMINATION OF NO VIOLATION OF SECTION 337 OF THE TARIFF ACT OF 1930,** was served upon the following parties via first class mail and air mail, where necessary on August 30, 2002.

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CERTAIN SET-TOP BOXES AND COMPONENTS THEREOF

337-TA-454

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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

In the Matter of **CERTAIN SET TOP BOXES AND COMPONENTS THEREOF**	)	**Inv. No. 337-TA-454**

COMMISSION OPINION

I. Background and Procedural History

The Commission instituted this patent-based investigation, which concerns allegations of unfair acts in violation of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the importation and sale of certain set-top boxes, on March 14, 2001. 66 *Fed. Reg.* 15887 (2001). Complainants Gemstar-TV Guide International, Inc. of Pasadena, California, and StarSight Telecast, Inc. of Fremont, California, named Pioneer Corporation, Pioneer North America, Inc., Pioneer Digital Technologies, Inc., Pioneer New Media Technologies, Inc., Scientific-Atlanta, Inc., EchoStar Communications Corporation, and SCI Systems, Inc. as respondents.

The presiding administrative law judge (ALJ) held an evidentiary hearing from December 3, 2001, through December 19, 2001, and issued his final ID on June 21, 2002, in which he concluded that there was no violation of section 337, based on the following findings: (a) complainants have failed to establish that claims 18-24, 26-28, 31-33, 36, 42-43, 48-50, 54, 57, 59-61, and 66 of U.S. Letters Patent 4,706,121 (the '121' patent); claims 1, 3, 8, and 10 of U.S. Patent 5,479,268 (the '268 patent); and claims 1,3, 8, and 10 of U.S. Letters Patent 5,809,204 (the '204 patent) are infringed by respondents; (b) respondents have failed to establish that the asserted

claims are not valid; (c) respondents have established that the '121 patent is unenforceable for failure to name a co-inventor; (d) complainants have engaged in patent misuse with respect the '121 patent; (e) no industry exists in the United States, as required by subsection (a)(2) of section 337, that exploits each of the '121, 268, and '204 patents in issue; and (f) there has been an importation of the set-top boxes which are the subject of the investigation.

On July 5, 2002, all parties to the investigation, including the Commission investigative attorney (IA), filed petitions for review of various portions of the final ID. Respondents indicated that their petitions are contingent petitions, and should be considered by the Commission only if the Commission determines to review the ID. On July 12, 2002, all the parties filed responses to the petitions for review.

In their petition for review, complainants argued, *inter alia*, as follows: "In his Final Initial Determination, the ALJ failed to address Complainants' argument that Complainants practice independent Claim 42 of the '121 Patent." Comp. Pet. at 263. Respondents argued that the ALJ's omission amounts to harmless error and does not warrant the Commission's review. *See, e.g.*, Echostar Response at 121 ("Contrary to Gemstar's belief, however, this omission does not warrant review -- the claim construction conclusions found elsewhere in the ID are dispositive of Gemstar's contentions on this claim.") The IA did not take a position on this issue.

We determined to review the subject ID on the issue of the technical prong of the domestic industry requirement for the limited purpose of making a finding as to claim 42 of the '121 patent, which finding was omitted by the ALJ in his final ID.

II. Scope of the Review

Commission review of an ID is limited to the issues set forth in the notice of review and all subsidiary issues therein. *Certain Bar Clamps, Bar Clamp Pads, and Related Packaging Display and Other Materials*, Inv. No. 337-TA-429, Commission Opinion at 3 (January 1, 2001). The present review concerns the issue of whether complainants satisfy the technical prong of the domestic industry requirement by practicing claim 42 of the '121 patent.

III. Discussion

In his final ID, the ALJ did not expressly state whether complainants practice claim 42 of the '121 patent and, thus, whether by practicing claim 42 they satisfy the technical prong of the domestic industry requirement. The ALJ did, however, make all of the findings necessary to reach a determination that complainants do not practice claim 42. For the reasons that follow, we determine that complainants do not practice claim 42 and do not satisfy the technical prong of the domestic industry requirement by practicing claim 42.

As the ALJ found, complainants conceded that they "have not shown that the products that they relied upon to satisfy the domestic industry requirement meet the claim construction respondents and the [IA] proposed." ID at 299. [1] Thus, with respect to claim 42, the ALJ

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[1] In support, the ALJ cited complainants' rebuttal brief. That brief states as follows:

> Finally, Respondents complain that Complainants have not demonstrated that their domestic industry products practice the patents-at-issue under Respondents' proposed claim constructions. *This is true*, but ignores the equally salient fact that Respondents have failed to introduce any evidence to rebut the fact that, under Complainants' claim construction, the products do practice each of the claims-at-issue. (CRRF 5529.1 - CRRFF 5529.11). Therefore, if the Court adopts Complainants' construction for even one claim of each patent,

rejected complainants' proposed construction and interpreted claim 42 consistent with respondents' and the IA's proposed constructions. ID at 73-80, 14-61, 299. Therefore, based on the foregoing, complainants cannot demonstrate that they practice claim 42 under the ALJ's claim construction which we have adopted. As a result, we determine that complainants do not practice claim 42 and thus do not satisfy the technical prong of the domestic industry requirement by practicing that claim.

> Complainants will have satisfied their burden of demonstrating that they meet the technical prong of the domestic industry requirement with respect to that patent.

ID at 298 *citing* (CRBr at 263) (emphasis in original omitted; emphasis added by the ALJ) (citations omitted).

Complainants did not dispute this ALJ finding in their petition for review.

CERTAIN SET-TOP BOXES AND COMPONENTS THEREOF 337-TA-454

PUBLIC CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **COMMISSION OPINION,** was served upon the following parties via first class mail and air mail, where necessary on August 30, 2002.

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337-TA-454

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PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of	)	
	)	
CERTAIN SET-TOP BOXES AND COMPONENTS THEREOF	)	**Investigation No. 337-TA-454**
	)	
	)	

Final Initial Determination

This is the administrative law judge's final initial determination, under Commission rule 210.42. The administrative law judge, after a review of the record developed, finds no violation by any respondent of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337).[1]

[1] Should the Commission find a violation the administrative law judge is making recommendations as to remedy and bonding in this final initial determination.

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TABLE OF CONTENTS

ABBREVIATIONS

CFF	Complainants' Proposed Findings Of Fact
CORFF	Complainants' Objection To Respondents' Proposed Finding Of Fact
CPost	Complainants' Initial Posthearing Brief
CPre	Complainants' Prehearing Brief
CRBr	Complainants' Reply Brief
CRRFF	Complainants' Rebuttal To Respondents' Proposed Finding Of Fact
CX	Complainants' Exhibit
EPost	EchoStar's Initial Posthearing Brief
ERBr	EchoStar's Reply Brief
EPre	EchoStar's Prehearing Brief
FF	Findings Of Fact
JX	Joint Exhibit
PPost	Pioneer's Initial Posthearing Brief
PPre	Pioneer's Prehearing Brief
PRBr	Pioneer's Reply Brief
RFF	Respondents' Proposed Findings of Fact
ROCFF	Respondents' Objection To Complainants' Proposed Finding Of Fact
RRCFF	Respondents' Rebuttal To Complainants' Proposed Finding Of Fact
RX	Respondents' Exhibit
S-A Post	S-A's Initial Posthearing Brief
S-A Pre	S-A's Prehearing Brief

S-A RBr	S-A's Reply Brief
SFF	Staff's Proposed Finding Of Fact
SPost	Staff's Initial Posthearing Brief
SPre	Staff's Prehearing Brief
SRBr	Staff's Reply Brief
SX	Staff's Exhibit
Tr.	Hearing Transcript Of Record

I. PROCEDURAL HISTORY

By notice, issued on March 14, 2001, the Commission instituted an investigation, pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended, to determine whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation into the United States, or the sale within the United States after importation of certain set-top boxes by reason of infringement of claims 18-24, 26-28, 31, 32, 33, 36, 42, 43, 48-51, 54, 57-61 and 66 of United States Patent 4,706,121 (the '121 patent), claims 1-5 and 10-14 of United States Patent 5,253,066 (the '066 patent), claims 1, 3, 8, and 10 of United States Patent 5,479,268 (the '268 patent), and claims 14-17, 19, and 31-35 of United States Patent 5,809,204 (the '204 patent) and whether there exists an industry in the United States as required by subsection (a)(2) of section 337. The notice of investigation was published in the Federal Register on March 21, 2001. (66 Fed. Reg. No. 55 at 15,887-89).

Complainants identified in the Commission notice were Gemstar-TV Guide International, Inc. (Gemstar) and StarSight Telecast, Inc. (StarSight). As respondents, the following were named in the notice: Pioneer Corporation, Pioneer North America, Inc., Pioneer Digital Technologies, Inc., Pioneer New Media Technologies, Inc.[1] (collectively, Pioneer), Scientific-Atlanta, Inc., (S-A), EchoStar Communications Corporation, and SCI Systems, Inc. (collectively, EchoStar).

On March 21, 2001, the presiding Administrative Law Judge Morriss issued a notice in which she advised the parties that she owned one of the accused products (an EchoStar 4900 set-top box) and that she had an ongoing service contract with DISH Network, which she believed

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[1] Pioneer Electronics USA, Inc. is the successor to Pioneer New Media and Technologies, Inc. See Order No. 35 which issued on November 2, 2001.

was related to EchoStar. Judge Morriss stated that, if any party requested her disqualification as the presiding administrative law judge, she would seek to recuse herself from the investigation and directed each party to file a written submission to her attorney-advisor, by April 2, indicating whether the party requested her disqualification or whether the party consented to her continuing to preside over the investigation. Judge Morriss directed that said submission should not be filed or served on the other parties.

By notice, issued on April 4, 2001, the Commission chairman directed that the submissions ordered by Judge Morriss should be filed with the Commission by the close of business on April 6. Respondent Pioneer subsequently filed a submission with the Commission requesting disqualification of Judge Morriss. On April 10, the Commission issued an order designating the undersigned as the presiding administrative law judge in this investigation in place of Judge Morriss.

Order No. 1, which issued on April 12, 2001, set a target date for completion of this investigation of June 21, 2002. Revised Order No. 55, which issued on March 19, was an initial determination which extended the target date to October 21. On April 24, the Commission issued a notice stating that it would not review said initial determination.

Order No. 2, which issued on April 2, 2001, was the protective order. Order No. 6, which issued on May 17, denied complainants' Motion No. 454-10 regarding modification of Order No. 2. Order No. 6 further imposed a limitation on patent prosecution attorneys subscribing to the protective order. Order No. 9, which issued on May 31, granted Pioneer's Motion No. 454-13 to amend their response to include two additional factual allegations to the Ninth Affirmative Defense and to reference supplemental exhibits submitted by complainants.

Order No. 17, which issued on July 9, 2001, granted EchoStar's Motion Nos. 454-31 and 454-32 to modify the response to the complaint and the notice of investigation by providing additional details regarding the products imported by or in behalf of EchoStar. Order No. 18, which issued on July 12, denied EchoStar's Motion No. 454-15 for an order sanctioning complainants.

Order No. 24 was an initial determination, which issued on August 23, 2001, and granted complainants' Motion No. 454-43 to attach copies of license agreements and a list of licensees to the complaint, and to amend the complaint to reflect the attachments. In a notice dated December 14, the Commission determined not to review Order No. 24.

Order No. 25, which issued on August 28, 2001, denied complainants' Motion No. 454-45 to strike the First Affirmative Defense of Pioneer relating to patent misuse. Order No. 29, which issued October 9, denied S-A's Motions Nos. 454-55 and - 56 to take evidence relating to public interest and to certify to the Commission the question of whether the administrative law judge can receive evidence relating to public interest issues and to amend the notice of investigation to allow the administrative law judge to take evidence relating to public interest issues. Order No. 32, which issued on October 12, denied complainants' Motion No. 454-52 to disqualify Miller & Chevalier from representing EchoStar in this investigation. Order No. 46, which issued November 21, denied respondent Pioneer's motion to disqualify Fish & Richardson from representing complainants in this investigation.

Order No. 36, which issued on November 2, 2001, denied Motion No. 454-82 of non-party Peter Vogel, the named inventor on the '066 patent, to compel the return of allegedly privileged documents, and granted Pioneer's Motion No. 454-81 for in camera review of those

documents to determine if the documents in issue were subject to any privilege. In the same order, complainants' Motion No. 454-80 to exclude the use of those same documents in issue was denied.

Order No. 37, which issued on November 6, 2001, granted respondents' joint Motion No. 454-78 to amend responses to the complaint and to assert an additional affirmative defense that the '066 patent is unenforceable because of inequitable conduct. Order No. 38, which issued on November 7, denied complainants' Motion No. 454-50 for summary determination requesting dismissal of certain affirmative defenses regarding patent misuse. Order No. 39, which issued on November 14, denied complainants' Motion No. 454-92 for summary determination regarding the economic prong of the domestic industry requirement. Order No. 41, which issued on November 15, granted S-A's Motion No. 454-89 to amend its response to the complaint and notice of investigation to assert additional affirmative defenses that the '121 patent is unenforceable due to inequitable conduct and that the '121 patent is invalid due to non-joinder of an actual inventor.

Complainants, in a letter to the administrative law judge dated November 15, 2001, gave notice of their intention to remove all of the asserted claims of the '066 patent, two claims of the '268 patent, and two claims of the '204 patent from this investigation. Order No. 44, which issued on November 20, was an initial determination granting complainants' Motion No. 454-103 to terminate the investigation with respect to the '066 patent, claims 8 and 10 of the '268 patent, and claims 19 and 35 of the '204 patent. On January 30, 2002 the Commission determined not to review the initial determination. Thus, the claims that remain at issue in this investigation are claims 18-24, 26-28, 31, 32, 33, 36, 42, 43, 48-51, 54, 57-61 and 66 of the '121

patent, claims 1 and 3 of the '268 patent, and claims 14-17, and 31-34 of the '204 patent.

On December 3, 2001, the hearing commenced and continued through December 19. During the hearing, the administrative law judge granted respondents' Motion No. 454-111 to preclude complainants from asserting infringement under the doctrine of equivalents. (Tr. at 92). Also during the hearing, the administrative law judge granted an unopposed motion by EchoStar to amend their answer to add defenses that the '121 patent is unenforceable due to inequitable conduct and that the '121 patent is invalid due to non-joinder of an inventor similar to the relief granted to S-A in Order No. 41. (Tr. at 5337-38).

On January 17, 2002, respondents jointly moved to strike the testimony of complainants' proffered expert witness, Dr. Philip Faillace, and related findings and exhibits on any topics relating to the IPG[2] source code for the accused products. (Motion Docket No. 454-143A). Order No. 62, which issued on June 21 granted in part said motion.

Post hearing submissions have been made. The matter is now ready for decision.

The final initial and recommended determinations are based on the record compiled at the hearing and the exhibits admitted into evidence. The administrative law judge has also taken into account his observation of the witnesses who appeared before him during the hearing. Proposed findings of fact submitted by the parties not herein adopted, in the form submitted or in substance, are rejected as either not supported by the evidence or as involving immaterial matters and/or as irrelevant. Certain findings of fact included herein have references to supporting evidence in the record. Such references are intended to serve as guides to the testimony and

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[2] The term "IPG" has been referred to by parties as "Interactive Program Guide." A more lengthy definition, agreed to by the parties, is set forth in the "PATENT MISUSE" section, infra.

exhibits supporting the findings of fact. They do not necessarily represent complete summaries of the evidence supporting said findings.

II. PARTIES

See FF 1-22.

III. JURISDICTION

The complaint and notice of investigation state a cause of action under section 337 of the Tariff Act of 1930, as amended. Thus, the Commission has jurisdiction over the subject matter of this investigation. See Amgen, Inc. v. U.S. International Trade Commission, 902 F. 2d 1531, 1536 (Fed. Cir. 1990). Each of the named respondents responded to the complaint and notice of investigation and participated in the hearing. Thus, the Commission has personal jurisdiction over each of the respondents.

While EchoStar appeared at the hearing, it argued that named respondent EchoStar Communications Corporation (ECC) is not a proper respondent under section 337 because ECC is a holding company; that ECC does not import the accused devices; that ECC does not sell the accused devices for importation; and that because there is no evidence that ECC has committed the acts alleged by complainants to invoke the Commission's jurisdiction under section 337, complainants have not met their statutory burden under section 337. (EPost at 279-284). Charles Ergen, who testified at the hearing, is the Chairman and Chief Executive Officer of ECC

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} in that ETC

is a wholly owned subsidiary of EchoStar DBS Corporation which is a wholly owned subsidiary of EchoStar Broadband Corporation, a wholly owned subsidiary of ECC. (Ergen, Tr. at 2985-87,

3029, RX-1943, RX-7448). Ergen is an officer of ETC. (Tr. at 3043). ETC has participated in the design of accused set-top boxes. (Ergen, Tr. at 3046-47, CX-3773, No. 1). In addition, ETC participates in the importing, purchasing and licensing of EchoStar set-top boxes. (Ergen Tr. at 3032-33). In view of Ergen's testimony and the referenced evidence, the administrative law judge rejects EchoStar's argument that ECC is not a properly named respondent.

Respondents argued that they cannot be found to have violated section 337 because they do not import an alleged infringing article. (See, e.g., S-A Post at 294). Complainants argued that respondents admitted that they imported the accused set-top boxes and/or components thereof into the United States, or that such articles were imported on their behalf; that the evidence established that all of the accused set-top boxes and/or components thereof were imported with hardware and/or software that enable the later downloading of infringing IPG software or resident software applications(s) that contain an infringing IPG. The staff argued that there is subject mater jurisdiction because the evidence of record established that set-top boxes alleged to be part of an infringing system or process have been manufactured abroad, imported into the United States, and sold within the United States after importation. (SPost at 95).

Subject matter jurisdiction in section 337 investigations is established by the filing of a complaint alleging "unfair acts in the importation of articles . . . into the United States, or in the sale of such articles by the owner, importer, or consignee." 19 U.S.C. § 1337(a)(1)(A). The term "unfair acts" has been construed broadly to include infringement of patents, and the alleged unfair acts occurring incident to importation of the articles or products involved or affected. See Novelty Glasses, ITC Inv. No. 337-TA-55, USITC Pub. No. 991 (1979); Welded Stainless Steel Pipe and Tube, Inv. No. 337-TA-29, USITC Pub. Np. 863 (1978); In re von Clemm, 229 F. 2d

441 (C.C.P.A. 1955). In Hardware Logic Emulation Systems, Inv. No. 337-TA-383, Final Initial Determination at 159 (July 31, 1997), this administrative law judge rejected respondents' arguments that they must directly infringe the patents-in-issue in order to violate section 337, stating that "[t]here is nothing in the plain language of section 337(a)(1)(B), or the legislative history that would limit articles that 'infringe a . . . patent to only those articles that directly infringe, and would exclude those articles that contributorily infringe." See also Certain Flash Memory Circuits and Products Containing Same, Inv. No. 337-TA-382, Comm'n Op. at 15-16 (June 9, 1997), Certain Curable Fluoroelastomer Compositions and Precursors Thereof, Inv. No. 337-TA-364, Unreviewed Initial Determination at 66 (December 15, 1994).

The record does establish that set-top boxes alleged to be part of an infringing system or process have been manufactured abroad imported into the United States, and sold within the United States after importation by the named respondents. See, e.g. SX-3 (EchoStar) at 18-23, SX-4 (SCI) at 14-15, SX-5 (Pioneer) at 12-13 and SX-3 (S-A) at 11-17. {

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In addition, while S-A relied on Greg Durden's testimony to support the argument that an Explorer set-top box can be used without IPG software, Durden, who has worked for S-A for around 21 years (Tr. at 2713), was unable to identify any end user who has actually employed an Explorer set-top box with SARA software but without SARA IPG software (Tr. at 2810):

> Q Is it correct that Scientific-Atlanta cannot identify any end user who has actually employed an Explorer set-top box with SARA software but without SARA IPG software (Tr. at 2810).
>
> A I believe that's correct, yes.
>
> Q Is it also true that Scientific-Atlanta is unaware of any MSO that has installed Explorer boxes with SARA software but without the SARA IPG software?
>
> A As far as I know, yes.

Accordingly the administrative law judge rejects respondents' contention that they cannot be found to have violated section 337 because they do not import an alleged infringing article.

IV. PATENTED SUBJECT MATTER IN ISSUE

In issue are certain claims of the '121 patent, the '268 patent and the '204 patent. The '121 patent, entitled "TV Schedule System and Process," initially issued to Patrick Young on November 10, 1987, based on Application Serial No. 860,077 filed on May 6, 1986. Serial

No. 860,077 was a continuation-in-part of abandoned Application Serial No. 754, 630 filed July 12, 1985. On December 14, 1993, Reexamination Certificate B1 4,706,121 issued to Patrick Young on the initial '121 patent. (FF 23-25, 31, 32). In issue are independent claim 18 (and, by dependency, claims 19-24, 26-28, and 31), independent claims 32, 33, 36, 42 (and, by dependency, claims 43, 48-50), independent claims 51, 54, 57 (and, by dependency, claims 58-61) and independent claim 66.[3]

The '268 patent, entitled "User Interface for Television Schedule System," issued to Patrick Young, John H. Roop, Alan R. Ebright, Michael W. Faber and David Anderson on December 26, 1995, based on Application Serial No. 198,538 filed on February 18, 1994. Serial No. 198,538 was a continuation of abandoned Application Serial No. 579,555 filed on September 10, 1990, which in turn was a continuation of abandoned Application Serial No. 579,555 filed September 10, 1990, which in turn was a continuation-in-part of Application Serial No. 219,971, filed July 15, 1998, which issued as U.S. Patent No. 4,977,455. In issue are independent claim 1 and dependent claim 3. (FF 26, 27).

The '204 patent, entitled "User Interface for Television Schedule System," issued to Patrick Young, John H. Roop, Alan R. Ebright, Michael W. Faber and David Anderson on September 15, 1998 based on Application Serial No. 484,412. filed on June 7, 1995.[4] Serial No.

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[3] All of the asserted claims are not in issue with respect to each of the respondents. Specifically complainants have accused Pioneer of infringing claims 18-24, 26-28, 31, 33, 36, 42-43, 48-50, 54, 57, 59-61 and 66. S-A is accused of infringing claims 18-24, 26-28, 31, 33, 36, 42-43, 48, 51, 54, 57, 59-61 and 66. Complainants have accused EchoStar of infinging claims 18-24, 26-28, 31, 32, 36, 54, 57-61 and 66.

[4] For substantive purposes, the specifications of the '204 and '268 patents are identical. (Faillace, Tr. at 1147, Rhyne, Tr. at 3645-46; CX-3, CX-4).

484,412 was a continuation of Application Serial No. 198,538, filed February 18, 1994 (now the '268 patent). (FF 28-30). In issue are independent claims 14 and 31, claims 15 through 17, which are dependent upon claim 14, and claims 32 through 34, which are dependent upon claim 31.

V. CLAIM CONSTRUCTION

Claim construction is a question of law to be decided by the administrative law judge. Markman v. Westview Instruments, Inc., 52 F.3d 967, 978, 34 U.S.P.Q.2d 1321, 1328 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 376 (1996) (Markman). The construction of the language of a claim should be made independently of what is being alleged to infringe the claim. See Donald S. Chisum, Patents § 18.03.

As for proper claim construction:

> It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.

Vitronics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d 1573, 1576 (Fed. Cir. 1996) (citation omitted) (Emphasis added) (Vitronics). To construe the claims of a patent "a court principally consults the evidence intrinsic to the patent, including the claims, the written description, and the relevant prosecution history." Watts v. XL Sys. Inc., 232 F.3d 877, 882 (Fed. Cir. 2000).

In considering claim language, the "ordinary and customary meaning of a disputed claim term is presumed to be the correct one." K-2 Corp. v. Salomon, S. A., 191 F.3d 1356, 1363 (Fed. Cir. 1999). "[T]he focus is on the objective test of what one of ordinary skill in the art at the

time of the invention would have understood the term to mean." Markman, 52 F.3d at 986. A claim term must be given the same interpretation whenever it is employed in the claims, i.e., the meaning of a claim term should not vary from claim element or from claim to claim. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995).

The specification contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention. For claim construction purposes the written description may act as a dictionary, which explains the invention and may define terms used in the claims. A patentee is free to be his own lexicographer, although any special definition given to a word must be clearly defined in the specification. Markman, 52 F.3d at 978, 979, 34 U.S.P.Q.2d at 1328, 1329; Vitronics, 90 F.3d at 1580.

The prosecution history is of "critical significance in determining the meaning of the claims" Vitronics, 90 F.3d at 1582 (Emphasis added). "The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution" Id. at 1583 (quoting Southwall Technologies, 54 F.3d 1570, 1576 (Fed. Cir. 1995) (Emphasis added)). Claims may not be construed one way in order to obtain their allowance and in a different or inconsistent way against accused infringers. Spectrum International, Inc. v. Sterlite Corp., 164 F.3d 1372, 1379 (Fed. Cir. 1998). The Federal Circuit has made it clear that the public is entitled to rely on an applicant's representations. See Hockerson-Halberstadt, Inc. v. Avia Group International, Inc. 222 F.3d 951, 957 (Fed. Cir. 2000).

The administrative law judge may, in his discretion, receive extrinsic evidence to aid him in coming to a correct conclusion as to the true meaning of language employed in a patent. Markman, 52 F.3d at 981, 34 U.S.P.Q.2d at 1331. Extrinsic evidence consists of all evidence

external to the patent and prosecution history, including expert and inventor testimony, dictionaries and learned treatises. The evidence may be helpful to explain scientific principles and the meaning of technical terms, and terms of art that appear in the patent and prosecution history. It may also demonstrate the state of the prior art at the time of the invention. Extrinsic evidence, however, is not to be used for the purpose of clarifying ambiguities in claim terminology. Markman, 52 F.3d at 981, 34 U.S.P.Q.2d at 1331. Moreover, neither the patentee nor the alleged infringer may alter the scope of the claims. Thus,

> 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.

Vitronics, 90 F.3d at 1538-39, 34 U.S.P.Q.2d at 1577. The testimony of an inventor on the proper construction of claims, based on the text of the patent, is entitled to no deference because it amounts to no more than legal opinion about the process of construction that the administrative law judge must undertake. No inquiry as to the subjective intent of the inventor or of the U.S. Patent and Trademark Office (PTO) is appropriate or even possible in the context of a patent infringement action. In fact, commonly the claims are drafted by the inventor's patent solicitor and they may even be drafted by the patent examiner in an examiner's amendment subject to the approval of the inventor's solicitor. Markman, 52 F.3d at 985, 34 U.S.P.Q.2d at 1334-35. The scope of a patent is defined by the claims, and not by the description of the preferred embodiment in the specification. Gart v. Logitech, Inc. 254 F.3d 1334, 59 U.S.P.Q.2d 1290 (Fed. Cir. 2001).

35 U.S.C. § 112, ¶ 6 provides guidelines for interpreting means-plus-function limitations. This section of the patent statute states:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Only the disputed claim elements need be interpreted by the administrative law judge. See In the Matter Certain Hardware Logic Emulation Systems and Components Thereof, Inv. No. 337-TA-383, (July 31, 1997) (Hardware Logic); and In the Matter of Certain Ion Trap Mass Spectrometers and Components Thereof, Inv. 337-TA-393 at p. 24-25 (February 25, 1998).[5]

A. '121 Patent

In issue are claims 18-24, 26-28, 31-33, 36, 42, 43, 48-51, 54, 57-61 and 66.

1. Independent Claim 18.

Independent process claim 18 (FF 33), the earliest numbered claim in issue of the '121 patent, reads:

> 18. A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to storage means in a data processor, supplying user program selection criteria to the data processor, said user program selection criteria comprising a plurality of independent user chosen program selection criteria and at least one program choice, the data processor combining said user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the

[5] This course of action has been sanctioned by the Court of Appeals for the Federal Circuit, which, referring to Hardware Logic, stated that "by agreement, the appeal turns on the proper construction of certain disputed terms in the three asserted claims. The operation and structure of the accused device are neither uncertain nor disputed. In sum we adopt the claim construction of the Commission which was correct and derived according to our case law on appropriate methodology." Mentor Graphics Co. v. United States International Trade Commission, 124 F.3d 226 (Fed. Cir. 1997).

program schedule information in said storage means in the data processor, storing information identifying the selected programs, said stored information identifying broadcast schedule time, channels, and program titles, and using the stored information to tune the television receiver to the selected programs.

The administrative law judge finds that the language of the preamble, viz., "[a] process for controlling the presentation of broadcast programs to a television receiver," pursuant to the plain meaning of the language, refers to a process for controlling the presentation of broadcast programs to a conventional TV set. Such interpretation is consistent with EchoStar's proposed construction that "television receiver" is a conventional TV set (respondents' jointly proposed claim constructions submitted pursuant to the administrative law judge's November 27, 2001 telephonic hearing) and complainants' proposed construction that "the presentation of broadcast programs to a television receiver" refers to providing television programs to a television set. (RX-3311 at 4). He further finds that the language of process claim 18 describes a process in which several discrete steps occur. First claim 18 recites that the process "comprises supplying program schedule information to storage means in a data processor, [and] supplying user program selection criteria to the data processor." (Emphasis added) (FF 33). Therefore, claim 18 requires that during the process two things first occur: program schedule information is supplied to the data processor's storage means and user program selection criteria is supplied to the data processor. The claim language does not expressly mandate that "program schedule information" and the "user program selection criteria" be provided to the data processor in any given order in relation to each other, i.e., the claim language does not state that the "program schedule information" must be supplied before the "user program selection criteria" is supplied, or vice versa, or whether both are to be supplied simultaneously. The claim language however does

expressly state that the "program schedule information" is to be supplied to a particular location in the data processor (viz., the data processor's storage means), whereas no particular part of the data processor is specified with respect to the "user program selection criteria."

The administrative law judge further finds that claim 18 goes on to describe the "user program selection criteria" that is supplied to the data processor in the preceding step as "comprising a plurality of independent chosen program selection criteria and at least one program choice." (FF 33). Therefore, from this clause the claim discloses that the data processor had been provided two or more "independent chosen program selection criteria" and one or more program choices. This clause clearly refers to more than one "independent chosen program selection criteria" as it refers to "a plurality of independent chosen program selection criteria," which is in stark contrast to the second part of the clause which specifies that "at least one program choice" is to be provided to the data processor, instead of a "plurality of program choices." Id. There is no indication as to when the "plurality of independent chosen program selection criteria" or the "program choice" must be supplied in relation to each other, i.e., the claim language does not state that the "program choice" is to be supplied after the "independent chosen program selection criteria," or vice versa, or whether both are to be supplied simultaneously. Id.

In the claim 18 process, the next step that is recited is that the data processor "combin[es] said user selection criteria." (FF 33). The administrative law judge finds from this language, that this step must occur after the data processor has been supplied with "user selection data" as the data processor cannot combine the "said user selection criteria" before it is supplied with the "user selection criteria." However, the claim language does not specify whether the "said user

selection criteria" refers to the "user program selection criteria" or the "independent user selection criteria." The next step in the process, pursuant to the language of claim 18, is that the data processor selects the programs that meet the "combined user selection criteria" from the "program schedule information" that is stored in the data processor's storage means, which step must take place after the data processor "combin[es] the user selection criteria," or else there would be no "combined user selection criteria" and, since the data processor is selecting from the "program schedule information in [its] storage means," the selection step must also occur after the data processor's storage means has been supplied with "program schedule information."

The data processor then stores information identifying the programs that it had just selected. The administrative law judge finds that this step must occur only after the data processor has selected programs meeting the "combined user selection criteria," or else there would no information identifying the selected programs to store. The information identifying the programs is further described as identifying the broadcast schedule times, channels, and the program titles. (CX-1, col. 5, lns. 26-27). The data processor then uses the "stored" information to tune the television to the selected programs which is the last step in process claim 18. (Emphasis added) (FF 33). As the plain language of this clause indicates, the information identifying the selected programs must have been stored prior to the data processor using it to tune the television receiver to the selected programs.

The construction of claim 18, supra, as including a number of discrete steps is consistent with the specification of the '121 patent, which states:

> The process of this invention includes the following steps. Program schedule information is supplied to a data processor. User program selection criteria are supplied to the data processor. The user selection criteria are used to

> select programs for viewing from program schedule information in the data processor. The stored information is used to tune the television receiver to the selected programs.

(col. 4, lns. 53-60). The only difference in this description of the '121 invention and that which is described in claim 18, is the description of the process in the specification specifies that program schedule information is supplied to the data processor first, and then the user program selection criteria is supplied to the data processor, whereas claim 18 does not explicitly require one to be supplied before the other.

The prosecution history of the '121 patent is also consistent with the administrative law judge's interpretation of claim 18 as comprising a number of discrete steps. In its November 23, 1992 amendment to the '121 patent, filed during the re-examination, the applicant described original claim 18 accordingly, in an attempt to distinguish it from certain prior art references:

> Process claim 18 contains similar limitations which distinguish over the prior art. Regarding the claimed "combining of user selection criteria," the Examiner has asserted that this reads on the plurality of data needed to identify a single program to be recorded (channel, time, etc.). This trivializing simplification, however, ignores the plain meaning and interpretation of the claims, which interpretation is also supported by the specification. Of course, programming information such as channel and time might be used as selection criteria, but, such as is recited in claim 18, the selection criteria must then be combined, the combined criteria must be used to select programs from the schedule information, and then the schedule information for the selected programs is stored. These steps are clearly not met by the simple input and storage of programming data for a single program.

(Emphasis in original omitted) (FF 91).

During reexamination the applicant in a February 26, 1993 supplemental amendment further described the process disclosed in several of the claims of the '121 patent:

> Several of the present claims recite a process in which the user enters user program selection criteria, and the user enters user program selection criteria, and the data processor combines the program selection criteria, and the data processor

> combines the program selection criteria, searches through the stored selection criteria, searches through the stored schedule information, and creates and stores a display list of program listings that meet the combined criteria. This is disclosed, for example, at co. 17 lines 33 et seq. The user may then make program selection choices (which the Examiner has characterized as further program selection criteria) from this display. The data processor then stores information for these program selections, including information identifying program titles, in a reminder calender list.

(FF 150).

There follows the interpretation of the clauses of claim 18 that are recited after the preamble and in the order in which they are recited.

a. The language "comprises supplying program schedule information to"

Claim 18 recites, after the preamble, the clause "comprises supplying program schedule information to storage means in a data processor." (FF 33). In issue is the meaning of "program schedule information."

Complainants argued that "program schedule information" is merely information concerning scheduled television programs. (CFF 282). Respondents argued that the '121 reexamination prosecution history in the context of the asserted claims of the '121 patent explicitly provides that "schedule information" refers to times, titles and channels. (RFF 640). The staff argued that the proper construction of "program schedule information" requires that the term include the titles of programs, as well as the scheduled broadcast time and the channels on which the broadcast is to occur. (SPost at 7).

Original claim 18 of the '121 patent was amended in the examination prosecution to read (FF 33, 165):

> A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to <u>storage</u>

> means in a data processor, supplying user program selection criteria to the data processor, said user program selection criteria comprising a plurality of independent user program selection criteria and at least one program choice, the data processor combining said user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in said storage means in the data processor, storing information identifying the selected programs, said stored information identifying broadcast schedule times, channels and program titles, and using the stored information to tune the television to the selected program. (CX-1, B '121 Patent at col. 5, lns. 14-29) (underlined language was added in the reexamination proceeding)

Thus, the language of claim 18 in issue conclusively shows that in the reexamination proceeding, applicant Patrick Young specifically amended claim 18 to identify the information in the storage means as "broadcast schedule times, channels and program titles." (Emphasis added).

Original independent process claim 18, as issued on November 10, 1987, did not refer to "program titles." (FF 91). Moreover, the phrase "program titles" was included in claim 18 in response to rejections by the Examiner. In reference to the reexamination proceedings, the Examiner in an Office Action of June 8, 1992 rejected all of the claimed subject matter in light of certain prior art. (FF 94). In an amendment received by the Patent Office on August 13, 1992, while new independent claim 57 directed to a "television schedule system" defined "broadcast schedule information" as "comprising broadcast schedule times, titles and channels," independent process claim 18 was not amended to include program titles. (FF 96).

Following a rejection on September 22, 1992 in which the claimed subject matter was rejected prior art (FF 108-112), applicant, in a response filed on November 23, 1992, rewrote the claims. (FF 113). While revised independent claim 57 relating to a "television schedule system" again defined "broadcast schedule information" as comprising broadcast schedule times, titles and channels, rewritten independent process claim 18 did not include the phrase "program

titles." (FF 113). In a Final Office Action of January 5, 1993, claim 18, which still did not include "program titles," was rejected by the Examiner in light of prior art. (FF 121-128). A proposed amendment attached to a Reexamination Interview Summary Form and relating to a telephonic interview on January 6, 1993 did not include "program titles" in claim 18. (FF 129). On January 21, 1993, applicant faxed to the Examiner a proposed amendment. Proposed claim 18 in the amendment was again devoid of any reference to "program titles." (FF 130). Likewise applicant in an amendment after final date-stamped at the Patent Office on January 29, 1993 and in a proposed supplemental amendment after final faxed to the Examiner in February 16, 1993, each in response to the Patent Office action of January 5, 1993, did not amend claim 18 to include "program titles." (FF 132).

Applicant, ultimately, in a proposed Supplemental Amendment After Final, faxed to the Examiner on February 23, 1993, proposed to amend claim 18 by adding the language "said stored information identifying broadcast schedule times, channels, and program titles." (FF 141). In the accompanying remarks, it was stated that independent claim 18, inter alia, had been amended "to further clarify that the schedule information stored for the selected programs identifies not only program channels and times, but also program titles." (FF 141). Likewise, in a February 26, 1993 Supplemental Amendment After Final, applicant added to claim 18 the phrase "said stored information identifying broadcast schedule times, channels, and program titles." (FF 146). In commenting on the amendment applicant specifically stated (FF 150):

> In response to earlier arguments that the claims require schedule information including program title to be stored for selected programs, the Examiner only argued that the term "schedule information" was not defined so as to require program title. Several claims have been amended to specify the storage of program title for the selected programs and are thus believed to be allowable. As

> previously noted, prior art systems simply program the VCR with the channels and times for selected programs; information identifying the title was not stored.

(Emphasis added). Thereafter, the Examiner, in each of a Notice Of Intent To Issue Reexamination Certificate dated June 2, 1993 and a supplemental notice dated August 26, 1993, specifically stated that claim 18 avoided the art of record in at least the art of record did not show or suggest a process for controlling the presentation of broadcast programs to a television receiver which comprises, inter alia, "storing information identifying the selected programs and identifying broadcast schedule times, channels and titles." (FF 163-164).

Complainants argued that "schedule information" is used in two contexts in claim 18, and only the second context, in which schedule information for the selected programs is stored, requires the inclusion of time, title, and channel for the selected programs. The administrative law judge rejects complainants' argument because pursuant to the plain language of independent claim 18, programs are selected from schedule information already in the storage means in the data processor. Hence, if the schedule information from which the selected programs are selected did not already include time, title, and channel, the process would not be able to store information identifying time, title and channel for the selected programs.

Based on the instrinsic evidence, the administrative law judge finds that the claimed phrase "program schedule information" in claim 18 requires that it includes the titles of programs, the scheduled broadcast times and the channels on which the programs are to be broadcast.

b. The language "storage means in a data processor"

Complainants argued that "storage means in a data processor" should be construed as the "directly addressable" or "main memory" of a data processor's processing unit. (CRRFF760). Complainants also argued that such memory, in addition to constituting the storage means of claim 18, should also be considered to be part of, and therefore within, a data processor. (CFF 305).

Respondents argued that "storage means" should be construed as memory that includes a program list buffer, screen buffer and a user pre-configured channel buffer (containing a list of user-selected channels), user pre-configured theme buffer (containing a list of user-selected themes), and user pre-configured prime time buffer (containing a user selected time range). (PPost at 64, S-A Post at 61, EPost at 58). Respondents also argued that "storage means in a data processor" should be construed as meaning a "storage means in a central processing unit (CPU)" (PPost at 72), i.e., a memory internal to the CPU (S-A at 87), such that the five buffers constituting the storage means are within the CPU (EPost at 65). The staff argued that evidence presented at the hearing established that the claim term "data processor" refers to a CPU and that the meaning of the phrase "in a data processor" means that the storage means must be within, and not merely connected to, the data processor. (SPost at 13-17).

The administrative law judge finds that the record establishes that the claimed term "storage means" does not have a clear meaning to one of ordinary skill in the art. However, he finds, based on the specification of the '121 patent and the re-examination history, that "storage means" should be interpreted as including at least five buffers that are disclosed in the '121 patent as constituting the "storage means": viz., the "program list buffer," "theme buffer,"

"screen buffer," "channel buffer," and "prime time buffer."

The specification defines the "storage means" as comprising the "program list buffer," "theme buffer," "screen buffer," "channel buffer," and "prime time buffer." Thus it recites: "[p]rogram list buffer 303, screen buffer 353, and the other buffers discussed above." (FF 168). This portion of the specification refers to FIG. 8, which is a flow chart of software used with the systems shown in FIGs. 3 and 4. FIGs. 3 and 4 are block diagrams of receiver and television receiver control systems that are to be used in conjunction with the systems to be used to broadcast program schedule information depicted in FIGs. 1 and 2 and are the only systems implementing the invention of the '121 patent disclosed in the '121 patent (col. 5, lns. 64-66, col. 6, lns. 1-14). Moreover, the administrative law judge finds the binding nature of this definition is reinforced by the '121 patent's reexamination proceeding which demonstrates that the language added to the specification was necessary to obtain the allowance of claim 18.

In a Proposed Amendment attached to a January 6, 1993, Reexamination Interview Summary Form, Young added the language "storage means comprising an electronic memory" to system claims 1, 12, 14, 15, 39, 42, 51, 52 and 54, and the language "electronic memory associated with a data processor" to process claims 18, 33, 34, 36, and 38 in an attempt to overcome the rejection. (FF 129). However, the phrase "comprising an electronic memory" was subsequently omitted in the February 16, 1993 Proposed Supplemental Amendment After Final. (FF 134).

In a Proposed Supplemental Amendment After Final, faxed on February 23, 1993, Young attempted to find support in the specification that "electronic memory" could comprise the

claimed "storage means" (FF 142):

> A group of claims have been amended to clarify that the schedule information is provided to a storage means (in some claims recited as an electronic memory in the data processor), the data processor combines user selection criteria, and programs meeting the combined criteria are then selected from the schedule information in the storage means. Support of these limitations can be found in a number of locations in the patent, including at column 8, lines 23 et. seq., and at column 17, lines 33 et seq. It is believed inherent and implicit that the list operations described in column 17 are performed on information in an electronic memory.

The Examiner in a Reexamination Interview Summary Form, in reference to interviews that took place on February 19 and 24, 1993, "expressed concerns that the term 'electronic memory' and the recitations that the schedule data is stored and retrieved from such a memory did not appear to have clear support in the disclosure." (FF 143).

In a February 26, 1993 Supplemental Amendment After Final, Young attempted to overcome the Examiner's rejections with three amendments to the '121 patent's specification: (1) changing from "A memory" at column 7, line 47 to "An electronic memory" (2) amending column 17, line 38 to specify that the "program listing" is stored in "program list buffer 303;" and (3) amending column 17, line 49 to read, "Program list buffer 303, screen buffer 353, and the other buffers discussed above are located within an electronic memory coupled to the data processor, such as electronic memory 111." (FF 144). Young explained the reason for these proposed amendments to the specification as follows:

> As suggested by the Examiner, various minor amendments have been made to the specification to make explicit various aspects of the invention that were implicit but not totally explicit in the original specification. At column 7, language was added to make explicit the fact that the memory employed by the data processor is an electronic memory. This is believed not to be new matter because it is inherent and implicit in the original specification that in the disclosed embodiment the memory used by the data processor is electronic (as opposed to human, for

example).

* * * *

> In column 17 language was added to make explicit the facts that program listing 325 is stored in program list buffer 303, and that the various buffers are within electronic memory coupled to the data processor. This is believed not to be new matter because at column 16, lines 45 et. seq., it is stated that the CPU stores the program data in program list buffer 303, and because it is inherent and implicit in the original specification that in the disclosed embodiment the various buffers manipulated by the data processor must be in the electronic memory, or the data processor could not do the recited functions.

(FF 144).

The Examiner in a Office Action dated March 26, 1993 rejected Young's attempt to amend the specification so as to disclose an "electronic memory," stating (FF 153):

> In Column 7, line 47, 'A memory' has been changed to - - an electronic memory - - . This amendment is considered to introduce new matter because: a) it is not clear from the disclosure as originally filed what kind of memories are included or excluded by the term "electronic memories" (i.e. RAM, disc, tape, storage tubes, etc. . .); and b) it appears to suggest that said memory is now intended to be limited only to memories of some certain type (i.e. electronic) while the disclosure as originally filed appears to have recited a generic memory (i.e. inclusive of all types).

Accordingly, the Examiner found that "[c]laims 1-12, 14, 15, 18-31, 33, 34, 36, 38, 54-56, and 64-67 recited that the schedule information is stored in an 'electronic memory'. Such recitations do not appear to be supported by the specification as originally filed" and thus he rejected those claims. However, the Examiner stated that if this deficiency in the claim language were remedied, the claims at issue would be patentable. (FF 154).

Young next attempted to overcome this rejection in an amendment dated April 6, 1993 by again amending the claims to delete "comprising an electronic memory" or "electronic memory," and adding the phrase "storage means." (FF 156). Furthermore, Young proposed amending the

specification to recite "[p]rogram list buffer 303, screen buffer 353, and the other buffers discussed above are located within a data storage device coupled to the data processor." Id. Young explained this proposed amendment as follows,

> Applicant has amended the specification as requested by the Examiner, and has amended the claims to no longer refer to an electronic memory. It is respectfully submitted that the original specification fully supports the claims and that the objection to the specification and the § 112 rejection of claims is therefore overcome.

(FF 157). Applicant Young again, however, failed to describe the scope of the pertinent claim term "storage means."

In a Reexamination Interview Summary form regarding a telephonic interview held on April 19, 1993, the Examiner stated that "[a]pplicant agreed to change the last two lines in the sixth full paragraph of column 17 so as to avoid the issue of the new matter" [The last two lines was a reference to the following: "[p]rogram list buffer 303, screen buffer 353, and the other buffers discussed above are located within a data storage device coupled to the data processor."] (FF 158).

The next day, Young submitted a Supplemental Amendment dated April 20, 1993 that amended the specification to change "data storage device coupled to a data processor" to "data storage means" and to define explicitly that they comprise the five recited buffers. (FF 159, 160). Young's remarks explain his motivation for this supplemental amendment to the specification: "During the telephone conversation of April 19, 1993, Applicant . . . agreed to change the amendment to column 17 of the specification to simply refer to a data storage means." (FF 160). Furthermore, the Examiner stated in the April 19, 1993 Reexamination Interview Summary Form that: "[a]pplicant agreed to change the last two lines in the sixth full paragraph of column 17 so

as to avoid the issue of new matter." (FF 158). This amendment was accepted and appears in the Reexamination Certificate at column 2, lines 38-52. (FF 162). The Examiner then, on June 2, 1993, issued a Notice of Intent to Issue Reexamination Certificate. (FF 163).

Accordingly, in light of the specification and the prosecution history, the administrative law judge finds that the "storage means" of claim 18 is composed of at least the following buffers: the program list buffer, the screen buffer, the channel buffer, the theme buffer, and the prime time buffer.

The administrative law judge further finds based on the intrinsic evidence that the claimed phrase "storage means in a data processor" refers to a storage means within a CPU. Thus, the ordinary meaning of the term "in" when used to connote the location of an object "in" another object is "within." In In the Matter of Certain Digital Satellite Sys. (DSS) Receivers & Components Thereof, Inv. No. 337-TA-392, USITC Pub. 3418. Initial Determination, (Oct. 20, 1997), this administrative law judge construed the claim language "a predetermined signal in a television program transmission." Id. at 248. Based in part on dictionary definitions of the term "in," he concluded that the ordinary meaning of "'a predetermined signal in a television program transmission' requires a 'predetermined signal' that is located or positioned within an electronic transmission" Id. Likewise, it is found that the plain meaning of the phrase "storage means in a data processor" indicates that the "storage means" must be "within" the CPU.

In addition the administrative law judge finds the abstract of the '121 patent, which supplies relevant evidence for claim interpretation,[6] correlates the claim limitation "data

[6] See, e.g., Hill-Rom Co., Inc. v. Kinetic Concepts, Inc., 209 F.3d 1337, 1341, n (Fed. Cir. 2000).

processor" with "CPU 110" four times. Thus the front page of the patent has a diagram identifying the "CPU" as "110" (CX-1). The abstract then states:

> A data processor (110) is connected to receive the schedule information . . . user remote control transmitter 116-remote receiver (118) combination supplies user selection inputs to the data processor (110). The data processor (110) selects programs from the schedule information based on the user inputs. The schedule information for the selected programs is stored in a memory (111), and is used by the data processor (110) to control a programmable TV tuner (132).

Id. The prosecution history of the '121 patent further supports the finding that the claimed storage means is within a CPU. When Young first attempted, in a proposed amendment attached to a Reexamination Interview Summary Form concerning a telephonic interview on January 6, 1993, to add language to the first occurrence of "a data processor" in claim 18, which language was the precursor of "storage means in," he did so by adding the language "electronic memory associated with a data processor." (FF 129). On the face of this proposed amendment to claim 18, hand-written brackets were placed around the words "associated with" and the word "in" was hand-written next to the end of that line of text. Id. This change was incorporated into Young's next Proposed Amendment faxed on January 21, 1993 which read "electronic memory in" a data processor. (FF 130). Thus, the Examiner did not allow Young to claim an electronic memory that was "associated with," but not "in," a data processor.

Also on two separate occasions, the Examiner rejected Young's attempts to amend the specification to state that the buffers discussed at column 17, lines 38-49, are located within some form of storage device coupled to, rather than in, the data processor/CPU. First, in a February 26, 1993 supplemental amendment Young attempted to amend column 17, line 49 to read, "Program list buffer 303, screen buffer 353, and the other buffers discussed above are

located within an electronic memory coupled to the data processor, such a electronic memory 111." (FF 144). Young argued that this amendment made explicit various aspects of the invention, and the changes to the specification were not "new matter because at column 16, lines 45 et seq., it is stated that the CPU stores the program data in program list buffer 303." (FF 144). The Examiner, in an Office Action dated March 26, 1993, disagreed and rejected this amendment as "new matter." (FF 152). The Examiner's explanation as to why he considered this new matter was cut-off in the document. (FF 153).

A subsequent amendment dated April 6, 1993 stated, "Program list buffer 303, screen 353, and the other buffers discussed above are located within a data storage device coupled to the data processor." (FF 156, 157). The Examiner, however, in a Reexamination Interview Summary form regarding a telephonic interview held on April 19, 1993, rejected this amendment because he found that the language "are located within a data storage device coupled to the data processor" constituted new matter. (FF 158). In Young's next amendment to the specification, dated April 20, 1993, Young changed "data storage device coupled to a data processor" to "data storage means," as he had agreed he would in the April 19, 1993, "telephone conversation" with the Examiner. (FF 159, 160). This amendment was accepted, and the claims were allowed. (FF 160, 161). Hence, the administrative law judge finds that the Examiner refused to allow Young to amend the specification to place the buffers that comprise the storage means outside of the data processor/CPU.

Complainants argued that if "data processor" is interpreted to mean a CPU without any associated memory, such an interpretation would render the '121 patent invalid for lack of an enabling disclosure and therefore such an interpretation should be avoided. The basis for

complainants' argument that interpreting "data processor" as a CPU would invalidate the '121 patent is that the CPU disclosed as part of the preferred enablement of the '121 invention using a Little Board/186 Microcomputer does not have sufficient capacity in its internal memory to store the volume of data that would be required to be stored by the claims in issue. (See, e.g., CRPost at 62-65). Neither respondents nor the staff dispute that the Little Board/186 Microcomputer would be incapable of containing the data required to be held by the storage means in the claim 18 invention.

The '121 patent states, "[t]he systems shown in FIGS. 1-4 are preferably implemented with the commercially available subsystems shown in the following table." (col. 21, lns. 21-22). Among the "commercially available subsystems" so identified is the "Little Board/186 Microcomputer," which is the subsystem identified as being the preferred method of implementing system control units 106 (of Fig. 3) and 180 (of Fig. 4) (col. 21, lns. 30-31). System control units 106 and 180 each are depicted in FIGs. 3 and 4, respectively, as a block containing, inter alia, another block representing a CPU. The Little Board/186 Microcomputer has an integrated 80186 CPU and has either 128K or 512K of RAM. (Tr. at 3740-41; CX-3452). Respondents' expert, Rhyne, agreed, with respect to the Little Board/186 Microcomputer and after examining the Little Board's specification sheet (CX 3542), that it would be impossible to store the data required to be held in the storage means available on the CPU. (Tr. at 3742). However, complainants made no allegation before the administrative law judge that the Examiner, either during the original prosecution or during the extensive reexamination proceedings (FF 92-168) was given access or made aware of the Little Board's specification sheet.

Furthermore, although the specification of the '121 patent identifies the Little Board/186 Microcomputer as the preferred device to enable system control units 106 and 180, the specification does not state that the Little Board device is the only device capable of being used to implement the control system units. Complainants claimed that no CPU, as of 1985, was capable of storing the information on its internal registers that claim 18 required to be stored on the storage means.[7] In support of this argument, complainants relied upon the testimony of their expert, Faillace, and that of respondents' experts, Grimes and Rhyne.

Faillace testified that "[t]he most expensive microprocessor you could get in 1985 had in its internal registers that were available for storing things, about two dozen bytes of storage," and that this would be inadequate to hold the information required to be held in claim 18's storage means. (Tr. at 1208-10; 5624-25). Faillace also testified as microcomputers existed in 1985 they would be unable to hold the information required to be held by claim 18's storage means (Tr. at 1219-20) and that one in the ordinary skill of the art as of 1985 would not have interpreted the '121 patent to be referring to the internal registers of a CPU because such an interpretation would not have read on the preferred embodiment. (Tr. at 1225). Rhyne testified that he was unaware of a CPU with sufficient memory within itself to meet the storage requirements, but testified that if such a CPU existed it would have read on claim 18. (Tr. at 3785). In fact, both of respondents' expert witnesses, Grimes and Rhyne, were unable to identify any CPU that existed, as of 1985, that would have had sufficient memory internally to hold the data required to be held by the storage means of the claims in question. (Tr. at 3784-85; 4343-49).

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[7] Complainants, in contrast to the argument involving the "Little Board/186 Microcompter" argued that the asserted claims should not be limited to analog broadcasts or an analog tuning process. See infra.

Under Talbert Fuel Systems Patents Co. v. Unocal Corp., 275 F.3d 1371 (Fed. Cir. 2002), it is complainants' burden to show that a proferred construction would render the patent invalid for lack of an enabling disclosure. In Talbert the federal circuit affirmed a district court's construction of a patent claim relating to a "gasoline having a boiling point range of 121-345°F" in which the lower court interpreted the claim "as limited to gasolines having a final boiling point of 345°F, and excluding gasolines having a higher final boiling point," despite the plaintiff's claim that the lower court's construction was "incorrect because it was inoperable." Id. at 1374-76. In rejecting the plaintiff's argument, the federal circuit observed that, "while it agreed that a construction that renders the claimed invention inoperable should be viewed with extreme skepticism," the plaintiff "did not demonstrate inoperability or provide any basis for judicially interpreting the claim to adjust the temperature range that [the plaintiff] stat[ed was] the inoperable limitation." The administrative law judge finds that complainants have not met their burden in establishing that the invention disclosed in claim 18 would be inoperable if the data processor were interpreted to be a CPU.

In Genentech, Inc. v. Novo Nordisk, 108 F.3d 1361 (Fed. Cir. 1997), the Federal Circuit observed that "[t]o be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" Id. at 1365. The court further noted that "[p]atent protection is granted in return for an enabling disclosure of invention, not for vague intimations of general ideas that may or may not be workable." Id. at 1366.[8]

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[8] In Genetech, the claimed process involved "cleavable fusion expression." The Court, in finding a lack of enablement, stated (108 F.3d at 1365):

There is no question that the specification for the '121 patent is more than a "vague intimation[] of general ideas that may or may not work." The only argument that was raised concerning the enablement of the '121 patent was that there was no CPU in 1985 that was capable of performing all the data storage functions of the data processor of claim 18. While Rhyne and Grimes testified that they were unaware of any microcomputer existing in 1985 that had sufficient internal memory to satisfy the storage requirements of claim 18, there is no indication that either one made any attempt to locate such a CPU. Such an omission is determinative, because both Grimes and Rhyne were respondents' witnesses, and respondents were not challenging the validity of their proposed construction. It was complainants' burden to ascertain whether or not there were such CPUs available in 1985.

Complainants' sole remaining evidence in support of their argument is the testimony of Faillace, who made a conclusory statement that there were no such CPUs available in 1985. Faillace did not detail how he had determined that no such CPU had been available in 1985 nor did he identify what CPUs were available in 1985 and that any specific microcomputer was

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> There is no dispute that the portion of the specification chiefly relied upon by Genentech and by the district court, column 7, lines 29-59 [for enablement], does not describe in any detail whatsoever how to make hGH using cleavable fusion expression. For example, no reaction conditions for the steps needed to produce hGH are provided; no description of any specific cleavable conjugate protein appears. The relevant portion of the specification merely describes three (or perhaps four) applications for which cleavable fusion expression is <u>generally</u> well-suited and then names an enzyme that might be used as a cleavage agent (trypsin), along with sites at which it cleaves ("arg- arg or lys-lys, etc."). Thus, the specification does not describe a specific material to be cleaved or any reaction conditions under which cleavable fusion expression would work.

(Emphasis in the original) (footnote omitted).

inadequate. An expert's opinion on the ultimate legal issue of enablement must be supported by something more than a conclusory statement. See In re Buchner, 929 F.2d 660, 661, 18 U.S.P.Q.2d 1331, 1332 (Fed. Cir. 1991). Thus the administrative law judge rejects complainants' argument that construing "data processor" to be "CPU" would render the '121 patent invalid on account of a lack of an enabling disclosure.

c. The language "supplying user program selection criteria to the data processor, said user program selection criteria comprising a plurality of independent user chosen program selection criteria and at least one program choice, the data processor combining said user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in said storage means in the data processor"

The parties disputed the proper interpretation of the terms "said selection criteria" and "combining" as used in the above portion of claim 18. Complainants argued that the "said user selection criteria" must include a "program choice" and are not limited to the criteria of theme, channels, and prime time. (CPost at 52). Respondents and the staff argued that "said user selection criteria" do not include a "program choice" and are limited to the criteria of theme, prime time and channels. (RFF 789, SPost at 11).

The parties also disputed whether the term "combining" as used in claim 18, requires the data processor to employ logical "AND" combining of the selection criteria, or whether the data processor can employ logical "OR" combining of the selection criteria instead of logical "AND" combining. Complainants argued that the data processor could employ just logical "OR" combining, such that the data processor would use the combined "user selection criteria" to select those programs that satisfied any of the user selection criteria. (CPost at 59-60). Respondents and the staff argued that the data processor must employ logical "AND" combining, such that the

data processor, using the combined user selection criteria, would select only those programs that satisfied all of the combined selection criteria. (RFF 854; PPost at 82-83).

Finally, complainants argued that the combining step could be performed through multiple, sequential searches. (CRRFF 817.3). Respondents and the staff argued that the combining step had to be performed prior to any search by the data processor. (RFF 817).

Accordingly, there are four areas of dispute relating to the language: (1) whether a "program choice" is part of the "said user selection criteria" combined by the data processor, (2) whether the "said user selection criteria" combined by the data processor are limited to the criteria of theme, prime time, and channels, (3) whether "combining," as used in claim 18, requires the use of logical "AND" combining of the selection criteria or whether it can mean just the use of logical "OR" combining, and (4) whether the combining step could be performed through multiple sequential searches or has to be performed prior to any search. These four issues will be addressed ad seriatim.

i. Whether a "program choice" is part of the "said user selection criteria" combined by the data processor

The above portion of claim 18 mentions criteria in three contexts, viz., (1) "user program selection criteria," which is supplied to the data processor, (2) "independent user chosen program selection criteria," which, in part, composes the "user program selection criteria," and (3) "user selection criteria," which is "combined" by the data processor. In addition, the phrase "user selection criteria" is referred to as "said user selection criteria," but there is no preceding use of the term "user selection criteria." In fact, claim 18 only uses criteria in connection with two terms before reciting "said user selection criteria," viz., "user program selection criteria," and

"independent user chosen program selection criteria." Therefore, the administrative law judge finds that the plain language of the claim indicates that "said user selection criteria" is referring to one of those two terms. Referring to the plain language of claim 18, if "said user selection criteria" were interpreted to refer to "user program selection criteria," "said user selection criteria" would include a "program choice," as well as "independent user chosen program selection criteria." However, if "said user selection criteria" were interpreted to refer only to "user chosen program selection criteria," then this would exclude "program choice" from being a "said user selection criteria," since "independent user chosen program selection criteria" and "program choice" are separate and distinct components of "user program selection criteria." Thus, a finding must be made as to whether "said user program selection criteria" refers to "user program selection criteria" or "independent user chosen program selection criteria."

From the plain language of claim 18 and the specification, the administrative law judge finds that "said user selection criteria" refers to "independent user chosen program selection criteria," exclusive of the program choice. A "program choice" is the user's choice of a single television program at a specific date and time, as the term "choice" means "the voluntary and deliberate action of picking, singling out, or selecting from two or more that which is favored or superior.' (RX-7407 at ES-7033-000671). Thus, a "program choice" is the deliberate selection or singling out of a specific program, on a specific channel, at a specific time. The '121 patent's specification supports this construction. For example, the '121 patent's specification (and its original claims) never use the term "program choice." Said specification does, however, give examples of a user making a selection of a particular program, provided on a particular channel, at a particular time and date. (See, e.g., CX-1, at col. 16, lns. 18-23, col. 18, lns. 16-18). Hence

the administrative law judge finds that a "program choice" by the viewer, i.e., an actual selection of a particular program to watch by the user, would render any subsequent combining of "user selection criteria" so as to select those programs for viewing from the stored program schedule information, needless. The user does ultimately make a "program choice," but this is after the data processor has combined the "user selection criteria" and has selected those programs satisfying the combined criteria, so that the user makes his "program choice" from those programs selected by the data processor.

Furthermore, interpreting "said user selection criteria" to mean only "independent user chosen selection criteria" is consistent with the earlier use of the term "said user program selection criteria," in the claim, which refers to the antecedent "user program selection criteria," as the term "independent user chosen program selection criteria" has not yet occurred in the claim. Therefore, when the inventor wanted to refer to "user program selection criteria" he referred to it as "said user program selection criteria." Hence "said user selection criteria" must mean something other than "user program selection criteria."

The interpretation that "said user selection criteria" refers to "independent user chosen selection criteria" is consistent with the language of the specification which states:

> A search of the program listing 352 is made. The search is dependent on the status of the channel buffer, the theme buffer, the prime time buffer, and the direction of the search. If the page 356 is up, the search direction is forward starting from the list pointer. When the search satisfies the above criteria, the program listing is placed into the screen buffer 353. The search continues until the screen buffer is full 354 in which case the search is terminated. The status lines information is passed to the screen and displayed by the TV.
>
> * * *
>
> If an SEL key entry is detected at 370, the channel of the programmable tuner 132

> or 164 will be set to the channel listed at 375 at the current cursor position of the MG display.

(CX-1 at col. 17, ln. 38-col. 18., ln. 4). Therefore, as this excerpt from the specification makes clear, the data processor's search of the program schedule information does not take into account the viewer's selection of a particular program to view, because such a selection occurs after the search.

The interpretation of "said user selection criteria," as referring to "independent user chosen program selection criteria," is supported by the reexamination history, during which the applicant, in order to distinguish the use of combined selection criteria by the invention disclosed in the '121 patent over the selection of a single program, stated in the Amendment of November 23, 1992 that:

> Regarding the claimed 'combining of user selection criterion,' the Examiner has asserted that this reads on the plurality of data needed to identify a single program to be recorded (channel, time, etc.) This trivializing simplification, however, ignores the plain meaning and interpretation of the claims, which interpretation is also supported by the specification. Of course, programming information such as channel and time might be used as selection criteria, but, such as is recited in claim 18, the selection criteria must then be combined, the combined criteria must be used to select programs from schedule information, and then the schedule information for the selected programs is stored. These steps are clearly not met by the simple input and storage of programming data for a single program.

(FF 117) (Emphasis in original).

Said interpretation is also consistent with the applicant's February 26, 1993 Supplemental Amendment After Final:

> Combining User Selection Criteria and Selecting Programs

> Several of the present claims recite a process in which the user enters user program selection criteria, and the data processor combines the program selection criteria, searches through the stored schedule information, and creates and stores a display list of program listings that meet the combined criteria. This is disclosed, for example, at col. 17 lines 33 et seq. The user may then make program selection choices (which the Examiner has characterized as further program selection criteria) from this display. The data processor then stores information for these program selections, including information identifying program titles, in a reminder calendar list.
>
> Several claims recite the data processor combining a plurality of user selection criteria other than the program choices. This is different from the scenario that the Examiner has proposed would be inherent in Levine and similar art, namely that the user could enter a date as a first selection criteria, then be presented with a page of program listings, and then enter a program choice as a second selection criteria to be "combined" with the date selection criteria. As amended, several claims (such as claim 1) require the the [sic] data processor combine a plurality of selection criteria in addition to the program choice. The Examiner's proposed date entry does not meet the requirement of combined selection criteria even if entered as a series of page commands. Each page command simply establishes a new requirement that supersedes and replaces the previous requirement rather than being combined with it.

(FF 150) (emphasis in original omitted and emphasis added).

Based on the foregoing, as complainants' representations to the Examiner during the '121 patent's reexamination bear out, the administrative law judge finds that the "said user selection criteria" that is combined by the data processor does not include the "program choice," but instead consists of the "independent user chosen program selection criteria." Hence, a "program choice" is found not to be a "said user selection criteria" that is combined by the data processor.

ii. Whether the "said user selection criteria" combined by the data processor is limited to the criteria of theme, prime time and channels

The claimed language in issue uses the word "criteria." Criteria is the plural of criterion which is defined as "a standard on which a decision or judgement may be based." (Webster's Third New Int'l Dictionary (1993)). Thus the administrative law judge finds that "independent

user chosen program selection criteria," which is referred to by the "said program selection criteria," are two or more standards used for the selection of programs by the data processor. Further he finds that the plain language of "independent user chosen program selection criteria" indicates that it is the user who determines which criteria are to be so used and sets those criteria. As set forth in the specification:

> It is a further object of the invention to provide such a system in which the user supplied selection criteria can be combined by the system to make program selection.

(CX-1, col. 3, lns. 14-20).

> Because the system will search through a volume of schedule information to find programs meeting the viewer's selection criteria, the program selection is much easier and more rapid with the system of this invention than with manual selection.

(CX-1, col. 5, lns. 19-36). However, the administrative law judge finds that the intrinsic evidence, specifically, the specification and the re-examination proceeding, makes it clear that the term "independent user chosen program selection criteria" refers to the criteria of "theme" (i.e., selection of programs classified in a particular theme, e.g., "news" or "drama"), "channel" (i.e., selection of programs being broadcast on particular channels), and "prime time" (i.e., selection of programs being scheduled for broadcast at a particular time slot), the parameters of which can be pre-selected by the user. For example, the specification describes what is shown on the screen when the claimed invention is working in the "Master Guide (MG) mode:"

> At the bottom of the screen is a two line status display; showing the actual time and date, and whether any of the search restrictions (prime, theme, and channel) are activated.

(CX-1, col. 11, lns. 34-37 (emphasis added)).

The specification later describes how the invention, when working in the "Program Guide (PG) mode," conducts searches of the program listings according to the theme, prime time, and channel criteria as set by the user. (See CX-1, col. 12, ln. 12 - col. 15, ln. 17; and, in particular, col. 12, ln. 45 - col. 13, ln. 58; col 13, ln. 60 - col. 14, ln. 34; and col. 14, ln. 36 - col. 15, ln. 17). Also, the specification describes the invention as conducting searches only on the basis of theme, channel, and prime time:

> For advanced users, the Program Master can be set up to list only the types of programs (theme), only certain channels, and only programs within a certain time, such as Prime Time.

(CX-1, col. 12, lns. 13-16).[9]

Furthermore, during the re-examination of the '121 patent, the applicant repeatedly indicated that "selection criteria" were prime time, theme, and channel. For example, the applicant in his August 13, 1992 amendment distinguished his invention over a prior art system of Kram by noting that the prior art "cannot automatically combine two selection criteria such as 'weather' and 'channels 2, 5, and 11.'"). (FF 107). Thus, according to the applicant, the theme ("weather") and the list of desired channels ("2, 5, and 11") are each a single criterion. Later in the reexamination proceeding, the applicant reiterated that each of theme, channel, and prime time is an individual selection criterion. For example, in the Amendment of February 26, 1993, Young stated:

> The user selection criteria may be entered and activated independently under different categories (theme, channel, prime time) and are maintained by the data processor whether currently

[9] Indeed, in describing changes in the details of his invention, the applicant never suggested that other criteria could be used in conducting searches. (CX-1, col. 21, ln. 65 - col. 22, ln. 26).

> activated or not. This is disclosed, for example, from column 12 line 12 to column 15 line 17 (wherein it is stated that buttons can be pressed to independently activate the THEME, PRIME-TIME, and CHANNEL selection criteria) and from Column 18 line 11 to column 20 line 38. Furthermore, the selection criteria can be combined as alternatives (in a logical OR fashion), such as a list of acceptable channels or a list of acceptable themes.

(FF 148) (emphasis added).

Additionally, applicant Young in the August 10, 1992 Amendment, specifically argued that his invention provided for prime time, channel and theme criteria that could be independently activated and stored for use after being selected:

> Typical schedule selection criteria include accessible satellite symbols or channel numbers, viewing times, or programs themes (news, sports, comedy, etc.) The system stores the schedule selection criteria, and the various selection criteria may then be enabled or disabled by the user as desired. When schedule information is presented to the user, the data processor system automatically combines all the currently enabled schedule selection criteria and presents to the user only schedule information meeting the requirements of the combined criteria.

(FF 97). The applicant reaffirmed his position that his invention provided for prime time, channel and theme criteria that could be independently activated and stored for use after being selected in his February 26, 1993 Supplemental Amendment After Final:

> The user selection criteria may be entered and activated independently under different categories (theme, channel, prime time) and are maintained by the data processor whether currently activated or not. . . . Also the prior art does not allow complex entries such as theme or channel lists to be deactivated yet stored in memory.

(FF 150) (Emphasis in original).

As found, supra, the '121 patent describes a channel list as one of the three user selection criteria that can be stored in a buffer and independently activated. The administrative law judge finds the '121 prosecution history shows that a list of favorite channels is a single user selection

criterion, even though more than one channel is included in the list. In the Amendment of August 13, 1992, Young stated: "The system of Kram cannot automatically combine two selection criteria such as 'weather' and 'channels 2, 5, and 11' to provide the user a custom assembled list of programs meeting the combined criteria." (FF 107). By placing quotes around "weather" and "channels 2, 5, and 11" Young identified the two referenced selection criteria. If each channel were itself a selection criterion he would have referenced four criteria (channels 2, 5 and 11 and weather) not two (weather and channels).

Furthermore, as Young explicitly stated in the February 23, 1993 Proposed Supplemental Amendment After Final:

> III. Clarifying Manner of Combining: Independent claims 65 and 68 now require that at least some of the selection criteria are combined as alternatives. This is supported, for example, at column 14, in the discussion of the Channel Restriction selection criteria. Multiple channels may be specified, and the combined channel criterion is satisfied whenever any one of the selected individual channel criteria matches a listing.

(FF 141) (Emphasis added). Thus, as Young made explicit during the reexamination proceeding, even though more than one channel may be specified so as to restrict the data processor's search, the channels so specified constitute collectively only one selection criterion.

Based on the foregoing, in view of the plain language of claim 18, the specification of the '121 patent and its prosecution history, the administrative law judge finds that the "user program selection criteria" are the theme, channel and prime time criteria.

iii. Whether "combining," as used in claim 18, requires the use of logical "AND" combining of the selection criteria or whether it can mean just the use of logical "OR" combining

Claim 18 requires "combining said user program selection criteria." The term "combining," as used in claim 18, means the combining of "independent user chosen program

selection criteria" such that the programs selected in the subsequent search satisfy all of the selection criteria. The administrative law judge finds that the intrinsic evidence makes it clear that when combining the user selection criteria (theme, prime time and channel) such combining is logical "AND" (the selected programs must satisfy all of the combined criteria). However, the administrative law judge further finds that the intrinsic evidence establishes that the channel and theme selection criteria may be comprised of lists of multiple themes or channels, wherein the channels or themes composing these lists are combined in a logical "OR" manner, such that a selected programs must satisfy only one of the listed themes or one of listed channels.

Referring to the reexamination proceeding, the applicant, in his Amendment of August 21, 1993, specifically stated:

> Furthermore, even if the system of Kram could be used as a television guide controller for Kruger, the present system would not result. First, it is noted systems such as Kram cannot custom assemble a new page of data combining a plurality of listings earlier received. Systems such as Kram are only capable of associating related but distinct pages of data which must be viewed one at a time. The Examiner cited a "weather", then "city" operation in Kram. This type of operation is explained in more detail from col. 24, line 52 to col. 26, line 41. If the user selects a keyword topic "weather", the system constructs an index menu including each page having the keyword "weather". Each such page will also have a particular supplemental keyword which will be displayed on the index menu. The user then chooses one of the index entries to retrieve either a single page or a series (one at a time) of relational pages. The system of Kram cannot automatically combine two selection criteria such as "weather" and "channels 2, 5, and 11" to provide the user a custom assembled list of programs meeting the combined criteria. The system of Kram could only provide a first index in response to "weather", from which the user would have to select "channel 2" to receive that screen, and then select "channel 5" to receive that screen, and then select "channel 11" to receive that screen. Furthermore, as with Kato, Kram is very specific and does not remedy the general

deficiencies of Kruger.

(FF 107) (Emphasis added). From the wording of this statement the administrative law judge finds that the applicant was distinguishing his invention from prior art, since his invention could automatically create a list of programs that related to "weather" and were to scheduled to be broadcast on channel "2" or channel "5" or channel "11." Moreover, this statement demonstrates the logical "AND" combining between selection criteria (i.e., themes (weather) and channels (2, 5, and 11)) and the logical "OR" combining between the individual channels comprising the channels selection criterion (i.e., "2, 5, and 11"), that the invention was designed to accomplish. This is apparent by the steps a user of the Kram system of would need to carry out in order to duplicate the results of the '121 invention. Thus, the user would have to first select "weather," and then the user would have to select channel 2 to receive a listing of the programs relating to programs relating to weather on channel 2 from the index provided to him by the Kram system. The user would then need to select channel 5 to receive a listing of the programs relating to weather on channel 5. Finally, the user would need to select channel 11 to receive a listing of the programs relating to weather on channel 11. Upon completition of those steps, the user of the Kram system would have received listings of all of the programs relating to "weather" and occurring on channel 2 or channel 5 or channel 11. While this result duplicates the '121 invention's logical "AND" combining of the theme and channel selection criteria and its logical "OR" combining of the list of channels comprising the channel selection criterion, the administrative law judge finds that it does not duplicate the results of using only logical "OR" combining because the user would not have received a list of all the programs relating to weather (only those programs relating to weather and occurring on channels 2, 5, and 11) and would not

have received a listing of all the programs occurring on channels 2, 5, and 11 (only those programs relating to weather).

The administrative law judge finds that the claim 18 invention's requirement of logical "AND" combining is consistent with the teaching of the '121 patent itself. Thus, the '121 patent teaches the use of independent user chosen program selection criteria to reduce the number of scheduled programs to a subset which have certain characteristics of particular interest to the viewer. For example, the '121 patent teaches using "combined" criteria to select a particular subset of the available programs. (See, e.g., at col. 1, lns. 14-17; col. 3, ln. 14-17; col. 3, ln. 19-24; col. 5, ln. 19-27). To eliminate programs that the viewer is not interested in, programs containing the characteristics of each of the combined criteria are selected. As amended, the specification provides:

> A search of the program listing 352, stored in program list buffer 303, is made. The search is dependent on the status of the channel buffer, the theme butter, the prime time buffer, and the direction of search. If the page is down 357, the search direction will be backward 358 from the current list pointer. When the search satisfies the above criteria, the program listing from program list buffer 303 is placed into the screen buffer 353.

('121 Reexam. Certificate col. 2, ln. 38-52 amending original '121 patent, col. 17, lns. 38-49). As stated by complainants' expert, Faillace, the focus of the '121 patent was to help the average user use database techniques to take a vast sea of program schedule information, cut it down to size, and enable that user to focus just on those programs most likely to be of interest to him. (Failace, Tr. at 1150).

Also Young, in a February 26, 1993 Amendment, stated:

> The user selection criteria may be entered and activated

> independently under different categories (theme, channel, prime time) and are maintained by the data processor whether currently activated or not. This is disclosed, for example, from column 12 line 12 to column 15 line 17 (wherein it is stated that buttons can be pressed to independently activate the THEME, PRIME-TIME, and CHANNEL selection criteria) and from Column 18 line 11 to column 20 line 38. Furthermore, the selection criteria can be combined as alternatives (in a logical OR fashion), such as a list of acceptable channels or a list of acceptable themes.

(FF 150) (emphasis omitted from original and emphasis added). In this statement, Young only mentions logical "OR" combining as occurring within individual selection criterion (i.e., within the list of acceptable channels or the list of acceptable themes) and not occurring between the selection criteria.

Claim 67, which was added during the reexamination in an Amendment dated February 23, 1993, explicitly requires logical "OR" combining. However, Young used specific language to so claim logical "OR" combining. Thus, while claim 67 requires "supplying user program selection criteria to the data processor" (CX-1 at col. 12, lns. 22-23), it does not further define the "user program selection criteria" to include a plurality of "independent user chosen program selection criteria." Claim 67 later specifies, "wherein a group of said selection criteria are combined by the date processor as logical alternatives so that the combination of said group of selection criteria is satisfied whenever any one of said selection criteria of said group is met." (Id. at col. 12, lns. 30-34). Hence, claim 67 describes the process of setting up selection criteria, which are then combined as logical alternatives, before being used to select programs meeting the combined criteria.

This interpretation of claim 67 and its use of the language "logical alternatives" is consistent with the reexamination proceedings, where Young explained in a Proposed

Supplemental Amendment After Final faxed on February 23, 1993:

> Independent claims 65 and 68 [which became claims 64 and 67] now require that at least some of the selection criteria are combined as alternatives. This is supported, for example, at column 14, in the discussion of the Channel Restriction selection criteria. Multiple channels may be specified, and the combined of selection criteria by the present invention versus the 'combining' of paging commands or other selections by the cited prior art systems.

(FF 141). Therefore, as Young stated, multiple channels are combined as alternatives (i.e., in a logical "OR" manner) to form the "channel criteria." However, Young gave no indication that the "theme", "channel" and "prime time" criteria, each one defined by a separate buffer, could be combined together in a logical "OR" fashion.

Hence, in light of the plain language of the claim, the specification of the '121 patent, and complainants' own representations to the patent examiner during the '121 patent's re-examination proceedings, the "said user selection criteria" are to be combined in a logical "AND" fashion, while lists of channels and themes comprising the channel and theme criteria are to be combined in a logical "OR" manner.

iv. Whether the combining step could be performed through multiple sequential searches or has to be performed prior to any search

Complainants argued that the "combining" step can be performed through multiple sequential and hierarchal searches, as long as these searches each use independent criterion. Thus, it was argued that the limitation would be satisfied by a system that allows a user to select a selection criterion, such as a particular title or theme, causing the system to find the programs with the selected theme or title. Complainants argued that the system then would display the programs satisfying the first selection criterion, at which point the user could choose another selection criterion, causing the system to display only those programs satisfying both the first and

second selection criterion. (CRRFF 817.3). Respondents and the staff argued that for the "combining" step to be satisfied, the system had to combine the selection criteria and then conduct a single search instead of multiple searches. (RFF 817).

The parties are in agreement that the applicant disclaimed "dependent, hierarchal" entry of search data during the prosecution history. (CRRFF 817). Complainants argued, however, that the applicant did not disclaim "combining user selection criteria in a 'hierarchal' fashion when the user selection criteria are 'independent.'" (CRRFF 805.14). Thus, complainants contended that a system that allows a user to select one "independent" selection criterion and displays the programs meeting that criterion, then allows the user to select another "independent" selection criterion and then displays only those programs satisfying the first selection criterion and the second selection criterion would satisfy the "combining" limitation because it involves hierarchal entry of independent user selection criteria. (See CRRFF 805 et seq.).

The administrative law judge rejects complainants' argument. In support of their argument, complainants relied upon the testimony of their expert witness, Faillace, in an attempt to distinguish a "dependent hierarchial" search from a mere "hierarchial" search. (CRRFF 805.13). Faillace testified as follows:

> In the context of the teletext art, this refers to the combination of criteria for which the satisfaction of any one is entirely dependent on the satisfaction of another, such as, for example, when soccer programs can only be requested if sports programs have previously been requested.

(Faillace, Tr. at 5654). The administrative law judge finds that, Faillace's testimony fails to make any distinguishment between mere "hierarchal" searches at issue and "dependent, hierarchal" searches.

According to complainants, the ability of some of the accused systems to allow a user to select a criterion, conduct a search, display the search results and allow the user to choose a second selection criterion, and then conduct a search for programs meeting both selection criteria is somehow different than Faillace's sport programs/soccer example. However, in both systems the second selection criterion is "determined by and dependent upon the previous choice[]." For example, in Faillace's example, sports programs is selected as the first selection criterion, and soccer is selected as the second criterion, causing the system to select only those sports programs relating to soccer. If movies were chosen as the first selection criterion, and soccer were chosen as the second criterion, the system would find and display an entirely different list of results, i.e., movies relating to soccer. Similarly, with some of the accused devices, a user can, for example, select a particular theme, view a list of programs with that theme, and then select a particular date, causing the system to display programs of the selected theme scheduled to be broadcast on the selected date. The second criterion is completely dependent upon the first criterion, because if the user selects a different first selection criterion the search results will differ even though the user chose the same second selection criterion.

In a February 26, 1993 Amendment, Young clearly disclaimed hierarchal entry of data to distinguish his invention from prior art teletext devices:

> The user selection criteria may be entered and activated independently under different categories (theme, channel, prime time) and are maintained by the data processor whether currently activated or not. This is disclosed, for example, from column 12 line 12 to column 15 line 17 (wherein it is stated that buttons can be pressed independently activate the THEME, PRIME-TIME, and CHANNEL selection criteria) and from column 18 line 11 to column 20 line 38. . . . This is far different from even the cited teletext art, where search criteria are entered and combined in a dependent, hierarchical fashion. At each stage in the cited teletext art, the available search choices are determined by and dependent upon the

previous choices made. . . .

(FF 150) (Emphasis in original).

Thus, the administrative law judge finds that the selection criteria must be combined prior to any search.

d. The language "storing information identifying the selected programs, said stored information identifying broadcast schedule times, channels, and program titles"

Complainants argued that "storing" means to place in an apparatus in which information can be retained; that "information identifying" means data sufficient "to serve as a means of identification for;" and that "the selected programs" refers to the programs that were chosen by the data processor using the combined user program selection criteria. (CFF 503). It was argued that the language in issue requires information to be stored (i.e., placed or retained) in the system's memory, and that such information be sufficient to allow the system to distinguish the selected programs from the remaining programs so that the selected programs can be tuned in. Complainants further argued that such information can include, for example, an address or a pointer or a link to an address in memory for the specified data or some other type of information, such as program times and channels. (CPost at 69). Respondents argued that the language "storing information identifying the selected programs" refers to "storing times, titles, and channels for the programs that the user has selected. (RFF 875, 876).

The plain language of the claim clearly indicates that "information identifying the selected programs" consists of the broadcast schedule times, channels, and program titles of the selected programs, and that this information is stored after the data processor selects the programs on the basis of combined user selection criteria. The prosecution history is consistent

with this interpretation.

In the June 8, 1992 Office Action, the Examiner found that original claim 18, inter alia, of the '121 patent was subject to reexamination and rejected original claim 18 as being anticipated or rendered obvious in light of several pieces of prior art, including Yarbrough et al., U.S. Letters Patent 4, 305,101 (Yarbrough). (FF 94). In the August 10, 1992 Amendment, responsive to this Office Action, applicant Young, in an attempt to distinguish claim 18 from Yarbrough, made the following argument:

> Independent process claims 18 and 32-38 all recite the process steps of providing schedule information to a data processor, selecting programs from the schedule information based on user inputs, storing schedule information for the selected programs, and using the stored schedule information to tune a television to receive the selected programs.
>
> It should be noted that the term "schedule information", both as used in the present patent and as commonly understood, refers to a television schedule, i.e., a list of programs to be shown over a range of times, with at least program titles, program times, and, if for a plurality of channels, program channels. This usage is consistent with the dictionary meaning, wherein a schedule is defined as "a list of times of recurring events...; a timetable".

(FF 102).

Original claim 18 did not recite the "storing [of] schedule information for the selected programs," only the "storing [of] information identifying the selected programs." Therefore the applicant was clearly equating "information identifying the selected programs" with "schedule information," which is properly construed so as to include title. See supra. The applicant also makes clear that the "schedule information" of the selected programs is to be stored after the data processor has selected the programs, not before. Thus the Examiner, in the September 22, 1992 Office Action, again rejected the original claim 18, but this time as being anticipated by or

obvious in light of Levine, U.S. Letters Patent, 4,963,994 (Levine) either alone or in view of Monteath et al., U.S. Letters Patent 4, 329, 684 and Wright, U.K. published application 2,034, 995. (FF 109, 112). The Examiner made no mention of Yarbrough.

In a November 23, 1992 Amendment responsive to the Office Action of September 22, 1992, the applicant stated that

> These rejections are based on a failure to recognize the fundamental distinction between "schedule information" as used in, e.g., Claim 1 or "information identifying the selected programs" as used in, e.g. Claim 18, and the program data used in the prior art, i.e., sufficient data such as time, day and channel to program a VCR or television set.
>
> * * * *
>
> Additionally, Applicant notes that Levine stores only conventional programming data, not schedule information as presently claimed. As discussed in the previous Amendment, the storage of schedule information as opposed to mere programming data significantly enhances the user's ability to verify and later identify the selected programs, and also enables the data processor to perform additional functions, such as linking and tracking programs, i.e., allowing the user to review a list of programs selected for future viewing or taping by presenting a calendar as disclosed, rather than simple programming data for controlling a video recorder. Some of the Examiner's current remarks appear to recognize the distinction between these two types of information, but the relevance of this distinction to the analysis of the claim language was not explicitly discussed. Applicant respectfully submits that this distinction is an important one separating the claimed invention from the prior art, and is sufficient to distinguish the claimed invention from the prior art.

(FF 116) (Emphasis in original).

Young also represented that:

> Claim 18 further requires "storing information identifying the selected programs." It is respectfully submitted that data, channel and time data do not sufficiently identify the selected programs. Date, channel and time data identify time slots and channels without any identification of programs broadcast in the time slots on the channels. Again, the distinction between identifying selected programs and identifying only time slots and channels is critical for achieving many benefits"

> tracking programs that have been selected with the system, i.e., allowing the user to review a list of programs selected for future viewing or taping by presenting identifying information on the program, rather than just an indication of when recordings will be made; linking related programs with the schedule information; and, automatically updating the stored schedule information for the selected program when the schedule time for a previously selected program is changed, as described in the '121 patent. Because the prior art does not combine user selection criteria, use such combined user selection criteria to select programs meeting the combined user selection criteria in the data processor, or store information identifying the selected programs, the Levine, Wright and Monteath prior art fails to teach or suggest the subject matter of Claim 18 or its dependent claims 19-31.

(FF 118) (Emphasis in original). Therefore, again Young distinguished the prior art from claim 18 on the basis that "information identifying the selected programs" included the programs title.

In the January 5, 1993 Office Action the Examiner maintained his rejection of claim 18 stating, inter alia:

> 1) The examiner notes that applicant does not appear to dispute the receipt and display of "schedule information" in Levine [see lines 1-4 in the last paragraph on page 8 of the arguments filed 11/23/92]. Nor does applicant appear to dispute that a user may enter codes into the system of Levine, wherein said codes are obtained from the displayed "schedule information", such that the entered information directs the processor to control a video recorder to receive and record the selected programs [see the paragraph which starts on page 8 and extends to page 9 in the arguments filed 11/23/92].
>
> As disclosed, applicant's claimed invention also displays schedule information from which a user also selects the desired program to be recorded. The user then also enters data into the system which directs the processor to control a video recorder to receive and record the selected programs. Applicant's disclosed system differs from Levine in that the user inputs of applicant are used by the processor to actually access the stored information while the user inputs in Levine actually represent the stored information. The examiner maintains that the recitation that the processor is "configured to select programs from the schedule information based on user inputs" does not distinguish two systems. Specifically, the processors of both systems are directed to record selected programs based on user inputs [see applicant's arguments on page 9 and the first 7 lines of page 10].
>
> 2) In the first full paragraph on page 10 of the argument's [sic], applicant argues

> that Levine stores only "conventional programming data" and not "schedule information" as claimed. This argument seems only to be directed to terminology (i.e. labels) and appears to be inconsistent with applicant's discussion in the last paragraph on page 8 in which applicant has acknowledged thestored [sic] data to be schedule information [see lines 52-59 in column 2 of Levine].

(FF 123). Lines 1-4 of last paragraph on page 8 of the argument filed on November 23, 1992 read:

> Levine discloses a system which can prompt the user through the steps of programming the VCR and which in some embodiments can display schedule information on the television screen.

(FF 115) (Emphasis added).

Therefore the Examiner rejected applicant's attempt to distinguish Levine from claim 18, because by the applicant's own admission Levine could utilize schedule information, rendering the distinction between schedule information and programming data made with respect to Yarbrough irrelevant.

Applicant Young, next, in interviews with the Examiner and in submissions of proposed amendments for the Examiner's evaluation, attempted to distinguish claim 18 from the prior art by specifying an "electronic memory" for the storage means. See, supra. This attempt to define the "storage means" as an "electronic memory" ultimately failed. See, supra. While attempting to so define "storage means," applicant Young also, in the February 23, 1993 Proposed Supplemental Amendment, added the phrase "said stored information identifying broadcast schedule times, channels, and program titles" and explained that amendment accordingly:

> I. Clarifying Schedule Information: Independent claims 1, 12, 14-15, 18, 33-34, 36-38, and 54 have been amended, in addition to the earlier clarifications agreed upon by the Examiner, to further clarify that the schedule information stored for the selected programs identifies not only program channels and times, but also program titles. New claim 57 also contains this recitation. As previously noted,

prior art systems simply program the VCR with the channels and times for selected programs; information identifying the title was not stored.

(FF 141).

The phrase "said stored information identifying broadcast schedule times, channels, and program titles" was retained in a February 26, 1993 Supplemental Amendment After Final, as was the attempt to define storage means as an electronic memory. (FF 144 to 151). In a March 26, 1993 Office Action, the Examiner rejected claim 18 as modified, because of the attempt to define storage means as an "electronic memory." (FF 152 to 155). The Examiner did not object to the addition of the phrase "said stored information identifying broadcast schedule times, channels, and program titles." Id. In the April 6, 1993 Amendment, Young submitted claim 18 with language referring to an electronic memory removed, but still with the phrase "said stored information identifying broadcast schedule times, channels, and program titles." (FF 156, 157). Claim 18 as modified was ultimately approved for inclusion in the issuance of the reexamination certificate. (FF 158, 161, 162, 163, 164).

Therefore, the prosecution history and the plain language of the claim, clearly support the administrative law judge's interpretation of this language as meaning that the "information identifying the selected programs" consists of the broadcast schedule times, channels, and program titles of the selected programs, and that this information is stored after the data processor selects the programs on the basis of combined user selection criteria.

e. The language "and using the stored information to tune the television receiver to the selected programs"

Complainants argued that the language means the data processor must use some of the stored information about the selected programs to cause a programmable tuner for the television

receiver to tune in the selected programs. It was further argued that "tun[ing] the television receiver" means isolating a desired signal for a selected program from among a group of signals being received. (CPost at 74, 75).

Respondents argued that "tun[ing] the television receiver" requires "conventional tuning, i.e., the tuning to analog channels that was done by the analog television in 1985 and 1990." (RFF 958). It was also argued that "tuning the television receiver" excludes tuning a tuner that is external to the television set. (RFF 981).

There is nothing in the claim language, patent specification, or file history, to limit the "programmable tuner" to an analog or digital tuner or evinces any need or intent to limit the invention to analog tuning. There is no language in the claim that limits "tuning" to analog tuning or which excludes digital tuning. On the contrary, the only kind of tuning that the claims require is tuning to selected programs. The administrative law judge finds no language in the claims which defines or limits tuning to the selection of a frequency. Indeed, the express language of claim 18 states that tuning means "tun[ing] the television receiver to the selected programs."

The administrative law judge also finds no statement in the specification that tuning means selecting frequencies. Indeed, there is no reference at all in the patent specification to selecting a frequency or frequencies or to tuning to a frequency or frequencies and the '121 patent's specification does not expressly or implicitly require analog broadcasts or an analog tuning process. Respondents have failed to cite a single part of the specification that discusses

tuning to a frequency or equates tuning with selecting a frequency.[10] The administrative law judge finds that the only requirement ascribed by the specification to the invention's tuner is that it be "programmable." (CX-1, col. 4, lns. 46-48; col. 7, lns. 60-61; col. 8, lns. 48-56). A "programmable tuner" is a tuner "that is capable of programmatic control, as control via control signals, as opposed to control signals." (RFF 986). The specification clearly shows that the control signals controlling the programmable tuner are generated by the data processor. ('121 patent, col. 7, lns. 60-61; col. 8, lns. 35-40). Likewise the administrative law judge finds that the two places that specifically discuss tuning, state that the television receiver must be "tuned" to selected programs or "channels for selected programs," ('121 patent, col. 4, lns. 53-60; col. 11, lns. 60-65) without any indication of how the tuning is to be achieved. He also finds that the term "channel" has not been used in the specification or file history to refer to a band of frequencies. Rather, the '121 patent's specification repeatedly uses the term "channel" to mean "service provider." Equating "channels" with service providers is consistent with digital tuning

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[10] EchoStar has relied on IPPV Enterprises, LLC v. EchoStar Communications Corp., 106 F. Supp. 2d 595 (D.Del 2000) (IPPV 1) to import an "analog" limitation into claims asserted in this investigation. However, in a final decision from IPPV 1, the Delaware court concluded that the claims as construed literally covered both digital and analog television signals. (See 2002 U.S. Dist. LEXIS 5439 at 54 (D. Del. Mar. 27, 2002) (IPPV III)). The administrative law judge rejects the argument of EchoStar in a letter to the administrative law judge, dated April 25, 2002, that IPPV III has no effect on IPPV I because the court's IPPV III order, in which it ruled on various post-trial motions, stated that it did not affect its previous findings regarding a '942 patent. To the contrary, in upholding the jury verdict of literal infringement by EchoStar's digital broadcast signals, the Delaware court specifically pointed out that the construction the court had given the jury for the claim term "television program signal" was "based on the court's understanding . . . that such a construction would not exclude digital signals." (IPPV III at 56-57). The court also pointed out that it had instructed plaintiff's counsel that counsel was free to "argue literal" infringement to the jury because the court's "definition" of the term "television program signal" included "digital as well as analog television broadcast[s]." Id. at 55.

because the tuner would be used to find a particular provider not necessarily a particular frequency. The administrative law judge notes that the patent specification uses the word "channel" synonymously with service provider no fewer than 10 times, each underscored below:

> "In most metropolitan areas, a large variety of cable programming is available. Since a cable channel will provide its signal on different numbered channels in different areas, depending on which channels are otherwise unused, programming for the cable channels is disseminated on a national or regional basis by the name of the channel, rather than the particular channel number on which the signal is supplied, while the television set must be tuned by the channel number. In the San Francisco metropolitan area, for example, there are presently 15 different cable channels that are listed by name, not channel number. A viewer will often not remember the channel number on which a given cable service is furnished, especially if that service is only watched occasionally. U.S. Pat. No. 4,405,946, issued Sept. 20, 1983 to Knight, discloses a system for providing an on-screen display of channel numbers or an indication that a signal is coming from a recording device, but with no teaching or suggestion of displaying a cable channel by name rather than number."

(CX-1, col. 2, lns. 36-55).

The administrative law judge finds, consistent with the way "channel" is used throughout the specification ('121 patent, col. 2, lns. 36-35, col. 5, lns. 21-24, col. 4., lns. 13-18, col. 10, lns. 24-37), channel refers to a programming source typically identified by a number or a service name, such as Channel 2 or Channel 5 or HBO. Indeed, the '121 patent's specification, in the Summary of the Invention section equates channel selection with program selection ('121 patent, col. 3, lns. 21-24). In fact, the specification expressly disclaims that it is providing any novel teachings in the area of broadcast systems or processes. ('121 patent, col. 6, lns. 55-59, col. 7, lns. 24-30). Furthermore, the patent itself contemplated that program schedule information could be supplied to the system of the invention in digital form over the internet, from internet service providers such as Compuserve ('121 patent, col. 21, ln. 65-col. 22, ln. 9). Such information

could not have been used by the patented system unless the techniques for isolating the desired digital data was known in the art.

Similarly, the administrative law judge rejects respondents' arguments that the tuner being tuned to the selected channel must be within the television receiver. Figures 3, 4a and 4b, the only depictions of embodiments of the '121 invention, clearly depict the programmable tuner as being separate (i.e., outside) of the television receiver.

2. Other Claims In Issue

Remaining claims 19-24, 26-28, 31-33, 36, 42, 43, 48-51, 54, 57-61 and 66 in issue are set forth in the section titled "ADDITIONAL FINDINGS." See FF 34 to 58. There follows interpretation of disputed language of those claims.

a. Independent Claim 32

Independent claim 32 reads:

> A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to a data processor, supplying user program selection criteria to the data processor, using the user selection criteria to select programs for viewing from the program schedule information in the data processor, storing information identifying the selected programs, using the stored information to tune the television receiver to the selected programs, using the television receiver as a display by the data processor for presenting messages to the user during the process, including time remaining for a program being broadcast.

(FF 44). Much of the language in claim 32 is found in claim 18; and hence the interpretation of that language controls the interpretation of the same language in claim 32. However, based on the plain language of claim 32, the specification of the '121 patent and the reexamination proceedings, and the arguments of the parties, the following claimed language is in issue for interpretation: "program schedule information," "user program selection criteria," "supplying

program schedule information to a data processor," and "during the process."

i. The language "program schedule information"

Claim 32 recites, after the preamble, "comprises supplying program schedule information to the data processor." In issue is the meaning of "program schedule information." Complainants argued that "program schedule information" or "schedule information" should be given its ordinary meaning, i.e., "information concerning scheduled television programs." (CFF 282). In support of their argument complainants asserted that the specification does not, explicitly or implicitly, require that "schedule information" or "program schedule information" include the time, channel or title of a program (CFF 287(a)) and that the specification's use of the terms is consistent with the meaning urged by complainants. (CFF 287(b)). Each of respondents and the staff argued that the phrase should be interpreted in the same way as the identical phrase was interpreted in claim 18 and therefore that the term includes the titles of programs, as well as the scheduled broadcast time, and the channels.

The language of claim 32, with respect to the term "program schedule information," differs significantly from the language of claim 18. Thus, while claim 18 contains the phrase "said stored information identifying broadcast schedule times, channels and program titles," which the administrative law judge found applicant specifically included in claim 18 due to rejections of claim 18 by the Examiner, claim 32 does not have said phrase. See supra. Moreover, the Examiner in finding that claim 32 avoided the art of record did not rely on the fact that the art of record does not show or suggest a process for controlling the presentation of broadcast programs to a television receiver which comprises storing information identifying the selected programs and identifying broadcast schedule times, channels and titles as he did for

claim 18. As was found, supra, it was not until February 26, 1993 that applicant amended claim 18 during reexamination to include "titles" and represented that "[s]everal claims have been amended to specify the storage of program title for the selected programs and are thus believed to be allowable." (FF 150). However claim 32 in issue was never amended in the reexamination proceeding.

In the reexamination proceedings original claim 32 was rejected over certain prior art in the Office Action of June 8, 1992. (FF 94). However in the next Office Action of September 22, 1992, the Examiner specifically found that claim 32, which does not recite "titles," avoided the art of record in that it at least recites displaying data indicating the time remaining in a broadcast signal and that such a display is not taught or suggested by the art of record. (FF 112). Moreover in the next Office Action of January 5, 1993, the Examiner again stated that claim 32 avoids the art of record "as was set forth in paragraph 9 of paper #12 [viz., the Office Action of September 22, 1992] (FF 128). Also in the supplemental notice of intent to issue the reexamination certificate, mailed August 26, 1993, titles were absent from the specific reasons the Examiner found claim 32 avoided the art of record. See FF 164. The Examiner never required that claim 32 include titles to avoid the art of record. While respondents relied on arguments of applicant made in a November 23, 1992 amendment, the Examiner in his Office Action of September 22, 1992 had already determined that claim 32 avoided the art of record. Hence the administrative law judge rejects the argument of respondents and the staff that "program schedule information" of claim 32 must include broadcast schedule times, channels and program titles.

As to how "program schedule information" in claim 32 should be interpreted, the specification states:

> This invention relates to an electronic system and a process which allows the user to make broadcast selection using selection criteria that can be combined in different ways. Most especially, the invention relates to such an electronic system and process which receives the schedule information in broadcast form and then processes the schedule information to make the selections.

(col. 1, lns. 11-21) (Emphasis added). Therefore, "schedule information," pursuant to the specification, is the information that is used by the system or process to select programs satisfying the selection criteria chosen by the user. As already found, see supra, the selection criteria are prime time, channels, and theme. Hence the "program information" must at least include: information concerning a program's time of scheduled broadcast to satisfy the prime time criterion, the channel on which it is to be broadcast to satisfy the channels criterion, and the theme of the program to satisfy the theme criterion. This is the only information which is required for the system or process to be able to conduct a search based on the selection criteria.

This finding is consistent with the following portion of the specification:

> The process of this invention includes the following steps. Program schedule information is supplied to a data processor. User program selection criteria are supplied to the data processor. The user selection criteria are used to select programs for viewing from program schedule information in the data processor. The stored information is used to tune the television receiver to the selected programs.

(col. 4, lns. 53-60). Thus, in this section of the specification, "program schedule information" must be sufficient so as to allow the system or process to search the "program schedule information" and select those programs satisfying the "user selection criteria." Therefore according to said section, the "program schedule information" must consist of information about a program's broadcast time, the channel on which it is to be broadcast, and its theme.

Furthermore, in a subsequent portion of the specification, said portion under "Broadcast

Format," specifies that "[e]ach program listing is framed with the following information[:]" "[s]tart time," "[d]uration of program," "[c]hannel number," "[t]heme classification number," "[t]heme subclassification number," "[l]inking number (only for serial shows)," "[o]ptional expanded listing," "[e]nd of program," "[s]atellite symbol," "[s]atellite name," and "[e]ncrypted and any special broadcast indicators." (col. 20, ln. 65 - col. 21, ln. 15). Therefore, of the information that is to frame the program listing, most of it is related to either the program's time of broadcast ("[s]tart time," "[d]uration of program," and "[e]nd of program"), the program's theme ("[t]heme classification number" and "[t]heme subclassification number"), or the channel on which it is to be broadcast ("[c]hannel number," "[s]atellite symbol," and "[s]atellite name"). The remaining information which does not fall under any of three selection criteria is not transmitted for every program, but rather for only certain programs. The "[l]inking number' is "only for serial shows," while the "expanded listing" is "[o]ptional," and the "[e]ncrypted and any special broadcast indicators" are for those shows that are broadcast encrypted or deserving of a "special broadcast indicator[]." Therefore, all program listings are to be broadcast with information relating to the program's theme, time of broadcast, and the channel on which it is to be broadcast, while certain programs may contain additional information.

Based on the foregoing, the administrative law judge finds that "program schedule information", as used in claim 32, includes a program's theme information, the channel on which it is scheduled to be broadcast, the time when it is to be broadcast, and may, but does not have to, include other information relating to a program, such as the program's title.

ii. The language "user program selection criteria"

According to the plain language of claim 32, which differs from the language of claim 18,

in that claim 32 does not recite "independent user chosen program selection criteria" or "program choice," "user selection criteria" refers to "user program selection criteria."[11] Insofar as claim 32 calls for the "user selection criteria to select programs for viewing from the program schedule information in the data processor," where the only method disclosed in the specification for using "user selection criteria" to select programs is to combine theme, channel and prime time selection criteria, and search for programs that satisfy all of the combined criteria in a user program selection criteria see supra, "user program selection criteria" as used in claim 32 is found to be the "theme," "channel" and "prime time" selection criteria.

iii. The language "supplying program schedule information to the data processor"

The administrative law judge interprets "data processor" the same way he interpreted it in claim 18, viz., a CPU. See supra. The administrative law judge finds that the "program schedule information" must, as with the claim 18 invention, be stored inside the data schedule processor. Unlike claim 18 there is no explicit disclosure of a storage means in the data processor in claim 32. However claim 32 does recite that the "program schedule information" is "supplied to" the data processor, such that the "program schedule information" is "in the data processor." (col. 27, ln. 2). Therefore, the administrative law judge finds that claim 32 requires the "program schedule information" be supplied to and stored in the CPU.

iv. The language "during the process"

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[11] The "independent user chosen program selection criteria" of claim 18 is found to be identical to "user program selection criteria" of claim 32. Both sets of criteria consist of the program theme (theme), the scheduled time of the program's broadcast (prime time), and the channel on which it is to be broadcast (channels). Neither set includes a "program choice."

Claim 32 requires the television receiver be used "as a display by the data processor for presenting messages to the user during the process, including time remaining for a program being broadcast." Respondents argued that such messages had to be displayed "before the television set is tuned to a program that the CPU selected." (EPost at 114). This argument is based on the contention that the process in claim 32 ends when the television set is tuned to the program. However, the process in claim 32 includes "supplying program schedule information to a data processor." The claim does not indicate when this "supplying" begins or ends. Moreover, as the specification states, the program schedule information is repeatedly broadcast:

> The microcomputer 22 of FIGS. 1 and 2 is programmed to repeat transmissions of the program list for a number of times to allow for correction of uncorrectable errors at the receiver 90 or 160 (FIGS. 3 and 4).

(col. 17, lns. 5-9). Also, the data processor is sent new program schedule information to update the existing program schedule information:

> As each block of data is received, the data integrity is verified by error checking logic at 302. If no error exists, the received data is stored in the program list buffer 303, replacing the previous program list data.

(col. 16., lns. 60-63).

Therefore, based on the '121 patent's specification, the process in claim 32 does not have an "end," but rather it is always continuing. The administrative law judge finds that claim 32 does not require that the television receiver be used as a display before the selected program is tuned to.

b. Independent Claim 33

Independent claim 33 reads:

A process for controlling the presentation of broadcast programs to a television

> receiver, which comprises supplying program schedule information to storage means in a data processor, supplying user program selection criteria to the data processor, the data processor combining said user program selection criteria with automatic criteria according to at least one of a current time and a current channel, using the combination of user program selection criteria and automatic criteria to select programs for viewing from the program schedule information in said storage means in the data processor, storing information identifying the selected programs, using the stored information to tune the television receiver to the selected programs, turning on a broadcast program recording device for a selected broadcast program, recording the selected broadcast program, and supplying a different program broadcast signal to the television receiver than the broadcast signal for the selected program supplied to the program recording device.

(FF 45). Much of the language in claim 33 is found in claim 18 and hence, the interpretation of that language controls the interpretation of the same language in claim 33. Moreover, the parties are in agreement that the plain meaning of the phrase "supplying a different program broadcast signal to the television receiver than the broadcast signal data processor" is that while one signal for a selected program is being supplied to a recording device, such as a VCR, the data processor causes a different signal to be supplied to the television set. (Faillace, Tr. at 1499-00). This feature is referred to in the industry as the "watch one/record another" capability. (Faillace, Tr. at 1500). The parties are also in agreement that the '121 specification does not define said phrase in a manner that is unconventional or inconsistent with the ordinary meaning of these terms. (CFF 741).

The parties further do not dispute that "automatic criteria" are criteria provided by the system and not the user. (CFF 700). Furthermore, as indicated by the plain claim language "the data processor combining said user selection criteria with automatic criteria according to at least one of a current time period and a current channel," the parties are in agreement that the system must supply certain program information for a given time interval. This program information

must include at least the current time or the program information for a set of channels, which includes the currently tuned channel. (CFF 702). However, the phrase "turning on" is in dispute.

i. The language "turning on"

Complainants contend that this limitation means that the system causes a "program recording device" to begin recording and to in fact record the selected program, but does not mean that the system has to cause the provision of electricity to the "recording device." (CPost at 109). Respondents and the staff argued that the limitation requires the system to turn on the recording device's power, so that it will be able to record the selected program. (SPost at 22).

The administrative law judge finds that the ordinary meaning of "turn on" requires that the system disclosed in claim 33 turn on the recording device's power so that it will be able to record the selected program. "Turn on" means "to activate or cause to flow, operate, or function by or as if by turning a control <turn the water on full> <turn on the power>." (Mirriam-Webster's Collegiate Dictionary Online available at http://www.m-w.com/) (Emphasis in original). Furthermore, one of the express objects of the '121 patent's invention was "to provide such a system and process in which the user is not required to leave the VCR powered on for unattended recording." (col. 3, lns. 66-68). Similarly,

> [i]n one form of this invention, the system is connected to the remote control facilities of a VCR to turn on its power, start the recording, and stop recording of programs on the VCR. The user therefore not required to leave the VCR powered on for unattended recording.

(col. 5, lns. 48-53). Pursuant to this objective, the preferred embodiment of the '121 patent's invention turns on the power to a connected VCR:

> Figure 4b is a block diagram of a modified form of the receiver 160, which may also be used with the transmitter system 50 shown in Figure 2. In the Figure 4b

> receiver 160, a remote VCR 216 and its wireless remote controller 1010, so that the remote VCR 216 need not be powered up in advance of unattended recording. The remote controller 1010 is connected by lines 1000 and 1002 to CPU 178. In response to the CPU 178, the remote controller 1010 transmits control signals to the remote VCR 216 in a conventional manner, as indicated at 1004. The remote controller 1010 can either be a unit designed for the VCR, but modified to be electrically operated from the TV scheduler, or it can be an equivalent design of the remote controller with direct connections to the CPU 178. Instead of enabling the VCR from pause line 214, when the CPU 178 determines that a program is to be recorded (see, e.g., block 501 of FIG. 13) according to the selected programs, it issues a control signal to power up the VCR on control line 1000. This control signal generates a contact closure across the switch matrix of the remote controller 1010 power-on key. The contact closure may be obtained with a relay or an PET transistor switch. The control signal on line 1000 also generates a contact closure across the play key and the record key of the of the controller 1010 to initiate recording of the program. When the program ends, CPU 178 will issue a control signal on line 1002. Line 1002 generates a contact closure across the remote controller power-off key. When the CPU 178 determines another program is to be recorded, the above process is repeated.

(col. 9, lns. 5-35) (Emphasis added). Therefore, as the above language of the specification of the '121 patent describes the operation of the '121 patent's invention's unattended recording feature, the administrative law judge finds that the VCR is powered on by the invention through a signal causing a closure in the VCR's remote control's power on switch, which signal activates the remote control's "play" and "record" buttons causing the powered on VCR to record the scheduled program; and that when the scheduled program is over, the VCR's power is turned off by a signal to the VCR's remote control's "power off" switch. The administrative law judge finds nothing in the '121 patent that suggests that the invention of the '121 patent can cause a VCR to record a selected program, without the VCR first being powered on by the invention.

Moreover, the administrative law judge finds that the specification disclosed that the "turn-on"command to a VCR is different than the "record" command. In Fig. 13, box 506 is labeled "Turn On VCR & Record." (Emphasis added). The finding that the "turn-on"command

to a VCR is different than the "record" command is further reinforced by the following section of the specification, which lists "turn-on" and "record" as different operations:

> For unattended recording with the TV scheduler 160 of FIG. 4B, turn on of the remote VCR 216 is accomplished by means of the remote controller 1010 connected to the TV scheduler 160. Turn-on , record and turn-off are all actuated remotely as described above in connection with FIG. 4B.

(col. 20, lns. 59-64) (Emphasis added). Also, this difference between the "turn on" and "record" functions is reflected in the plain language of the claim itself, as the system must be capable of both "turning on a broadcast program recording device and recording the selected broadcast program" (col. 6, lns. 39-31) (Emphasis added).

The reexamination proceedings also support the finding that "turning on" a VCR is to cause electricity to go to the VCR, and not merely causing the VCR to record a program. After the Examiner, in the June 8, 1992 Office Action, rejected claim 32-36 as being "unpatentable as anticipated under 35 USC § 102 over Muguet, 4, 787, 063," because Muguet disclosed, inter alia, the "turning on and off the VCR at start and en [sic] of the program or both." (FF 94). In the August 13, 1992, amendment, Young distinguished Muguet from the rejected claims on the following basis:

> Claims 33-35 include in their recitations the step of turning on a program recorder for a selected program, whereas in Muguet the specialized VCR must remain on continually, not just for the selected program.

(FF 106).

Based on the plain language of the claim, the specification and the prosecution history, the administrative law judge finds that "turning on" requires that the system disclosed in claim 33 to turn on the recording device's power so that it is able to record the selected program.

c. Independent Claim 36

Independent claim 36 reads:

A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to storage means in a data processor, supplying user program selection criteria to the data processor, said user program selection criteria comprising a plurality of independent user chosen selection criteria and at least one portion [sic] choice, the data processor combining said user program selection criteria, using the combined user program selection criteria to select programs for viewing from the program schedule information in said storage means in the data processor, storing information identifying the selected programs including broadcast schedule times, channels and program titles, using the stored information to tune the television receiver to the selected programs, turning on a program recording device and recording the selected broadcast program by supplying control signals to a remote controller for the program recording device.

(FF 46). All of the language in claim 36 is found in claim 18 or in claim 33. Hence, the interpretation of that language in claim 18 or in claim 33 controls the interpretation of the same language in claim 36.

d. Independent Claim 42

Independent claim 42 reads:

A system for controlling a recording device to allow user selection of broadcast programs from schedule information, which comprises a data processor, a first input means for the schedule information connected to said data processor, a second user selection input means connected to said data processor, said data processor being configured to select programs from the schedule information based on user inputs, storage means connected to receive the schedule information for programs selected by said data processor, a programmable tuner for connection to the recording device, said programmable tuner being connected to receive control signals from said data processor at a time of a selected broadcast for causing said programmable tuner to supply broadcast signals for the selected programs to the recording device, and a television receiver, said system being configured to allow said television receiver to receive a different program than the broadcast signal for the selected program supplied to said recording device, wherein said data processor is configured for a selectable display mode, said data processor being configured to present an initial display of said schedule

information stored in said storage means upon selection of said display mode, said initial display automatically comprising schedule information for at least one of a current time period and a current channel of said programmable tuner.

(FF 47). Much of the language in claim 42 is found in claim 18 and hence, the interpretation of that language in claim 18 controls the interpretation of the same language in claim 42. The parties have disputed: "a first input means for the schedule information connected to said data processor," "a second user selection input means connected to said data processor," and

> wherein said data processor is configured for a selectable display mode, said data processor being configured to present an initial display of said schedule information stored in said storage means upon selection of said display mode, said initial display automatically comprising schedule information for at least one of a current time period and a current channel of said programmable tuner.

i. The language "a first input means for the schedule information connected to said data processor"

Complainants argued that this claim limitation is not a means plus function element, because it "does not recite a function; it only recites a structure well known in the computer field;" that an "input means" which is, according to complainants, simply a mechanism for supplying a data to the data processor, e.g., is an input port and wire; and that a person of ordinary skill in the art would know that the input port of a computer is its input means. (CPost at 115). Complainants also argued that if this limitation was construed to be a means plus function element, the structures corresponding to the input means are the lines running from the data demodulator in FIGs. 3 and 4 to the CPU (lines 108 and 182, respectively) and the input ports to which they are connected. (CPost at 116).

Respondents argued that this limitation is a means plus function limitation, the claimed function being the receipt and supply of schedule information to the data processor. (RFF 1114).

Respondents also argued that two corresponding sets of structures are disclosed in this specification: (1) in the Fig. 3 embodiment, the corresponding structure is the FM antenna 92, the FM receiver 94, the SCA subcarrier decoder 98, and the data demodulator 102, and (2) in the Fig. 4 embodiment, the corresponding structure is the antenna 162, programmable TV tuner 164, program data timing controller 168, and data demodulator 169. (RFF 112).

The staff did not take a position regarding this limitation in its initial post hearing brief.

The use of term "means" creates a presumption of the applicability of 35 U.S.C. § 112, ¶ 6. See Sage Products, Inc. v. Devon Industries, Inc., 126 F. 3d 1420, 1427 (Fed. Cir. 1997); Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996); Certain Flooring Products, Inv. No. 337-TA-443, Final Initial Determination at 11-20 (Nov. 2, 2001), Comm'n Notice Finding No Violation (March 22, 2002). The administrative law judge rejects complainants' argument that this limitation is not subject to 35 U.S.C. § 112, ¶ 6, because there is no function recited. The limitation in question, "a first input means for the schedule information connected to said data processor," recites a "means," which is connected to the "data processor," for the "input" of "schedule information." Therefore, the administrative law judge finds that this limitation should be interpreted pursuant to 35 U.S.C. § 112, ¶ 6.

The administrative law judge also rejects complainants' argument that if interpreted under 35 U.S.C. § 112, ¶ 6, this limitation should be construed to mean only the lines running from the data demodulator in FIGs. 3 and 4 and the input ports to which they are connected (lines 108 and 182, respectively). To the contrary, the only instance the term "port" is used in the '121 specification of the '121 patent is in connection with "conventional" transmitter systems which are described as being without "novelty." Thus the specification does not disclose any input

ports being connected to the data processors depicted in FIGs. 3 and 4. The only mention of a "port" at all in the specification is the "serial input/output (I/O) port" 24 which, in conjunction with line 28, connects the microcomputer 22 to the data modulator 26 in the transmitter depicted in FIG. 1. (col. 6, lns. 28-31). In the transmitter depicted in FIG. 2, the microcomputer's 22 I/O port 24 is connected to a buffer. (col. 6, lns. 64-67). The transmitter system 20 depicted in FIG. 1 is described accordingly:

> Since the design and implementation of the system 20 is [sic] itself [sic] conventional, and the novelty resides in the particular data processing signals broadcast with the system 20, the design and operation of the system 20 will not be described in further detail.

(col. 6, lns. 55-59) (Emphasis added). The transmitter system 50 depicted in Fig. 2 is described in similar terms. (See col. 7, lns. 26-30).

While the only instance the term "port" is used in the specification of the '121 patent is in connection with "conventional" transmitter systems which are without "novelty," the specification makes the following description of the structures involved in allowing the data processor in the first embodiment to receive the information broadcast by the "conventional" transmitter systems:

> FIG. 3 is a block diagram of a receiver and television receiver control system 90 which is used in combination with the FM transmitter system 20 of FIG. 1. An FM antenna 92 receives the broadcast signals from the system 20, which are supplied to FM receiver 94 on line 96. FM receiver 94 supplies the FM broadcast signals to an SCA subcarrier decoder 98 on line 100. The decoder 98 strips the schedule information signals from the FM broadcast signals and supplies the schedule information signals to a data demodulator 102 on line 104. The data demodulator 102 converts the schedule information signals to digital format and supplies the digital schedule information signals to system control unit 106 on line 108, more particularly, to CPU 110 of the system control unit 106.

(col. 7, lns. 33-46). Therefore, in accordance with the first embodiment the following structures

are needed in order to supply to the CPU the program schedule information: an FM antenna (to receive the broadcast signals), an FM receiver (to supply the broadcast signals to the SCA subcarrier decoder), a SCA subcarrier decoder (to separate the program schedule information from the rest of the broadcast signal), and a data demodulator (to convert the program schedule information into digital format).

In connection with the second embodiment, the specification of the '121 patent (CX-1) describes the following structures and operations:

> FIG. 4 is a block diagram of another receiver system 160, which may be used with the transmitter system 50 shown in FIG. 2. Antenna 162 receives the TV broadcast signal from the transmitter system 50 and supplies it to a programmable TV tuner 164 on line 166. The tuner 164 supplies the broadcast signal to a program data timing controller 168 on line 170, to data demodulator 169 on line 171 and to a video switcher 172 on line 174. The output of controller 168 is supplied to the demodulator 169 on line 176. The demodulator 169 supplies the program schedule information signals, which have been stripped from the TV broadcast signals and digitized, to CPU 178 of system control unit 180 on line 182.

(col. 8, lns. 23-35). Therefore, supplying the CPU of the second embodiment with program schedule information involves the following structure: an antenna (to receive the broadcast signal), a programmable tuner (to route the broadcast signal to a data demodulator) and a program data timing controller, and a data demodulator (to digitize the schedule information).

The administrative law judge finds that in neither the first or second embodiments the term "port" is used, either in connection with supplying the CPU with schedule information or otherwise. Additionally, with respect to the other structures relied upon by complainants in their proposed constructions, viz., lines 108 and 182, the administrative law judge finds no description of those "structures." Rather the specification merely states that the digitized schedule

information is supplied to the CPUs by the data demodulators along lines 108 and 182. The administrative law judge finds no indication that lines 108 and 182 are capable of supplying schedule information to the CPUs without the structures described above.[12]

Based on the foregoing, the administrative law judge finds the first input means of claim 42 comprises either (1) an FM antenna, an FM receiver, a SCA subcarrier decoder, and data demodulator; or (2) an antenna, a programmable tuner, a program data timing controller and a data demodulator; or (3) their 35 U.S.C. § 112, ¶ 6 equivalents.

ii. The language "a second user selection input means connected to said data processor"

Complainants argued that this limitation is not a means plus function element because it does not recite a function, and, if it were construed as a means plus function element, the corresponding structures are a remote controller and a remote receiver, as well as line 120/192. (CPost at 117). Respondents argued that this limitation was a means plus function element and that the corresponding structures are a remote controller and a remote receiver, lines 120 and 192, and the keypad and keys depicted in Fig. 5. (RRCFF 851). The staff took no position regarding the construction of this element.

The administrative law judge rejects complainants' argument that the limitation in issue is not governed by 35 U.S.C. § 112, ¶ 6, because he finds that the limitation does recite a function, viz., a "means" for the "input" of "user selection[s]." Therefore, he finds that it should

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[12] In contrast to the transmitter systems depicted in FIGs. 1 and 2, which the specification of the '121 patent describes as "conventional" and lacking "novelty," see supra, the specification of the '121 patent describes the receiver systems depicted in FIGs. 3, 4a and 4b in great detail and does not describe said receiver systems, or any structures thereof, as being conventional or lacking novelty.

be construed under 35 U.S.C. § 112, ¶ 6, for the same reasons that that "first input means" of claim 42 was so construed. See supra.

The administrative law judge further finds that the structure corresponding to the limitation in issue is a remote controller, with a keypad, and a remote receiver or its 35 U.S.C. § 112, ¶ 6 equivalents. In support and with reference to the first embodiment, the specification states that "[o]ther inputs are supplied to the CPU 110 are supplied by a remote transmitter controller 116-remote receiver 118 combination on line 120." (col. 7, lns. 51-53). With respect to the second embodiment, "[u]ser program selections and other user inputs are provided by a remote control transmitter 188-remote receiver 190 combination on line 192," (col. 8, lns. 42-44), the remote controller 116/188 is also clearly depicted in Fig. 5 as having a keypad.

iii. The language "wherein said data processor is configured for a selectable display mode, said data processor being configured to present an initial display of said schedule information stored in said storage means upon selection of said display mode, said initial display automatically comprising schedule information for at least one of a current time period and a current channel of said programmable tuner"

Complainants argued that this limitation should be construed as requiring that the data processor be capable of invoking a particular mode of displaying schedule information in response to user inputs, that the "initial display of said schedule information" refers to the first display of television schedule information that appears when the user selects a particular "selectable display mode," and that this initial display will include at least information about one program that is either being currently broadcast, or is scheduled to be broadcast, on the channel to which the system is already tuned. (CPost at 125).

Respondents and the staff argued that limitation requires an initial display mode that the user can select from multiple options for the display of schedule information when the display is

first invoked and that this information should include information for programs selected for recording, and therefore, the initial display should provide current programming information and programming information for recording. (PPost at 114-15; SPost at 17).

The limitation at issue was added to claim 42 during reexamination proceedings in the applicant's February 26, 1993 Supplemental After Final amendment in response to the Examiner's rejection of the claim in his January 5, 1993 Office Action. (FF 121 to 128). Young stated in the accompanying remarks:

> Automatically Focusing the Display
>
> Also discussed were clarifications of the preselection of schedule information for display, directed to automatically focusing a display of schedule information according to a current time or a current channel. The Examiner has confirmed that the claims reciting this selective display are believed to be allowable. Support for this selective display can found [sic], for example, at column 10, lines 12-65. Lines 50-59 are an example display for preferred embodiment. Lines 45-46 explain that the listing starts at the nearest previous half-hour. Lines 46-47 explain that a pointer (not shown in the example screen) will be positioned at the last selection made (and thus indicate the current channel). Lines 60 to 62 explain that the screen also includes 3 lines of status information, which at lines 56-59 is shown to include for the currently selected channel the remaining time and program title schedule information. Similar disclosure also appears at column 1, lines 33-37.

(FF 149). In a March 26, 1993 Office Action, the Examiner found that claim 42, "as amended, avoid[s] the art of record and [is] patentable." (FF 155).

Said remarks in the February 26 1993 Supplemental After Final refer to sections of the specification, which disclose a "selectable display," such that an user can change the display by changing the prime time, channel or theme criteria or the time in which the display begins and in which the initial display comprises information selected by the data processor in response to the user inputs, as well as either the current channel that the television is tuned to or the current time.

Thus the "example display" referred to by Young discloses a list of six programs, the start times of which run from 9:00 pm to 9:30 pm, and three additional lines of information immediately below the last program listed. (col. 10, lns. 50-59). The current time and date is contained in the three lines below the program listing. Id. The current time is reported to be 9:23 pm, and because the "[l]isting always starts at the previous half hour," the first time slot display is at "9:00." (col. 10. 1ns. 45-46). The listing is also restricted in accordance to the settings of the prime time, channel and theme criteria. (col. 10, ln. 65 - col. 11, ln. 5). The text discloses "that the pointer always is positioned at the last selection made," although no "pointer" is depicted in the sample display. (col. 10, lns. 46-47). The display can be changed by changing the prime time, channel and theme criteria. (col. 13, lns. 32-44; col. 14, lns. 16-28; and col. 14, ln. 55 - col. 15, ln. 16). The user can also change the time that the display will start at. (col. 11, lns. 29-36).

Based on the foregoing, the administrative law judge finds, consistent with the portions of the '121 patent's specification cited by Young in his February 26, 1993 Supplemental After Final, that the limitation in issue requires a "selectable display," such that an user can change the display by changing the prime time, channel and theme criteria and in which the initial display comprises information selected by the data processor in response to the user inputs, as well as either the current channel that the television is tuned to or the current time.

e. Independent Claim 51

Independent claim 51 reads:

> A system for controlling a recording device to allow user selection of broadcast programs from schedule information, which comprises a data processor, a first input means for the schedule information connected to said data processor, a second user selection input means connected to said data processor, said data processor being configured to select programs from the schedule information

based on user inputs, storage means connected to receive the schedule information for programs selected by said data processor, a programmable tuner for connection to the recording device, said programmable tuner being connected to receive control signals from said data processor at a time of a selected broadcast for causing said programmable tuner to supply broadcast signals for the selected programs to the recording device, said data processor being connected to a remote controller for said recording device to supply control signals to said remote controller for powering on said recording device, starting and stopping recording of the selected program and powering off said recording device, further comprising a display means coupled to said data processor, wherein said data processor is configured for a selectable display mode, said display means being configured to present an initial display of said schedule information stored in said storage means upon selection of said display mode, said initial display automatically comprising schedule information for at least one of a current time period and a current channel of said programmable tuner.

(FF 52). The language in claim 51 is found in the preceding claims in issue. Hence, the prior interpretation of corresponding language in the preceding claims controls the interpretation of language in claim 51.

f. Independent Claim 54

Independent claim 54 reads:

A system for controlling receipt of broadcast television programs to allow user selection of broadcast programs from broadcast schedule information which is selectively stored in a storage means, which comprises a data processor, a programmable tuner configured to receive both the broadcast programs and the broadcast schedule information connected to said data processor, means connected between said programmable tuner and said data processor for separating the broadcast schedule information from the broadcast programs and supplying the broadcast schedule information to said data processor, a user selection input means connected to said data processor, said data processor being configured to select programs from the schedule information stored in said storage means based on user inputs, said storage means being connected to receive a reminder calendar list comprising the schedule information for programs selected by said data processor, said programmable tuner being connected to receive control signals from said data processor at a time of a selected broadcast for causing said programmable tuner to supply signals for the selected broadcast programs to at least one signal receiver for the selected broadcast programs, wherein said user inputs comprise a plurality of user program selection criteria,

said data processor being configured to combine said plurality of user program selection criteria and to present a list of programs meeting said combined program selection criteria, said user inputs further comprising a program choice from said presented list of programs, said reminder calendar list comprising information identifying titles for said programs selected by said data processor.

(FF 53). Much of the language in claim 54 is found in preceding independent claims in issue and, hence, the prior interpretation of that language controls the interpretation of the same language in claim 54. With respect to the language:

i. The language " means connected between said programmable tuner and said data processor for separating the broadcast schedule information from the broadcast programs and supplying the broadcast schedule information to said data processor"

The parties agree that the language is a means plus function element and that the function of the element is to segregate program schedule information from television programs and to supply the program schedule information to the data processor. (CPost at 147; PPost at 110). The parties also agree that the Fig. 4 embodiment, and not the Fig. 3, is the correct embodiment to consider in determining the structures that comprise the corresponding means. (CPost at 147; PPost at 110). Complainants argued, however, that the corresponding means is the demodulator 169, while respondents argued that the corresponding structures are the data demodulator 169 and the program data timing controller 168.

The specification of the '121 patent describes the following process for supplying program schedule information to the data processor in the FIG. 4 embodiment:

> FIG. 4 is a block diagram of another receiver system 160, which may be used with the transmitter system 50 shown in FIG. 2. Antenna 162 receives the TV broadcast signal from the transmitter system 50 and supplies it to a programmable TV tuner 164 on line 166. The tuner 164 supplies the broadcast signal to a program data timing controller 168 on line 170, to data demodulator 169 on line 171 and to a video switcher 172 on line 174. The output of controller 168 is supplied to the demodulator 169 on line 176. The demodulator 169 supplies the

> program schedule information signals, which have been stripped from the TV broadcast signals and digitized, to CPU 178 of system control unit 180 on line 182.

(col. 8, lns. 23-35). Therefore, the administrative law judge finds that the data demodulator 169 is one of the corresponding structures in the FIG. 4 embodiment, as it "supplies the program schedule information signals, which have been stripped from the TV broadcast signals and digitized, to CPU 178." As to which structure or structures separate the schedule information from the broadcast program respondents' expert witness, Rhyne, testified that when the VBI was used to transmit program schedule information the data demodulator could not be the only corresponding structure to separate the program schedule information:

> Well, if you're going to pick data off of one or more lines in the vertical blanking interval, you have to have a line counter. It's a process that's commonly called data slicing; it's used, for example, in closed captioning at line 21 [of the VBI].
>
> And that's what the that program timing controller is, it's not well described in the patent. But as best I understand it, it was a counter that found the appropriate line or lines and then pulls out a little snippet of electronic signal that was supposed to carry the data, and passes it to the demodulator.
>
> Well if the demodulator didn't have that device in front of it, it would be trying to demodulate all of the video signals on all of the lines and it would just be producing gibberish.

(Tr. at 3596-97). The specification of the '121 patent is consistent with Rhyne's testimony. The FIG. 3 embodiment is a receiver for use with a transmitter that transmits the program schedule information separate from the broadcast programming. (col. 6, lns. 20-24; col. 7, lns. 33-37). Therefore, the FIG. 3 embodiment does not need to separate the schedule information from the broadcast programming. The FIG. 3 embodiment has a data demodulator 102 which converts the schedule information signals to digital format and supplies the digital schedule information to

the CPU 110, after the schedule information signals are "strip[ped]" from the FM broadcast by the SCA sub carrier decoder 98. The FIG. 3 embodiment does not have the program data timing controller. The FIG. 4 embodiment, which has to separate schedule information from the broadcast programming, has a program data timing controller 168 and the program data timing controller 168 outputs directly to the data demodulator 169.

Accordingly, the administrative law judge finds that the corresponding 35 U.S.C. § 112, ¶ 6 structures are the data demodulator 169 and the program data timing controller 168 or their 35 U.S.C. § 112, ¶ 6 equivalents.

g. Independent Claim 57

Independent claim 57 reads:

> A television schedule system for controlling receipt of broadcast television programs to allow user selection of broadcast programs from broadcast schedule information displayed on a television, said broadcast schedule information comprising broadcast schedule times, titles and channels, said system comprising:
>
> a data processor;
>
> a system clock connected to said data processor for providing a system time;
>
> a programmable tuner connected to said data processor and configured to receive both the broadcast programs and the broadcast schedule information;
>
> signal separating means connected between said programmable tuner and said data processor for separating the broadcast schedule information from the broadcast programs, and for supplying the broadcast schedule information to said data processor;
>
> display means connected to said data processor for displaying at least a portion of said broadcast schedule information on said television;
>
> user selection input means connected to said data processor for providing user inputs for selecting listings of programs from said displayed broadcast schedule information; and

storage means being connected to said data processor for storing schedule information, wherein said data processor is configured to selected programs from said displayed broadcast schedule information based on said user inputs, to retrieve broadcast schedule information for said selected programs from said broadcast schedule information supplied to said data processor, and to store said retrieved schedule information in said storage means, said stored broadcast schedule information identifying a broadcast schedule time and channel and a program title for each said selected program; wherein

said data processor provides control signals to said programmable tuner when the system time matches a stored broadcast schedule time of one of said selected programs, said control signals causing said programmable tuner to supply broadcast program signals for the stored broadcast schedule channel of said one selected program to at least one signal receiver; and wherein

said data processor is configured for a selectable display mode, said display means being configured to display a preselected initial display of said schedule information stored in said storage means upon selection of said display mode, said preselected initial display automatically comprising schedule information meeting initial display selection criteria, said initial display selection criteria including at least one of a current time period and a channel currently selected by said programmable tuner.

(FF 54). Much of the language in claim 57 is found in preceding claims and, hence, the interpretation of that language controls the interpretation of the same language in claim 57.

With respect to the language:

signal separating means connected between said programmable tuner and said data processor for separating the broadcast schedule information from the broadcast programs, and for supplying the broadcast schedule information to said data processor

the parties agree that this limitation should be construed the same as the "separating means" limitation of claim 54, which is similarly worded. (PPost at 110, CPost at 161). Accordingly, the administrative law judge finds that the corresponding 35 U.S.C. § 112, ¶ 6 structures are the data demodulator 169 and the program data timing controller 168 or their 35 U.S.C. § 112, ¶ 6 equivalents.

Both complainants and respondents agree that the language:

> display means connected to said data processor for displaying at least a portion of said broadcast schedule information on said television

is a means plus function limitation and that the function is to display schedule information on a television. (CPost at 161; PPost at 119). Complainants argued however that the corresponding structure is the video display generator 136 of FIG. 3 and 204 of FIG. 4 and a device for display, such as a television receiver. (CPost at 162). Respondents argued that an additional structure comprises the means in addition to the video display generator and television receiver, viz., the video switcher (140/172).

The schedule information is displayed in the FIG. 3 embodiment in the following manner:

> The CPU 110 supplies information signals from the program schedule data on line 108, control inputs on line 114 and user inputs on line 120 to video display generator 136 on line 138. Output video display signals from the generator 136 are supplied to a video switcher 140 on line 142. The video switcher also receives TV program signals from tuner 132 on line 144, and a control signal from CPU 110. The video switcher 140 supplies the signals from the tuner 132 or the generator 142 to the TV receiver 126 on line 148 and a video cassette recorder (VCR) 150 on line 152.

(col. 7, ln. 68 - col. 8, ln. 12). The display of schedule information in relation to the FIG.4 embodiment is similar:

> From the user inputs on line 192 and the control program, the CPU generates control signals for the programmable TV tuner 164, which are supplied to video display generator 204 on line 206. The generator 204 converts the video display information signals to video signals for the video switcher 172 on line 208. The CPU 178 supplies control signals for the video switcher 172 on line 210 to video signal outputs of the video switcher 172 on lines 212 and 214 to the TV receiver 200 and VCR 216 between schedule information video signals from the generator 204 and the program video signals from tuner 164.

(col. 8, lns. 49-62).

Therefore, as the above portions of the specification indicate, the video switcher (140, 172) allows the CPU to control whether or not the IPG, incorporating the schedule information, will be displayed or not. Without this ability, the user would not be able to see the IPG or would only see the IPG, and would not be able to view any television programming. In fact, as the following testimony by complainants' expert witness, Faillace, reveals, a system in accordance to the '121 patent, but omitting the video switcher, would be useless:

> Q. Without a working video switcher, the person who has spent a lot of money for their brand new TV with a fancy –
>
> A. Guide.
>
> Q. – guide will simply have a regular old television, right?
>
> A. That's correct.

(Tr. at 2391).

Therefore, the administrative law judge finds that the corresponding structure to this limitation is (1) a video generator, a video switcher, and a television receiver, or (2) their 35 U.S.C. § 112, ¶ 6 equivalents.

The parties agree that the limitation "a selectable display mode" should be interpreted the same way as the "selectable display mode" limitation of claim 42 was interpreted. (CPost at 145; PPost at 114). Therefore, the administrative law judge finds that this limitation requires a "selectable display," such that an user can change the display by changing the Prime Time, Channel and Theme criteria, or the time in which the display begins and in which the initial display comprises information selected by the data processor in response to the user inputs, as well as either the current channel that the television is tuned to or the current time. See supra.

B. '268/'204 Patents

In issue are claims 1 and 3 of the '268 patent and claims 14, 15, 16 and 17 of the '204 patent.

Claims 1 and 3 of the '268 patent (FF 59-61) read:

1. An interactive television schedule system, which comprises:

a television display,

means coupled to said television display for displaying the television schedule on said television display as a grid of two-dimensionally arranged, adjacent irregular cells which vary in length corresponding to time duration of programs, with a title of a program being displayed in each of said irregular cells, said grid having a plurality of channels listed in a first dimension and time listed in a second dimension,

user input means coupled to said means for displaying the television schedule, said user input means including a program selector and a movement control for a visual identification of ones of said irregular cells which initiates movement of said visual identification in the first dimension, and irregular movement of said visual identification in the second dimension in steps corresponding to variation in cell size, responsive to an input by a user to said movement control, between first and second ones of said irregular cells to select a desired one of said irregular cells corresponding to program,

a tuner coupled to said user input means for tuning to the desired program, and

means coupled to said means for displaying the television schedule for displaying a program note overlay including a program description for the desired program on said television display.

3. The interactive television schedule system of claim 1 additionally comprising means coupled to said means for displaying the television schedule for selecting the desired visually identified program in response to activation of said program selector, and

a recording device coupled to said means for selecting the desired program to record the desired program.

Independent claim 14 and dependent claims 15, 16 and 17 of the '204 patent (FF 62 to 65) read:

14. An interactive television schedule system, which comprises:

a television display,

means coupled to said television display for displaying a television schedule on said television display as a grid of two-dimensionally arranged, adjacent irregular cells which vary in length corresponding to time duration of programs, with a title of a program being displayed in each of said irregular cells, said grid having a plurality of channels listed in a first dimension and time listed in a second dimension,

user input means coupled to said means for displaying the television schedule, said user input means including a program selector and a movement control for a visual identification of selected ones of said irregular cells which controls movement of said visual identification in the first dimension and in the second dimension from cell to cell, responsive to an input by a user to said movement control to visually identify a desired one of said irregular cells corresponding to a desired program,

means coupled to said means for displaying the television schedule for selecting the desired visually identified program in response to activation of said program selector, and

a programmable tuner coupled to said means for selecting the desired program for tuning to a select channel for the desired program,

said means for displaying the television schedule on said television display further being configured to display an overlay containing information on a television program being shown on said television display when a channel being shown on said television display is changed.

15. The interactive television schedule system of claim 14 in which the overlay information on the television program includes program title, name of television service, channel number, and time.

16. The interactive television schedule system of claim 15 in which said means for displaying the television schedule is further configured to provide an alternate overlay including a program note with a program description for the television program being shown on said television display.

17. The interactive television schedule system of claim 14 in which said means for displaying the television schedule is further configured to provide an alternate display including a program note with a program description for the visually identified program.

Independent claim 31 and dependent claims 32 through 34 of the '204 patent (FF 66 to 69) read:

31. An interactive process for operating a television schedule system, which comprises:

displaying a television schedule on a television display as a grid of two-dimensionally arranged, adjacent irregular cells which vary in length corresponding to time duration of programs, with a title of a program being displayed in each of said irregular cells, said grid having a plurality of channels listed in a first dimension and time listed in a second dimension,

providing a visual identification of a selected one of said irregular cells,

moving said visual identification in the first dimension and in second dimension between first and second ones of said irregular cells to select a desired one of said irregular cells corresponding to a desired program,

tuning a programmable tuner to a select channel based on position of said visual identification for the desired program, and

displaying an overlay containing information relating to a television program being shown on said television set when a channel being shown on the television set is changed.

32. The interactive process for operating a television schedule system of claim 31 in which the information relating to the television program includes program title, name of television service, channel number, and time.

33. The interactive process for operating a television schedule system of claim 32 additionally comprising the step of displaying an overlay including a program note with a program description for the television program being shown on said television set.

34. The interactive process for operating a television schedule system of claim 31 additionally comprising the step of displaying a program note with a

program description for the visually identified program.

Based on the arguments of the parties, the following claimed language is in dispute for the asserted claims of each of the '268 and '204 patents: "visual identification," "means . . . for displaying," and the language relating to the movement and the program note limitations. Moreover, the language "tuning a programmable tuner to a select channel based on position of said visual identification" is also in dispute for the asserted claims of the '204 patent.

1. The language "visual identification" ('268/'204 Patents)

Each of the asserted claims of the '268 and '204 patents refers to a "visual identification." The parties agree that "visual identification" is not a term of art. (See, e.g., RFF 1296 and CRFF 1296).[13]

Complainants argued that "visual identification" is defined by its ordinary meaning, viz., any identifier that can be seen. (CFF 1387). It was further argued that there is nothing in the claims, specification or prosecution history that defines "visual identification" in a manner that is "unconventional" or inconsistent with the ordinary meaning of the term. (CFF 1388).

Respondents argued that the "visual identification" of each of the asserted, independent claims of the '268 and '204 patents requires an "innovative cursor" as defined in the specification as a cursor that (1) highlights the entire cell, (2) identifies the current half-hour position within a cell that is longer than a half-hour, and (3) differentially identifies the remaining portions of the cell; that the intrinsic evidence conclusively demonstrates that the "innovative cursor" is not merely a preferred embodiment, but is an essential part of the invention; and that long before reaching the description of the preferred embodiment, a reader of the specification would learn

[13] For substantive purposes, the specifications of the '268 and '204 patents are identical.

that the invention is the innovative cursor. (See, e.g., EPost at 117). The staff argued that the visual identification should be construed as an identification that provides the user some sort of indication as to which segment of a long program cell the visual identification is currently focused upon. (SPost at 29).

The "visual identification"is described by the claim language of all the asserted claims as being a visual identification of an irregular cell comprising the two dimensional grid of the television schedule. (CX-3, col. 14, lns. 56-57; CX-4 col. 17, lns. 1-2; col. 20, lns. 6-7). However, the term "visual identification" does not appear in the '268 and the '204 patents' common specification.

The "innovative cursor 32" is the only "visual identification" described in the Abstract, Summary of the Invention, and Detailed Description of the Invention sections as being capable of attaining the objectives of the invention as set forth in the Summary of the Invention section. The Abstract, which is identical in the '268 and the '204 patents, describes a screen for a user interface of a television schedule system consisting of a two-dimensional array of cells containing program titles. Each cell corresponds to a program and the length of each cell is directly proportional to the length of the corresponding program. The array is arranged as a grid of three regular columns, each column delineating a duration of time of an half hour in length, and twelve rows of program listings. Each program listing is contained in a cell, with some of the program listings overlapping two or more of the columns because of their length. (CX-3). The Abstract identifies a key problem with a user interface that utilizes a conventional cursor in a grid made up of such irregular cells:

Because of the widely varying length of the cells (26), if a conventional cursor

> used to select a cell location were to simply step from one cell to another, the result would be abrupt changes in the screen (10) as the cursor moved from a cell (26) of several hours length to an adjacent cell in the same row.

(CX-3).

The Abstract then discloses the inventors' solution for these "abrupt changes in the screen:"

> An effective way of taming the motion is to assume that behind every array (24) is an underlying array of regular cells. By restricting cursor movements to the regular cells, abrupt screen changes will be avoided. With the cursor (32), the entire cell (26) is 3-D highlighted, using a conventional offset shadow (34). The offset shadow (34) is a black bar that underlines the entire cell and wraps around the right edge of the cell. To tag the underlying position — which defines where the cursor (32) is and thus, where it will move next — portions (36) of the black bar outside the current underlying position are segmented, while the current position is painted solid.

(CX-3). The cursor (32) described in the abstract is referred to as the "innovative cursor" in the Detailed Description of the Invention and is depicted in Figures 1 and 5 of both patents. (CX-3, Figs. 1 and 5).[14]

The Summary of the Invention section, which is identical in the '268 and '204 patents, states that the objects of the invention may be attained by a novel television schedule system and

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[14] While the innovative cursor is depicted in Figures 1 through 7, the innovative feature of the cursor – i.e., its ability to highlight an entire cell and indicate to the user the half-hour column that the cursor is currently located in – is only evident in Figures 1 and 5. In Figures 1 and 5 the cursors are positioned in cells representing shows that are greater than an half-hour in duration, and therefore the cell is more than one column in length. In each of Figures 1 and 5, the cursor highlights the entire cell. However the highlighting within the cell is varied so as to indicate the column that the cursor is in. For instance, in Figures 1 and 5, the portion of the cell corresponding to the column that the cursor is in is highlighted with a solid black line, while the remaining portion of the cell is highlighted with segmented line. With each of Figures 2, 3, 4, 6, and 7, the cursor is depicted as being positioned in a cell which corresponds to a program an half-hour in length, and therefore the cell occupies one column. In these figures, the cell is highlighted entirely with just a solid black line, since the position of the cursor and the cell are coterminous.

method featuring a user interface with a novel cursor. Thus it reads:

> The attainment of these and related objects may be achieved through use of the novel television schedule system and process user interface herein disclosed. A television schedule system including a user interface in accordance with this invention has a display. A means is connected to the display for displaying the television schedule on the display as an array of irregular cells which vary dimensionally in length, corresponding to different television program time lengths. A means is connected to the display for providing a cursor with the television schedule on the display. The cursor has a variable length corresponding to the length of a selected one of the irregular cells in which the cursor is located. A means is connected to the means for providing the cursor for moving the cursor in the array in a series of equal length steps. At least some of the irregular cells have a length which is greater than the length of the steps.
>
> In the process of operating a television schedule system with the user interface of this invention, the television schedule is displayed as an array of irregular cells which vary dimensionally in length, corresponding to different television program time lengths. A cursor is provided with the television schedule on the display, the cursor has a variable length corresponding to the length of a selected one of the irregular cells in which the cursor is located. The cursor is moved in the array in a series of equal length steps, with at least some of the irregular cells having a length which is greater than the length of the steps.

(CX-4,col. 2, ln. 52- col. 3, ln. 10) (Emphasis added).

The Detailed Description of the Invention section, which is identical in the '268 and '204 patents, describes the problem created by using a conventional cursor with a grid composed of irregular cells:

> Because of the widely varying length of the cells 26, if a conventional cursor used to select a cell location were to simply step from one cell to another, the result would be abrupt changes in the screens 10, 12, 14, 18 and 20 as the cursor moved from a cell 26 of several hours length to an adjacent cell in the same row. Such abrupt changes disorient a user of the system.

(CX-4, col. 4, lns. 46-52) (Emphasis added). It further describes one way of preventing abrupt changes that could otherwise "disorient a user of the system:"

> An effective way of taming the motion is to assume behind every array 24 is an

> underlying array of regular cells. By restricting cursor movements to the regular cells, abrupt screen changes will be avoided.

(CX-4, col. 4, lns. 46-52). However, the Detailed Description of the Invention section immediately acknowledges that even this system would be "befuddling to users," as

> there is now a potential ambiguity between the underlying cell which governs cursor movement and visible cell 26 which holds the program title.
>
> Viz. if the cursor moves in half hour steps, and the cell length is, say four hours, should the cursor be 1/2 hour long or four hours long? If the cursor only spans the interval of the underlying cell (1/2 hour), the cursor appears to be highlighting a segment of the cell, which is misleading. On the other hand, if the cursor spans the entire four hours of the TV listing, the cursor underlying position will be obscure. In this case, cursor right/left commands will appear inoperative while traversing a long cell. The absence of feedback following a cursor command is befuddling to users.

(CX-4, col. 4, ln. 56 - col. 5, ln. 2) (Emphasis added).

It then states that "[t]herefore, an innovative cursor 32 (Fig. 1) for the irregular array 24 is required which satisfies several conflicting requirements." (CX-4, col. 5, lns. 3-5). (Emphasis added).

Under the Detailed Description of the Invention section, the innovative curser is described accordingly:

> With the cursor 32, the entire cell 26 is 3-D highlighted, using a conventional offset shadow 34. The offset shadow 34 is a black bar that underlines the entire cell and wraps around the right edge of the cell. To tag the underlying position – which defines where the cursor 32 is and thus, where it will move next – portions 36 of the black bar outside the current underlying position are segmented, while the current position is painted solid.
>
> For an half hour cell 26, the offset shadow's underline bar will always be black. FIGS. 2 and 3 show the cursor 32 as it appears for a half-hour program. For programs that go beyond ½ hour, only the current ½ hour position will be solid black. All remaining positions will be striped. If the cursor is moved left or right, the solid section will move accordingly, providing complete visual feedback.

(CX-3, col. 5, lns.7-23).

The Detailed Description of the Invention concludes:

> It should now be readily apparent to those skilled in the art that a system and method incorporating a novel user interface capable of achieving the stated objects of the invention has been provided. The user interface that is configured to compensate for the particular nature of the television schedule information. The user interface has a cursor operation that compensates for an irregular grid format of the television schedule information. The user interface presents the schedule information in a format that compensates for limited resolution of the television display. The user interface presents supplemental schedule information in overlays that obscure a minimum amount of useful other information. Order of presentation of the schedule information in the interface is customizable by user preference.

(CX-3, col. 14 lns. 21-35)(Emphasis added).

The features of the "innovative cursor" are readily observed from the Figures 1 and 5 of the '204 and the '268 patents. As seen in Figures 1 and 5 of the patents, the "innovative cursor" described in the text of the patents highlights the first half of the cell, which corresponds with first half hour of an hour long program, with a solid black line, while highlighting the second half of the cell, which corresponds to the last half hour of an hour long program, with a segmented line. Thus Figure 1 of the `268 patent shows a two dimensional television program schedule grid guide made up of cells of irregular length, wherein each cell contains a program title and corresponds to a single television program. Time is displayed horizontally, while channels are displayed vertically. (CX-3, Fig. 1). Therefore, the cursor is able to highlight the entire cell and to indicate to the user its exact position within the cell.

As seen from the foregoing, a conventional cursor, and especially its mode of moving within a grid composed of irregular cells (i.e., moving to an adjacent cell in response to each use of the movement controller by the user), was disclaimed by the applicants. Furthermore,

complainants' reliance on the doctrine of claim differentiation is misplaced. As stated above, the doctrine of claim differentiation is not determinative. See, supra. Furthermore, the limitation of claim 7 that the "visual identification" comprise a cursor is not inconsistent with the administrative law judge's finding that the "visual identification" is a cursor that (1) highlights the entire cell, (2) identifies the current half-hour position within a cell that is longer than a half-hour, and (3) differentially identifies the remaining portions of the cell. A cursor is a "visual cue." (Mirriam Webster's Collegiate Dictionary Online available at http://www.m-w.com/).). Therefore, complainants' proposed construction of "visual identification" as being any identification that is visible would render claim 7's limitation redundant.

Based on the foregoing, the administrative law judge finds that the claimed visual identification of the '268 and '204 patents is the "innovative curser" defined in the specification as a cursor that (1) highlights the entire cell, (2) identifies the current half-hour position within a cell that is longer than a half-hour, and (3) differentially identifies the remaining portions of the cell.

2. The language "means. . . for displaying" ('268/'204 Patents)

Claim 1 of the '268 patent recites:

> means coupled to said television display for displaying the television schedule on said television display as a grid of two-dimensionally arranged, adjacent irregular cells which vary in length corresponding to time duration of programs, with a title of a program being displayed in each of said irregular cells, said grid having a plurality of channels listed in a first dimension and time listed in a second dimension .

(CX-3). In almost the exact same language, claim 14 of the '204 provides for the same "means .

. . for displaying" element as provided for in claim 1 of the '268 patent.[15]

The parties agree that the "means . . . for displaying" elements in claim 1 of the '268 patent and claim 14 of the '204 patent are means plus function elements. (See, e.g., CPost at 184; PPost at 123). Complainants contend that the corresponding structures for this element are the CPU 228 and the Video Display Generator 224. (CPost at 184, 222). Respondents and the staff argued that the corresponding structures include, in addition to the CPU 228 and the Video Display Generator 224, the Video Switcher 226. (PPost at 123-24; SPost at 29).

The administrative law judge rejects complainants' arguments that the 35 U.S.C. §112 corresponding structures should be limited to the CPU 228 and the Video Display Generator 224 to the exclusion of the Video Switcher 226. Thus, the specification provides:

> For a What's on TV request, the listing stored in schedule memory 232 is retrieved, processed by CPU 228, and outputted to video display generator 224. Video switcher 226 is enabled by CPU output 246 to select the video display generator 224 output whenever schedule data is to be presented to the TV/monitor 210.

(CX-4, col. 13, lns. 12-17). Accordingly, Figures 22A and 22B, which are the only block diagrams of systems incorporating the inventions of the '268 and '204 patents, show that the CPU and the Video Display Generator in Figure 22A are connected to the television display through the Video Switcher, and that, in Figure 22B, the CPU is similarly connected to the television display.[16]

Furthermore, complainants' expert witness, Faillace, testified that each of the video

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[15] The only difference between this element as recited in claim 14 of the '204 patent and claim 1 of the '268 patent, is that claim 1 of the '268 patent refers to "the television schedule," while claim 14 of the '204 patent refers to "a television schedule."

[16] Figure 22B does show a Video Display Generator.

switchers, referred to in the '121, '204 and '268 patents, operated in the same way, viz., it receives control signals from the CPU indicating which of the two inputs that it receives – i.e., the input from the tuner or the input from the video display receiver – it should accept and pass through so that it is displayed on the television set and switches to the selected input. (Tr. at 2387).

In the context of the invention of the '121 patent, Faillace testified as to what would happen if the video switcher was rendered inoperable:

Q Now, this person watching television with this invention that's incorporated in the television, unbeknownst to him, the video switcher has gone on the blink. We won't go into the details, but it is struck. It's no longer able to respond to commands from the CPU, and it is simply letting the output from the turner go through to the television receiver.

When that person presses the button on his remote to try to call up the guide, what will happen?

A He won't see a guide.

Q I'm sorry, not a guide. He will try pull up the program schedule information.

A He won't see that either.

Q In other words, it won't be generated on the display?

A It will.

* * *

Q If the video switcher is inoperative as I described, the viewer will only receive the television program, the signal from the tuner, that's correct.

A The broadcast program, that's right.

Q The broadcast program. So then isn't it true that in order for the

program information that is being generated by the video display generator to reach the TV receiver, that video switcher or its equivalent must be there in order to allow that information to reach the TV receiver and be displayed on the screen?

A It is true in precisely the same sense that the line 142 must also be there.

Q Without a working video switcher, the person who has spent a lot of money for their brand new TV with a fancy –

A Guide.

Q – guide will simply have a regular old television, right?

A That's correct.

(Tr. at 2389-91). Moreover, complainants' in their post hearing brief responded to respondents' inclusion of a video switcher as part of the corresponding "means . . . for displaying" accordingly: "Respondents [sic] proposed additional structure merely enables the CPU (executing relevant software routines) and video display generator to perform their stated functions." (CPost at 185 (Emphasis added)). Therefore, complainants admit that the CPU and Video Display Generator need the Video Switcher in order to accomplish their ascribed function of "displaying the television schedule on said television display."

Based on the foregoing, the administrative law judge finds that the corresponding means to the "means . . . for displaying" of claim 1 of the '268 patent and claim 14 of the '204 patent are (1) the CPU, the video display generator, and the video switcher, or (2) their 35 U.S.C. § 112 equivalents.

3. The movement limitation ('268/'204 Patents)

Independent claim 14 of the '204 patent requires

> a movement control for a visual identification of selected ones of said irregular cells which controls movement of said visual identification in the first dimension and in second dimension from cell to cell.

(CX-4, col. 17, lns. 1-5). Claim 14 recited that the cells comprising the television grid guide would be "two dimensionally arranged," with "plurality of channels listed in the first dimension and time listed in a second dimension." (CX-4, col. 16, lns. 58-65).

Independent claim 31 provides for process that calls for:

> moving said visual identification in the first dimension and in the second dimension between first and second ones of said irregular cells to select a desired one of said irregular cells corresponding to a desired program.

(CX-4, col. 20, lns. 8-11). As with claim 14 of the '204 patent, "a plurality of channels" is listed in the first dimension, while time is listed in the second dimension. (CX-4, col. 20, lns. 3-5).

As was observed above, see supra, claim 1 of '268 patent had the following language:

> a movement control for a visual identification of ones of said irregular cells which initiates movement of said visual identification in the first dimension, and irregular movement of said visual identification in the second dimension in steps corresponding to variation in cell size, responsive to an input by a user to said movement control, between first and second ones of said irregular cells.

(CX-3, col. 14, lns. 56-65). Once again, "a plurality of channels" is listed in the first dimension, while time is listed in the second dimension. (CX-3, col. 14, lns. 50-53).

Complainants argued that the movement limitation only requires "that the 'visual identification' be in one cell, in one instance, then in another cell, in a second instance. As such, movement' of the 'visual identification' moves relative to the physical dimensions of the television screen – irrespective of whether the grid stays put, or whether the grid moves while the 'visual identification' stays put." (CPost at 197). Respondents S-A and Pioneer and the staff

argued that the movement limitation of the asserted claims is only satisfied if the "visual identification" moves within the grid guide, and is not satisfied if the "visual identification" remains stationary while the grid guide itself moves. (See, S-A Post at 127-28; PPost at 134-136; SPost at 50-52).

Respondent EchoStar argued that the movement limitation be construed such that the cursor would move at regular intervals, so that some user inputs would cause the cursor to move from cell to cell, but other user inputs would cause the cursor to move its position within the cell. (EPost at 126-128). Under EchoStar's construction, cell to cell movement would occur when the cursor was in a cell that corresponded to the length of the cursor's regular movement. (Id.). For instance if the cursor was moved at half hour intervals and happened to be in a cell corresponding to a show that was a half hour in duration, it would exhibit cell to cell movement to the next cell. If the cursor was in a cell that corresponded to a program greater than a half hour it would exhibit movement within the cell. (Id).

The administrative law judge rejects complainants' argument that the cursor does not have to be able to move within the grid. The movement limitation requires that the "visual identification" be able to be moved along both dimensions of the grid guide. The administrative law judge finds that this movement limitation is supported by both the plain language of the claims at issue and the specification. First, all three claims specify that the "visual identification," not the grid guide, must be able to be moved, in the first and second dimensions. The claims also make clear that the dimensions in which the "visual identification" is being moved are the dimensions of the "two -dimensionally arranged" grid guide. (CX-4, col. 16, lns. 58-65; col. 19, ln. 67 - col. 20, ln. 5; CX-3, col. 14, lns. 48-53).

The administrative law judge further finds that the specification provides support for the administrative law judge's construction of the movement limitation to require that the "visual identification" must be able to be moved within the grid. Thus, the Abstract discloses that it is the cursor, and not the grid guide, that is to be moved: "To tag the underlying position -- which defines where the cursor (32) is and thus, where it will move next . . . ." (Emphasis added). Similarly, the Summary of the Invention section recites that "a means is connected . . . for moving the cursor in the array in series of equal length steps." (CX-4, col. 2, 64-66 (Emphasis added); see also CX-4, col. 3, lns. 8-11 ("The cursor is moved in the array in a series of equal length steps . . . .")) . The Detailed Description of the Invention section also makes reference to the "[m]ovement of the cursor." (CX-4, col. 5, ln. 23). A comparison of Figures 1, 2, and 3 illustrates the movement described in the specification and the claims: the grid remains the same in all three figures, except for the position of the cursor which has been moved from the cell with the title "Young & Restless" in Figure 1, to the cell with the title "Judge (Part 1)" in Figure 2 and to the cell with the title "Inside Edition" in Figure 3. In all three figures, the grid has remained static and unchanged while the cursor has been moved in the first and/or second dimension to highlight a new program.

The administrative law judge also finds that the cursor's movement within the grid must be done, consistent with EchoStar's proposed construction, in regular steps that may result in cell to cell movement or movement within a cell, depending on the length of the cell occupied by the "visual identification." He finds that regular cell to cell movement would render the innovative cursor a nullity. The innovative cursor (1) highlights the entire cell; (2) identifies its current half hour position within a cell that is longer than a half hour; and (3) differentially identifies the

remaining portions of the cell. See supra. With regular cell to cell movement the cursor would not have a half hour position within a cell longer than an half hour. Moreover, the administrative law judge has already rejected construing the term "visual identification" to include a conventional cursor, which utilizes cell-to-cell movement, because the specifications of the '268 and '204 patents specifically disclaimed such movement.

Specifically, the specifications of the '204 and '268 patents state that one of the objects of the inventions disclosed in those patents is "to provide such a user interface having a cursor operation that compensates for an irregular grid format of the television schedule information." (CX-4, col. 2, lns. 37-39). However, the specifications explicitly disclaim any user interface using cell to cell movement within the grid of irregular cells. For instance, in the Background of the Invention section, cell to cell movement is described accordingly:

> If this array is navigated by a cursor that goes from cell to cell, a single cursor command can produce violent screen changes. For example, a cursor right command may cause an abrupt jump to a cell situated several hours from the current page. Not only is this unsettling, but may take considerable effort to recover. Clearly, a gentler cursor motion is needed for the irregular cells found in a grid TV guide.

(CX-4, col. 2, lns. 8-15). (Emphasis added). Furthermore, under the Detailed Description of the Invention section, cell to cell movement is again dismissed as being unsuitable for use with a grid of irregular cells:

> Because of the widely varying length of cells 26, if a conventional cursor used to select a cell location were simply step from one cell to another, the result would be abrupt changes in the screens 10, 12, 14, 18, and 20 as the cursor moved from a cell 26 of several hours in length to an adjacent cell in the same row. Such abrupt changes disorient a user of the system.

(CX-4, col. 4, lns. 46-52). (Emphasis added)

Therefore, in light of the specification's description of cell to cell movement being "disorient[ing]" and "unsettling," and resulting in "abrupt changes" and "abrupt jumps," as well as "violent screen changes," the administrative law judge finds that such movement was disclaimed by the patentees.[17]

Accordingly, based on the foregoing, the administrative law judge finds that the claims in issue require that the "visual identification" be able to be moved within both dimensions of the two dimensional grid guide, in addition to being moved at regular intervals.

4. The program note limitation ('268/'204 Patents)

Claim 1 of the '268 patent requires the display of a "program note overlay including a program description on said television display." Claims 17 and 34 of the '204 patent require the display of "a program note with a program description for the visually identified program," such limitation, according to S-A and EchoStar, requires the "program note overlay" of claim 1. (S-A

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[17] Complainants argued that the plain language of claim 1 of the '268 patent, specifically the requirement that the movement of the "visual identification" be irregular and correspond with the variation of size of the irregular cells, is consistent with cell to cell movement, in that the length of the visual identification's movement would be vary in accordance to the length of the irregular cells. However, the administrative law judge finds that the language relied upon by complainants equally supports the position of EchoStar, in that the movement of the innovative cursor can be typified as "irregular" and vary in correspondence with the size of the irregular cells. With the innovative cursor, which moves in half hour increments while highlighting the entire cell that it occupies, a user, on occasions when the cursor is occupying a cell that corresponds to a half hour program, only has to push the arrow key once to cause the cursor to move to the next cell and highlight it. However, on other occasions, where the innovative cursor is occupying a cell that corresponds to a program longer than a half hour, the user has to push the arrow key multiple times. The administrative law judge further finds that such movement would occur "in steps corresponding to variation in cell size" as, for example, each movement of the innovative cursor in a cell corresponding to a two hour program, would be equal to a quarter of the cell's length, while if the cursor were located in a cell corresponding to an hour long program each of its movements would be equal to half the length of the cell.

Post at 148, EPost at 130-31). Complainants argued that the "program note" limitation of these claims should be construed consistent with its ordinary meaning, viz., "a display of graphical or textual information, about a program, that partially or completely covers the video screen." (CPost at 212).

The staff argued that the "term 'overlay' has a number of meanings in the software and user interface area[s], and generally implies something that appears to come up and partially hide what had appeared on the screen previously." (SPost at 34-35).

Respondents argued that the "program note" limitation can only be met by an overlay that is superimposed on top of the grid guide and also, its position on the screen must vary according to the location of the cursor, so as to avoid masking the cursor. (See, e.g., S-A Post at 148-50 ; PPost at 145-48; EPost at 130-34).

In the Background of the Invention section, the following need is identified:

> Printed grid televison schedule guides often include additional information besides the program title and broadcast names. Such grids are also typically provided in combination with a more detailed printed schedule that contains a synopsis of each program, whether the program is a repeat, ratings for movies, and other information. When using a television set as a display for a schedule system, the size and resolution of the television display limit the amount of text that can be displayed with the grid. Improved techniques are required for conveying the most amount [sic] of information to the user in an easily understood manner within the limitations of the television display.

(CX-4, col. 2, lns. 16-27 (Emphasis added)).

Similarly, in the Summary of the Invention section, one of the objects of the invention is described as "to provide such a user interface in which supplemental schedule information is

presented in overlays[18] that obscure a minimum amount of useful other information." (CX-4, col. 2, lns. 45-48). The Detailed Description of the Invention section describes the "overlay" accordingly:

> FIG. 6 shows a television schedule grid screen 20 with a program note overlay 52. With limited text capacity on TV displays, it is preferable to display as many lines of TV listings as feasible. To handle program notes, which are text intensive, on-demand overlays 52 are used . . . .
>
> Program notes for a selected program are overlaid over the grid guide upon request. The program note can be toggled off/on using a SELECT command. The program note 52 overlays and hides 3 or 4 listings of the guide. To minimize concealment of the guide an auto-roving note is used. The program note will overlay either the top half or bottom half of the screen, as necessary to avoid masking the title of the selected screen. If the cursor 32 is in the upper half of the screen, the note will appear in the bottom half, and vice versa. If the cursor 32 is moved to the lower half of the screen the note will automatically position itself in, [sic] the upper half of the screen.

(CX-4, col. 6, lns. 22-52) (Emphasis added). Thus in this section of the specification program note overlays are described as temporarily covering the grid guide. However, as a later section of the specification describing channel grazing overlays makes clear, a program note overlay does not always have to cover the grid guide:

> FIGS. 9 and 10 show channel grazing overlays 64 and 66 that provide information on current programs when switching channels while watching television. In the overlay 64, when scanning channels the title of each program is overlaid at 68, along with the name of the TV service (HBO, ABC etc.), the cable channel number, the current date, day of the week, and time in the channel information field 62. The overlay 66 is the same as the overlay 64 except that this overlay includes a program note 70, which is similar to the program note 52 in FIG. 6, but contains information to a program currently being broadcast on the selected channel. To access program notes, press the Select key. In addition to the program note 70, elapsed time is indicated by a percentage calibrated time bar 72. The bar is bracketed by S for start, and F for finish. By default, titles will appear

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[18] An "overlay" is defined as "a covering either permanent or temporary." (Webster's Seventh New Collegiate Dictionary (1963) at 601).

> automatically when channels are scanned. Grazing Titles may be de-activated using the CANCEL key. To restore auto-titles, press Select while viewing TV. The flow diagram governing titles/program notes, while viewing TV, is shown in Fig. 11.

(CX-4, col. 7, ln. 56 - col. 8, ln. 8) (Emphasis added). Hence the specification makes clear that the overlay 66 is identical to program note overlay 52 except that it "contains information to a program currently being broadcast on the selected channel," even though the program note displayed as part of the channel grazing overlay was displayed over a broadcast television show and not the grid guide. (Tr. at 3653-54). Therefore, the administrative law judge rejects respondents' and the staff's attempts to limit the "overlay" limitation to require that the program note cover a portion of the grid guide. Instead, the administrative law judge construes this limitation to require merely that the overlay must cover a portion of the screen, irrespective of what is being displayed on the screen.

Furthermore, the administrative law judge rejects respondents' attempts to read the auto-roving feature into the "program note" limitation. Respondents' argued that the auto-roving feature must be read into the claims, because the invention needs this feature in order to accomplish one of the stated objects of the invention, viz., to present additional information about programs by using overlays that obscure a minimum amount of useful information. (EPost at 132). However, even though the specification states that the auto-roving function is used with the overlays to "minimize concealment of the guide" ('204 patent, col. 6, lns. 44-45), such an auto-roving feature would not enable the overlays to better accomplish the stated objective of presenting additional information about programs by using overlays that obscure a minimum amount of useful information. This is because an overlay as described in the specification will

always obscure three to four lines on a grid guide even if the auto-roving function is used. The auto-roving feature merely causes the overlay to appear (and thereby obscure a portion of the grid guide) on the top or bottom of the grid guide depending on the position of the cursor, whereas a non-auto-roving overlay would appear in the same place every time it is invoked, irrespective of the location of the cursor. Therefore the same amount of information is obscured whether an auto-roving or a non-auto-roving overlay is used. Moreover, the program notes displayed as part of the channel grazing overlays do not exhibit any auto-roving capability (Tr. at 4068-69), even though such program notes would be subject to the same over all objective of presenting additional information about programs by using overlays that obscure a minimum amount of useful information.

Accordingly, the administrative law judge construes "program note" limitation of claim 1 of the '268 patent and claims 17 and 34 of the '204 patent as to require only the use of overlays that are invoked on demand, but does not require the overlays to be auto-roving or to appear over part of the grid guide.

5. The language "tuning a programmable tuner to a select channel based on position of said visual identification" ('204 patent)

Claim 31 of the '204 patent recites "tuning a programmable tuner to a select channel based on position of said visual identification" as an element. Respondents argued that this limitation "requires that the channel changes in response to movement of the visual identification without further user input, i.e., without pressing the select button." (RFF 1521). Complainants argued that this limitation can be met even if the select button had to be used as the final step to cause the tuner to tune to the selected channel. (CORFF 1521 et seq.)

The administrative law judge rejects respondents' proposed construction. The plain language of the limitation is in no way inconsistent with a system or a process in which the user can move a cursor to highlight cell on a grid guide corresponding to a television show and then press the SELECT button to cause the tuner to tune to the selected program. In such a system or process the tuner would still be tuning to a particular channel based on the position of the cursor. Respondents claim that the prosecution history supports their proposed construction, yet they are only able to cite to the language of proposed claim 229 which was introduced in the Supplemental Amendment of March 21, 1995. While applicant's remarks accompanying the Supplemental Amendment make it clear that proposed claim 229 had a limitation which required that the tuner to automatically tune to a particular channel, solely because of the placement of the cursor (RX 3011 at 423), proposed claim 229 did not develop into claim 31 and the wording of the limitation of proposed claim 229 is markedly different from that of the corresponding limitation of claim 31.[19]

VI. INFRINGEMENT

Complainants have the burden of proving, by a preponderance of the evidence, that the claims in issue are infringed by the accused set-top boxes. See, e.g., Conroy v. Reebok International, Ltd., 14 F.3d 1570, 1573 (Fed. Cir. 1994); Braun Inc. v. Dynamics Corp., 975 F.2d 815 (Fed. Cir. 1992); Chisum, § 18.06(1). To find infringement, the accused set-top boxes must meet each claim limitation, either literally or under the doctrine of equivalents. Charles Greiner & Co. v. Mari-med Mfg. Inc., 962 F.2d 1031, 1034 (Fed. Cir. 1992). Literal infringement

[19] Proposed claim 229 recited the limitation of "providing television signals for the particular program to the television receiver in response to position of the cursor at the one of the irregular cells corresponding to the particular program." (RX-3011 at 420-21).

requires that every limitation of the claim be found in the accused set-top boxes, exactly. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1575 (Fed. Cir.), cert. denied, 116 S. Ct. 515 (1995).

A device that does not literally infringe a claim can infringe under the doctrine equivalents.[20] The "doctrine of equivalents" prevents an accused patent infringer from avoiding liability for infringement by changing only minor or insubstantial details of a claimed invention while retaining the invention's essential identity. Festo Corp. v. Shoketsu Kinzoku Kogyo Mabashihi Co., 234 F.3d 558. (Fed. Cir. 2000), vacated, Slip op., 535 U.S., 2002 WL 1050479 (May 28, 2002).

A. '121 Patent

1. Pioneer

Complainants argued that they have established that the accused Pioneer devices infringe claims 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 31, 33, 36, 42, 43, 48, 50, 54, 57, 59, 60, 61 and 66 of the '121 patent. Each of the staff and Pioneer argued that complainants have not met their burden.

a. Independent Claim 18 And Dependent Claims 19-24, 26-28 And 31

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[20] As the PROCEDURAL HISTORY section stated, the administrative law judge granted respondents' Motion No. 454-111 to preclude complainants from asserting infringement under the doctrine of equivalents.

}

Moreover, the administrative law judge finds that the Pioneer set-top boxes do not "combin[e] said user selection criteria" as required by claim 18. The Pioneer IPG has three modes of operation: Time View, Theme View and Title View. The administrative law judge finds that none of these modes of operation allows a user to "combin[e] said user selection criteria." The Time View of Passport software is the initial mode of the Pioneer IPG and displays a grid television guide that is just like a newspaper TV guide. (Krakirian, Tr. at 2970-2971, 2890). Specifically, the left hand column of the grid television guide provides a list of channels offered by the cable provider, while the top column lists the time in half increments. Titles of programs are contained in cells in the grid, corresponding to the appropriate scheduled channel and time of broadcast. This channel list is preset and pre-ordered by the cable operator. (Krakirian, Tr. at 2890; RX-4500A, slide/video segment 5).

A user of Passport software cannot change the sequence or order of the preset channel line up. (Krakirian, Tr. at 2890; RX-4500A, slide/video segment 5). All that a user may do in the Time View is browse the preset channel list that is automatically called up by the Passport software in response to the user pressing the "GUIDE" button, by using the page up or down keys or by using the up or down directional arrow keys. (Krakirian, Tr. at 2970-2971). The grid shifts along the appropriate axis and in the appropriate direction, each time one of these buttons are

used. For example, when the user presses the left or right arrow key, the grid shifts along the time axis and a new grid is displayed with a new half-hour column replacing one of the original columns. (CX-2367). Alternatively, the user can press the fast forward or fast rewind key, causing a new grid to be shifted 4 hours forward or backward, respectively, along the time axis. (CX-2303).

However, the user cannot change the way the initial Time View is displayed. (Krakirian, Tr. at 2890). For example, the user may not specify a particular time range or channel range to display on the grid, as the Passport software controls what part of the channel list and time range will be displayed. (Krakirian, Tr. at 2970-2971). Also, a user cannot enter commands to cause only particular channels to be contained in the list shown in the left hand column of the grid guide. (Krakirian, Tr. at 2892; RX-4500A, slides/video segments 5 & 6).

The administrative law judge finds that no combining as that term was construed with relation to claim 18 occurs in Pioneer's Time View. As required by claim 18, the Time View mode does not allow the user to enter a plurality of criteria, which are then used to select only those programs that meet the combined criteria, so that only those programs are displayed to the user. The administrative law judge finds that the navigation that occurs in the Time View grid guide by browsing does not utilize combining of search criteria within the meaning of claim 18, as a user cannot cause the IPG to present to him particular programing that occurs at a particular time or on a particular channel. Instead, the Pioneer IPG merely allows the user to browse through the grid guide, either cell by cell or four hour time interval by four hour interval, to find for himself the channel or time range that he is interested in. The user must browse through the entirety of the information to find desired programs just like one browses through the pages of a

printed television guide. (Rhyne, Tr. at 3577-78; Krakirian, Tr. at 2970-71). Thus the administrative law judge finds that in the accused Pioneer set-top boxes, there is no way for the user to reduce the number of programs that are presented to the user in Time View, which is in conflict with the purpose of the '121 patent. As testified by Faillace, complainants' expert witness, the purpose of the '121 patent is to provide database techniques to take a vast sea of program schedule information, cut it down to size, and enable the user to focus just on those programs most likely to be of interest to him or her, so that instead of looking at thousands of descriptions of programs, the user would be looking at just a handful of programs, in order to be able to make an educated choice. (Faillace, Tr. at 1150). Faillace's testimony is supported by the specification which states in the Background of the Invention section that "[i]t would be desirable for a user to be able to reduce the number of such listings to be consulted in making a program selection." ('121 patent, col. 2, ll. 63-65). The specification provides further that:

> Because the system will search through a volume of schedule information to find programs meeting the viewer's selection criteria, the program selection is much easier and more rapid with the system of this invention than with manual selection. By way of example, the system can be used to select satellite programs from a larger list of satellite programs by user selected satellite symbols, such as F1 or AB, to be displayed by the scheduler, eliminating most of the program listings which are of no value to the viewer. Similarly, for users without special decryption service, the system will remove from display those satellite listings which are of no value to the viewer because they are encrypted.

(col. 5, lns. 23-36) (Emphasis added). Therefore, the administrative law judge finds that "combining" of selection criteria as required by claim 18 does not occur in the IPG's Time View mode of Pioneer.

The administrative law judge further finds that the use of the Pioneer set-top boxes' Theme View or Title View modes does not satisfy the combining limitation of claim 18, as no

combining at all occurs in either the Passport's Theme View or Title View as the user selects one criterion (an initial letter of a program's title or a single theme) and the system presents the user with a list of program's meeting that criterion, and whereupon the user must scroll through the list to find the desired program. For instance, once in the Time View, a user may switch to the Theme View by pressing the "B" button on the remote control. (Krakirian, Tr. at 2893; RX-4500A, slide/video segment 7). There is no way, however, that a user of Passport software may enter the Theme View without first entering the Time View. (Krakirian, Tr. at 2894; RX-4500A, slide/video segment 7). Similar to the operation of Theme View, once in the Time View, a user may switch to the Title View by pressing the "C" key. (CX-2336; CX-8006). However, there is no way that a user of Passport software may enter the Title View without first entering the Time View by pressing the "Guide" key. (Krakirian, Tr. 2894). On the left side of the screen in Title View, a list of characters appears from which a user may choose the initial character of a title. (Faillace, at Tr. 2265; RX-8006; CX-2336). With Passport software, the user can only select only one initial character while in Title View. (Faillace, Tr. at 2267-2268; RX-8007; RX-8008). The system will then find all the programs having the initial letter that the user selected and will present the user with a list of programs beginning with that letter along with the programs' scheduled broadcast dates, times and channels. (RX-8006; RX-8007; RX-8008). In Title View, the user cannot combine a title search with an interval of time, but must rather navigate up and down the list of programs presented as beginning with the initial letter selected by the user. (Tr. at 3577).

The Pioneer Passport software's Theme View operates the same way as the Title View except the user is selecting a theme instead of an initial character. (Krakirian, Tr. at 2895). In

the Passport software's Theme View, the user may apply only one theme at a time and may not combine a theme with an interval of time. (Rhyne, Tr. at 3575-3572; RX-4747.93). The user may only navigate up or down the list of programs by scrolling through the list. (Rhyne, Tr. at 3576-77; RX-4747.93). Therefore, no combining at all occurs in either the Passport's Theme View or Title View as the user selects one criterion (an initial letter of a program's title or a single theme) and the system presents the user with a list of program's meeting that criterion, and whereupon the user must scroll through the list to find the desired program.

The administrative law judge further finds that Pioneer's Passport software does not store the title of selected programs as required by claim 18. (Krakirian, Tr. at 2899-01). From any of the three views (Time, Theme or Title) the user may press the "SELECT" button. (Krakirian, Tr. at 2899-2900). If the highlight is on a cell corresponding to a program being currently broadcast, the Passport software will select the channel for the highlighted row, take the viewer to that service and allow the viewer to watch the selected program. The Passport software will then store the channel, but not the title, of the program that the viewer selected. (Krakirian, Tr. at 2899-2901). If the user presses "SELECT" and the highlight is within a column for a future time, Passport software will ask whether the user wishes to manually select the service for the highlighted position or set a timer so that the user may, at a future time, record or be reminded to view the service corresponding to the scheduled program that is highlighted. (Krakirian, Tr. at 2899). If the user elects to set an event timer, Passport software will set a timer that causes the software to take future action. (Krakirian, Tr. at 2900). {

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Based on the foregoing the administrative law judge finds that the accused Pioneer set-top boxes do not infringe independent claim 18 and dependent claims 19-24, 26-28 and 31.

b. Independent Claim 33

The administrative law judges finds that the accused Pioneer devices do not infringe independent claim 33. For the same reasons that he found that the accused Pioneer devices do not store schedule information in the CPU, do not have a storage means, and do not combine user selection criteria in relation to claim 18, he finds that the accused devices lack these features and functions in relation to claim 33. See supra. The administrative law judge further finds that the accused Pioneer devices are incapable of "turning on" a VCR within the meaning of claim 33, i.e., to cause electricity to be supplied to it. The Pioneer set-top boxes, when fitted with an "IR Blaster", an optional accessory, can cause a VCR that is already turned on to start to recording a selected channel. (Tr. at 2255-57). However the Pioneer set-top boxes cannot turn power on for a VCR that is turned off. (Tr. at 1471-72, 3635).

Based on the foregoing, the administrative law judge finds that the accused Pioneer set-top boxes do not infringe independent claim 33.

c. Independent Claim 36

The administrative law judges finds that the accused Pioneer devices do not infringe independent claim 36. For the same reasons that he found that the accused Pioneer devices do not store schedule information in the CPU, do not have a storage means, do not combine user selection criteria and do not store the titles of selected programs in relation to claim 18, he finds that the accused devices lack these features and functions in relation to claim 36. See supra. Additionally, for the same reason that he found that the accused Pioneer devices cannot turn on a

VCR in relation to claim 33, he finds that the Pioneer devices are incapable of performing that function in relation to claim 36.

d. Independent Claim 42 And Dependent Claims 43, 48, 49 And 50

The administrative law judge finds that the accused Pioneer devices do not infringe independent claim 42 and dependent claims 43, 48, 49 and 50. For the same reasons that he found that the Pioneer devices did not satisfy the "storage means" limitation of claim 18, he finds that the Pioneer devices do not satisfy the "storage means" limitation of claim 42 and the claims depending therefrom.

The administrative law judge further finds that the accused Pioneer devices do not have the first input means required by claim 42 and the claims that depend from it. As found in the claim construction section, supra, the "first input means" is a means plus function element and the corresponding structures comprise either (1) an FM antenna, an FM receiver, a SCA subcarrier decoder, and data demodulator or (2) an antenna, a programmable tuner, a program data timing controller and a data demodulator; or (3) their 35 U.S.C. § 112, ¶ 6 equivalents.

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It is undisputed that the digital technologies used by Pioneer's set-top boxes were developed after the issuance of the '121 patent. (Tr. at 1193-94, 1662-3).[21] Thus the digital technology relied upon by Pioneer cannot be a 35 U.S.C. § 112, ¶ 6 equivalent to the "first input means" because it was developed after the issuance of the '121 patent. As the Federal Circuit stated in Al-Site Corp. v. VSI International, Inc., 174 F.3d 1308, 1320 (Fed. Cir. 1999)

> As this court has recently clarified, a structural equivalent under § 112 must have been available at the time of the issuance of the claim. See [Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1310 (Fed. Cir. 1998).] An equivalent structure or act under § 112 cannot embrace technology developed after the issuance of the patent because the literal meaning of a claim is fixed upon its issuance. An "after arising equivalent" infringes, if at all, under the doctrine of equivalents. See [Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 117 S.Ct. 1040, 1052 (1997);] Hughes Aircraft Co. v. U.S., 140 F.3d 1470, 1475, 46 U.S.P.Q.2d 1285, 1289 (Fed. Cir. 1998). . . . . In other words, an equivalent structure or act under § 112 for literal infringement must have been available under the doctrine of equivalents may arise after patent issuance and before the time of infringement. See Warner-Jenkinson, 117 S.Ct. at 1053.

The administrative law judge further finds that the accused Pioneer devices do not have a

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[21] Pioneer's digital technology has greater speed of transmission, reliability, and total available capacity than analog technology. (Tr. at 3598-60; RX-4747.46; RX- 4760; RX-4762).

a "selectable display", in which the initial display comprises information selected by the data processor in response to the user inputs, as well as either the current channel that the television is tuned to or the current time. With the accused Pioneer devices, the user has no ability to select the way the initial Time View is displayed. No larger or smaller time interval than the one-and-a-half hours time period can be displayed on the Time View's grid guide in the horizontal dimension. (Krakirian, Tr. 2891; RX-4500A, slide/video segment 5). Furthermore, the Pioneer set-top boxes do not allow a user to store a user selected set of preferred themes that can be activated or deactivated by the user and therefore the user cannot have the Time View show only those programs coming within certain themes. (Krakarian, Tr. at 2893-95). Also, a user cannot enter commands to cause only particular channels to be listed.

Accordingly, based on the foregoing, the administrative law judge, finds that accused Pioneer devices do not infringe independent claim 42 and dependent claims 43, 48, 49 and 50.

e. Independent Claim 54

The administrative law judge finds that the accused Pioneer devices do not infringe independent claim 54. For the same reasons that he found that the Pioneer devices did not satisfy the "storage means" limitation of claim 18, he finds that the Pioneer devices do not satisfy the "storage means" limitation of claim 54. Furthermore, he finds that the Pioneer products at issue do not have the 35 U.S.C. § 112, ¶ 6 corresponding structures for the "means connected between said programmable tuner and said data processor for separating the broadcast schedule information from the broadcast programs and supplying the broadcast schedule information to said data processor."

Complainants argued that "[t]he separating means in all the accused devices is the

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Based on the foregoing, the administrative law judge finds that the accused Pioneer devices do not infringe independent claim 54.

f. Independent Claim 57 And Dependent Claims 59, 60 And 61

The administrative law judge finds that the accused Pioneer devices do not infringe independent claim 57 and dependent claims 59, 60 and 61. For the same reasons that he found that the Pioneer devices did not satisfy the "storage means" limitation of claim 18, he finds that the Pioneer devices do not satisfy the "storage means" limitation of claim 57. For the same reasons that he found that the Pioneer devices did not satisfy the "separating means" limitation of claim 54, he finds that the Pioneer devices do not satisfy the "separating means" limitation of

claim 57. Furthermore, for the same reason that he found that Pioneer products did not satisfy claim 42's "selectable display" limitation he finds that they do not satisfy claim 57's selectable display limitation.

Based on the foregoing, the administrative law judge finds that the accused Pioneer devices do not infringe independent claim 57 and dependent claims 59, 60 and 61.

g. Independent Claim 66

The administrative law judge finds that the accused Pioneer devices do not infringe independent claim 66. For the same reasons that he found that the accused Pioneer devices do not store schedule information in the CPU, do not have a storage means, and do not combine user selection criteria in relation to claim 18, he finds that the accused devices lack these features and functions in relation to claim 66. See supra. Accordingly, the accused Pioneer devices do not infringe independent claim 66.

2. EchoStar

Complainants argued that they have established that the accused EchoStar devices infringe claims 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 31, 32, 36, 54, 57, 58, 59, 60, 61 and 66 of the '121 patent. Each of the staff and EchoStar argued that complainants have not met their burden of proving infringement of these claims.

a. Independent Claim 18 And Dependent Claims 19-24, 26-28 And 31

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The administrative law judge also finds that the accused EchoStar devices do not have the storage means required by claim 18 and the claims depending from it.{

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After the accused EchoStar set-top boxes display screenful of events satisfying the user selected theme, the user can scroll down the list of selected programs. (CX-2326 et seq., Tr. at 1320-21). When the user scrolls past the last program listed on the screen, the system can display additional events beyond those displayed in the initial screen that match the selected theme {

}

While, the accused EchoStar devices allow a user to set the set-top boxeses to display only those programs that are to be broadcast on certain channels, (Tr. at 1323), such combining is logical "OR" combining, as the set-top boxes displays all of the programs that occurr on any of the selected channels, instead of displaying only programs that occur on all of the selected channels, as would be the case with logical "AND" combining. As found in the claim construction section, supra, the "combining" limitation requires that the set-top boxes perform both logical "OR" and logical "AND" combining. Therefore, the set-top boxes's ability to display the programs scheduled to be broadcast on selected channels does not satisfy the combining limitation.

The administrative law judge further finds that the accused EchoStar set-top boxeses{ }

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Based on the foregoing, the administrative law judge finds that complainants have failed to meet their burden of proving that the accused EchoStar devices infringe independent claim 18 and dependent claims 19-24, 26-28 and 31 of the '121 patent.

b. Independent Claim 32

The administrative law judge finds that complainants have not met their burden of

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[22] The administrative law judge finds that the accused EchoStar set-top boxes{
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proving that the accused EchoStar devices infringe claim 32 of the '121 patent.{

} as required by claim 32.

c. Independent Claim 36

The administrative law judges finds that the accused EchoStar devices do not infringe independent claim 36. For the same reasons, supra, that he found that the accused EchoStar devices{

} he finds that the accused devices lack these features and functions with respect to claim 36. Additionally, complainants admitted that the EchoStar devices cannot power on a VCR as is required by independent claim 36.

Based on the foregoing, the administrative law judge finds that complainants have failed to meet their burden of proving that the accused EchoStar devices infringe claim 36.

d. Independent Claim 54

The administrative law judge finds that complainants have not met their burden in establishing that the accused EchoStar devices infringe independent claim 54. For the same reasons that he found that the EchoStar devices{

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} As stated above, in connection with the accused Pioneer products in relation to claim 42, {

}

Based on the foregoing, the administrative law judge finds that the accused EchoStar devices do not infringe independent claim 54.

e. Independent Claim 57 And Dependent Claims 58, 59, 60 And 61

The administrative law judge finds that complainants have not met their burden in establishing that the accused EchoStar devices infringe independent claim 57 and dependent

claims 58, 59, 60 and 61. For the same reasons that he found that the accused EchoStar devices {

} Moreover, for the same reasons that the administrative law judge found that the EchoStar devices{

}

Based on the foregoing, the administrative law judge finds that the accused EchoStar devices do not infringe independent claim 57 and dependent claims 58, 59, 60 and 61.

f. Independent Claim 66

The administrative law judge finds that complainants have not met their burden in establishing that the accused EchoStar devices infringe independent claim 66. For the same reasons that he found that the accused EchoStar devices{

} he finds that the accused devices lack these features and functions in relation to claim 66. See supra. Accordingly, the accused EchoStar devices do not infringe independent claim 66.

3. S-A

Complainants argued that they have established that the accused S-A devices infringe claims 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 31, 33, 36, 42, 43, 48, 49, 50, 51, 54, 57, 59, 60, 61 and 66 of the '121 patent. Each of the staff and S-A argued that complainants have not met their burden.

a. Independent Claim 18 And Dependent Claims 19-24, 26-28 And 31

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} The grid shows a screen of five predetermined channels over an hour and a half time interval. (Rhyne, Tr. at 3581-82; 3587). A user can cause the grid to shift along its time axis or its channel axis by using directional arrows. (Rhyne, Tr. at 3581-82; 3587). As found with respect to Pioneer, supra, such navigation does not constitute "combining."

Moreover, the S-A Standard Guide only allows the user to select from the stored presorted relational database of IPG data by date or based on one theme or based on the first character of a program title. (RX-474.91; RX-4747.88C; Rhyne Tr. at 3577; 3587-91; JX-12C at 556-61, 572, 626-28, 930-42). The theme and title-character search can neither be combined nor applied successively to create a subset listing only programs with the selected theme and title character. (RX-4747.91, Rhyne, Tr. at 3575-77). Thus, in the accused S-A products having the Standard Guide, only a single selection criterion can be used at a time. For example, the Theme, Title, or Date View uses only a single criterion. The date key can be used following the Theme View or Title View key to display only those programs with the selected theme or initial letter of their title and are scheduled to be broadcast on the selected date. (Rhyne, Tr. at 3588 and 3590-91; RX-4747.88; RX-4747.91; JX-62C at 272-73, 276-77, 281-82). However, the administrative law judge finds that this does not satisfy the "combining" limitation of claim 18, as Young had specifically disclaimed sequential, hierarchal searches. See, supra.

The S-A Flex Guide does not allow the user to select from the stored IPG data based on the first character of a program title, date or theme. (Durden, Tr. at 2791; JX-12C at 10531-54; JX-49C at 106). In the accused S-A Flex Guide, the administrative law judge finds that the Time

View displays a grid guide that is just like a newspaper TV guide. The Time View allows a user to scroll through pages of the grid guide and browse through the schedule information. (Rhyne, Tr. at 3582-83, 3587). The user may not specify a particular time range or channel range to display. (RX-4747.57; Rhyne, Tr. at 3537-38, 3622-23, 3631). Rather, the S-A Flex Guide determines what part of the channel list and time range will be first displayed. (Durden, Tr. at 2755). Once the Time View is chosen and displayed, the user can only browse through a preset channel line up and preset sequential time range. (Rhyne, Tr. at 3582-83). The user of the S-A Flex Guide may not change the sequence of channels or sequence of times displayed, as these have been preset. (Rhyne, Tr. 3582-83). The user may page up or down one screen of pre-set channels at a time using page keys, may use directional arrow keys to scroll the grid up or down one channel row at a time along the pre-set channel list, and may use directional arrow keys to scroll the grid forward or backwards in thirty-minute intervals. (JX-12C at 554-556; Durden, Tr. at 2757-2758). Also a user cannot enter commands to cause only particular channels to be contained in the list shown in the left hand column of the grid guide. (Rhyne, Tr. at 3583). After the S-A Flex Guide is opened to the Time View the user's interaction with the Time View is limited to using the directional keys on the remote control to scroll the grid forward or backwards in half-hour increments. (Rhyne, Tr. at 3575-76, 3583, 3587; RX-4747.91). A user of the S-A Flex Guide cannot enter commands that allow the user to view programs that are on at a particular time without having to use the directional arrow keys, the page button, or the "C" button to scroll to the desired time. (Rhyne, Tr. 3575-76, 3583, 3587; RX-4747.91). In the S-A Standard Guide's Title View, the user may not combine a title with a user-specified interval of time. The user may only navigate up or down the list of programs having the same user selected

initial character of the title. (RPX-99, clips 24 and 25). Therefore, the administrative law judge finds that the accused S-A products do not satisfy the "combining" limitation of claim 18. Moreover, the administrative law judge finds that the accused S-A products do not store titles of selected programs as required by claim 18. (FF 187, 188).

Based on the foregoing, the administrative law judge finds that the complainants have failed to meet their burden of proving that the accused S-A products infringe independent claim 18 and dependent claims 19-24, 26-28 and 31.

b. Independent Claim 33

The administrative law judges finds that complainants have not satisfied their burden in establishing that the accused S-A devices infringe independent claim 33. For the same reasons, supra, that he found that{

} See supra.

Based on the foregoing, the administrative law judge finds that the accused S-A set-top boxes do not infringe independent claim 33.

c. Independent Claim 36

The administrative law judges finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 36. For the same reasons that he found that the accused S-A devices{

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and functions in relation to claim 36.

d. Independent Claim 42 And Dependent Claims 43, 48, 49 And 50

The administrative law judge finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 42 and dependent claims 43, 48, 49 and 50. For the same reasons that he found that the S-A devices did not satisfy the "storage means" limitation of claim 18 supra, he finds that the S-A devices do not satisfy the "storage means" limitation of claim 42 and the claims depending therefrom.

The administrative law judge further finds that complainants have not met their burden in establishing that the accused S-A devices{

} As found in the claim construction section, supra, the "first input means" is a means plus function element and the corresponding structures comprises either (1) an FM antenna, an FM receiver, a SCA subcarrier decoder, and data demodulator or (2) an antenna, a programmable tuner, a program data timing controller and a data demodulator; or (3) their 35 U.S.C. § 112, ¶ 6 equivalents.{

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Furthermore, the administrative law judge finds that the S-A products{ }

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} The Time View of the S-A products displays a grid television guide that is just like a newspaper TV guide. (Rhyne, Tr. at 3582-83, 3587). The user may not specify a particular time range or channel range to display. (RX-4747.57; Rhyne, Tr. at 3537-38, 3622-23, 3631). Rather, the S-A guide mandates what part of the channel list and time range that will first be displayed. (Durden, Tr. at 2755). {

} (Rhyne, Tr. at 3575-76, 3583, 3587). The user of an S-A guide has no ability to change the displayed channels or the ordering of the channels. (Rhyne, Tr. at 3575-76, 3583, 3587). Nor can a user enter commands to cause only particular channels to be contained in the list shown in the left hand column of the grid guide. (Rhyne, Tr. at 3583).

Accordingly the administrative law judge finds that the accused S-A products do not infringe independent claim 42 and dependent claims 43, 48, 49 and 50.

e. Independent Claim 51

The administrative law judge finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 51. For the same reasons that he found that the accused S-A devices do not have a storage means in relation to claim 18, supra, and do not have the "first input means" and a "selectable display" as required by claim 42, supra, he finds that the accused devices lack these features and functions in relation to claim 51. Accordingly, the accused S-A devices do not infringe independent claim 51.

f. Independent Claim 54

The administrative law judge finds that complainants have not met their burden in

establishing that the accused S-A devices do not infringe independent claim 54. For the same reasons that he found that the S-A devices did not satisfy the "storage means" limitation of claim 18, he finds that the S-A devices do not satisfy the "storage means" limitation of claim 54. Furthermore, he finds that the S-A products at issue{

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} Therefore, the administrative law judge finds that the SA devices do not have the means for separating required by claim 54.

g. Independent Claim 57 And Dependent Claims 59, 60 And 61

The administrative law judge finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 57 and dependent claims 59, 60 and 61. For the same reasons that he found that the S-A devices did not satisfy the "storage means" limitation of claim 18, he finds that the S-A devices do not satisfy the "storage means" limitation of claim 57. For the same reasons that he found that the S-A devices did not satisfy the "separating means" limitation of claim 54, he finds that the S-A devices do not satisfy the "separating means" limitation of claim 57. Furthermore, for the same reason that he found that S-A products did not satisfy claim 42's "selectable display" limitation he finds that they do not satisfy claim 57's selectable display limitation.

Based on the foregoing, the administrative law judge finds that the accused S-A devices do not infringe independent claim 57 and dependent claims 59, 60 and 61.

h. Independent Claim 66

The administrative law judge finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 66. For the same reasons that he found that the accused S-A devices{

} in relation to claim 18, supra,

he finds that the accused devices lack these features and functions in relation to claim 66. Accordingly, the accused S-A devices do not infringe independent claim 66.

B. '268/'204 Patents

I. Pioneer

Complainants argued that they have established that the accused Pioneer products

infringe claims 1 and 3 of the '268 patent and claim 14, 15, 16, 17, 31, 32, 33 and 34 of the '204 patent. Each of Pioneer and the staff argued that complainants have not met their burden.

a. Independent Claim 1 And Dependent Claim 3 Of The '268 patent.

The administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products practice independent claim 1 and dependent claim 3 of the '268 patent. {

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Furthermore, the administrative law judge finds that the accused Pioneer products do not have a cursor that exhibits the movement required by the claims. {

} In the claim construction section, the administrative law judge found that the cursor must be able to be moved in regular intervals, and

it must also be able to be moved within the grid guide. See supra. The cursor of the Pioneer products cannot be moved within the grid guide and do not move in regular intervals and therefore do not meet this limitation.

The administrative law judge further finds that the accused Pioneer products do not have the required innovative cursor. Instead, the Pioneer cursor is uniformly black and fills the entire cell, irrespective of the length of the cell. (Tr. at 2918, RX-4500).

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products infringe claims 1 and 3 of the '268 patent.

b. Independent Claim 14 And Dependent Claims 15, 16 And 17 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent. For the same reasons that the administrative law judge found that the Pioneer products did not satisfy the "means . . . for displaying" limitation, the innovative cursor requirement, or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the Pioneer products do not meet these limitations in relation to claim 14, 15, 16, and 17 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent.

c. Independent Claim 31 And Dependent Claims 32, 33 And 34 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of

proving that the accused Pioneer products infringe independent claim 31 and dependent claims 32, 33 and 34 of the '204 patent. For the same reasons that the administrative law judge found that the Pioneer products did not satisfy the innovative cursor requirement, or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the Pioneer products do not meet these limitations in relation to claims 31, 32, 33 and 34 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products infringe independent claim 31 and dependent claims 32, 33, and 34 of the '204 patent.

2. S-A

Complainants argued that they have established that the accused S-A products infringe claims 1 and 3 of the '268 patent and claim 14, 15, 16, 17, 31, 32, 33 and 34 of the '204 patent. Each of S-A and the staff argued that complainants have not met their burden.

a. Independent Claim 1 And Dependent Claim 3 Of The '268 patent.

The administrative law judge finds that complainants have not met their burden of proving that the accused S-A products practice independent claim 1 and dependent claim 3 of the '268 patent.{

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the administrative law judge finds that complainants have not met their burden of showing that the accused S-A products meet the "means . . . for displaying" limitation.

Furthermore, the administrative law judge finds that the accused S-A products do not have a cursor that exhibits the movement required by the claims in issue. {

} Therefore, for the same reasons that the administrative law judge found that the Pioneer products did not satisfy the movement limitation, the administrative law judge finds that the accused S-A products do not satisfy the movement limitation. Complainants argued that the cursor in the S-A products still exhibited the movement required by claims 1 and 3 of the '268 patent as the cursor "mov[ed] from one cell to another". (CRRFF 2615.10). However, even if the administrative law judge were to accept complainants' argument that the cursor in the accused S-A products moves from one cell to another, such movement is still insufficient to satisfy the movement limitation of the asserted claims. In the claim construction section, the administrative law judge found that the claims require that the cursor move at regular time intervals and it must also be able to be moved within the grid guide.

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[23] {
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See supra. The cursor of the S-A products does not move at regular time intervals and cannot be moved within the grid guide and therefore does not satisfy the movement limitation.

The administrative law judge further finds that the accused S-A products do not have the required innovative cursor. Instead, the S-A cursor is uniformly black and fills the entire cell, irrespective of the length of the cell. (Tr. at 3657-58, RX-4748.10).

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe claims 1 and 3 of the '268 patent.

b. Independent Claim 14 And Dependent Claims 15, 16 And 17 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent. For the same reasons that the administrative law judge found that the S-A products did not satisfy the "means . . . for displaying limitation", the innovative cursor requirement, or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the S-A products do not meet these limitations in relation to claim 14, 15, 16, and 17 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent.

c. Independent Claim 31 And Dependent Claims 32, 33 And 34 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe independent claim 31 and dependent claims 32,

33 and 34 of the '204 patent. For the same reasons that the administrative law judge found that the S-A products did not satisfy the the innovative cursor requirement or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the S-A products do not meet these limitations in relation to claims 31, 32, 33 and 34 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe independent claim 31 and dependent claims 32, 33, and 34 of the '204 patent.

3. EchoStar

Complainants' argued that they have established that the accused EchoStar products infringe claims 1 and 3 of the '268 patent and claim 14, 15, 16, 17, 31, 32, 33 and 34 of the '204 patent. Each of EchoStar and the staff argued that complainants have not met their burden.

a. Independent Claim 1 And Dependent Claim 3 Of The '268 Patent.

The administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products practice independent claim 1 and dependent claim 3 of the '268 patent. The accused EchoStar products, like the accused Pioneer and S-A products, do not have a{ } as required by the "means . . . for displaying" limitation. (Tr. at 3142).{

} Therefore, the administrative law judge finds that complainants have not met their

burden of showing that the accused EchoStar products meet the "means . . . for displaying" limitation.

The administrative law judge further finds that the accused EchoStar products do not have the required innovative cursor. Instead, the EchoStar cursor is uniformly black and highlights the entire cell, irrespective of the length of the cell. (Tr. at 3988-89, RX-7483). Moreover, the administrative law judge finds that the accused EchoStar products do not satisfy the movement limitation. The cursor in the EchoStar products do not move in equal time increments. (Tr. at 3989-90). Instead, the cursor moves cell to cell until it reaches the edge of the screen, where upon it starts moving in half hour increments. (Tr. at 3989-90).

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe claims 1 and 3 of the '268 patent.

b. Independent Claim 14 And Dependent Claims 15, 16 And 17 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent. For the same reasons that the administrative law judge found that the EchoStar products did not satisfy the "means . . . for displaying limitation, the movement limitation or the innovative cursor requirement in relation to claims 1 and 3 of the '268 patent, he finds that the EchoStar products do not meet these limitations in relation to claim 14, 15, 16, and 17 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe independent claim 14

and dependent claims 15, 16, and 17 of the '204 patent.

c. Independent Claim 31 And Dependent Claims 32, 33 And 34 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe independent claim 31 and dependent claims 32, 33 and 34 of the '204 patent. For the same reasons that the administrative law judge found that the EchoStar products did not satisfy the innovative cursor requirement or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the EchoStar products do not meet these limitations in relation to claims 31, 32, 33 and 34 the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe independent claim 31 and dependent claims 32, 33, and 34 of the '204 patent.

VII. PATENT MISUSE

The staff and all of the respondents argued that complainants have committed patent misuse through their licensing practices.[24] Complainants have denied any patent misuse. A party

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[24] {

[Pages 151-218 of this Initial Determination have been omitted because they discuss patent misuse, an issue on which the Commission took no position.]

kinds of guides that are being sold today.

Thus, Lechner admitted that it is possible to design an interactive electronic program guide that did not practice any of the patents in the Gemstar portfolio which is a position inconsistent with complainants' position. While complainants point to Lechner's conclusion that the product would not be commercially viable in the sense that no one would pay for the product, the administrative law judge finds no specific facts testified to by Lechner which support Lechner's conclusion.

Based on the foregoing the administrative law judge gives no weight to the testimony of Lechner as to the existence of any blocking patents. Hence he rejects Gemstar's argument that Gemstar should be immune from respondents' patent misuse defenses because Gemstar has acquired a blocking position in the IPG technology market.

VIII. VALIDITY(Prior Art)

Respondents have challenged the validity of the '121 patent, '268 patent and '204 patent based on certain prior art. Any invalidity defense must be established by clear and convincing evidence. See, e.g., WMS Gaming, Inc. v. Int'l Game Tech, 184 F. 3d 1339, 1355 (Fed. Cir.. 1999).

A. The '121 Patent

Respondents argued that, under complainants' interpretation, the asserted claims of the '121 patent are invalid based on an analysis presented in an Exhibit A attached to S-A's post hearing brief[62] that relies on (1) a system developed by the CableData Company of California

[62] This analysis is based on demonstrative exhibits used by respondents' experts Tjaden and Grimes to summarize their opinions regarding the presence and location of certain claim features in the prior art as of the priority date of the '121 patent. (S-A Post at 175). The appendix relates

the features of which are described in a publication entitled "ViaCable," published in December 1981 by CableData (RX-4256); (2) Honjo 2, a publication (RX-4297) which was filed on May 12, 1982 in Japan and was laid open or published on November 16, 1983 (RFF 4412), (3) Honjo 1, a publication (RX-4294) which was filed on February 10, 1982 in Japan and was laid open or published on August 15, 1983, just a few months before the Honjo 2 publication was laid open or published (4) a U.S. patent (RX- 4300) to Muguet; (5) a system by Kruger, which was known as the ZPS system and resulted in a report detailing the features of the ZPS system, which was made public at the German national library in 1980 (JX-32 at 10-15, RX-3477, RX-3476); a German patent (JX-32 at 66-68, RX-3470, RX-3611 at 10-12), a U.S. patent (JX-32 at 81-86, RX-3026) and various published articles (JX-32 at 72-75, 95-97, 99, RX-3474, RX-3495, RX-3480); and (6) a system described by Reiter. (RX-4301).

The Exhibit A analysis does not include independent claim 32 of the '121 patent since complainants have not accused S-A of infringing independent claim 32. Respondent EchoStar has been accused of infringing claim 32 and argued that respondents' expert Grimes relied on at least the following prior art references to invalidate claim 32: (1) the Honjo 1 publication, (2) Reiter system, (3) CableData system, (4) the Muguet patent, (5) the Kruger system, (6) a Keiser reference (RX-7468, RX-3022), (7) a Hashimoto reference (RX-7468, RX-4288) and (8) the VideoCipher system (RX-7468, RX-3685) (EPost at 220-223).[63]

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to claims 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 31, 33, 36, 42, 43, 48, 49, 50, 51, 54, 57, 58, 59, 60, 61 and 66 of the '121 patent asserted against S-A. Tjaden and Grimes relied on complainants' claim construction in testifying that the asserted claims are invalid based on prior art.

[63] Pioneer incorporated by reference the arguments of S-A and EchoStar. (PPost at 1, 231).

Complainants argued that respondents have not met their burden of proof and were not specific as to the applicability of the prior art. The staff argued that because respondents' invalidity arguments rested upon the use of claim constructions that the staff considered incorrect and which differ from respondents' own claim constructions on the issue of infringement, the staff was of the view that respondents have not carried their burden of establishing by clear and convincing evidence that the claims at issue are invalid for obviousness or anticipation. (SPost at 57, 58).

Respondents' arguments that the asserted claims of the '121 patent are invalid on the basis of prior art were premised on complainants' proposed claim constructions. (See, e.g., EPost at 194; S-A Post at 175). Moreover, the analyses by Grimes and Tjaden relied upon by respondents to meet their burden of proof regarding prior art were provided in accordance with complainants' constructions of the disputed claim elements. However, the administrative law judge has rejected complainants' proposed constructions of claim elements with respect to all of the asserted claims of the '121 patent.

Thus with respect to independent claim 18, dependent claims 19-24, 26-28 and 31 and independent claim 36 of the '121 patent, the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions: that "data processor" is a CPU; that "storage means" consists of at least the program list, the screen, the prime time, the channel and the theme buffers; that incoming schedule information had to be stored in the CPU itself; that the data processor must be capable of logical "OR" and logical "AND" combining; and that the schedule information that was to be stored for each selected program included the program's title. See supra. The administrative law

judge finds that respondents have not met their burden of proving that those claims, when properly construed, were anticipated or rendered obvious by the cited prior art references.

With respect to claim 32, the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions, that: "data processor" is a CPU and that incoming schedule information had to be stored in the CPU itself. See supra. The administrative law judge finds that respondents have not met their burden of proving that claim 32 when properly construed, was rendered obvious by the cited prior art references.

With respect to independent claim 33, the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions, that: "data processor" is a CPU; that "storage means" consists of at least the program list, the screen, the prime time, the channel and the theme buffers; that incoming schedule information had to be stored in the CPU itself; that the data processor must be capable of logical "OR" and logical "AND" combining; and that "turning on" a VCR means that the system must cause power to be supplied to the VCR. See supra. The administrative law judge finds that respondents have not met their burden of proving that claims 33, when properly construed, was rendered obvious by the cited prior art references.

With respect to independent claim 42, dependent claims 43, 48, 49 and 50 and independent claim 51 the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions, that: "storage means" consists of at least the program list, the screen, the prime time, the channel and the theme buffers; the "first input means" is limited to the corresponding structures disclosed in FIGs. 3 and 4 or

their 35 U.S.C. §112, ¶ 6 equivalents; and the selectable display consists of an initial display comprising information selected by the data processor in response to user inputs, as well as either the current channel that the television is tuned to or the current time. See supra. The administrative law judge finds that respondents have not met their burden of proving that those claims when properly construed, were anticipated or rendered obvious by the cited prior art references.

With respect to independent claim 54 the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions, that: the "storage means" consists of at least the program list, the screen, the prime time, the channel and the theme buffers; the "first input means" is limited to the corresponding structures disclosed in FIGs. 3 and 4 or their 35 U.S.C. §112 ¶ 6 equivalents; and the selectable display consists of an initial display comprising information selected by the data processor in response to user inputs, as well as either the current channel that the television is tuned to or the current time. See supra. The administrative law judge finds that respondents have not met their burden of proving that claim 54, when properly construed, was anticipated or rendered obvious by the cited prior art references.

With respect to independent claim 57 and dependent claims 58, 59, 60 and 61 the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions, that: the "storage means" consists of at least the program list, the screen, the prime time, the channel and the theme buffers; the "separating means" is limited to the corresponding structures disclosed in FIGs. 4a and 4b or their 35 U.S.C. §112, ¶ 6 equivalents; and the selectable display consists of an initial display comprising

information selected by the data processor in response to user inputs, as well as either the current channel that the television is tuned to or the current time. See supra. The administrative law judge finds that respondents have not met their burden of proving that those claims, when properly construed, were anticipated or rendered obvious by the cited prior art references.

With respect to claim 66, the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions, that: "data processor" is a CPU; that "storage means" consists of at least the program list, the screen, the prime time, the channel and the theme buffers; that incoming schedule information has to be stored in the CPU itself; and that the data processor must be capable of logical "OR" and logical "AND" combining. See supra. The administrative law judge finds that respondents have not met their burden of proving that claim 66, when properly construed, was anticipated or rendered obvious by the cited prior art references.

Based on the foregoing, the administrative law judge finds that respondents have not met their burden of proving that the assessed claims of the '121 patent were anticipated or rendered obvious by the cited prior art references.[64]

B. The '268/'204 Patents

It was argued by respondents that the asserted claims of the '204 and '268 patents are invalid under complainants' claim construction on the basis of prior art which either anticipated

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[64] Respondents asserted that some of the asserted claims are entitled to a priority date of the filing date of the abandoned parent application, viz., July 12, 1985 while other asserted claims are entitled only to the priority date of the continuation-in-part application, viz., May 6, 1986. Since the administrative law judge has found that respondents have not met their burden in establishing that any of the asserted claims are invalid over any prior art, irrespective of the priority date, the priority date issue is mooted.

or rendered obvious the asserted claims of the '204 and '268 patents. (See, e.g., EPost at 258; S-A Post at 179). However, the administrative law judge has rejected complainants' proposed constructions of claim elements with respect to all of the asserted claims of the '204 and '268 patents. See supra.

With respect to independent claim 1 and dependent claim 3 of the '268 patents, the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions: that "visual identification" is the "innovative curser" defined in the specification as a cursor that (1) highlights the entire cell, (2) identifies the current half-hour position within a cell that is longer than a half-hour, and (3) differentially identifies the remaining portions of the cell; that the movement requirement requires the cursor to move in equal time intervals within a grid; and that "means . . . for displaying" includes a video switcher. See supra. Therefore, the administrative law judge finds that respondents have not met their burden of proving that these claims were anticipated or rendered obvious by the cited prior art references.

With respect to independent claim 14 and dependent claims 15, 16 and 17 of the '204 patent, the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions, that: the "visual identification" is the "innovative curser" defined in the specification as a cursor that (1) highlights the entire cell, (2) identifies the current half-hour position within a cell that is longer than a half-hour, and (3) differentially identifies the remaining portions of the cell; the movement requirement requires the cursor to move in equal time intervals within a grid; and "means . . . for displaying" includes a video switcher. See supra. Therefore, the administrative law judge finds

that respondents have not met their burden of proving that these claims were anticipated or rendered obvious by the cited prior art references.

With respect to independent claim 31 and dependent claims 32, 33 and 34 of the '204 patent, the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions: that "visual identification" is the "innovative curser" defined in the specification as a cursor that (1) highlights the entire cell, (2) identifies the current half-hour position within a cell that is longer than a half-hour, and (3) differentially identifies the remaining portions of the cell, the movement requirement requires the cursor to move in equal time intervals within a grid. See supra. Therefore, the administrative law judge finds that respondents have not met their burden of proving that those claims were anticipated or rendered obvious by the cited prior art references.

IX. VALIDITY (Alleged Impermissible Broadening - Claims 18-31, 33, 34, 36 and 38 of the '121 Patent)

Respondents argued that prior to the reexamination of the '121 patent, each process claim required "supplying program schedule information to a data processor;" that during the reexamination, claims 18-31, 33, 34, 36 and 38 were amended to read "supplying program schedule information to storage means in a data processor;" and that this amended claim language was also included in new claims 66 and 67. It was argued that complainants construed the amended claim language "storage means in a data processor" to mean "storage means that is part of or within a data processor;" that because the data processor of the claims is the CPU, under complainants' construction the claim language "supplying program schedule information to storage means in a data processor" would be satisfied by supplying schedule information to

storage means that is a part of, but not in, a data processor; and that the original process claims of the '121 patent required the supply of schedule information to a data processor, and would not have been met by supplying schedule information to a storage means that is a part of the '121 patent. Hence it was argued that complainants' construction would broaden the scope of the '121 patent. Thus respondents argued that, pursuant to the Federal Circuit's holding in Anderson v. Int'l Eng'g & Mfg., Inc., 160 F. 3d 1345, 1369 (Fed. Cir. 1998), claims 18-31, 33, 34, 36 and 38 of the '121 patent are invalid for impermissable broadening. (See, e.g., EPost at 231).[65]

The administrative law judge has found that the proper interpretation of the "data processor" in the asserted claims of the '121 patent is a CPU. Hence respondents' argument that certain claims of the '121 patent are invalid due to impermissible broadening during reexamination has been mooted.

X. INVENTORSHIP ('121 Patent)

The patent statute provides that when an invention is made by two or more persons, they shall apply for the patent jointly. 35 U.S.C. § 116. Where there is joint inventorship, the patent must issue to all inventors. 35 U.S.C. §§ 102(f), 116, and 256. If nonjoinder of an actual inventor is proved by clear and convincing evidence, the patent is rendered unenforceable. See Pannu v. Iolab Corp.155 F.3d 1344, 1349 (Fed. Cir. 1998). In the absence of deceptive intent,

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[65] S-A on May 9, 2001 filed Motion No. 454-7 for summary determination that claims 18-31, 33, 34, 36, 66 and 67 of the '121 patent had been broadened during reexamination and are thus invalid. Order No. 8, which issued on May 31 and denied without prejudice Motion No. 454-7, made reference to the early stage of the investigation and an affidavit of complainants' expert. However the order stated that extrinsic issue is not necessarily determinative of claim interpretation, citing Markman 52 F. 2d at 981.

the unenforceability may be overcome by naming the non-joined inventor as an inventor of the patent by court order or by application to the PTO, in accordance with the procedures set forth in 35 U.S.C. § 256. Stark v. Advanced Magnetics, Inc., 119 F.3d 1551, 1555 (Fed. Cir. 1997).

The issuance of a patent creates a presumption that the named inventor(s) are the true and only inventors. Ethicon, Inc. v. United States Surgical Corporation, 135 F.3d 1456, 1460 (Fed. Cir.), cert. denied, 119 S.Ct. 278 (1998) (Ethicon). To rebut this presumption, "a party challenging validity for omission of an inventor must present by clear and convincing evidence that the omitted individual actually invented the claimed invention." See Acromed Corp. v. Sofamor Danek Group, Inc., 253 F.3d 1371, 1379 (Fed. Cir. 2001). The testimony of an alleged inventor, standing alone, does not constitute corroboration, and cannot rise to the level of clear and convincing proof. Ethicon, 135 F.3d at 1461, citing Price v. Symsek, 988 F.2d 1187, 1194 (Fed. Cir. 1993) (Price).[66]

A "[c]onception is the touchstone of inventorship." Burroughs Wellcome Co. v. Barr Laboratories, Inc., 40 F.3d 1223, 1227 (Fed. Cir. 1994), cert. denied, 516 U.S. 1070 (1996). It is the "formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention as it is hereafter to be applied in practice." Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1376 (Fed. Cir. 1986) (Hybritech). An "idea is sufficiently 'definite and permanent' when 'only ordinary skill' would be necessary to reduce the invention to

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[66] Price involved a patent interference proceeding. In the proceeding, Richard C. Price filed an application containing claims from a '869 patent to provoke an interference. Price, the junior party, had the burden of proof. Price 988 F.2d at 1189, 1193. In that context, the Court stated that the case law is unequivocal, that an inventor's testimony respecting the facts surrounding a claim of derivation or priority of invention cannot, standing alone, rise to the level of clear and convincing proof. Id.

practice, without extensive research or experimentation" Ethicon, 135 F.3d at 1460. The conceived invention "must include every feature of the subject matter claimed in the patent." Ethicon 135 F.3d at 1460 citing Sewall v. Walters, 21 F.3d 411, 415 (Fed. Cir. 1994).

To be a joint inventor, "an individual must make a contribution to the conception of the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention." Fina Oil & Chemical Co. v. Ewen, 123 F.3d 1466, 1473 (Fed. Cir. 1997) (Fina). However, each of the joint inventors does not have to make the same type or amount of contribution to the invention. Thus each needs to perform only a part of the task which produces the invention. Ethicon, 135 F.2d at 1460. One does not qualify as a joint inventor by merely assisting the actual inventor after conception of the claimed invention. A coinventor however need not make a contribution to every claim of a patent. A contribution to one claim is enough. Id. Thus, the critical question for joint conception is "who conceived, as that term is used in the patent law, the subject matter of the claims at issue." Id.

Respondents argued that the '121 patent is invalid and unenforceable on the ground that Patrick Young, the only inventor named on the patent, is not the sole inventor, and that Edward Neil should have been named as a coinventor.

Complainants, citing In the Matter of Certain EPROM, EEPROM, Flash Memory, and Flash Microcontroller Semiconductor Devices, and Products Containing Same, Inv. No. 337-TA-395, "1998 ITC LEXIS 371 at 101 (July 9, 1998)"[67] (Eprom), argued that respondents failed to

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[67] Although complainants' citation seems to indicate that they are citing to an opinion issued by the Commission on July 9, 1998, their citation is actually to an opinion issued by the Commission on December 11, 2000. Lexis had incorrectly entitled the December 11, 2000 opinion as the July 9, 1998 opinion. As will be seen, infra, the July 9, 1998 Commission opinion is controlling law on the issue of inventorship in the Eprom case.

even attempt to meet the governing ITC precedent on the issue of joint inventorship. (CPost at 339).

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The staff also argued, that with respect to the hardware used in the invention in issue, it appears undisputed that Young had experience in FM technology prior to the "brainstorming" sessions, citing{ } Neil, Tr. at 3398 and{ } The staff, however, noted that Neil apparently had experience in the area of VBI technology from his work on

computer games, citing Neil, Tr. at 3347, and that Young in his witness statement and testimony about his background never claimed to have experience in that area, citing CX-1226. The staff further noted that Neil testified that encoding information into the VBI "was Pat's area," citing Neil Tr. at 3399-400. The staff also noted, with respect to the software needed to use the invention, that Neil appeared to have had more experience than Young in the area of software development, including spreadsheet technology, citing Neil, Tr. at 3334-39 and CX-126, and that Neil had been head of software development at Advanced Telecommunication Systems (ATS) where he met Young in 1984, citing Neil, Tr. at 3339 and Young, Tr. at 958. (SPost at 62). Thus, it was argued by the staff that the circumstantial evidence of the relative backgrounds of Neil and Young suggest that Neil may have contributed to the conception of the invention of the '121 patent with respect to the use of spreadsheet technology and/or the use of the VBI. However it was then argued by the staff that while the circumstances suggest that Neil could have contributed to the hardware and/or software components of the invention disclosed in the '121 patent, Neil had no "contemporaneous documents" which Neil prepared and that there was no testimony other than that of Neil himself to support Neil's account. The staff argued that

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} However the staff concluded that the evidence of the men's backgrounds does not rise to the level of clear and convincing evidence in support of respondents' allegation of "misjoinder of invention" and accordingly that the '121 patent should not be found invalid for "misjoinder of inventor." (SPost at 62-63).

Complainants are correct that governing ITC precedent on coinventorship is from the Eprom case. In support complainants cited to a Commission opinion that was filed on December

11, 2000 (12/11/00 op.). The law of the Eprom case on coinventorship however is the Commission opinion of July 9, 1998 (7/9/98 op.), reported in Pub. No. 3136 (October 1998). Thus, Investigation No. 337-TA-395, was instituted in March 1997, and assigned to this administrative law judge. Before the administrative law judge, respondents and intervenor argued that the '903 patent was invalid and/or unenforceable because it allegedly did not identify other actual inventors in addition to the named inventor Larry Jordan. Complainant argued that the evidence presented supported the legal presumption that Jordan as the sole inventor of the '903 patent. The staff argued that the evidence, taken as a whole, did not establish clearly and convincingly that another person made such a substantive contribution in the conception of the '903 patent so as to have required joinder of such a person as a co-inventor of Jordan.

In the final initial determination (ID), in Inv. No. 337-TA-395, which issued on March 19, 1998, it was found that the '903 patent was not unenforceable for failure to name a coinventor as argued by respondents and intervenor. Hence it was stated (ID at 96-98):

> Though a joint inventor need not contribute to the subject matter of each claim or even contribute equally to the overall invention under section 116, 'one does not qualify as a joint inventor merely by assisting the actual inventor after conception of the claimed invention' Ethicon, Inc. v U. S. Surgical Co., 45 U.S.P.Q.2d 1545 (Fed Cir. 1998) (Ethicon); Sewall v. Walters 21 F.3d at 416, 417, (Fed. Cir. 1994) (Sewell); Shatterproof, 758 F.2d at 624. Conception is the formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice. Hybritech,, 802 F.2d at 1376 (Fed.Cir.1986). Also, '[a]n inventor may use the services, ideas and aid of others in the process of perfecting his invention without losing his right to a patent.' Hess v. Advanced Cardiovascular Sys., Inc., 106 F.3d 976, 980, (Fed.Cir.), cert. denied, 117 S.Ct. 2459, (1997) (Hess). Finally, depending on the scope of a patent's claims, one of ordinary skill in the art who simply reduced the inventor's idea to practice is not necessarily a joint inventor, even if the specification discloses that embodiment to satisfy the best mode requirement. Ethicon at 45 U.S.P.Q.2d at 1548; Sewall, 21 F.3d at 416.

It is well established that '[p]atent issuance creates a presumption that the named inventors are the true and only inventors.' Ethicon, 45 U.S.P.Q.2d at 1547 (citing Hess 106 F.3d at 980). This is a strong presumption to overcome on the basis of nonjoinder: 'the burden of showing misjoinder or nonjoinder is a heavy one that must be proved by clear and convincing evidence.' Hess, 106 F.3d at 980; Fina Oil & Chemical Co. v. Ewen, 123 F.3d 1466, 1466 (Fed. Cir. 1997).

In Ethicon, the Federal Circuit noted in proving inventorship, that:

> an inventor's testimony respecting the facts surrounding a claim of derivation or priority of invention cannot, standing alone, rise to the level of clear and convincing proof. Price v. Symsek, 988 F.2d 1187, 1194, 26 USPQ2d 1031, 1036 (Fed.Cir.1993). The rule is the same for an alleged co-inventor's testimony. See Hess, 106 F.3d at 980. Thus, an alleged co-inventor must supply evidence to corroborate his testimony. See Price, 988 F.2d at 1194. Whether the inventor's testimony has been sufficiently corroborated is evaluated under a 'rule of reason' analysis. Id. at 1195. Under this analysis, '[a]n evaluation of all pertinent evidence must be made so that a sound determination of the credibility of the [alleged] inventor's story may be reached.' Id.
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> Corroborating evidence may take many forms. Often contemporaneous documents prepared by a putative inventor serve to corroborate an inventor's testimony. See id. at 1195-96. Circumstantial evidence about the inventive process may also corroborate. See Knorr v. Pearson, 671 F.2d 1368, 1373, 213 USPQ 196, 200 (CCPA 1982) ([S]ufficient circumstantial evidence of an independent nature can satisfy the corroboration rule.). Additionally, oral testimony of someone other than the alleged inventor may corroborate. See Price, 988 F.2d at 1195-96 [45 U.S.P.Q.2d at 1548].

It was then found in the ID, referring to the invention in issue of the '903 patent, that:

> while Jordan used the skills of Gupta [the coinventor then alleged by the intervenor and respondents] to construct the physical embodiment of the invention in the '903 patent, the work he performed for Jordan was basic and well known implementations of ordinary electrical engineering skills. (FF 594, 602). Also . . . Gupta asserted that he is not co-inventor and Jordan . . . did not admit that Gupta or anyone else was responsible for the invention; . . . [that] Jordan with a definite problem and a solution in his mind, the conception of Silicon Signature, sought out an engineer who had not the depth of experience to conceive Jordan's

> invention, but only the ability to supply his knowledge of materials and circuit elements to Jordan's specifications.

(ID at 99).

Complainant petitioned for review of the ID of March 19, 1998. The Commission determined to review most of the findings of said ID, including those relating to the joint inventorship issue. Complainant argued before the Commission that the evidence presented supported the legal presumption that Jordan was the sole inventor of the '903 patent. The staff argued that the evidence, taken as a whole, did not establish clearly and convincingly that another person made such a substantive contribution in the conception of the '903 patent so as to have required joinder of that person as a coinventor along with Jordan.

On final disposition of Eprom in the 7/9/98 op., as reported in Pub. No. 3136, the Commission found, inter alia, that the '903 patent was unenforceable for failure to name a co-inventor. At that time there were only three Commissioners in office: then Chairman Bragg, then Vice Chairman Miller, and Commissioner Crawford. Since former Vice Chairman Miller did not participate in the investigation, the Commission's 7/9/98 op. was made by former Chairman Bragg and Commissioner Crawford. Commissioner Crawford subsequently issued a statement on September 28, 1998 (also reported in Pub. No. 3136) wherein she concluded that her decision on inventorship "would have been different had the General Counsel provided me accurate information."

On August 12, 1998, after issuance of the 7/9/98 op., complainant filed a petition with the PTO to correct the inventorship of the '903 patent pursuant to PTO rule 324, 37 C.F.R. § 1.324. Complainant, reversing the position it took before the administrative law judge, sought to correct

the inventorship of the '903 patent by adding Gupta as a coinventor along with Jordon. The PTO granted complainant's petition on August 18, 1998, and issued a certificate of correction on October 6, 1998.

On September 8, 1998, complainant filed with the Commission a "Petition For Relief From Final Determination Finding U.S. Patent No. 4,451,903 Unenforceable." Respondents and the staff filed responses to the petition. The Commission ruled on complainant's petition on January 25, 1999, determining to treat complainant's petition as a petition for reconsideration, granting the petition, and reopening the record of the investigation for the limited purpose of resolving the issues arising from the PTO's issuance of the certificate of correction for the '903 patent. Investigation No. 337-TA-395 was remanded to this administrative law judge with instructions to issue an initial determination (ID(2)) addressing the issues presented.

Complainant, respondents, intervenor, and the staff participated in the remand proceeding. The ID(2) issued on May 17, 2000, with the following principal findings:

> Complainant committed inequitable conduct at the PTO in the procurement of the certificate of correction for the '903 patent;
>
> The inventors listed on the PTO certificate of correction (Larry Jordan and Anil Gupta) are not the correct inventors; and
>
> No inequitable conduct was shown to have taken place at the PTO in the the prosecution of the original patent application that matured into the '903 patent.

Complainant petitioned for review, inter alia, of the following findings made in the ID(2): (1) that complainant committed inequitable conduct in the PTO correction proceeding, and (2) that the inventors listed on the PTO certificate of correction (Jordan and Gupta) were not the correct inventors. Complainant also alleged that the administrative law judge in the remand

proceeding exhibited such bias against it that complainant was denied a fair hearing. The staff opposed complainant's petition in part, but also petitioned for review, inter alia, the rulings on inequitable conduct and inventorship. Respondents and intervenor filed a joint response in opposition to the petitions for review.

On July 17, 2000, the Commission determined to review the issues which included:

> This administrative law judge's determination that the PTO certificate of correction for the '903 patent was procured inequitably.
>
> This administrative law judge's determination that the inventors named on the PTO certificate of correction (Jordan and Gupta) are incorrect.

The Commission, in its 12/11/00 op.[68] as to its principal determinations concerning the '903 inventorship and inequitable conduct issues: (1) found that complainant did not commit inequitable conduct before the PTO during the correction proceedings; and (2) found that the correct inventors were listed on the certificate of correction of the '903 patent.[69] The Commission, however, in its 12/11/00 op. repeatedly stated that the 7/9/98 op. is the "law of the case." See, e.g., 12/11/00 op. at pp. 7 ("The Commission's Opinion of July 9, 1998 . . . is the law of the case"), 21 ("the Commission's 7/9/98 decision . . . was the law of the case"), and 34 ("In this investigation, the law of the case is that [quoting from the 7/9/98 op.]"). Hence, the 12/11/00 op. is not the law from Inv. No. 337-TA-395 case on coinventorship. Rather it is the 7/9/98 op.

The Commission, in its 7/9/98 op., in reversing the administrative law judge and finding

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[68] The Secretary's Office has stated that then Chairman Koplan, then Vice Chairman Okun, and Commissioners Bragg, Miller, Hillman and Askey, participated in the 12/11/00 op.

[69] As to the '903 violation issues other than that of inventorship, the Commission adopted Commissioner Bragg's Supplemental Views issued with the Commission's 7/9/98 op. and those views were attached as an Appendix to the 12/11/00 op.

that the '903 patent was unenforceable unless and until the PTO or a court makes the inventorhip correction,[70] [71] stated that the administrative law judge had "noted that both the named inventor (Larry Jordan) and the engineer (Anil Gupta) who testified that he implemented Jordan's idea in silicon, attributed the essential conception of the invention to Jordan; Engineer Gupta testified that he implemented the elements of the invention of the '903 patent using well known circuit techniques, and that as a young engineer he did not have the breadth of experience to come up with Silicon Signature"[72] (7/9/98 op. at 7); and that at the time of the issuance of the March 19, 1998 ID:

> Federal Circuit cases had sent mixed signals as to what constitutes conception of an invention. One panel stated that [conception] is complete when one of ordinary

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[70] The Commission, has no power in section 337 investigations to correct inventorship. 7/9/98 op. at 9.

[71] While the Commission in its 12/11/00 op. at 16 stated that "the Commission had stated in its 7/9/98 Opinion that Gupta was 'presumably' the co-inventor," (the 7/9/98 op. at 20 stated that Gupta was presumably the circuitry designer for Silicon Signature, and hence a co-inventor), the 12/11/00 op. at 21 stated that "between his [Gupta's] 1997 testimony and the 1998 PTO correction proceedings, the Commission determined that Gupta's contributions rose to the level of inventorship under Ethicon." Hence it would appear that the Commission in its 12/11/00 op. is interpreting the 7/9/98 op. as indicating that Gupta was a coinventor.

[72] The 7/9/98 op. quoted the following testimony:

> I [Gupta] at that time was a young engineer with a few years – this was my first job in nonvolatile memories. I, course, had not the breadth to come up with silicon signature. Mr. Jordan [the named inventor] had worked in nonvolatile memory field for a couple for years with his prior employer, Intel Corporation, and it was an idea with Mr. Jordan had come up [sic, with] after having seen the problems faces, which I don't have details right now, but he was very proud of this idea of silicon signature, and that's why I'm very hesitant to take the credit to say – because I was of the technician, you can say, implemented it into silicon.

(Dec., 1997 Hearing Tr. at 1062).

skill in the art could construct the apparatus without unduly extensive research or experimentation. [citing Sewall]. Another panel stated that [conception] is the formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice. [citing Hybritech] The former statement appears to support the ALJ's finding on inventorship, while the latter statement appears to indicate that named inventor Jordan's contribution falls short of that which is necessary for a complete conception of an invention. [7/9/98 op. at 8]

The 7/9/98 op. then stated that it appeared from the record that Jordan, the sole named inventor of the '903 patent, was a marketing person who had never designed semiconductor products in his career, citing hearing Tr. at 3104,[73] that Jordan's testimony is to the effect that he had a "general

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[73] The transcript in the Inv. No. 337-TA-395 Dec. 19, 1997 hearing at 3104-05 reads as to the testimony of Jordan:

Q Did you, well, have you ever designed and products in your career?

A No.

Q All right. Have you ever drawn the layouts of any products in your career?

A No.

Q Have you ever outlined the relative locations of circuit elements on a semiconductor chip?

A No.

Q Did you set forth the elements in figure 1?

A I described the concept that I wanted implemented and the issues that I wanted solved, and the engineers implemented those concepts and then we sat and discussed what was being implemented and was I comfortable that that was what I wanted. And then I approved it.

Q Did you conceive figure 1, the block diagram?

A Yes.

* * *

concept" of Silicon Signature in block diagram form, but that he had no involvement in the physical realization of the invention, citing Tr. at 3107-08; that Jordan admitted that he did not conceive any of the circuitry by which the elements of the '903 patent claims at issue were realized, citing Tr. at 3108-10,[74] and that while Jordan's "concept could be and was

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Q As you understand the work and define the word "conceived."

A I thought of and described that document, that figure in the sense of the major elements.

* * *

Q Did you, using your understanding of the term "conceive," did you conceive the block diagram shown in figure 1?

A Yes.

[74] Jordan's testimony at 3107-15 from the Dec. 19, 1997 hearing transcript read:

Q Let's talk about that, then. What elements in figure 1 did you conceive?

A The fact that there would be a high-voltage input on a high address, line A9 in this case.

Q Okay.

A And that it would, by applying a high-voltage signal, which is outside of the normal operating range of the product, that it would access an additional information array to bring out the stored information about the manufacturer's ID and the information on how to program it.

Q Now, did you, then, conceive of row decoder 16, that element?

A I did not conceive something called row decoder 16. I had a concept that said there is an input line which is shown as A9, and that input line has a high-voltage detector on it that then puts it into the programming, the signature read mode. And how it was implemented in terms of the physical implementation, I did not have any concern about.

Q Perhaps could we put up figure 3, then. Mr. Jordan, Exhibit 16, do you

recognize figure 3 from you patent?

A Yes, I do.

Q Do you see high-voltage detection circuit 102?

A Yes.

Q Did you conceive of high-voltage detection circuit 102?

A I conceived of the concept that said there has to be a high-voltage input detection circuit so that you can recognize the high voltage and do a different operation.

Q All right. Did you conceive of that fact that it had to have inverters, high-voltage detection circuit 102 had to have inverters?

A No, I did not.

Q With regard to the high-voltage detection circuit, were you familiar with the use of high voltage on an address pin before you joined SEEQ?

A Yes.

Q What was your familiarity?

A There were a number of instances where high voltage has been used in test environments, and I believe also in some reliability or QA environments.

Q Is that how you knew that you could put a high voltage on an address pin to implement the concept?

A I knew that it was quite possible or practical to have a high-voltage detection circuit designed into a normal product which then allowed it to have a secondary function.

Q Now, did you conceive the use of element 204, which is a NOR gate, as part of the implementation of your concept?

A No, I did not.

Q All right.

A I conceived only that with the high-voltage input, when it goes into a, what we call super voltage, or called super voltage mode, outside of the normal range, that it turns off the normal functioning of that pin and the device and goes into the secondary mode, which is to read out the product information array.

Q Now, let's go back to figure 1 which is RPX 14.

A Yes.

Q Did you determine how, or did you conceive how that high voltage was going to, I think you said stop the normal operation of the array; is that correct?

A Yes.

* * *

Q Now, did you conceive of how to disable the normal operation of the device?

A No.

Q All right. Did you determine at all whether the column decoder 14 should be involved in being disabled?

* * *

THE WITNESS: The high-voltage input circuit disables the memory array, the main memory array, and enables the product information array. That still utilizes the column decoder, so they are not disabled.

BY MR. YOCHES:

Q No, I understand that. I want to know whether you conceived of whether or not to disable column decoder 14.

* * *

THE WITNESS: Yes, I conceived that the only pin, A9, not the pin but the address pin in the A9 area, meaning the high address pin, would be the one that affects what information is being read out and that none of the

other pins would be affected in their normal operation. They would still do their normal thing.

BY MR. YOCHES:

Q They would still do their normal thing at what time in the operation of that product?

A Always.

Q All right. So that while you are reading out the product information array 30, pins A5 through A12 would operate normally?

A They would not be used because you are only picking up one row, and the decoding of that row was four address lines, which was the concept of the 16 bytes.

Q I'm sorry decoding of which rows were address bytes?

A The lower decoders. Zero through 3 is what is there, zero through 4 is what is shown because it's not limited to any number of decoders.

Q I understand that. But could you repeat again, what this column - - well.

In your explanation, what effect does A0 through A4 have when you are reading out the product information array?

A It reads out individual bytes that are a part of the row and puts that information out onto - - well, it selects the byte which will be put out onto the output pins.

Q All right. Did you tell the engineers to design it that way?

A I described that was what I wanted to have done. I wanted to be able to access the product information array and then select and sequence out the information contained in the array.

Q How - - did you describe at all whether or not the product information array had to be an additional row of memory array or additional row attached to the memory array anyway?

A I described that it had to be low cost because the customers would not pay

implemented using common circuit techniques without undue experimentation," the disclosure of Jordan did not rise to the level of an "operative invention" within the meaning of Hybritech

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a significant increase. So it had to be manufacturable, it had to not add significantly to the die size and it had to be part of the entire product, meaning it was built and manufactured as a single die.

Q But did you determine whether or not it has to be a row attached to memory array 12?

A I specifically said that it would be either columns or rows. We chose a row, I chose a row, because that gave me the information coming out on all output pins, instead of a single, if I had chosen a column, then the information would have sequenced out on an individual output, as opposed to on all outputs. And I wanted it to come out easily and in bigger increments, so I chose a row.

Q But do I understand you, then, that you also conceived of using another row, that was your conception, and not engineers at SEEQ; is that correct?

A My conception was, again, to do it the easiest way possible, and the cheapest way. And that was decided that that was with a row, because you could use, I understood you could use either a row or a column, but when we talked about the issues involved and the ease of implementing, the rows was chosen.

Q Who chose it?

* * *

THE WITNESS: I don't recall who chose it.

* * *

Q Who determined the product information array 30 should be this row, as opposed to a separate register that did not use the column address gating 178 at the column decoder 14?

* * *

THE WITNESS: I did not make those decisions, so it would have been engineering.

(7/8/98 op. at 7-8). The Commission then stated (Id. at 8-9):

> Analysis of the inventorship issue is complicated by the fact that certain claim elements of the '903 patent are written in means plus function language. A patent specification must disclose some structure with respect to means plus function elements that performs each of the claimed functions. Thus, a patent would not have been granted on the basis of Jordan's disclosure alone. The question is whether the person(s) who selected particular circuit structures for each of the means plus function claim elements (presumably Gupta) is a co-inventor.
>
> Since inventorship is a disfavored technical defense [citing Certain Double-Sided Floppy Disk Drives and Components Thereof, Inv. No. 337-TA-215, USITC Pub. 1860 (1986)] that must be proven by clear and convincing evidence, we are ordinarily reluctant to go behind an ALJ's findings on this issue. Since the ID issued, however, the Federal Circuit has issued an opinion [Ethicon] that answers the question posed.[75] In Ethicon, Inv. v. United States Surgical Corp., 135 F.3d 1456 (Fed. Cir. 1998), the court dealt with the contribution of an electronics technician to an invention for a surgical instrument claimed in means plus function format. The court emphasized the Hybritech standard of a complete and operative invention. Of even more significance, however, is the following statement concerning inventorship in the means plus function context:
>
> > The contributor of any disclosed means of a means-plus-function claim element is a joint inventor as to that claim, unless one asserting sole inventorship can show that the contribution of that means was simply a reduction to practice of the sole inventor's broader concept [citing Sewell].
>
> . . . We find that named inventor Jordan's involvement in the particulars of the circuit design in this investigation did not rise to the level of the sole inventor's involvement in Sewall. [76] Jordan neither selected nor simulated the performance of any circuit means. Therefore, we conclude that the above stated exception in Ethicon does not apply.

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[75] As seen, supra, Ethicon issued before the March 19, 1998 ID and was quoted at some length in the March 19, 1998 ID. The basis for Commissioner Crawford's September 28, 1998 statement was that "the administrative law judge was able to consider Ethicon in making his decision, and in fact cited to Ethicon several times in his ID." (Pub. No. 3136, statement at 2).

[76] It was noted that the named inventor in Sewall had formulated particular circuit elements and simulated their performance, leaving the putative coinventor with nothing to do except implement the circuits in silicon.

On the basis of Ethicon, we find that '903 patent is unenforceable for failure to name an inventor. . . .

The '121 patent in issue in this investigation was issued on November 10, 1987, based on an application filed on May 6, 1986 which in turn was a continuation-in-part of an abandoned application filed on July 12, 1985. (FF 23). The '121 patent was subsequently reexamined by the PTO and the PTO then issued a Reexamination Certificate on December 14, 1993. (FF 25). Before the filing of the initial applicaton on July 12, 1985, the record shows no actual reduction to practice.[77] Hence, the critical issue is who conceived the claimed invention before the constructive reduction to practice on July 12, 1985.

Thus the Commission, in its 7/9/98 op., in finding that respondents and the intervenor met the clear and convincing burden of establishing that Jordan was not the sole inventor of the invention of the '903 patent, examined the background of Jordan and found that Jordan was a

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marketing person who had never designed semiconductor products in his career. The testimony relied on in the 7/9/98 op. does show that Jordan did conceive figure 1 of the '903 patent in the sense of the major elements. See, supra. Also the Commission in the 7/9/98 op. did find that Jordan's "concept could be and was implemented using common circuit techniques without undue experimentation."

In view of the 7/9/98 op., the background of the named inventor Young and the putative inventor Neil should be examined. According to Young's witness statement, Young graduated from U.C. Berkeley in 1958 with a Bachelor of Science degree in Electrical Engineering. (CX-1226). Young worked for Systems from 1960 to 1962 designing frequency counter instrumentation and systems. He left Systems in 1962 to work for Able Research to 1968. At Able Research, he created and built the first intelligent broadband microwave counter from 1970 to 1972. Young was the chief designer at a small start-up company called Dietzgen Electronics (Dietzgen), a engineering slide rule company. There he developed several digital products for Dietzgen. From 1972 to 1975, Young was the research and development manager for GT&E, developing a multifunction business transaction telephone. From 1975 to 1978, he worked for Advanced Memory Systems developing solid state memory cards for mid-size computers. From 1978 to 1980, Young was a research and development engineer for Electronic Telephone Co. where he developed the first all digital touch tone generator chip for use in telephones. The company was acquired by AT&E and Young continued to work there until July 1984. One of the products he worked on was a wrist pager that had a novel power scheme allowing a watch battery to operate the pager for long periods. The pager used the FM SCA band for distribution of the paging signals. Young went to work in August 1984 for Advanced Telecommunication Systems

(ATS) on a product for controlling PCs from a remote location. (CX-1226 at 2). He left that position in December 1984, and remained unemployed until May 1985 when he became VP of engineering for Tiara Inc., a company that he founded with two other people. Id. At Tiara, Young was overseeing a range of card products from Taiwan for the IBM PC. He was also involved in redesigning the user interface of a networking product to compete with the Ethernet. In May 1986, about ten months after the original application for the '121 patent was filed on July 12, 1985, Young founded a company called Insight Technology, which was later renamed StarSight Telecast. (CX-1226 at 3). He retired from StarSight in September 1994. Id. Young's position at StarSight was Chief Scientist for a portion of time running from 1986 until 1991. (Tr. at 937-938). Based on Young's background, the administrative law judge finds that Young's experience up to July 12, 1985 is primarily in the area of hardware and working with broadcast FM signals.

Edward Neil obtained a bachelor's degree in computer science from Arizona State University in 1972. (Neil, Tr. at 3333–34). Neil was hired after college by Motorola, where he was a test engineer, writing software to test various kinds of specialized integrated circuits. Thereafter, he transferred to the semiconductor engineering group at Motorola where he was again involved with writing software for testing and evaluation of various processes that the company was using. (Tr. at 3334). The next company Neil worked for was Bowmar Instruments, where he wrote the specialized software for doing algorithms for calculations. He then went back to work for Motorola as a teaching engineer and taught microprocessor technology to other engineers and customers of Motorola. Next Neil worked for ASM America when he designed control language for semiconductor processing equipment which allowed customer to program their own customized processes. (Tr. at 3334-35). After that, at around 1978 or 1979, he consulted for

various companies as Mircao and Motorola. (Tr. at 3336). In 1981, he moved to the Bay area (Silicon Valley, San Jose) and began working at a company called Axlon in Silicon Valley, California. Axlon was in the business of making specialized hardware and software for Atari home computers. Neil's job was to write software that allowed the company's products to work effectively on Atari home computers and he was involved in an effort to add additional products and functionality to the Atari. (Neil, Tr. at 3336–37). After working at Axlon, Neil worked for Human Engineered Software as manager of software development. While at Human Engineered Software, Neil worked on software for Atari and Commodore home computers, including games, productivity products, and spreadsheets, and also traveled to Boston to see the early development of Lotus computer spreadsheets and to learn about the techniques which the Lotus company was using to present those spreadsheets. (Neil, Tr. at 3338, 3346). At that time, Lotus was demonstrating the capability to search and sort through spreadsheet data based upon certain various search criteria. (Neil, Tr. at 3346-47). Neil's next position was at ATS as its manager of software development and chief coder. ATS manufactured and sold a board that plugged into a personal computer to allow users to conference between their personal computers. (Neil, Tr. at 3338). Neil's responsibility at ATS was to write the software code for the functions of the board product. (Neil, Tr. at 3338). Neil also worked with computer spreadsheets while he was employed by ATS. (Neil, Tr. at 3345 – 3346).

After ATS, Neil started his own company in the 1985-86 time frame. (Tr. at 3336). For the next five years, Neil did consulting work until he went to work for NEC Technologies where he was manager of laser printer software development for almost two years. (Tr. at 3336-37). He again did a short stint of consulting for Okidata and a couple of small companies. Thereafter Neil

went to a company called In Sight Development and worked on a product that was Internet-related and for which he got a patent. (Tr. at 3337). In 1996 Neil moved to his current address in Healdsburg, Calif. where he did some consulting work for local wineries and also did about a year with Watrories. Currently, he is the chief technology officer of a company called Iris Solutions. (Tr. at 3337). Based on Neil's background, while the administrative law judge finds that Young's experience when the initial application for the '121 patent was filed on July 12, 1985, is primarily hardware and working with broadcast FM signals, Neil's experience up and to July 12, 1985 by contrast is found to be generally in the area of software engineering and includes experience in home computers, video games and spreadsheet as well as VBI related work.

Aside from CX-1397 and CX-687, referenced by the staff, there are no contemporaneous documents generated prior to the July 12, 1985 filing date that relate to the conception of the claimed invention of the '121 patent.[78] Hence, what is left is the live testimony of inventor Young

[78] {

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and putative inventor Neil. As Ethicon stated, which statment of Ethicon was quoted by the administrative law judge in his March 19, 1998 ID, an alleged coinventor must supply evidence to corroborate his testimony. However corroborating evidence may take many forms. Whether the inventor's testimony has been sufficiently corroborated is evaluated under a "rule of reason" analysis. Under this analysis, an evaluation of all pertinent evidence is made. See supra.

Regarding the foci of the invention of the '121 patent, complainants' expert witness Faillace, testified:

> Q You told us this problem was the proliferation of channels. Collectively the claims of the '121 have a focus of addressing the problem?
>
> A Yes.
>
> Q What was that?
>
> A That was the focus, that was to help that average user use database techniques to take this sea, this vast sea of program schedule information, cut it down to size and enable that user to focus just on those programs most likely to be of interest to him, so that instead of looking at thousands of descriptions of programs, he would look at just maybe a half dozen or so and then be able to make an educated choice.
>
> Q Were there any other sort of principal focuses collectively of the claims of the '121?
>
> A I think it's combining that database feature with the programatic control feature, that is once you've identified from this tightly

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focused group of programs the ones you want to watch, then it's just a matter of hitting a button on the remote control to having it on your screen, if it's a current program, or to setting it up for tuning and recording in the future if it's a future program.

Q Did the claims of the '121 collectively address in any way the manner of getting programs schedule information and what to do with it once it's gotten --

A They address the issue, somewhere the program selection -- excuse me, the program schedule information upon which these choices are based, has to be in the data processor so that it can present them to the user.

(Tr. at 1150-51 (Emphasis added)). Accordingly, Faillace identified two key facets of the invention of the '121 patent: (1) the use of database techniques to allow the user to narrow the number of programs presented to him or her, and (2) allowing the user to cause the television to tune to one of the selected programs or to cause the VCR to be programmed to record one of the selected programs by "hitting a button on the remote." The spreadsheet technology testified about, by Neil at the hearing, accomplishes the first facet of the invention of the '121 patent, as well as other aspects disclosed in individual claims.

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} Specifically, the use of a matrix-type spreadsheet allows a system or process to display a television grid similar to two-dimensional grids that are used to present printed schedule information. (Tr. at 3345-46). Spreadsheet technology also allows the implementer to hide within the layers of the spreadsheet additional information about the programs, beyond that which is displayed on the two dimensional grid, so that a user could select a particular program in the spreadsheet and, thereby, cause

additional information about the program to appear in another box on the screen. (Tr. at 3346). This additional information could also be associated with the displayed programs, so as to allow searches for particular categories or types of programs. (Tr. at 3352-53). The ability to store additional information, so as to allow searches, enables the television guide system to "select[] those programs meeting the combined user selection criteria for viewing from the program schedule information," as required by claim 18 and, by dependency, claims 19-24, 26-28 and 31, as well as a similar limitations in claims 32, 33, 36, 42 (and, by dependency, claims 43, 48, 49 and 50), 54 and 66. Such a capability also enables claim 28 and 29's requirement that there be

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}

Such a feature enables the {

}

Neil's testimony is corroborated by his background which included{

} (CX-1397, CX-687). Neil's primary work experience was in the{

} He had received a degree in{

} Neil's work experience also had encompassed{ } See supra. Neil was aware of the

{

} See supra.

The original{

} (CX-1397). The disclosure described certain aspects of the{ } as follows:

{

}

(CX-1397 at 1) (Emphasis added). Furthermore, {

} (CX-1397 at 1).

The administrative law judge finds that such characteristics listed in the{

} Consistent with Neil's suggestion to use{

} In the second version of the product disclosure, which is styled as just{

}

{ }[79]

Moreover, all of the asserted claims of the '121 patent require supplying schedule information to the data processor. See Section V(A), supra. The '121 patent only discloses two methods of supplying the data processor with schedule information: through an FM transmission system or through the VBI. Figure 1 depicts a transmission system using an FM transmitter to broadcast schedule information, while Fig. 3 depicts an embodiment capable of receiving such transmitted information and supplying it to its CPU. Figure 2 shows a transmission system that transmits schedule information through the VBI, while Figs. 4a and 4b depict embodiments of the '121 patent capable of receiving such data and supplying it to their CPUs. Those three embodiments are the only embodiments of the '121 patent depicted and described in the

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[79] {

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specification, and two of them are designed to receive schedule information through the VBI. Furthermore, the ability to transmit the schedule information, so that it could be updated continuously, is also a key component to the '121 invention. For instance, under the Background of the Invention section, the '121 patent states: "[c]onventionally published program listings are not capable of handling last minute schedule changes and additions." (col. 2, lns. 2-4). Similarly, under the Summary of the Invention section, it is stated that "[i]t is another object of this invention to provide such a system and process which is capable of accommodating last minute schedule changes and additions." (col. 3, lns. 11-13).

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Neil's testimony that he had suggested to Young that the VBI should be used to supply the data processors with schedule information, is corroborated by the backgrounds of Young and Neil as well as{

} (CX-687) and by Young's admission that{

} Neil had experience with transmitting information in the VBI (or the vertical retrace). See supra. He gained this experience during his employment at Human Engineered Software. Young admitted that the only discussions that he had with Neil regarding{ }

{ } (Tr. at 894-95). Young had extensive experience working{ } (Tr. at 857-58). The only experience with transmitting information through the VBI that Young had, that is evidenced in the record, is in removing nondisplay information encoded into the VBI of a video signal, which was a hardware technique that Young knew well. (Tr. at 3400).[80]

The original{ }described as follows:

{ } { } Accordingly, the administrative law judge finds that{ }[81] The second version of the{ }

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[80] {

}

[81] {

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687), purports to be the{

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> The Supreme Court, in Marshall v. Lonberger, 459 U.S. 422, 434 (1983), has stated:
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> As was aptly stated by the New York Court of Appeals, although in a case of rather different substantive nature: 'Face to face with living witnesses the original trier of the facts holds a position of advantage from which appellate judges are excluded. In doubtful cases the exercise of his power of observation often proves the most accurate method of ascertaining the truth... How can we say the judge is wrong? We never saw the witnesses... To the sophistication and sagacity of the trial judge the law confides the duty of appraisal.' Boyd v. Boyd, 252 N.Y. 422, 429, 169 N.E. 632, 634.

Having had the opportunity to observe both Neil and Young's demeanor at the hearing, the administrative law judge finds Neil's demeanor was credible and straightforward, while Young's demeanor was lacking those characteristics.[82] Moreover, he finds testimony of Young, who was complainants' corporate deposition designee on the '121 patent conception, conflicts with

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[82] Neil was not represented by any of respondents' counsel. Although Neil met with respondents' attorneys before testifying at the hearing and they gave him background on the hearing, respondents' counsel did not go over with Neil any of the questions that they asked him at the hearing. Neil was not being compensated in any way for his time at the hearing other than having his air fare to the hearing and hotel expenses, when at the hearing, paid for by respondents' attorneys. (Neil, Tr. at 3417-18).

documents and other testimony of Young.[83] For example, at the hearing on December 5, 2001, as to conception of the claimed invention, Young testified (Tr. at 852-65):

Q Mr. Young, when do you first recall having the idea that led to the '121 patent?

A This is the last week of the 1984 and the time frame to the first week of 1985, January.

Q Mr. Young, how is it that you recall that date today?

A This is the period of 49er playoff, and this is -- it happened in a year in which they won the Super Bowl, and my wife is an avid fan of the 49ers, and I'm just an interested party.

Q What's the connection between the 49ers and your wife's interest in the 49ers and the invention of the '121 patent?

A I spent quite a bit of time during this playoff recording games for her. Basically I would set up the VCR, and my wife never learned to master the programming steps required.

Q What specifically was your wife's difficulty, Mr. Young?

A I think she could not remember the sequence of steps required.

Q What role did you play in helping your wife?

A I tried to teach her, and in the end I wind up doing the entire programming task.

Q And at some point did you come up with a way to help your wife with programming her 49er games?

A Right. I think this is after I've been recording like the nth game for that year, and I, for whatever the reason, I point to her that if I put the name, list of 49er games on the TV, will you be able to take this

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[83] Complainants argued that Neil's testimony is inconsistent. The administrative law judge finds the alleged inconsistencies in Neil's testimony trivial and do not serve to undercut Neil's credibility.

remote controller, point at it, and pick the game you want, click the button, and in turn automatic programming process will be done for you. And right away she liked the idea. She thought that was something she could handle.

* * *

Q I'd like to just take you back to the initial idea that you had. You say that you were going to display something on a screen. What is it you had in mind at that time in late December 1994 [sic], early January 1985 of displaying on the screen?

A I was trying to simply solve the problem for my life, and I was going to just take a list of the 49ers schedule, put it on the screen, keep it as simple as possible. I didn't want to complicate her -- she has trouble with following the steps of programming. I didn't want to make this any more difficult. Show on the screen, cursoring to the game, click on it, and the entire thing will be done.

Q What do you mean by "cursoring to the game"?

A So she [Young's wife] can select the particular games that she wanted to record.

Q Did there come a time when you considered expanding this idea beyond just football games?

A Right. Very quickly, I realized that if this is going to have any commercial success, it would have to be far more than just games, and I went through that maybe I can record all the sport games, list the sport games, maybe perhaps prime time movies, things of this sort. But in the end, I realized that I could not make that -- make those choices and decided to do an entire full-blown TV guide.

Q What do you mean by a "full-blown TV guide"?

A That would be a program that is like a weekly guide, seven-day listing on all the channels, basically that point, yeah.

Q When did this additional idea occur to you relative to the initial idea?

A It happened within the same hour.

Q At this time you were living in the San Francisco area; is that correct?

A Yes.

Q How many programs per week approximately were shown in San Francisco in that period of time?

A I estimate between -- per week -- about 5000 to 10,000.

Q If you were to try to display all of those programs on the TV screen, about how many screens would that information fill?

A Roughly it would probably be like 500 to maybe 1000 pages.

Q If that's all, for instance, your wife had to work with, how would she go about finding a program for recording?

A Obviously, if I just were to create a guide that is equivalent of thumbing through like a newspaper, she would have to page through all these pages which would basically defeat the entire idea of a simple tool for programming the VCR.

Q Did you see this as a problem or a limitation?

A It was -- I saw it as now a real challenge to somehow make a guide with five to 10,000 listings something for someone like my wife who is not technical, that she can master.

Q Did you address this challenge?

A Yes, I did. I began to think of ways of getting in a standard or a weekly guide, ways of, for example, putting in some kind of theme selection, and within a few selection strokes, I will be able to get that onto football.

Q Approximately when did you have this idea of creating themes?

A This is all that same very short time frame.

Q End of December 1984, early January 1985?

A Right. When I first started, I would say within that date or two, I

was thinking of actually how to implement this.

Q What type of television broadcast technology did you envision using this approach with?

A Right; okay. The thing I didn't want to do is to have obviously manual interest of this 49ers schedule or even that was too prohibitive. So the technology I had in mind is a thing called FM si[sic SCA] band.

Q And is this a way that you came up with to implement this idea?

A No. It was in the beginning of how to do this.

About -- the previous company, two previous companies, I was working on a concept. I developed a wristwatch pager, and the wristwatch pager is a pager that operates off of this FM superior technology.

Q What was the name of that previous company?

A The company is called AT&E.

Q And what was the conclusion between this pager that you were working on at AT&E and this idea you had regarding television?

A Okay. It seems like it was the ideal technology.

It is a si [sic SCA] channel of the FM. It's underutilized. The only thing that I know that was utilizing it at that time to any degree was music, audio. The FM si [sic SCA] band can also carry digital information.

Q How would that technology -- how did you envision at this time using that technology in connection with your television idea?

A Right; okay. Now that I have a way of getting of raw TV schedule data into some kind of a box, then what I will need now is obviously some intelligence to collect that information, some intelligence on how to search through that information. The information eventually will be displayed on the screen. So I will need some kind of video generator, and the most important thing is will need an external programming tuner that will actually select the

program.

I think this came about -- the VCR I had at the time I bought in '79. It did not have wires control features. You couldn't program it using an external programmable tuner. It was sort of a clunker. So this was the reason why I had an external programmable tuner in response to perform that function.

Q Can you identify the principal subcomponents of the system that you envisioned in this January 1985 time frame for implementing this idea that you had had?

A Right. I would need, in addition to the programmer tuner, obviously some very -- what I want right at the top is software, very intuitive software for searching, because the target user for my product is someone like my wife who is not technical.

The other piece I need now is to -- I have this -- well, I also need a generator. Once I have this thing listed on the screen, I will need now some kind of remote device to point to it, and once I point to it, I click it. Then I need to somehow control my VCR, and at that time I had an old-fashioned VCR. It didn't have a wires control. So in my original thinking, it was going to be a wire, direct wire to the pause control on the VCR. So that's pretty much that very initial idea.

Q How would -- can you explain how the wire leading to the VCR would control the VCR?

A Yes. It's somewhat of an awkward scheme. It will need to put my VCR into a record mode, and the machines, the very early machines at that time had -- it comes with like a 20-foot wire with a button on it, and then you use that to turn the recording off and on.

* * *

Q Did you consider searching to be an aspect of your idea at that point in time?

A Absolutely. If I did not have -- I call these tools for searching navigational tools, and if I didn't come up with a good idea for doing that, it won't fit the need of my wife and will not fit the need of what I think will be the market for this product.

Q Why was that?

A I think a lot of products, for example VCR programs, that exist at that time was extremely awkward. I estimated that maybe the majority of housewives can't program VCR.

* * *

Q Did your idea at this time, did it address that problem that you just described?

A I felt that was one of the key problems. I don't think anyone ever, to my knowledge, thought about now making this process what we call a cable map, how to map names of cable services like ESPN, HBO, and map it actually to the cable system that you have.

Q Is cable mapping different than navigational tools?

A Completely different, but it's absolutely essential to any automatic navigation. You could not record any program in a cable system properly unless you have a cable map.

Q And can you contrast cable mapping with navigational tools?

A Well, navigational -- you navigate, the way that I perceive navigation, would always be dealing in terms of the cable provider service name. I don't want people to think well, it should be channel 87. That's one of the problems of, I think, the average user. I want them to think oh, this is Bravo, okay, and they look at the chart and see Bravo. I want to make the rest of the operation fully transparent, fully automatic.

Q And what about the idea of sorting by themes?

How does that differ from the concept of navigational tools?

A It's one of the -- it's definitely one of the navigational features. The storybook theme is absolutely essential. For example, my wife, most of the time, is recording 49er games. I've got to get down from a raw listing of this five to 10,000 and in a couple keystroke -- it actually took a little bit more than that -- I wanted to be able to narrow down to the sports, football, pro football, and then bring up that screen.

Q The ideas that you've just been discussing, were these all ideas that you had in the December 1984/January 1985 time frame?

A The navigational came at that time, the cable came maybe a day later.

Q How about the VCR programming?

A First, the VCR programming was the entire initial idea that got me into thinking about this.

Q At some point did you decide that you would try to patent your invention?

A Yes.

(Emphasis added). In contrast to Young's hearing testimony about his conception of the invention of the '121 patent in{ } i.e., in a very short time frame, in his deposition on June 12, 2001, Young testified{ }

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(Emphasis added). Moreover,{

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(CX-1398). In this document, Young recites the following sequence of events:

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}[84]

The administrative law judge finds that Young's recitation of events in CX-1398C, contradicts the sequence of events to which Young testified at the hearing regarding the conception of the invention claimed in the '121 Patent. For example the introductory statement in

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[84] {

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{ } contradicts Young's trial testimony about the various ideas he conceived during the hour surrounding Young's alleged revelation regarding the recording of football games, which was the hour that Young testified he allegedly conceived of the invention claimed in the `121 patent.

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Young's testimony as to his conversations with Higgins is also conflicting. Thus on direct examination, Young testified (Tr. at 899-00):

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(Emphasis added). However, just hours later on the same day during cross-examination, Young testified:

{

}

Furthermore, Young testified on cross-examination as to { } (Tr. at 981-82):

{

}

(Emphasis added). In contrast to Young's hearing testimony, Young's corporate designee deposition contains the following question and answer with respect to the{ }

Do you see where it states in the middle of the paragraph, quote:

{

}

{ }Also, at the deposition, Young stated with

regards to Higgins' description of{ }set forth in RX-3812C (JX-60C at 864-65):

{

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(Emphasis added)

Even at the hearing on technical details, the administrative law judge found Young's testimony to conflict with his deposition testimony as complainants' corporate designee. For instance, Young testified (Tr. at 981-92):

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(Emphasis added). Another example of conflicting testimony is the following{ }

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(Emphasis added).

Based on the foregoing, the administrative law judge finds that Edward Neil made a contribution to the conception of the claimed invention of the '121 patent that was not insignificant in quality, when that contribution is measured against the dimension of the full invention claimed in the '121 patent. Accordingly, the administrative law judge finds that respondents have established that the '121 patent is unenforceable for failure to name Neil as a coinventor.

XI. VALIDITY (Best Mode '268/'204 Patent)

Respondents, relying primarily on deposition testimony of Roop, argued that the inventors of the '268 and '204 patents failed to disclose the best mode known to the inventor for carrying out the claimed invention. (See, e.g., EPost at 246). Hence, respondents argued that the "hybrid method" (also called the "hybrid cursor")[85] had been invented prior of the priority date of the '268

[85] The "hybrid method" is a method that uses a cursor that is moved from one cell to another with each press of the arrow key, until it reaches a cell that extends beyond the displayed grid

and '204 patents; and that the inventors prior to the filing date of the '204 and '268 patents knew of the "hybrid method,"and believed it to be superior to the innovative cursor disclosed in the '268 and '204 patents, but failed to disclose it. (EPost at 246-249).

Complainants argued that Roop during his deposition had expressed uncertainty as to when the hybrid method had been developed; that in his testimony during the hearing he had testified that the hybrid method had been developed two years after the filing date of the '204 and '268 patents; and that the hybrid method had been developed by David Warden, who is not one of the named inventors of the '268 and '204 patents. (CPost at 342-47).

The staff did not address the issue of the alleged failure to disclose the best mode with respect to the '268 and '204 patents.

The administrative law judge rejects respondents' arguments relating to best mode. Although, Roop's deposition testimony indicates that the inventors of the '268 and '204 patents knew of the hybrid method prior to the filing date of the '204 and '268 patents (See, e.g., JX 48 at 124-25), Roop subsequently and unequivocally recanted at the hearing his prior deposition testimony. (Tr. at 435-37). Thus, Roop testified that the inventor of the hybrid method was David Warden, who is not one of the named inventors of the '121 patent, and that Warden invented the hybrid method in 1992. (Tr. at 303). Such contradictory testimony is not to be automatically ascribed to bad faith on the part of Roop. The deposition occurred approximately 10 years after the filing date of the '204 and '268 patents and the conception of the hybrid cursor, and Roop had testified that his memory was refreshed during trial preparation after the deposition

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guide, in which case the screen will scroll a half hour ahead with each press of the arrow key. (Tr. at 300-01).

and immediately before the hearing. Respondents claimed that{

} (RFF 5156). However, CX-3816 is dated April 10, 1991 (Tr. at 288, 292-93; CX-3816), which is after the filing date of the '204 and '268 patents. Moreover,{

}(Tr. at 288-93; CX-3816 at 20-22, 85-86).

Based on the foregoing, the administrative law judge finds that respondents have not met their burden of proving that the inventors of the '268 and '204 patents withheld the best mode.

XII. VALIDITY (Indefiniteness – '121 Patent)

S-A argued that independent claims 18, 36 , and 66 and dependent claims 19, 20, 22, 24, 26, 27 and 31[86], which recite the step of supplying "user program selection criteria comprising a plurality of independent user chosen program selection criteria and at least one program choice" to the data processor and the step in which the data processor combines "said user selection criteria," are indefinite, and hence invalid under 35 U.S.C. § 112, ¶ 2 because it is unclear as to which antecedent – "user program selection criteria" or "independent user chosen program selection criteria" – "said user selection criteria" refers. (S-A Post at 187-88).

In light of the administrative law judge's finding, supra, that "said user selection criteria" refers to "independent user chosen program selection criteria," the administrative law judge

[86] In the heading for this section, S-A listed claim 54 in addition to the other claims. However, S-A made no reference to claim 54 in its arguments. Accordingly, the administrative law judge finds that S-A has not met its burden of proving that claim 54 of the '121 patent is invalid on account of indefiniteness.

rejects S-A's argument that the antecedent to "said user program selection criteria." is unclear. Accordingly he finds that S-A has not met its burden of proving that independent claims 18, 36 and 66 and dependent claims 19, 20, 22, 24, 26, 27 and 31are indefinite under 35 U.S.C. § 112, ¶ 2.

XIII. VALIDITY (Indefiniteness – '268 /'204 Patents)

Each of EchoStar and Pioneer argued that claims 1 and 3 of the '268 patent and claims 14-17 of the '204 patent are indefinite under 35 U.S.C. § 112, ¶ 2 in light of 35 U.S.C. § 112, ¶ 6. Thus, it was argued that those claims are written in "means plus function" language and are therefore subject to 35 U.S.C. § 112, ¶ 6; that applicants were required to set forth in the specification an adequate description of the means required to perform the recited function; and that the specifications of the two patents fail to disclose and describe software that Gemstar's expert witness identified as being "required" to perform the recited function of the claims. It was also argued that respondents' expert witnesses, Myers and Rhyne, both testified that software is required to perform various functions described in the asserted claims of the '268 patent and in claims 14-176 of the '204 patent (RFF 5419-5426); and that Myers testified that the specification of both the '268 and '204 patents fails to disclose any algorithm relevant to any of the means plus function elements of claims 1 and 3 of the '268 patent and claims 14-17 of the '204 patent. (RFF 5428-5429).[87] Accordingly, Pioneer and Echostar argued that the claims in issue are indefinite and invalid under 35 U.S.C. § 112, ¶ 2. (PPost at 236-37, EPost at 274-76).

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[87] Pioneer did not specifically identify which "means plus function" elements it was alleging to be indefinite, however, EchoStar, in its argument, made specific reference to claim 1's of the '268 patent limitation of a "means . . . for displaying a program note overlay including a program description of the desired program on said television display" and, in connection with claims 14-17 of the '204 patent, "the means plus function element that displays the overlay." (RFF 1465) .

Complainants argued that the actual legal test for indefiniteness is whether those skilled in the art would understand the scope of the invention; that the only evidence in the record that shows that persons skilled in the art would understand the scope of the invention (CRRFF 5428.3); that respondents' own expert conceded that the patents do describe the software required to perform the claimed function (CRRFF 5428.1, CRRFF 5428.2); and that even for means plus function claims, actual software source code need not be disclosed in order to meet the definiteness requirement. Complainants further argued that there was no testimony by any of respondents' experts, or anyone else, that they did not understand the scope of the claimed inventions (CRRFF 5428.4) and that not only was complainants' expert witness, Faillace, able to construe the claimed limitations and apply them to the accused products, but respondents' expert witness, Rhyne, was able to do the same. (CRPost at 347-49).

The administrative law judge finds that respondents have not met their burden of proving that the claims in issue are indefinite. Although the claims and specifications do not recite the exact computer code needed to implement the claims, such specificity is not required. The Federal Circuit in In re Dossel, 115 F.3d 942 , 946 (1997), found the claims in issue to be sufficiently definite even though no computer code was recited and the specific algorithms used were undisclosed. Thus it stated:

> [n]either the written description nor the claims uses the magic word "computer," nor do they quote computer code that may be used in the invention. Nevertheless, when the written description is combined with claims 8 and 9, the disclosure satisfies the requirements of § 112 ¶ 2. As the written description discloses, the clauses in question claim a device that receives digital data words from a memory and data input from a user. The device then computes, from the received data, the current distribution by mathematical operations including a matrix inversion or pseudo inversion, an then outputs the result to a display. While the written description does not disclose exactly what mathematical algorithm will be used to

compute the end result, it does state that "known algorithms" can be used to solve standard equations which are known in the art.

(Emphasis added).

With respect to the claims at issue, the specifications of the '268 and '204 patents do contain descriptions of the software used in the respective inventions. For instance, respondents' own expert witness, Rhyne, testified that:

> Q What structure have you identified as corresponding to the structure?
>
> A It's identified in Exhibit 4748.25, CPU, the memory, and including both the video display generator 224 and the video switcher 226, as well as the software that follows the flow charts of figures 8, 11, 18 and 19, to produce the screen shots of figures 1 through 3, 5 and 6.
>
> Q Why have you included software?
>
> A This is a programmable element, that CPU. And when you have a programmable element of this type, it's my practice to always include the software and then I don't find that you have a well defined structure until you link the two together, so that you not only know what general programmable device but you also know the software that it's going to execute when it performs the function.

(Tr. at 3668 (Emphasis added); see also RX 4748.25). Rhyne's testimony that the flow charts depicted in figures 8, 11, 18 and 19 describes the software used by the inventions disclosed in the '268 and '204 patents, is mirrored by complainants' expert witness, Faillace:

> Q Will you agree with me and shorten up this examination, that the corresponding structure, the corresponding software which you found is not explicitly described anywhere in the patent?
>
> A There's nowhere in the patent that says software does this, software does that. But there are flow charts and there are descriptions.
>
> Q Is the software that you found to be corresponding to this means, is

that illustrated or described in the patent?

A I think the wording of the claim element, the description in the patent, excuse me, flow charts, are all descriptive of software.

Q I'm - - is it your testimony that the flow charts in this patent depict the operation of the software which you have found to be part of the structure for this particular means?

A They're descriptive of it, they don't depict it.

Q And they're descriptive in that they describe the software that works here?

(Tr. at 2373-74 (Emphasis added)).

Based on the foregoing, the administrative law judge finds that respondents have not satisfied their burden of proving that claims 1 and 3 of the '268 patent, and claims 14, 15, 16, and 17 of the '204 patent are invalid under 35 U.S.C. § 112, ¶ 2 because of indefiniteness.

XIV. VALIDITY (Enablement – '121 Patent)

S-A argued that the claims that recite a"storage means" located "in a data processor" are invalid due to lack of enablement under 35 U.S.C. § 112. (S-A Post at 182-84). Hence, it was argued that complainants' expert witness, Faillace, admitted that the limited amount of storage available in the Little Board/186 microcomputer in 1985 would have been insufficient to store the various buffers that make up the claimed "storage means;" that the '121 patent does not disclose or teach any location for storage of schedule information except in the Little Board/186 microcomputer; and that, therefore, the '121 specification fails to enable one of ordinary skill in the art to make or use the claimed invention to store schedule information in a "storage means" located "in a data processor." Accordingly S-A argued that independent claims 18, 33, 36 and 66 and dependent claims 19, 20, 22, 24, 26, 27 and 31are invalid for lack of an enabling disclosure.

The staff argued that S-A had not established by clear and convincing evidence that a person of ordinary skill in the art would not be able to practice the claimed invention without undue experimentation and that each of the respondents' expert witnesses were able to testify as to their understanding of the claims and how the claimed invention worked. (SPost at 58-59).

Complainants agreed with S-A that, if "data processor" were construed to be just a "CPU," the claims in issue are in invalid due to enabling disclosure.

The administrative law judge has already found that the claims that recite a "storage means" located "in a data processor" if the term "data processor" was construed to mean a "CPU," are not invalid because of lack of enablement. See supra. Accordingly, the administrative law judge finds that S-A has not met its burden of proving invalidity of independent claims 18, 33, 36 and 66 and dependent claims 19, 20, 22, 24, 26, 27 and 31 because of lack of an enabling disclosure under 35 U.S.C. § 112.

XV. INEQUITABLE CONDUCT

Respondents argued that Young and InSight (StarSight's predecessor) engaged in a pervasive pattern of inequitable conduct during the prosecution and re-examination of the '121 patent (1) by purposefully submitting false or misleading statements to the Examiner in a sworn declaration, upon which the Examiner relied to conclude that the '121 patent contained patentable subject matter,[88] and (2) by Young's withholding from the Examiner material information

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[88] Respondents identify two alleged false or misleading statements made to the Examiner by Young during re-examination: (1) Young's representation in the declaration that the '121 invention was the world's first "point-and-select" system for simplifying VCR programming and {

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regarding Neil's contribution to the invention claimed in the '121 patent, which Young did with the intent to deceive. (S-A at 188). Respondents further argued that Young mischaracterized the VCR Plus + system in his declaration to the PTO. (EBr at 239). Finally, respondents argued that Young failed to disclose to the Examiner that "watch one/record another" functionality was known in the prior art. (EBr at 237).

A patent is unenforceable on grounds of "inequitable conduct" if the patentee withheld material information from the PTO with intent to mislead or deceive the PTO into allowing the claims. LaBounty Manufacturing, Inc. v. U.S. Int'l. Trade Comm., 958 F.2d 1066, 1070, 1074 (Fed. Cir. 1992) (LaBounty). Both materiality and intent must be proven by clear and convincing evidence. LaBounty, 958 F.2d at 1070, 1074; Kingsdown Medical Consultants, Ltd. v. Hollister, Inc., 863 F.2d 867, 872 (Fed. Cir. 1988), cert. denied, 490 U.S. 1067 (1989) (Kingsdown).

According to PTO rule 1. 56 (37 C.R.F. § 1.56(a)), the duty to disclose information:

> exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim.

Generally, when withheld information is highly material, a lower showing of deceptive intent will be sufficient to establish inequitable conduct. American Hoist & Derrick Co. v. Sowa & Sons. Inc., 725 F.2d 1350, 1363 (Fed. Cir.), cert. denied, 469 U.S. 821 (1984). Moreover, "[d]irect proof of wrongful intent is rarely available but may be inferred from clear and convincing evidence of the surrounding circumstances." LaBounty, 958 F.2d at 1076; Hewlett-Packard Co. v. Bausch

& Lomb, Inc. 746 F.Supp. 1413 (N.D. Col. 1990), aff'd, 925 F.2d 1480 (Fed. Cir.), cert. denied, 111 S.Ct. 2854 (1991). The conduct at issue must be viewed in light of all the evidence, including evidence of good faith. Kingsdown, 863 F.2d at 876. Any "[i]nformation is material where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent." LaBounty, 958 F.2d at 1074.

One who alleges inequitable conduct arising from a failure to disclose prior art must offer clear and convincing proof of the "materiality of the prior art, knowledge chargeable to the applicant of that prior art and of its materiality, and the applicant's failure to disclose the prior art, coupled with an intent to mislead the PTO." Molins PLC v. Texron, Inc., 48 F.3d 1172, 1178 (Fed. Cir. 1995).

An intent to deceive "cannot be inferred solely from the fact that information was not disclosed; there must be a factual basis for a finding of deceptive intent." Upjohn Co. v. Mova Pharmaceutical Corp., 225 F.3d 1306, 1312 (Fed. Cir. 2000) (quoting Herbert v. Lisle Corp., 99 F.3d 1109, 1116 (Fed. Cir. 1996); Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1482 (Fed. Cir. 1998) ("[I]nference without any probative evidence is insufficient to show culpable intent."). Inequitable conduct requires proof of the applicant's actual knowledge:

> Telsmith seeks to overcome the fatal lack of evidence that the relevant Nordberg employees knew of the Saunders patent's existence by contending that "Federal Circuit precedent does not require proof of actual knowledge of the withheld prior art, but only . . . proof that the applicant or its representatives 'should have known of the art or information,'" citing our decisions in Molins PLC, 48 F.3d at 1178, 33 U.S.P.Q.2d at 1826, and FMC Corp. v. Manitowoc Co., 835 F.2d 1411, 1415, 5 U.S.P.Q.2d 1112, 1116 (Fed. Cir. 1987). We long ago rejected this contention [citation omitted], and neither FMC Corp. nor Molins PLC held to the contrary . . . . Telsmith's contention that the 'failure of disclosure' form of inequitable conduct can be shown with proof that the applicant did not but should have known of a reference's existence runs counter to American Hoist [Derrick Co. v. Sowa & Sons,

> Inc., 725 F.2d 1350, 1362 (Fed. Cir. 1984)] and subsequent cases and must therefore be rejected. As we held in American Hoist, the applicant's actual knowledge of the reference's existence must be proved.

(Emphasis added); See also Nordberg, Inc. v. Telsmith, Inc., 82 F.3d 394, 397 (Fed. Cir. 1996), (citing American Hoist) ("Nor does an applicant for patent, who has no duty to conduct a prior art search, have an obligation to disclose any art of which, is the [district] court's words, he 'reasonably should be aware.'")).

Contrary to respondents' arguments, Young in his declaration to the Examiner never represented that the '121 invention was the world's first "point-and-select" system for simplifying VCR programming. (RX-3008 at 133-87). Young did compare the '121 invention to VCR Plus +, a system that allows a consumer to key in a code which then causes the VCR to automatically record a selected program. (RX-3008 at 135-36). In comparing the systems, Young declared that "[t]he advantages of the InSight Telecast product . . . includ[e] the ability to select the program from a listing which could be arranged by time, channel or theme." (RX-3008 at 135-36). Hence, Young did not try to distinguish the '121 invention merely on its "point and select" capability, but on that capability coupled with the capability of arranging listings by time, channel or theme. Young continued his description of the invention of the '121 patent:

> In one embodiment of this invention, programming a VCR has been simplified to a point-and- select method of operation. By merely selecting the title from a readily available "on-line" television schedule the VCR can be programmed. Listings can be stored by both cable source and cable channel number, so that cable channel conversion is automatic. There is no need for the user to convert cable source listings to cable channel numbers. Furthermore, the broadcast schedule listings are always specific to the particular cable network. Also, a program selected for recording can be verified by displaying its title, and not merely time and channel abstractions.

(RX-3008 at 137). Accordingly, although one feature of the embodiment that Young was referring

to had the "point-and-select" feature, it also had in combination with this feature, the ability to store listings by both the channel number or cable source and the ability to allow an user to verify a program selected for recording, by title, as well as the time and channel.

Young further represented that "the present invention allows the realization of a point-and-select on-line guide." (RX-3008 at 137). However, this statement is found in the concluding sentence of a paragraph. In the portion of the paragraph immediately preceding this sentence, Young described how the invention of the '121 patent would realize "a point-and-select on-line guide":

> The need for an effective "on-line" TV guide" is also well know, due to the shortcomings of printed TV guides. See Exhibit M. With a plethora of cable-TV services, viewers are confused with which channels corresponds to which cable system. For example, in the San Francisco Bay Area the consumer must chose between approximately 14,8000 weekly television programs in their program guide. The present invention allows the display of program listings by cable service name, such as HBO, and automatically tunes the television apparatus or VCR to the correct cable channel when that listing is selection. Also, cable channel information corresponding to the local cable system is transmitted to the schedule system.

(RX-3008 at 137).

Young also declared that:

> The Insight Telecast product will provide easy programming by means of an intuitive point-and-select method that will be available at a comparatively low price. Also, the Insight product will reprogram the VCR for any schedule changes of the selected program. Also, the on-screen schedule will provide accurate and accessible schedule information for the particular cable or network broadcasting region.

(RX-3008 at 139).

Thus, the invention's point and select functionality is only referred to in connection with other features, viz., the ability to reprogram the VCR in the event of any schedule changes of the selected programs and an on-screen schedule that will provide accurate and accessible schedule information

for the particular cable or network broadcasting region.

Accordingly, the administrative law judge finds nowhere in the declaration that Young states that the '121 invention was the first to implement the "point-and-select" method of program selection. Rather it is found, he merely declared that the "point and select" functionality was one of a number of features contained in the invention.

The administrative law judge also finds that Young, in fact, had not improperly failed to disclose the prior art "point-and-select" systems at issue to the Examiner. Respondents argued that Young had failed in his declaration to disclose to the Examiner the existence the guide invented by Kruger and used in the West German VPS and VPV systems (S-A at 194) and the Cable Data system. However, there is no evidence that Young knew or should have known that the Cable Data system was a point and select system. To show Young's knowledge of the point and select features of the Cable Data system, respondents relied on a February 16, 2000 letter from Michael Faber, the then CEO of Insight, to Allen Krass (RX-3645), in which Faber wrote:

> [Young] also found an interactive home system for cable viewers. A company called Cable Data delivered TV schedules to subscribers with local storage devices for program selection. This system was launched and heavily advertised in 1980 and 1981 until it was ended, we think, in 1985 (attachment 5).

(RX-3645 at GITC-FA-0043558). Attachment 5 consists of photocopies of two one-page advertisements for the Cable Data systems, both of which include pictures of a television screen as well as text. However, the quality of the photocopies are poor, and as a result the writing in the pictures of the screens is illegible. Nothing in the advertisements, either in the pictures or in the text, or the letter itself reveals that Young knew or should have known that the Cable Data system had a point and select functionality. Attachment 5 also has a photocopy of the table of contents of

"Inside Cablevision." The administrative law judge finds nothing on this page to indicate that the Cable Data system had a point and select functionality. Moreover, Young made repeated attempts to get more information from Cable Data concerning their system, but was rebuffed. (JX-60 at 588, 728). The only information that Young was able to collect on the Cable Data system were copies of the advertisements reproduced in Attachment A to RX-3645, which the administrative law judge finds did not suggest to Young that the Cable Data system had a point and select functionality. (JX-60 at 561). Accordingly, the administrative law judge finds that Young did not know, and had no reason to know, of Cable Data system's point and select functionality, if any, and therefore did not act with the intent to mislead the Examiner in failing to bring the Cable Data system to the Examiner's attention during re-examination.

With respect to the Kruger guide and the West German VPS and VPV systems, the administrative law judge finds that Young did in fact provide those references to the Examiner. In his August 13, 1992 amendment, Young addressed the VPV system under "Newly Cited Art" and, in a September 4, 1992 Information Disclosure Statement, provided the examiner with a translated copy of the reference. (RX-3008 at 215-16, 239-50 ("Videotext Programmiert Videorecorder")). With respect to the Kruger reference, the Examiner already knew of the Kruger patent prior to Young's declaration. (See, e.g., 279-81 (Examiner citing Kruger as a basis for rejecting certain claims); RX-3008 at 29 (Kruger in Request for Reexamination); RX-3008 at 102 (Kruger cited in Order Granting Reexamination); RX-3008 at 121 (Kruger cited in Office Action in Reexamination)).

Based on the foregoing, the administrative law judge finds that Young did not make statements in his declaration with the intent to deceive or mislead the Examiner.

With respect to respondents' inequitable conduct arguments as they relate to the Zenith agreement and the failure to name Neal as a co-inventor, the administrative law judge finds that they have been abandoned in accordance with ground rule 9(e), which states:

> A statement of the issues to be considered at the hearing that sets forth with particularity a party's contentions on each of the proposed issues, including citations to legal authorities in support thereof. Any contentions not set forth in detail as required herein shall be deemed abandoned, or withdrawn, except for contentions of which a party is not aware and could not be aware in the exercise of reasonable diligence at the time of filing the pre-hearing statements.

(Emphasis in original).

None of the respondents set forth the Zenith agreement or the failure to name Neal as co-inventor as possible bases for inequitable conduct in its pre-hearing brief (See PPre at 96; EPre at 150-56; S-A Pre at 93-101). Moreover no respondent has attempted to show that it was "not aware and could not have been aware in the exercise of reasonable diligence at the time of filing the prehearing statements" that the Zenith agreement or the failure to name Neal as a co-inventor could be bases for inequitable conduct. Accordingly, the administrative law judge finds that respondents have abandoned or withdrawn any contentions regarding to the Zenith agreement and the failure to name Neal as a co-inventor as they relate to inequitable conduct.

The administrative law judge also rejects respondents' inequitable conduct arguments which are based on the allegation that Young "failed to disclose to the PTO that the VCR Plus+ system embodied claims of the '121 patent." (EBr at 239). Respondents' arguments are based on two letters of August and September, 1990 sent by the patent council of InSight to Gemstar alleging that the VCR Plus+ system infringed the '121 patent. (RX-1612; RX-3591; RX-3625; RX-3636; RX-3641; CX-3375; CX-3401; CX-891, ¶¶ 20-32). Gemstar disputed this assertion,

and, eventually, InSight abandoned its earlier claim that VCR Plus+ infringed the '121 patent, as is shown by InSight's failure to continue to assert its original infringement opinion and its failure to seek redress through litigation. (Id.). An infringement opinion abandoned two years prior to Young's declaration is not material, especially in light of the fact that the Examiner knew of the actual VCR Plus + system. The administrative law judge finds no reason in the record for believing that Young or anyone at Insight believed that the abandoned opinion of Young and Insight about VCR Plus+ was material.

The administrative law judge also rejects respondents' argument that complainant committed inequitable conduct by failing to disclose that "watch one/record another" functionality was known in the prior art. Respondents have provided no evidence to show InSight or Young knew of such prior art and had intended to deceive the Examiner.[89] See 12/11/00 op., supra, at 21-23.

XVI. DOMESTIC INDUSTRY ('121, '268 and '204 Patents)

Complainants bear the burden of demonstrating the existence of an industry in the United States that practices the patents-at-issue and meets the requirements of section 337(a)(3). Certain Microsphere Adhesives, Process for making Same, and Products Containing Same, Including Self-Stick Repositionable Notes, Inv. No. 337-TA-366, USITC Pub 2049, Comm'n Op. at 8 (January 1996); Certain Plastic Encapsulated Integrated Circuits, Inv. No. 337-TA-315, USITC Pub. 2574.

In proving the existence of a domestic industry under subparts (A) and (B) of 19 U.S.C. § 1337(a)(3) a complainant must establish that its activities in the United States meet the threshold

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[89] EchoStar did cite RX 3149, a deposition transcript, to support the proposition that Young knew of such art. However, RX 3149 was never admitted into evidence. (Tr. at 3149).

set forth in the statute (economic prong) and that those activities are devoted to a product or process which is covered by the patent(s) in issue (technical prong) In re Certain Removable Elec. Cards and Elec. Card Reader Devices and Prods. Containing Same, Inv. No. 337-TA-396, 1998 WL 479084, Comm'n Op. (Aug. 13, 1998). Specifically, complainants must establish that an industry in the United States, relating to the articles protected by the patents in issue, exists or is in the process of being established. The definition of domestic industry, as set forth in subsection 337(a)(3), states that "for purposes of subparagraph (2), an industry in the United States, with respect to the articles protected by the patent concerned:

> significant investment in plant and equipment;
>
> significant employment of labor or capital; or
>
> substantial investment in its exploitation, including engineering, research and development, or licensing."

The domestic industry requirement is satisfied by meeting the criteria of any one of these three factors. Certain Concealed Cabinet Hinges and Mounting Plates, Inv. No. 337-TA-289, Comm'n Op. at 1920 (1990). Complainants bear the burden of establishing that the domestic industry requirement is satisfied. Id. at 22.

The technical prong of the domestic industry requirement requires complainants to demonstrate that they practice the patents at issue.

Although there must be a domestic industry with respect to each asserted patent, there is no requirement that those claims asserted against respondents must correspond with those practiced by the domestic industry. Certain Microsphere Adhesives, Process for Making Same and Products Containing Same Including Self-Stick Repositionable Notes, Inv.No. 337-TA-366, USITC Pub.

2949 (1996). Thus, complainants need only show that their products meet one claim of every patent at issue. Certain Lens Fitted Film Packages, Inv. No. 337-TA-406, Final Initial Determination at 203 (Feb. 24, 1999), reviewed-in-part on other grounds (April 9, 1999); Certain Toothbrushes and Packages Thereof, Inv. No. 337-TA-391, Order 8, Initial Determination (July 7, 1997), Commission's Determination Not to Review (August 6, 1997).

To satisfy the economic prong of the domestic industry requirement, complainants must show that "specified activities in the United States exist with respect to the articles identified by the technical prong." In re EPROM, EEPROM, Flash Memory, And Flash Microcontroller Seminconductor Devices and Prods. Containing Same, Inv. No. 337-TA-395, 1998 WL 223194, Initial Determination (March 19, 1998).

A. Economic Prong

Complainants argued that they have satisfied the economic prong of domestic industry because (1) they have made a substantial investment in the exploitation of their IPG patents, including the patents in issue, through licensing, (2) they have made a substantial investment in the exploitation of their IPG patents through research and development, including research and development of IPG products and services that practice the IPG patents at issue and (3) complainants have made other forms of substantial investments in the exploitation of their patented IPG technology. {

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} However the staff, in, its reply brief, argued that while complainants have established that they have made investments in research and development activities devoted to certain of their products, it has not been established that those products

practice the patents in issue, those investments should not be considered part of a "domestic industry" for purposes of section 337. The staff also argued that, with respect to complainants' licensing activities, complainants have a very large patent portfolio, making it "nearly impossible" to determine whether any of the licensing activities can be said to be devoted to the exploitation of the '121, '268 and '204 patents. The staff concluded, under those circumstances, that complainants have not established the existence of a licensing industry with respect to the three patents in issue. Thus, the staff's position in its reply brief is that complainants have not satisfied the economic prong of the domestic industry requirement. (SRPost at 34).

Respondents and the staff contend that the record is insufficient to establish the economic prong of a domestic industry for complainants' IPG technology, products and services related to the patents-in-issue. However respondents and the staff simultaneously argued, when alleging that complainants have misused the patents-in-issue, that the very same record compels the conclusion that complainants have misused the patents-in-issue in their licensing program. The administrative law judge finds that respondents and the staff in alleging misuse have implicitly acknowledged that complainants licensing activities are attributable to complainants' exploitation of the '121, '268 and '204 patents. Therefore, complainants in order to satisfy the economic prong for the domestic industry requirement need only prove that they have made at least substantial investment in exploitation of the patents in issue, including licensing. The administrative law judge finds that complainants have met that burden. Thus complainants license their IPGs, including the patents at issue. For example see Yuen Tr. at 2464-66, CX-0138, CX-0057, CX-1244, CX-0098, CX-0126, CX-0177, CX-0195. Moreover there is testimony from Craig Waggy, the senior vice-president and chief financial officer of TV Guide, which testimony is found credible, that complainants from

April 1996 through June 2001, incurred substantial expense associated with their licensing program. (Tr. at 702, CX-1324).

B. Technical Prong ('121 Patent)

Complainants argued that their Nova Guide practices claims 18, 19, 20, 21, 22, 23, 26, 27, 28, 32, 33, 36 and 66 of the '121 patent; that their Guide Plus practices claims 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 31, 33, 36 and 66 of the '121; and that their CESA guide practices claim 18 and 66 of the '121 patent. Accordingly, it was argued that they satisfied the technical prong of the domestic industry requirement. Respondents and the staff argued, inter alia, that complainants only introduced evidence that the products that they were relying on to satisfy the technical prong practiced the '121 patent under complainants' proposed claim constructions, and failed to provide any evidence that the products in question practiced the '121 patent under the respondents' and the staff's proposed constructions.

In their rebuttal brief complainants responded to respondents' and the staff's arguments accordingly:

> Finally, Respondents complain that Complainants have not demonstrated that their domestic industry products practice the patents-at-issue under Respondents' proposed claim constructions. This is true, but ignores the equally salient fact that Respondents have failed to introduce any evidence to rebut the fact that, under Complainants' claim construction, the products do practice each of the claims-at-issue. (CRRF 5529.1 - CRRFF 5529.11). Therefore, if the Court adopts Complainants' construction for even one claim of each patent, Complainants will have satisfied their burden of demonstrating that they meet the technical prong of the domestic industry requirement with respect to that patent. See Certain Lens Fitted Film Packages, Inv. No. 337-TA-406, Final Initial Determination at 203 (Feb. 24, 1999), reviewed-in-part on other grounds (April 9, 1999) (Complainants need only show that their products meet one of each patent at issue).

(CRBr at 263)(Emphasis in original omitted; emphasis added). Hence complainants have admitted

that they have not shown that the products that they relied upon to satisfy the domestic industry requirement meet the claim constructions respondents and the staff proposed. With respect to independent claim 18, dependent claims 19-24, 26-28 and 31 and independent claim 36, the administrative law judge rejected complainants' proposed constructions and found, consistent with respondents' and the staff's proposed constructions: that "data processor" is a CPU; that "storage means" consists of at least the program list, the screen, the prime time, the channel and the theme buffers; that incoming schedule information had to be stored in the CPU itself; that the data processor must be capable of logical "OR" and logical AND" combining; and that the schedule information that was to be stored for each selected program included the program's title. See supra. The administrative law judge finds that there is no evidence that complainants' products in question satisfy the proper construction of claims 18, 19, 20-21, 22, 23, 24, 26, 27, 28, 31 and 36. Accordingly, the administrative law judge finds that complainants have not met their burden of proof regarding said claims of the '121 patent.

With respect to claim 32, the administrative law judge rejected complainants' proposed claim constructions to find, consistent with respondents' and the staff's proposed constructions, that: "data processor" is a CPU and that incoming schedule information had to be stored in the CPU itself. See supra. The administrative law judge finds that there is no evidence that complainants' products in question satisfy the proper construction of claim 32. Accordingly the administrative law judge finds that complainants have not met their burden of proof regarding claim 32 of the '121 patent claim.

With respect to claim 33, the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions, that:

"data processor" is a CPU; "storage means" consists of at least the program list, the screen, the prime time, the channel and the theme buffers; that incoming schedule information had to be stored in the CPU itself; the data processor must be capable of logical "OR" and logical "AND" combining; and "turning on" a VCR means that the system must cause the VCR to power on. See supra. The administrative law judge finds that there is no evidence that complainants' products in question satisfy the proper construction of claim 33. Accordingly, the administrative law judge finds that complainants have not met their burden of proof regarding claim 33 of the '121 patent.

With respect to claim 66, the administrative law judge rejected complainants' proposed constructions to find, consistent with respondents' and the staff's proposed constructions, that: "data processor" is a CPU; "storage means" consists of at least the program list, the screen, the prime time, the channel and the theme buffers; that incoming schedule information has to be stored in the CPU itself; and the data processor must be capable of logical "OR" and logical "AND" combining. See supra. The administrative law judge finds that there is no evidence that complainants' products in question satisfy the proper construction of claim 66. Accordingly, the administrative law judge finds that complainants have not met their burden of proof regarding claim 66 of the '121 patent.

C. The Technical Prong ('268 Patent)

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D. The Technical Prong ('204 patent)

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XVII. REMEDY

The Commission has broad discretion in selecting the form, scope, and extent of the remedy in section 337 proceedings. Integrated Circuit Telecommunication Chips, Inv. No. 337-TA-337, Comm'n Op. (August 3, 1993), citing Viscofan, S.A. v. U.S. Int'l Trade Comm'n, 787

F.2s 544, 548 (Fed. Cir. 1986). An exclusion order can exclude from importation goods and products that directly or contributorily infringe the patented technology. In the Matter of Certain Hardware Logic Emulation Systems & Compnents Thereof, Inv. No. 337-TA-383, USITC Pub. 3089, Comm'n Op. at 27 (March 1998) (Hardware Logic). Direct infringement does not have to precede importation for an exclusion order to reach components that contribute to the infringement of the patents-in-issue. Hardware Logic, Comm'n Op. at 19-20. In Certain Personal Computers & Components Thereof, Inv. No. 337-TA-140, USITC Pub. No. 1504, 1984 ITC LEXIS 218* at *5 (March 1984), the Commission excluded from entry into the United States personal computers and components thereof "which are less than complete when imported but [which] are designed and intended to be employed by their owner, importer, consignee or agent of either to make a personal computer which directly infringes any of the [patents-in-suit]."

The Commission also has the authority to issue cease and desist orders where a respondent has a sufficient inventory of infringing goods in the United States. See Certain Crystalline Cefadroxil Monhydrate, Inv. No. 337-TA-293, Comm'n Op. on Remedy, the Public Interest and Bonding at 37-42 (March 15, 1990); Certain Plastic Encapsulated Integrated Circuits, Inv. No. 337-TA-315, USITC Pub. 2574, Comm'n Op. at 37 (November 1992). A "sufficient inventory" may consist of one infringing product. See e.g., Hardware Logic, Comm'n Op. at 26.

A cease and desist order can issue in lieu of or in addition to an exclusion order to prevent the sale, distribution, or other use of infringing imported products in the United States. The scope of section 337 is broad enough to prevent every type and form of unfair practice, including the transmission of infringing software by electronic means, electronic transmission of software and/or data that induces an infringing use of an imported product, and the servicing of imported products

that induce infringement. Hardware Logic, Comm'n Op. at 25-29; Certain Digital Satellite Systems Receivers, Inv. No. 337-TA-392, USITC Pub. 3418, Initial Determination at 239-44 (Oct. 1997), Order No. 53 at 7-11 (June 9, 1997).

Complainants argued that if the Commission determines that a section 337 violation has occurred, it "shall direct that the articles concerned . . . be excluded from entry into the United States," unless public interest facts specified within the statue are considered to counsel against it. 19 U.S.C. § 1337(d) and that the evidentiary record and applicable law make it clear that the administrative law judge should recommend the issuance of a limited exclusion order which excludes:

> importation of set-top boxes into which infringing software is installed after importation;
>
> importation of set-top box components which are incorporated into set-top boxes domestically, and into which infringing IPG software is installed;
>
> importation of new infringing IPG software, including updates, upgrades, and bug fixes; and
>
> satellite transmissions of infringing IPG software and/or program schedule data as an "importation." (CPost at 414-415).

Referring to EchoStar, complainants argued that an effective limited exclusion order must cover not only EchoStar's products and components, but also the satellite transmission imported to the set-top boxes in order to download the IPG; that EchoStar's accused products are the 2700, 2800, 3750, 3900, 4900, 6000, DP301 (versions D and E), DP 302, DP301, and DP501; that EchoStar admitted that the motherboards for its set-top boxes currently are made on its behalf by SCI in{ } and that its set-top boxes and/or motherboards are or have been manufactured by { } and by { } that EchoStar

further acknowledged that those set-top boxes and motherboards are imported by it or on its behalf by SCI and{ } It was argued that the record demonstrates that EchoStar's set-top boxes, at the time they leave the manufacturer,{

} Complainants argued that EchoStar acknowledged that it downloads the production software, the IPG, via its satellites and that program data also is similarly downloaded. Hence complainants argued that the exclusion order should prohibit the importation of set-top boxes and/or components, including motherboards, that enable the later downloading of IPG and program data from satellites, as well as the actual satellite transmission of IPG and program data to all existing EchoStar set-top boxes in the field that are capable of receiving such transmissions. (CPost at 417-418).

For the Pioneer set-top boxes, complainants argued that an effective exclusion order must cover importation of all of the Pioneer Voyager set-top boxes, and the transmission of cable signals that permit downloading and/or upgrading of IPG and/or program data; that Pioneer's accused set-top boxes are the BD-V 1000 series and BD-V 3000 series, also known by the product name "Voyager;" that Pioneer admitted that it currently manufactures those Voyager set-top boxes in

Malaysia, and that it previously manufactured them in Japan as well; that Pioneer further admitted that it imports the accused Voyager set-top boxes; that the accused Voyager set-top boxes as imported are equipped with hardware and contain certain third-party operating software, which enables the later downloading, and updating of IPG schedule data by the cable system operators; and that Pioneer supplies this entire software package, known as Passport, to the cable system operators, permitting them to conduct the appropriate downloading of the infringing Pioneer IPG. (CPost at 419).

Complainants argued, with regard to S-A, that an effective exclusion order must include S-A's set-top boxes as well as the transmission of cable signals that permit downloading and/or upgrading of IPG and/or program data; that S-A's infringing products are the Explorer 2000, 3000, 2100, and 3100; that all of S-A's Explorer set-top boxes are made in Mexico; that the Explorer set-top boxes run either S-A's SARA software or Pioneer's Passport software, both of which include the infringing IPGs; that at the time of importation the set-top boxes contain {

} that S-A is unaware of any end user who has actually employed an Explorer set-top box with SARA software but without the SARA IPG software at the time S-A's set-top boxes are imported;{

{ } and that the record shows that S-A imports the infringing set-top boxes with the intent that the S-A or Pioneer IPG software be loaded onto the set-top box by the cable operator. (CPost at 419-421).

EchoStar argued that any exclusion order should not bar electronic transmissions of software. It was argued that in Hardware Logic, Comm'n Op. at 1 n.3, the focus of the infringement case was on software that allegedly contributed to infringement when employed in certain external systems, and that because Customs does not regulate electronic transmissions, the Commission declined to adopt a recommendation of the administrative law judge that an exclusion order (as distinct from a cease and desist order) prohibit the electronic transmission of the software found to infringe Hardware Logic, Comm'n Op. at 20. It was further argued that the rationale of Hardware Logic applies with even greater force in this investigation; that the provision of section 337 pertaining to exclusion orders provides for exclusion of articles from entry into the United States; that unlike the electronic transmissions in Hardware Logic, there is no "entry into the United States" because the software and schedule data at issue never leaves the United States; that the software and schedule data is transmitted to the accused products from an uplink center located in the United States which transmits to satellites for ultimate transmission to users; that like the uplink center, these users are in the United States; and that while it is true that the satellites themselves are located in outer space, Gemstar has not shown the satellites to be outside U.S. jurisdiction. (EPost at 418).

It was also argued by EchoStar that any exclusion order should be written so as to avoid ensnaring non-infringing products. EchoStar argued that the DP302{

} and the accused 2700, 2800, 3900 and 4900 products all

{ } and that any recommended determination on remedy should, therefore, specifically identify each product found not to infringe and all components found to have substantial non-infringing uses, and should indicate that these are not subject to any exclusion order, or in the alternative, the order should require certification that a particular imported product is not intended for infringing use, citing In the Matter of Certain Condensers, Parts Thereof & Prods. Containing Same, Including Air Conditioners for Automobiles, Inv. No. 337-TA-334 (Remand), USITC Pub. 3063, Comm'n Op., at 39 (Sept. 10, 1997). (EPost at 419).

EchoStar further argued that any exclusion order should exempt the importation of replacement parts because there is no evidence that any hardware component contributes to or induces infringement and/or that third party purchasers of the original units knew or should have known that the devices were likely to infringe. (EPost at 420).

Pioneer also argued that any limited exclusion order should be directed only to specific models of set-top boxes imported by Pioneer and specific versions of Passport that are found to infringe the patents in issue because it can not be reasonably inferred that subsequent models are likely to infringe the patents-in-issue. Pioneer further argued that any exclusionary remedy should include proper procedures. e.g., a certification provision, to prevent products not destined for infringing use from being inadventently excluded. (PPost at 319, 329).

Complainants requested that the administrative law judge recommend issuance of a cease and desist order to enjoin each of Pioneer, S-A and EchoStar the distribution of:

> infringing IPG software for newly imported set-top boxes;
>
> infringing IPG software updates, upgrades, and bug fixes for set-top boxes already deployed;

program schedule data for newly imported set-top boxes that contain or will contain infringing IPG software;
program schedule data for already deployed set-top boxes that contain infringing IPG software;

satellite transmissions of infringing IPG software and/or program schedule data;
IPG software and/or program schedule data under respondents' control through its contractual and technical relationships with third parties, by whatever means necessary to effectively enjoin such distribution; and

inventories of set-top boxes that contain or will contain infringing software in United States warehouses.

{

} and that Pioneer also should be precluded from downloading, or permitting or facilitating others to download, at any time, infringing IPG software to Pioneer set-top boxes. Hardware Logic, Comm'n Op. at 25-29.

{ }

{

} that, at the time of importation, the set-top boxes contain {

} that S-A is inducing customers to infringe by providing a set-top box specifically designed to use the infringing SARA or Passport IPG software and by providing instructions for customers to install and use the infringing software; and that thus S-A should be prohibited from downloading, or permitting or facilitating others to download, SARA software containing the infringing IPG, or Passport software containing the infringing Pioneer IPG, citing Hardware Logic, Comm'n Op. at 25-29.

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S-A argued that should the Commission find that complainants are entitled to relief, the appropriate form of the relief against S-A should be no more than a cease and desist order directed to S-A's IPG, specially tailored to the type of infringement found, viz., induced infringement, contributory infringement or direct infringement. It was further argued that because of the rapid advances in IPG technology, any cease and desist order should be limited to features incorporated in the IPG software that are specifically found to infringe the patents at issue; that when fashioning an appropriate remedy, the Commission must consider the high likelihood of change in future

generations of the accused products; and that as the Commission has noted:

> We do not believe that infringement of the patents in controversy by future imports, particularly future generation DRAM imports, can be inferred from the determination of infringement in this investigation. DRAM technology changes and evolved rapidly even within one generation. DRAM technology changes and evolved rapidly even within one generation. The likelihood of change in a future generation, such that TI's patents in controversy are not infringed, is high.

Certain Dynamic Random Access Memories, Components Thereof and Products Containing Same, Inv. No. 337-TA-242, USITC Pub. 2034, Commission Opinion on Violation, Remedy, Bonding, and Public Interest at 88 (November 1987). (S-A Post at 295-296).

Pioneer argued that the appropriate remedy should be only a cease and desist order preventing Pioneer from engaging in acts that allegedly induce infringement of the patents, specifically the use of promotional literature that shows its set-top boxes operating infringing guides. It was argued that complainants failed to meet their burden of proving that Pioneer has commercially significant inventory in the United States and hence a cease and desist order concerning existing U.S. inventory is not warranted.

The staff argued that should a violation of section 337 be found, the appropriate remedy would be a limited exclusion order directed to the infringing set-top box(es), as well as a cease and desist order directed to the domestic respondent(s) ordering the subject party to cease the distribution of set-top boxes containing infringing IPG software. (SPost at 95).

The administrative law judge has found that there has been importation by each of the respondents of the accused set-top boxes. However, he has found no violation of section 337 by said respondents and hence he is not recommending any remedy based on his finding of no violation. Should the Commission find a violation however, it is recommended that a limited

exclusion order issue which prohibits entry of set-top boxes of each of the respondents and their affiliates which the Commission determines infringe any of the claims in issue of the asserted patents.

The administrative law judge rejects the respondents' argument that any exclusion order should be directed only to specific models of set-top boxes. The Commission's long-standing practice is to direct its remedial orders to all products covered by the patent claims as to which a violation has been found, rather than limiting its orders to only those specific models selected for the infringement analysis. See, e.g., Certain Curable Fluoroelastomer Compositions And Precusrsors Thereof, Inv. No. 337-TA-364, Order at 2 (March 16, 995); Certain Neodymium-Iron-Borom Magnets, Magnet Alloys, And Articles Containing Same, Inv. No. 337-TA-372, Order at 2, (March 29, 1996); Certain Variable Speed Wind Turbines And Components Thereof, Inv. No. 337-TA-376, Order at 3 (August 30, 1996); Certain Toothbrushes And The Packaging Thereof, Inv. No. 337-TA-391, Limited Exclusion Order at 1-2 (Octover 15, 1997). While individual models may be evaluated to determine importation and infringement, the Commission's jurisdiction extends to all models of infringing products that are imported at the time of the Commission's determination and to all such products that will be imported during the life of the remedial orders. The central purpose of remedial orders is to ensure complete relief to the domestic industry. An exclusion order covering only specific models of an accused device could easily be circumvented, thereby denying complete relief to the domestic industry.

The administrative law judge also rejects complainants' argument that any limited exclusion order should include satellite transmissions of infringing IPG software and/or program schedule date as on importation. In Hardware Logic the Commission did not adopt this

administrative law judge's recommendation that the exclusion order prohibit the electronic transmission of respondents' software. Hardware Logic Comm'n Op at 1, n. 3. The administrative law judge has not found that the arguments of complainants warrant the exclusion of satellite transmissions of infringing IPG software and/or program schedule data in light of the Commission's holding in Hardware Logic.

Should the Commission find a violation, the administrative law judge also recommends a cease and desist order enjoining each of the respondents from the distribution of set-top boxes that contain or will contain infringing software in United States warehouses. The Commission traditionally has issued cease and desist orders when "commercially significant" inventories of infringing goods are present in the United States See, e.g., Certain Condensers, Parts Thereof and Products Containing Same, Including Air Conditioners for Automobiles, Inv. No. 337-TA-334, Commission Opinion at 26-28 (August 1997); Certain Crystalline Cefadroxil Monohydrate, Inv. No. 337-TA-293 (March 1990); Certain Nonwoven Gas Filter Elements, Inv. No. 337-TA-275, USITC Pub. 2129 (September 1988); Certain Compound Action Metal Cutting Snips, Inv. No. 337-TA-197, USITC Pub. 1831 (March 1986). The administrative law judge finds the existence of commercially significant inventories for each of EchoStar and SA (FF 198 to 200, 204 to 208). He does not find commercially significant inventories for Pioneer. See FF 201-203. In addition as the Commission did in Hardware Logic in adopting this administrative law judge's recommendation, the administrative law judge recommends that any cease and desist order should prohibit the electronic transmission of respondents' software which is found to infringe the asserted claims in issue. As the Commission stated in Hardware Logic, Comm'n Opin. at 28, it is will settled that the scope of section 337 is "broad enough to prevent every-type and form of unfair

practice." See also Certain Welded Stainless Steel Pipe and Tube, Inv. No. 337-TA-29, USITC Pub. 863, Opinion of Commissioners Minchew, Moore and Alberger at 39 (1978), quoting S. Rep. 595, 67th Cong., 2d Sess., at 3; Certain Devices for Connecting Computers via Telephone Lines, Inv. 337-TA-360, Comm'n Op. at 13-14 (December 12, 1994) ("the legislative history does make clear . . . the broad scope permitted for section 337 remedial orders.").

XVIII. BOND

Section 337 provides that the bond during the Presidential review period should be set at an amount "sufficient to protect the Complainant from any injury ...." 19 U.S.C. § 1337(j)(3) (emphasis added). The Commission has set bonds as high as 460% of entered value. See In re Reclosable Plastic Bags and Tubing, ITC Inv. No. 337-TA-266 (1987). Complainants argued that the administrative law judge should recommend a bond at 100% of either the entered value of the infringing set-top-boxes and/or components thereof, or respondents' 2001 offering price for the infringing set-top boxes and/or components thereof, whichever is higher.[90] It is argued that this bond is necessary to preclude respondents from under pricing and dumping their inventory during the bonding period. (CPost at 425).

EchoStar argued that complainants do not produce a product for sale and therefore product pricing is not a basis for a bond. Hence it was argued that if a bond is appropriate, it should be

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[90] {

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based on a royalty rate appropriate to the patents and industry, citing In the Matter of Certain Acid-Washed Denim Garments & Accessories, Inv. No. 337-TA-324, USITC Pub. 2576, Comm'n Op., at 8 (Nov. 1992); {

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S-A argued that the lack of comparative pricing information, which would cause a bond of 100 percent of the entered value, results from the nature of complainants' business "built entirely around the licensing of its patent portfolio," that it is well established that in patent-based cases the Commission may base the bond on a reasonable royalty rate, particularly when accurate comparative pricing information is unavailable; {

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Pioneer argued that because complainants do not manufacture or sell set-top boxes, there is no price differential to consider and hence the bond should be based on a royalty. Pioneer also argued that given the difficulty in calculating a reasonable royalty based on complainants' existing licenses, if a bond is required, the royalty should be nominal. (PPost at 324-25).

The staff argued that while some of the licensing agreements in issue involve the payment of lump sums and others involve a series of discounts, making it difficult to calculate the "bottom line" fee per box, certain agreements, summarized below, are relatively straightforward and can be

used to determine a reasonable royalty rate:

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comparative pricing information, the lack is due to complainants' business which involves the licensing of patents. The administrative law judge rejects the staff's argument that the royalty rate

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[92] {

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XIX. ADDITIONAL FINDINGS

A. Parties

1. Gemstar is a Delaware corporation with its principal place of business in Pasadena, California. (SX-1C at 5).

2. StarSight is a California corporation with its principal place of business in Fremont, California. (SX-1C at 5).

3. StarSight is a wholly-owned subsidiary of Gemstar. (SX-2C at 3).

4. StarSight is the owner of two of the patents asserted in this investigation. (CX-3; CX-4).

5. Pioneer Corporation is a Japanese corporation with its principal place of business in Tokyo, Japan. (SX-5C at 4).

6. Pioneer North America, Inc. (Pioneer North America) is a Delaware corporation with its principal place of business in Long Beach, California. Pioneer North America is a wholly-owned subsidiary of Pioneer Corporation. (SX-5C at 4).

7. Pioneer Digital Technologies, Inc. (Pioneer Digital) is a Delaware corporation with its principal place of business in Burbank, California. Pioneer Digital is a wholly-owned subsidiary of Pioneer Corporation. (SX-5C at 4).

8. Pioneer Electronics USA, Inc. (Pioneer USA) is the successor to Pioneer New Media Technologies, Inc. Pioneer USA is a wholly-owned subsidiary of Pioneer Corporation. (SX-5C at 4).

9. S-A is a Georgia corporation with its headquarters in Norcross, Georgia and a manufacturing facility for set-top boxes in Juarez, Mexico. (SX-8C at 5).

10. EchoStar Communications Corporation is a Nevada corporation with its headquarters in Littleton, Colorado. (SX-3C at 7).

11. EchoStar Technologies Corporation is a wholly-owned subsidiary of EchoStar DBS Corporation. EchoStar DBS Corporation is a wholly-owned subsidiary of EchoStar Broadband Corporation. EchoStar Broadband Corporation is a wholly-owned subsidiary of EchoStar Communications Corporation. (Ergen, Tr. at 2985; RX-1943C).

12. EchoStar Technologies Corporation has participated in the designing, importing, purchasing and/or licensing of EchoStar's accused EchoStar 4900, Philips 2800 and JVC 2800 products. (SX-3C at 12).

13. EchoSphere Corporation has participated in the importing, selling and/or distributing accused EchoStar 4900, Philips 2800 and JVC2800 set-top boxes named in the complaint. (SX-3C at 12).

14. Houston Tracker Systems, Inc. is a wholly-owned subsidiary of EchoStar DBS Corporation. (RX 1943C; Ergen, Tr. at 2985).

15. Houston Tracker Systems Corp. has participated in the importing, selling and/or distributing accused EchoStar 4900, Philips 2800 and JVC2800 set-top boxes named in the complaint. (SX-3C at 12).

16. EchoStar Satellite Corporation is a wholly-owned subsidiary of EchoStar DBS Corporation. (Ergen, Tr. at 2985; RX-1943C).

17. EchoStar Satallite Corp. has participated in the importing, selling and/or distributing accused EchoStar 4900, Philips 2800 and JVC2800 set-top boxes named in the complaint. (SX-3C at 12).

18. SCI Systems, Inc. (SCI) is a Delaware corporation with its headquarters in Huntsville, Alabama. (SX-4C at 7).

19. SCI manufactures accused products EchoStar 4900, Phillips 2800 and JVC 2900 set-top boxes named in the complaint. (CX-4C at 7).

20. SCI does not manufacture set-top boxes for EchoStar outside the United States. (CX-1126 at 8).

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B. Patents at Issue

23. The '121 patent, entitled "TV Schedule System and Process," was issued on November 10, 1987, based on application Serial No. 860,077 filed on May 6, 1986, which in turn is a continuation-in-part of abandoned Serial No. 754,630 filed July 12, 1985. (CX-1, cover).

24. The named inventor on the '121 patent, Patrick Young, assigned the application to StarSight. (CX-11).

25. The '121 patent was subsequently re-examined by the U.S. Patent and Trademark Office (PTO) based on a reexamination request filed Dec. 6, 1991. The PTO issued Reexamination Certificate B1 4,706,121 on December 14, 1993. (CX-1).

26. The '268 patent, entitled "User Interface For Television Schedule System," was issued on December 26, 1995 based on application Serial No. 198,528 filed on February 18, 1994, which in turn is a continuation of abandoned Serial No. 579,555 filed September 10, 1990,

which is a continuation-in-part of Serial No. 219,971 filed July 15, 1988 (now U.S. Patent No. 4,977,455). (CX-3).

27. The named inventors on the '268 patent, Patrick Young, John H. Roop, Allan R. Ebright, Michael W. Faber, and David Anderson, assigned the patent rights to StarSight on May 31, 1993. (CX-13).

28. The '204 patent, entitled "User Interface for Television Schedule System," was issued on September 15, 1998, based on application Serial No. 484,412 filed on June 7, 1995, which in turn is a continuation of Serial No. 198,538 filed on Feb. 18, 1994 (now U.S. Pat. No. 5,479,268 in issue). (CX-4).

29. The term of the '204 patent is subject to a terminal disclaimer and will expire on December 26, 2012, the expiration date of U.S. Patent No. 5,479,268. (CX-4).

30. The named inventor on the '204 patent, Patrick Young, John H. Roop, Alan R. Ebright, Michael W. Faber and David Anderson, assigned the patent rights to StarSight on November 23, 1995. (CX-14).

31. According to the `121 patent reexamination file history, claims 18, 21, 33, 36, 42, 51, and 54 were amended during re-examination, claims 19-20, 22-24, 26-28, 31, 43, 48-50 are dependent upon claims that were amended during re-examination, and claims 57, 59-61 and 66 were added during re-examination. (CX-1, `121 patent, col. 2, line 62 - col. 3, line 2).

32. Of the claims of the '121 patent asserted against respondents, claims 18 and 32 are independent process claims, claims 19-24, 26-28 and 31 are process claims that depend from at least claim 18, and claims 33.36 and 66 are also independent process claims. (CX-1).

33. Asserted claim 18 of the `121 patent is an independent process claim that was

amended during re-examination to state as follows (in the following, underlined language was added through the reexamination):

> A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to storage means in a data processor, supplying user program selection criteria to the data processor, said user program selection criteria comprising a plurality of independent user program selection criteria and at least one program choice, the data processor combining said user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in said storage means in the data processor, storing information identifying the selected programs, said stored information identifying broadcast schedule times, channels and program titles, and using the stored information to tune the television to the selected program.

(CX-1).

34. Asserted claim 19 of the`121 patent, a process claim that depends from amended claim 18 of the `121 patent, states:

> The process of claim 18 in which the television receiver is used as a display by the data processor for presenting messages to the user during the process.

(CX-1).

35. Asserted claim 20 of the`121 patent, a process claim that depends from dependent claim 19 of the `121 patent (and hence also depends from amended claim 18 of the`121 patent), states:

> The process of claim 19 in which names of program services are displayed in the schedule information.

(CX-1).

36. Asserted claim 21 of the`121 patent, a process claim that depends from dependent claim 19 of the `121 patent (and hence also depends from amended claim 18 of the`121 patent),

was amended during re-examination to state as follows (in the following, underlined language was added through the reexamination):

> The process of claim 19 in which only a preselected portion of the schedule information is presented for the user selection, wherein said preselected portion is preselected according to a combination of said independent user chosen program selection criteria.

(CX-1).

37. Asserted claim 22 of the`121 patent, a process claim that depends from amended claim 18 of the `121 patent, states:

> The process of claim 18 in which at least some of the user selection criteria are supplied to the data processor by presenting a menu from the data processor on a display and allowing the user to select an item from the menu.

(CX-1).

38. Asserted claim 23 of the`121 patent, a process claim that depends from amended claim 18 of the `121 patent, states:

> The process of claim 18 further comprising the steps of checking for a conflict between a selected program and a previously selected program and providing an indication to the user of such conflict.

(CX-1).

39. Asserted claim 24 of the`121 patent, a process claim that depends from amended claim 18 of the `121 patent, states:

> The process of claim 18 in which the program schedule information is supplied to the data processor by broadcast.

(CX-1).

40. Asserted claim 26 of the`121 patent, a process claim that depends from dependent claim 24 (and hence depends from amended claim 18 of the `121 patent), states:

The process of claim 24 in which the television receiver is used as a display by the data processor for presenting messages to the user during the process.

(CX-1).

41. Asserted claim 27 of the`121 patent, a process claim that depends from dependent claim 26 (and hence depends from dependent claim 24 of the `121 patent and amended claim 18 of the `121 patent), states:

The process of claim 26 in which at least some of the user selection criteria are supplied to the data processor by presenting a menu from the data processor on a display and allowing the user to select an item from the menu.

(CX-1).

42. Asserted claim 28 of the`121 patent, a process claim that depends from dependent claim 27 (and hence depends from dependent claims 24 and 26 of the `121 Patent and amended claim 18 of the `121 patent), states:

The process of claim 27 further comprising the steps of checking for a conflict between a selected program and a previously selected program and providing an indication to the user of such conflict.

(CX-1).

43. Asserted claim 31 of the`121 patent, a process claim that depends from dependent claim 24 (and hence depends from amended claim 18 of the `121 patent), states:

The process of claim 24 in which the program schedule information and the programs are broadcast together, the process additionally comprising the step of separating the program schedule information from the programs for supplying the program schedule information to the data processor.

(CX-1).

44. Asserted claim 32 of the`121 patent, is an independent process claim that reads:

A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to a data processor, supplying user program selection criteria to the data processor, using the user selection criteria to select programs for viewing from the program schedule information in the data processor, storing information identifying the selected programs, using the stored information to tune the television receiver to the selected programs, using the television receiver as a display by the data processor for presenting messages to the user during the process, including time remaining for a program being broadcast.

(CX-1).

45. Asserted claim 33 of the '121 patent is an independent process claim that was amended during re-examination to state as follows (in the following, underlined language was added through the reexamination):

A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to storage means in a data processor, supplying user program selection criteria to the data processor, the data processor combining said user program selection criteria with automatic criteria according to at least one of a current time and a current channel, using the combination of user program selection criteria and automatic criteria to select programs for viewing from the program schedule information in said storage means in the data processor, storing information identifying the selected programs, using the stored information to tune the television receiver to the selected programs, turning on a broadcast program recording device for a selected broadcast program, recording the selected broadcast program, and supplying a different program broadcast signal to the television receiver than the broadcast signal for the selected program supplied to the program recording device.

(CX-1).

46. Asserted claim 36 of the '121 patent is an independent process claim that was amended during re-examination to state: as follows (in the following, underlined language was added through the reexamination, while bracketed ([]) language was deleted):

A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to storage means in a data processor, supplying user program selection criteria to the data

processor, said user program selection criteria comprising a plurality of independent user chosen selection criteria and at least one program choice, the data processor combining said user program selection criteria, using the combined user program selection criteria to select programs for viewing from the program schedule information in said storage means in the data processor, storing information identifying the selected programs including broadcast schedule times, channels and program titles, using the stored information to tune the television receiver to the selected programs, turning on [the] a program recording device and recording the selected broadcast program by supplying control signals to a remote controller for the program recording device.

(CX-1).

47. Asserted claim 42 of the `121 patent is an independent apparatus claim that was amended during re-examination to state as follows (in the following, underlined language was added through the reexamination):

A system for controlling a recording device to allow user selection of broadcast programs from schedule information, which comprises a data processor, a first input means for the schedule information connected to said data processor, a second user selection input means connected to said data processor, said data processor being configured to select programs from the schedule information based on user inputs, storage means connected to receive the schedule information for programs selected by said data processor, a programmable tuner for connection to the recording device, said programmable tuner being connected to receive control signals from said data processor at a time of a selected broadcast for causing said programmable tuner to supply broadcast signals for the selected programs to the recording device, and a television receiver, said system being configured to allow said television receiver to receive a different program than the broadcast signal for the selected program supplied to said recording device, wherein said data processor is configured for a selectable display mode, said data processor being configured to present an initial display of said schedule information stored in said storage means upon selection of said display mode, said initial display automatically comprising schedule information for at least one of a current time period and a current channel of said programmable tuner.

(CX-1).

48. Asserted claim 43 of the`121 patent, an apparatus claim that depends from amended claim 42 of the `121 patent, reads:

The system of claim 42 additionally comprising a display means connected to receive signals from said data processor for generating a display from the schedule information and the user selections on said display means.

(CX-1).

49. Asserted claim 48 of the`121 patent, an apparatus claim that depends upon dependent claim 43 of the `121 patent (and hence also depends from independent claim 42 of the `121 patent), reads:

The system of claim 43 in which said data processor is further configured to provide signals to said display means for presenting a plurality of user selection menus on said display means and said second user selection input means includes a plurality of keys for making selections from the menus for choosing programs from the schedule information.

(CX-1).

50. Asserted claim 49 of the`121 patent, an apparatus claim that depends upon dependent claim 48 of the `121 patent (and hence also depends from independent claim 42 of the `121 patent and dependent claim 43 of the `121 patent), reads:

The system of claim 48 in which said data processor is further configured to allow combinations of the menu selections for choosing programs from the schedule information.

(CX-1).

51. Asserted claim 50 of the`121 patent, an apparatus claim that depends from independent claim 42 of the `121 patent, reads:

The system of claim 42 in which said programmable tuner receives both the schedule information and the broadcast signals for the selected programs, said programmable tuner being connected as part of said first input means.

(CX-1).

52. Asserted claim 51 of the `121 patent is an independent apparatus claim that was

amended during re-examination to state as follows (in the following, underlined language was added through the reexamination):

> A system for controlling a recording device to allow user selection of broadcast programs from schedule information, which comprises a data processor, a first input means for the schedule information connected to said data processor, a second user selection input means connected to said data processor, said data processor being configured to select programs from the schedule information based on user inputs, storage means connected to receive the schedule information for programs selected by said data processor, a programmable tuner for connection to the recording device, said programmable tuner being connected to receive control signals from said data processor at a time of a selected broadcast for causing said programmable tuner to supply broadcast signals for the selected programs to the recording device, said data processor being connected to a remote controller for said recording device to supply control signals to said remote controller for powering on said recording device, starting and stopping recording of the selected program and powering off said recording device, <u>further comprising a display means coupled to said data processor, wherein said data processor is configured for a selectable display mode, said display means being configured to present an initial display of said schedule information stored in said storage means upon selection of said display mode, said initial display automatically comprising schedule information for at least one of a current time period and a current channel of said programmable tuner</u>.

(CX-1).

53. Asserted claim 54 of the '121 patent is an independent apparatus claim that was amended during re-examination to state as follows (in the following, underlined language was added through the reexamination):

> A system for controlling receipt of broadcast television programs to allow user selection of broadcast programs from broadcast schedule information <u>which is selectively stored in a storage means</u>, which comprises a data processor, a programmable tuner configured to receive both the broadcast programs and the broadcast schedule information connected to said data processor, means connected between said programmable tuner and said data processor for separating the broadcast schedule information from the broadcast programs and supplying the broadcast schedule information to said data processor, a user selection input means connected to said data processor, said data processor being configured to select programs from the schedule information <u>stored in said storage</u>

means based on user inputs, said storage means being connected to receive a reminder calendar list comprising the schedule information for programs selected by said data processor, said programmable tuner being connected to receive control signals from said data processor at a time of a selected broadcast for causing said programmable tuner to supply signals for the selected broadcast programs to at least one signal receiver for the selected broadcast programs, wherein said user inputs comprise a plurality of user program selection criteria, said data processor being configured to combine said plurality of user program selection criteria and to present a list of programs meeting said combined program selection criteria, said user inputs further comprising a program choice from said presented list of programs, said reminder calendar list comprising information identifying titles for said programs selected by said data processor.

(CX-1).

54. Asserted claim 57 of the `121 patent, added as a new independent apparatus claim during re-examination, and asserted claim 58, added during reexamination as a dependent claim to new independent claim 57 states:

57. A television schedule system for controlling receipt of broadcast television programs to allow user selection of broadcast programs from broadcast schedule information displayed on a television, said broadcast schedule information comprising broadcast schedule times, titles and channels, said system comprising:

a data processor;

a system clock connected to said data processor for providing a system time;

a programmable tuner connected to said data processor and configured to receive both the broadcast programs and the broadcast schedule information;

signal separating means connected between said programmable tuner and said data processor for separating the broadcast schedule information from the broadcast programs, and for supplying the broadcast schedule information to said data processor;

display means connected to said data processor for displaying at least a portion of said broadcast schedule information on said television;

user selection input means connected to said data processor for providing user inputs for selecting listings of programs from said displayed broadcast

schedule information; and

storage means being connected to said data processor for storing schedule information, wherein said data processor is configured to selected programs from said displayed broadcast schedule information based on said user inputs, to retrieve broadcast schedule information for said selected programs from said broadcast schedule information supplied to said data processor, and to store said retrieved schedule information in said storage means, said stored broadcast schedule information identifying a broadcast schedule time and channel and a program title for each said selected program; wherein

said data processor provides control signals to said programmable tuner when the system time matches a stored broadcast schedule time of one of said selected programs, said control signals causing said programmable tuner to supply broadcast program signals for the stored broadcast schedule channel of said one selected program to at least one signal receiver; and wherein

said data processor is configured for a selectable display mode, said display means being configured to display a preselected initial display of said schedule information stored in said storage means upon selection of said display mode, said preselected initial display automatically comprising schedule information meeting initial display selection criteria, said initial display selection criteria including at least one of a current time period and a channel currently selected by said programmable tuner.

(CX-1).

58. The system of claim 57, wherein said data processor is configured to update said program listings of broadcast schedule information and said stored schedule information for selected programs, in response to updated schedule information being supplied to said data processor.

55. Asserted claim 59 of the `121 patent, added during reexamination as a dependent claim to new independent claim 57 of the `121 patent, reads:

The television schedule system of claim 57, wherein said stored broadcast schedule information identifies a program description for each said selected program.

(CX-1).

56. Asserted claim 60 of the`121 patent, added during reexamination as a dependent claim to new independent claim 57 of the `121 patent, reads:

> The television schedule system of claim 57, wherein said preselected initial display automatically comprises schedule information for a channel currently selected by said programmable tuner, and wherein said display means further comprises means for displaying on said television, upon a change to a new channel of said programmable tuner, broadcast schedule information for a current program on said new channel.

(CX-1).

57. Asserted claim 61 of the`121 patent, added during reexamination as a dependent claim to new independent claim 57 of the `121patent, reads:

> The television schedule system of claim 60, wherein said displayed current program broadcast schedule information comprises a title of said current program.

(CX-1).

58. Asserted claim 66 of the `121 patent, added as a new independent process claim during re-examination, reads:

> A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to a storage means in a data processor, supplying user program selection criteria to the data processor, said user program selection criteria comprising a plurality of independent user chosen selection criteria and at least one program choice, the data processor combining said user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in said storage means in the data processor, storing information identifying the selected programs and using the stored information to tune the television receiver to the selected programs.

(CX-1).

59. Asserted claim 1 of the '268 patent is an independent apparatus claim, while asserted claims 3 is an apparatus claim that depends from claim 1. (RX-3005; CX-3 at col. 14,

line 42 - col. 15, line 4).

60. Asserted claim 1 of the `268 patent states:

An interactive television schedule system, which comprises:

a television display,

means coupled to said television display for displaying the television schedule on said television display as a grid of two-dimensionally arranged, adjacent irregular cells which vary in length corresponding to time duration of programs, with a title of a program being displayed in each of said irregular cells, said grid having a plurality of channels listed in a first dimension and time listed in a second dimension,

user input means coupled to said means for displaying the television schedule, said user input means including a program selector and a movement control for a visual identification of ones of said irregular cells which initiates movement of said visual identification in the first dimension, and irregular movement of said visual identification in the second dimension in steps corresponding to variation in cell size, responsive to an input by a user to said movement control, between first and second ones of said irregular cells to select a desired one of said irregular cells corresponding to a desired program,

a tuner coupled to said user input means for tuning to the desired program, and

means coupled to said means for displaying the television schedule for displaying a program note overlay including a program description for the desired program on said television display.

(CX-3).

61. Asserted claim 3 of the `268 patent, which depends from claim 1, states:

The interactive television schedule system of claim 1 additionally comprising means coupled to said means for displaying the television schedule for selecting the desired visually identified program in response to activation of said program selector, and a recording device coupled to said means for selecting the desired program to record the desired program.

(CX-3).

62. Asserted claim 14 of the '204 patent states:

An interactive television schedule system, which comprises:
a television display,

means coupled to said television display for displaying a television schedule on said television display as a grid of two-dimensionally arranged, adjacent irregular cells which vary in length corresponding to time duration of programs, with a title of a program being displayed in each of said irregular cells, said grid having a plurality of channels listed in a first dimension and time listed in a second dimension,

user input means coupled to said means for displaying the television schedule, said user input means including a program selector and a movement control for a visual identification of selected ones of said irregular cells which controls movement of said visual identification in the first dimension and in the second dimension from cell to cell, responsive to an input by a user to said movement control to visually identify a desired one of said irregular cells corresponding to a desired program,

means coupled to said means for displaying the television schedule for selecting the desired visually identified program in response to activation of said program selector, and

a programmable tuner coupled to said means for selecting the desired program for tuning to a select channel for the desired program,

said means for displaying the television schedule on said television display further being configured to display an overlay containing information on a television program being shown on said television display when a channel being shown on said television display is changed.

(CX-4).

63. Asserted claim 15 of the '204 patent, which depends from claim 14, states:

The interactive television schedule system of claim 14 in which the overlay information on the television program includes program title, name of television service, channel number, and time.

(CX-4).

64. Asserted claim 16 of the '204 patent, which depends from claim 15 (and hence

depends also from claim 14), states:

> The interactive television schedule system of claim 15 in which said means for displaying the television schedule is further configured to provide an alternate overlay including a program note with a program description for the television program being shown on said television display.

(CX-4).

65. Asserted claim 17 of the '204 patent, which depends from claim 14, states:

The interactive television schedule system of claim 14 in which said means for displaying the television schedule is further configured to provide an alternate display including a program note with a program description for the visually identified program. (CX-4).

66. Asserted claim 31 of the '204 patent states:

An interactive process for operating a television schedule, which comprises:

> displaying a television schedule on a television display as a grid of two-dimensionally arranged, adjacent irregular cells which vary in length corresponding to time duration of programs, with a title of a program being displayed in each of said irregular cells, said grid having a plurality of channels listed in a first dimension and time listed in a second dimension,
>
> providing a visual identification of a selected one of said irregular cells,
>
> moving said visual identification in the first dimension and in the second dimension between first and second ones of said irregular cells to select a desired one of said irregular cells corresponding to a desired program,
>
> tuning a programmable tuner to a select channel based on position of said visual identification for the desired program, and displaying an overlay containing information relating to a television program being shown on said television set when a channel is being shown on the television set is changed.

(CX-4).

67. Asserted claim 32 of the '204 patent, which depends from claim 31, states:

> The interactive process for operating a television schedule system of claim 31 in which the information relating to the television program includes program title, name of television service, channel number, and time.

(CX-4).

68. Asserted claim 33 of the '204 patent, which depends from claim 32 (and hence depends also from claim 31), states:

> The interactive process for operating a television schedule system of claim 32 additionally comprising the step of displaying an overlay including a program note with a program description for the television program being shown on said television set.

(CX-4).

69. Asserted claim 34 of the '204 patent, which depends from claim 31, states:

> The interactive process for operating a television schedule system of claim 31 additionally comprising the step of displaying a program note with a program description for the visually identified program.

(CX-4).

C. Gemstar's Licenses

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} D. Person Of Ordinary Skill In the Art

89. A person of ordinary skill in the art of the '121 patent at the time of filing would have had a Bachelor's degree in electrical engineering or computer engineering, or the equivalent of that in experience, plus several years of experience in the development of computer systems

and television broadcasting. (Tjaden, Tr. at 3803-04; Faillace, Tr. at 1098; Bristow, Tr. at 5076).

90. A person of ordinary skill in the art of the '268 and '204 patents as of September 10, 1990 was a person with a Bachelor's degree in computer science or a closely related field, and approximately two years of experience with user interfaces and computer programming. (Myers, Tr. at 3965-66).

E. Reexamination Of The '121 Patent

91. Original claim 18 of the '121 patent, as it issued on Nov. 10, 1987 with fifty six claims read: (CX-1):

> 18. A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to a data processor, supplying user program selection criteria to the data processor, combining user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in the data processor, storing information identifying the selected programs, and using the stored information to tune the television receiver to the selected programs.

None of original claims 1 to 56 recited program titles.

92. A "Request for Reexamination" of claims 1 through 56 of the '121 patent was filed on 12/6/91 by TV Answer, Inc. of Reston Virginia (TV Answer). (RX-3008 at 10).

93. The "Request for Reexamination" was granted by the PTO on February 11, 1992. The Examiner agreed that substantial questions as to the patentability of claims 1-56 of the '121 patent as issue have been raised by "the new references" cited by TV Answer. (RX-3008 at 99, 102).

94. The PTO, in the first Office Action mailed June 8, 1992, rejected all of the claimed subject matter, under 35 U.S.C. § 102(b) and 35 U.S.C. § 103, over certain prior art.

(RX-3008 at 110 to 127). Thus, in the Office Action in point 2, claims 1-6, 8-10, 12, 15, 18-22, 24-27, 31, 33, 34, 39, 42-46, 48, 49 and 52 were rejected as being anticipated by Yarbrough et al. U.S. Patent No. 4,305,101. (RX-3008 at 18, 111-118). In point 3 claims 1-8, 13, 15, 17, 18, 19, 21-28, 31-36, 38, 42-46, 51, and 56 were rejected as being anticipated by Muguet U.S. Patent No. 4,787,063, the Examiner stating, inter alia, that Muguet disclosed the "turning on and off the VCR at start and en [sic] of the program or both." (RX-3008 at 24, 118). In point 5, claims 1-12, 15, 18-22, 24-27, 31, 33, 34, 37 and 39-56 were rejected as being unpatentable over Yarbrough et al in view of Beyers, Jr. U.S. Patent No. 4,641,205 and Reiter U.S. Patent No. 4,751,578. (RX-3008 at 119-120). In point 6, claims 1, 2, 4-8, 11-19, 21-35, 45 and 47-56 were rejected as being unpatentable over Beyers, Jr. in view of Yarbrough et al, Kruger et al. U.S. Patent No. 4,388,179, Miller U.S. Patent No. 4,081,753 and Muguet. (RX-3008 at 120-122). In point 7, claims 1, 33 and 42 were rejected as being unpatentable over Kruger et al. in view of Kato et al. 4,031,548. (RX-3008 at 122, 123). In point 8, claims 1, 2, 18, 19, and 49 were rejected as being unpatentable over Kruger in view of Kram et al. 4,754,326. (RX-3008 at 123-124). In point 9, claims 42-53 were rejected as being unpatentable over Peers et al. U.S. Patent No. 4,689,022 in view of any of Kruger et al., Yarbrough et al or Beyers, Jr. (RX-3008 at 124). In point 10, claims 13, 17, 35 and 38 were rejected as being unpatentable over Kruger et al. in view of Miller or Muguet. (RX-3008 at 124). In point 11, claims 1, 5, 7, 8, 12-15, 21-15, 26-36, 38, 40, 41, 42, 51, 52 and 56 were rejected as being unpatentable over Kruger et al. in view of Muguet. (RX-3008 at 125-126).

95. An August 5, 1992 declaration of Patrick Young filed in the '121 reexamination proceeding recite that "the Insight product will reprogram the VCR for any schedule changes of

the selected program. Also, the on-screen schedule will provide accurate and accessible schedule information for the particular cable or network broadcasting region. These advantages of the claimed invention solve the problems that VCR owners have experienced for a long time." (RX-3008 at 139).

96. In an Amendment, received by the PTO on August 13, 1992, (RX-3008 at 189-237), the applicant responded to the June 8, 1992 Office action by amending claim 12 and adding new claims 57-88 that recited, among other limitations, "a data processor system." New independent claim 57 directed to a "television schedule system" defined "broadcast schedule information" as "comprising broadcast schedule times, titles and channels." Independent process claim 18 was not amended then and did not refer to program titles. (RX-3008 at 189-204).

97. In the amendment of August 13, 1992 it was argued that channel, theme, and prime time buffers maintain the user's selected criteria. Thus it was stated:

> The Present Invention
>
> The present invention is a system that integrates the on-screen presentation of television schedule information with automatic control of television apparatus including a television receiver and a VCR. This integration enables immediate access to and sharing of schedule information, which includes at least program titles, channels, and times, to facilitate many of the advantageous features described below and which allow an unskilled user to use the system of the present invention with ease. The system may be implemented integrally with a VCR or as a separate unit, in which case it may communicate with the VCR by remote control. The recitals of claim 1 include a data processor having a schedule information input means, a user input means for selecting programs from stored schedule information, and several devices controlled by the data processor; a television receiver, a program recorder, and a programmable tuner. It should be understood that the data processor system may include a plurality of microprocessors. The data processor system contains storage for schedule information for selected programs and uses this information to control operations of television apparatus. Actuating signals are sent to the recorder to cause it to record a selected program, and the data processor system may allow the television

to receive a different program. The integration of television schedule information, programmable tuner control, and VCR record control is one of the important aspects of the present invention.

The following features of a preferred embodiments are recited in various other claims. A number of schedule selection criteria may be provided by the user into the date processor system. Menus are displayed on the television screen, from which the user may make selections with the user input device.

Typical schedule selection criteria include accessible satellite symbols or channel numbers, viewing times, or program themes (news, sports, comedy, etc.). The system stores the schedule selection criteria, and the various selection criteria may then be enabled or disabled by the user as desired. When schedule information is presented to the user, the data processor system automatically combines all the currently enabled schedule selection criteria and presents to the user only schedule information meeting the requirements of the combined criteria. (RX-3008 at 206-207).

98. Applicant Young in the August 13, 1992 Amendment also stated:

The integrated television schedule system of this invention allows for automatic updating of program schedules, both within the stored main schedule and within the stored record schedule list. When the schedule input means receives new schedule information, either in the normal course of periodic schedule updating or due to last minute rescheduling, the new information is provided to the integrated data processor system, which in turn incorporates the new information into the stored schedule information for both the main schedule and the record list. Updated schedule information is thus provided as an 'on-line' resource to be automatically incorporated into the stored schedule information.

None of the cited references disclose a system integrating on-line television schedule information presentation and program selection with 'hands-on' television tuner control and/or VCR control by an integrated data process or system as disclosed and claimed in the present invention.

(RX-3008 at 209).

99. In the August 13, 1992 Amendment, the applicant stated: "In particular, it is noted that none of the prior art systems store the schedule information (which includes information of interest only to the user) of programs selected for recording from a schedule

display; the only information stored as recording orders by the prior art systems is essentially simply numeric VCR programming information." (RX-3008 at 210).

100. In distinguishing his invention over Muguet, the applicant in the August 13, 1992 Amendment argued that Muguet used time, channel and a program identification "as opposed to" "schedule information," stating (RX-3008 at 212):

> Thus, the system of Muguet simply programs the VCR with standard programming information (channel, start & stop times) and/or program ID information. As explained below, because Muguet simply downloads the programming information required by the VCR, as opposed to the schedule information including program title, verification of record requests is very tedious and complex.

101. In the amendment dated August 13, 1992, the applicant stated (RX-3008 at 216):

> Independent process claims 18 and 32-38 all recite the process steps of providing schedule information to a data processor, selecting programs from the schedule information based on user inputs, storing schedule information for the selected programs, and using the stored schedule information to tune a television to receive the selected programs.

102. In the Amendment of August 13, 1992 applicant Young noted (RX-3008 at 216-217):

> Independent process claims 18 and 32-38 all recite the process steps of providing schedule information to a data processor, selecting programs from the schedule information based on user inputs, storing schedule information for the selected programs, and using the stored schedule information to tune a television to receive the selected programs.
>
> It should be noted that the term "schedule information", both as used in the present patent and as commonly understood, refers to a television schedule, i.e., a list of programs to be shown over a range of times, with at least program titles, program times, and, if for a plurality of channels, program channels. This usage is consistent with the dictionary meaning, wherein a schedule is defined as "a list of times of recurring events...; a timetable".

103. In distinguishing over prior art, the applicant in the Amendment of August 13, 1992 further stated (RX-3008 at 217):

> Of particular importance in distinguishing the present claims over the disclosure of Yarbrough are the claim recitals,
>
> > 'said data processor configured to select programs from the schedule information based on user inputs, storage means connected to receive the schedule information for programs selected by said data processor....'The first clause requires that the data processor select program listings from the schedule information based on user inputs, as distinguished from selecting broadcast programs based on the schedule information. The second clause requires that the selected schedule information for the programs, previously selected by user inputs, is stored. This claim language describes a situation in which a data processor acquires program schedule information/listings, the user provides a selection input to select one of the program listings from the acquired schedule information, then the computer stores the selected program schedule information so that it may be used to control a programmable tuner and/or a VCR to receive and/or record the program corresponding to the selected program schedule listing.

(Emphasis in original)

104. In the Amendment of August 13, 1992, with regards to a prior art reference to Yarbrough, the applicant stated,

> The user enters a recording order, specifying program ID information, which is stored. The user order is not selected by the data processor in any way. The stored user order is then used to select only current broadcast programs based on the program IDs. This is clearly different from using user inputs as claimed to select a program listing from schedule information and thereafter store the schedule information for the selected programs.

(RX-3008 at 218) (Emphasis in original).

105. In distinguishing a prior art reference to Muguet, in the August 13, 1992

Amendment (RX-3008 at 189 to 237) the applicant stated:

> These recitations specify an integrated television schedule system in which a data processor system first receives schedule information, then selects particular programs from the schedule information based on user inputs, and then stores schedule information for the selected programs; finally, this stored schedule information is used for controlling a programmable tuner. The data processor thus remains in 'hands on' control of the VCR and tuner, thereby enabling easy verification of record requests, automatic updating of record schedules, and a variety of other advantageous features.

(RX-3008 at 224).

106. In the August 13, 1992 Amendment the applicant Young stated:

> Muguet, in contrast [to the `121 patent application], simply programs a VCR timer with VCR programming information — channel, start/stop times, and program ID in some implementations, as opposed to storing schedule information.

(RX-3008 at 224). In the August 13, 1992 Amendment Young also stated (RX-3008 at 227):

> Claims 33-55 include in their recitations the step of turning on a program recorder for a selected program, whereas in Muguet the specialized VCR must remain on continually, not just for the selected program.

107. The applicant in the Amendment of August 13, 1992 analogized the schedule information of the `121 patent to a television schedule in arguing that the `121 patent was not anticipated by the prior art:

> It is again respectfully submitted that the program description/ID information of the Krüger system is not functional as the television schedule information required by all currently pending claims. Firstly, Krüger's program information is concurrently transmitted along side the program being currently broadcast, and therefore cannot be used as a forecast schedule. . . .
>
> * * *
>
> Furthermore, even if the system of Kram could be used as a

> television guide controller for Kruger, the present system would not result. First, it is noted systems such as Kram cannot custom assemble a new page of data combining a plurality of listings earlier received. Systems such as Kram are only capable of associating related but distinct pages of data which must be viewed one at a time. The Examiner cited a "weather", then "city" operation in Kram. This type of operation is explained in more detail from col. 24, line 52 to col. 26, line 41. If the user selects a keyword topic "weather", the system constructs an index menu including each page having the keyword "weather". Each such page will also have a particular supplemental keyword which will be displayed on the index menu. The user then chooses one of the index entries to retrieve either a single page or a series (one at a time) of relational pages. The system of Kram cannot automatically combine two selection criteria such as "weather" and "channels 2, 5, and 11" to provide the user a custom assembled list of programs meeting the combined criteria. The system of Kram could only provide a first index in response to "weather", from which the user would have to select "channel 2" to receive that screen, and then select "channel 5" to receive that screen, and then select "channel 11" to receive that screen. Furthermore, as with Kato, Kram is very specific and does not remedy the general deficiencies of Kruger.

(RX-3008 at 230 to 232).

108. In an Office Action mailed on September 22, 1992, and in response to the 8/13/92 Amendment, the Examiner rejected the new claims as being broader than the original claims. The Examiner stated: "[c]laims 57-88 are rejected under 37 CFR 305 as broadening the scope of the claimed invention. It is noted that claims 57-88 fail to recite all of the limitations which are recited in any one of the patented claims and thereby enlarge the scope of the claimed invention. For example, all of these claims have been amended with respect to the original claims to recite 'a data processor system' instead of 'a data processor.' It is maintained that a 'data processor system' is broader than 'a data processor' in that it may include devices (displays, printers, light pens, etc.) which are peripheral to the 'data processor' itself." (RX-3008 at 254-55).

109. In the Office Action of 9/22//92, the Examiner in point 6 also rejected claims 1, 5, 18, 19, 22, 24-27, 42, 43 and 45 as anticipated by or obvious over Levine U.S. Patent No. 4,963,994 alone, or, in view of Wright, U.K. published application 2,034,995 and Monteath et al. U.S. Patent No. 4,329,684. (RX-3008 at 256 to 261).

110. In point 6 of the Office Action of 9/22/62 it was also stated that the Examiner noted "with respect to claims 18, 19, 22 and 24-27 'combining user selection criterion' is maintained to read on the plurality of data needed to identify a single program to be recorded (i.e. the channel, time, etc. . .)." (RX-3008 at 261).

111. The Examiner, in his 9/22/92 Office Action in point 6 also stated that applicant's disclosed invention appears to operate by: a) displaying a list of TV programs (i.e., the schedule information) from which a user may select desired programs to be viewed/recorded; b) providing means by which a user can input data to the processor so that the processor can identify the programs from the list which have been selected by the user; and c) "automatically" controlling the receiving device based on the internally stored schedule information in response tot he user selections. (RX-3008 at 257, 258).

112. In point 7 of the Office Action of 9/22/92, claims 2-4, 9, 10, 12, 15, 18, 20, 21, 23, 28-30, 34, 37-41, 44, 48, 49, 52 and 58 were rejected as being unpatentable over Levine, Wright and Monteath et al as set forth in point 6. (RX-3008 at 261 to 264). In point 8, the Examiner rejected claims 6, 7, 11, 14, 31, 36, 41, 46, 47, 50, 51 and 54-56 as being unpatentable over Levine, Wright and Monteath et al. as was set forth in point 7 of the Office action in view of Muguet. (RX-3008 at 264 to 266). The Examiner in point 9 did state that claims 13, 17 and 35 avoid the act of record in that they at least recite selective actuation circuitry (alarm and recorder)

which was not suggested or taught by the prior art and that claim 32 avoided the art of record in that it at least recited displaying data indicating the time remaining in a broadcast signal. It was concluded that such a display was not taught or suggested by the art of record. (RX-3008 at 266).

113. In an Amendment, responsive to the Office Action of 9/22/92 and filed on November 23, 1992 the applicant rewrote claim 36 and revised new claims 57-60, 66, 72 and 87. (RX-3008 at 269 to 286). Revised independent claim 57 to a "television schedule system" defined "broadcast schedule information" as comprising broadcast schedule times, title and channels." However independent claim 18 was not yet amended to refer to program titles. It was also argued, in the November 23, 1992 Amendment, that "a data processor system" was not broader than "a data processor." In particular, the applicant stated that "a data processor system must include more elements than a data processor, and is therefore equal or narrower in scope than simply a data processor." (RX-3008 at 275).

114. In the Amendment dated filed November 23, 1992, the applicant, on page 8, disputed certain prior art rejections stating: "These rejections are based on a failure to recognize the fundamental distinction between 'schedule information' as used in, e.g., Claim 1 or 'information identifying the selected programs' as used in, e.g., Claim 18, and the program data used in the prior art, i.e., sufficient data such as time, day, and channel to program a VCR or television set." (RX-3008 at 276)(emphasis in original).

115. In the amendment filed November 23, 1992, the applicant, at page 8, argued "Levine discloses a system which can prompt the user through the steps of programming the VCR, and which in some embodiments can display schedule information on the television

screen" (RX-3008 at 276).

116. In the Amendment filed November 23, 1992, applicant Young again stated that storing schedule information for selected programs distinguished the invention over the prior art:

> These rejections are based on a failure to recognize the fundamental distinction between "schedule information" as used in, e.g., Claim 1 or "information identifying the selected programs" as used in, e.g. Claim 18, and the program data used in the prior art, i.e., sufficient data such as time, day and channel to program a VCR or television set.
>
> * * *
>
> "Additionally, Applicant notes that Levine stores only conventional programming data, not schedule information as presently claimed. As discussed in the previous Amendment, the storage of schedule information as opposed to mere programming data significantly enhances the user's ability to verify and later identify the selected programs, and also enables the data processor to perform additional functions, such as linking and tracking programs, i.e., allowing the user to review a list of programs selected for future viewing or taping by presenting a calendar as disclosed, rather than simple programming data for controlling a video recorder. Some of the Examiner's current remarks appear to recognize the distinction between these two types of information, but the relevance of this distinction to the analysis of the claim language was not explicitly discussed. Applicant respectfully submits that this distinction is an important one separating the claimed invention from the prior art, and is sufficient to distinguish the claimed invention from the prior art."

(RX-3008 at 278) (Emphasis in original).

117. In the November 23, 1992 Amendment, the applicant referred to claim 18 as storing "schedule information" for selected programs. The applicant stated (RX-3008 at 279):

> Process Claim 18 contains a similar limitation which distinguishes over the prior art. Regarding the claimed 'combining of user selection criteria,' the Examiner has asserted that this reads on the plurality of data needed to identify a single program to be recorded

(channel, time, etc.). This trivializing simplification, however, ignores the plain meaning and interpretation of the claims, which interpretation is also supported by the specification. Of course, programming information such as channel and time might be used as selection criteria, but, such as is recited in claim 18, the selection criteria must then be combined, the combined criteria must be used to select programs from schedule information, and then the schedule information for the selected program is stored. These steps are clearly not met by the simple input and storage of programming data for a single program.

(RX-3008 at 279) (Emphasis in original).

118. With regards to prior art applicant Young in the November 23, a Amendment stated:

Claim 18 further requires "storing information identifying the selected programs." It is respectfully submitted that data, channel and time data do not sufficiently identify the selected programs. Date, channel and time data identify time slots and channels without any identification of programs broadcast in the time slots on the channels. Again, the distinction between identifying selected programs and identifying only time slots and channels is critical for achieving many benefits" tracking programs that have been selected with the system, i.e., allowing the user to review a list of programs selected for future viewing or taping by presenting identifying information on the program, rather than just an indication of when recordings will be made; linking related programs with the schedule information; and, automatically updating the stored schedule information for the selected program when the schedule time for a previously selected program is changed, as described in the '121 patent. Because the prior art does not combine user selection criteria, use such combined user selection criteria to select programs meeting the combined user selection criteria in the data processor, or store information identifying the selected programs, the Levine, Wright and Monteath prior art fails to teach or suggest the subject matter of Claim 18 or its dependent claims 19-31.

Similarly, independent Claim 33 requires 'using the user selection criteria to select programs for viewing from the schedule information in the data processor,' and 'storing information

> identifying the selected programs.' In Levine, Wright and Monteath et al., the selection is made by user entry of date, channel and time, without using the schedule information already in the data processor and the user entered date, channel and time information does not identify the selected programs. These limitations are also present in independent claims 34 and 36-38.

(RX-3008 at 280-81) (Emphasis in original).

119. On December 23, 1992 and December 29, 1992, the applicant's attorney conducted several telephonic interviews with the Examiner in which broadening matter was discussed. (RX-3008 at 288).

120. The Reexamination Interview Summary Form, mailed on January 5, 1993 in paper # 15, and summarizing the December 23, 1992 Examiner interview stated, inter alia, that "[t]he examiner indicated that he believed the language of the claims to be broader than the scope of applicant's arguments filed 11/23/92 (see paper #15)." (RX-3008 at 288).

121. In a Final Office Action, mailed January 5, 1993, the Examiner rejected the new claims 57-88 as broadening the scope of the claimed invention. In discussing this rejection on pages 2-4 of the Office Action, the Examiner gave examples of how the new claims are broadening. Thus it was stated (RX-3008 at 290-93):

> In view of applicant's amendment filed 11/23/92, the following is hereby noted to exemplify how the claims have been broadened:
>
> I. Claim 57 does not recite:
>
> a) the supplying of the "actuating signal" recited in original claim 1; b) the plurality of user selection menus recited in original claim 12; c) the "actuating signal" in original claim; d) the "actuating signal" in original claim 14; e) the "actuating signal" in original claim 15; f) the "linking information" in original claim 16; g) the "alarm" in original claim 17; h) the "combining of user selection criteria" in original claim 18; i) the "time remaining" message in original claim 32; j) the "television receiver" recited in original claim 37; k) the "terminating

> [of] recording" recited in original claim 34; l) the "turning on [of] the recording device" recited in original claim 35; m) the "remote controller" recited in original claim 36; n) the "linking information" recited in original claim 37; o) the "alarm" recited in original claim 38; p) the "user selection menu" recited in original claim 39; q) the "television receiver" recited in original claim 42; r) the "remote controller" recited in original claim 51; s) the "recording device" recited in original claim 52; f) the "linking information" recited in original claim 53; and g) the storing means connected to "receive the schedule information for programs selected by said processor" as in original claim 54. [Emphasis in original]

(RX-3008 at 290-93).

122. In the Final Office Action, mailed January 5, 1993, the Examiner in point 2 with respect to claims 65, 67, 72, 76, 82, 84 and 87, noted that those claims differ from the claims as originally filed in that they at least recited "a data processing.. system" instead of "a data processor;" that "applicant argued that a 'data processing system' must include more elements than a 'data processor' and therefore the limitation is more limiting." (Emphasis in original). The Examiner then stated specifically that he

> does not dispute applicant's position that a 'processor system' must include more elements, but, he points out that the recited connections to and processing performed by the processing system (as recited in these new claims) does not require connections to and processing performed by the processor itself (as recited in the original claims). Such processing/connections could be directed to said 'more elements.' Being such, these claims are clearly broader in scope than those originally filed.

(RX-3008 at 292) (Emphasis in original).

123. The Examiner in the Office Action of January 5, 1993 in point 5 rejecting again claims 1, 5, 18, 19, 22, 24-27, 33, 42, 43 and 45 as being anticipated by Levine alone as set forth in the 9/22/92 office action found that the claim language of the original claims of the `121 patent failed to include language that would require that the `121 patent's claim's data processor select programs from previously provided schedule information. For example the Examiner, in giving a

reason why pending claims were rejected as anticipated by Levine, stated (RX-3008 at 293-295):

> 1) The examiner notes that applicant does not appear to dispute the receipt and display of "schedule information" in Levine [see lines 1-4 in the last paragraph on page 8 of the arguments filed 11/23/92]. Nor does applicant appear to dispute that a user may enter codes into the system of Levine, wherein said codes are obtained from the displayed "schedule information", such that the entered information directs the processor to control a video recorder to receive and record the selected programs [see the paragraph which starts on page 8 and extends to page 9 in the arguments filed 11/23/92].
>
> As disclosed, applicant's claimed invention also displays schedule information from which a user also selects the desired program to be recorded. The user then also enters data into the system which directs the processor to control a video recorder to receive and record the selected programs. Applicant's disclosed system differs from Levine in that the user inputs of applicant are used by the processor to actually access the stored information while the user inputs in Levine actually represent the stored information. The examiner maintains that the recitation that the processor is "configured to select programs from the schedule information based on user inputs" does not distinguish two systems. Specifically, the processors of both systems are directed to record selected programs based on user inputs [see applicant's arguments on page 9 and the first 7 lines of page 10].
>
> 2) In the first full paragraph on page 10 of the argument's [sic], applicant argues that Levine stores only "conventional programming data" and not "schedule information" as claimed. This argument seems only to be directed to terminology (i.e. labels) and appears to be inconsistent with applicant's discussion in the last paragraph on page 8 in which applicant has acknowledged thestored [sic] data to be schedule information [see lines 52-59 in column 2 of Levine].

(RX-3008 at 293-95). (Emphasis in original)."

124. The Examiner in point 5 of the Office Action of 1/5/93 further gave another reason why pending claims were anticipated by Levine in stating:

> 2) In the first full paragraph on page 10 of the argument's [sic], applicant argues that Levine stores only "conventional programming data" and not "schedule information" as claimed. The argument seems only to be directed to terminology (i.e. labels) and appears to be inconsistent with applicant's discussion in the last paragraph on page 8 in which applicant has acknowledge thestored data to be schedule information [see lines 52-59 in column 2 of Levine.]

(RX-3008 at 294, 295).

125. The Examiner in point 5 of the Office Action of 1/5/93 gave another reason why pending claims were anticipated by Levine in stating:

> 3) The examiner points out that neither the processor of applicant's disclosed system nor the processor of Levine are intelligent devices. That is, the only way either processor "selects" programs to be recorded is that the user provides inputs which instruct the processors which programs are to be selected. Although the examiner acknowledges that the two processors operate differently to provide the selections, the examiner maintains that the limitation that the processor is "configured to select programs from the schedule information based on user inputs" does not define such differences.

(RX-3008 at 295) (Emphasis added).

126. The Examiner also in point 5 of the Office Action of 1/5/93 gave two other reasons why pending claims were anticipated by Levine in stating:

> 4) With respect to claim 18 (see arguments in the first full paragraph on page 11 of the amendment filed 11/23/92), the examiner maintains that the system described by Levine selects "those programs" for recording based on a plurality of criteria input by the user which was derived from stored schedule information displayed on the receiver. Such is maintained to meet the limitations of claim 18 when the "data processor" is consider to include the means for storing the incoming schedule information and the controller (26).
>
> 5) With respect to claim 33 (see arguments which start on the bottom of page 12 and extend to page 13), the examiner refers applicant back to the discussion of claim 18 above. Additionally, the examiner points out that the system of Levine must include means for storing the user input criteria for the system to be able to know/remember the selected programs which are to be recorded at some later date. Further, it is noted that information such as date, time, and channel are used by the processor in Levine to identify the programs to be recorded (the use of such identifiers is common in most TV listings).

(RX-3008 at 295 - 96) (Emphasis added).

127. The Examiner in his 1/5/93 Office action summarized all the reasons for anticipation by Levine in the following:

6) The examiner does not dispute that applicant's disclosed system operates differently than that disclosed by Levine. It is maintained, however, that such differences are not defined in the claims. Applicant's argument's simply appear to be an attempt to specifically define terminology/labels used in the claims so as to incorporate portions of the written description. Such arguments are not deemed to be persuasive. (RX-3008 at 296) (Emphasis added)

128. The Examiner, in the Office Action of 1/5/93, stated that claim 32 avoids the art of record "as was set forth in paragraph 9 of paper ¶ 12 [viz., the Office Action of 9/22/92]" (RX-3008 at 301).

129. In a Proposed Amendment, attached to the Reexamination Interview Summary Form concerning a telephonic interview on January 6, 1993, the language "electronic memory associated with a data processor" was added to process claims 18, 33, 34, 36, and 38, and the language "storage means comprising an electronic memory" was added to system claims 1, 12, 14, 15, 39, 42, 51, 52, and 54. (RX-3008 at 364-70) (Emphasis added). In claim 18, on the face of this proposed amendment, the language "associated with" is bracketed, and replaced with the word "in." (RX-3008 at 366). In the proposed amendment, proposed claim 18 did not refer to titles of programs. (RX-3008 at 366). However the last proposed claim stated that "said data processor identifies broadcast schedule times, titles and channels." (RX-3008 at 370).

130. On January 21, 1993, the applicant faxed to Examiner a Proposed Amendment (RX-3008 at 373, 391) incorporating the change that appears on the face of the Proposed Amendment attached to the January 6, 1993 Reexamination Interview Summary Form. However in claim 18, "electronic memory associated with" a data processor which was found in the proposed amendment attached to the reexamination Interview Summary Form concerning the telephonic interview on January 6, 1993 was amended to read "electronic memory in" a data

processor. (RX-3008 at 377). In the amendment Young stated (RX-3008 at 388-89):

> During the interview on January 5, 1993, clarifying amendments to claim 18 and others were presented for the Examiner's consideration. The amendments to claim 18 clarify that the schedule information is provided to an electronic memory in the data processor, the data processor combines user selection criteria, and the programs meeting the combined criteria are then selected from the schedule information in the memory. During the interview on January 5, the Examiner agreed to consider the proposed amendments to claim 18, and on January 6 confirmed that the proposed amendments were considered to avoid the prior art.

Proposed claim 18 yet did not include program titles. However proposed independent claim 57 to a "television schedule system" did state "said stored broadcast schedule information identifying a broadcast schedule time and channel and a program title for each said selected program." (RX-3008 at 377-86).

131. An Amendment After Final, date-stamped at the PTO on January 29, 1993, (RX-3008 at 393 - 410) was filed in response to the Office Acton on 1/5/93, to an in-person interview on Jan. 5, 1993 (RX-3008 at 305), and a telephone interview on Jan. 6, 1993. In claim 1, handwritten brackets were placed around "comprising an electronic memory" in the language "storage means comprising an electronic memory." (RX-3008 at 394).

132. In the amendment of 1/29/93 (RX-3008 at 393 - 410) applicant rewrote claims 1, 4, 12, 14-15, 18, 21, 29, 33-34, 36-39, 42, 51-52, 54 and 57-64. In the Amendment, independent process claim 18 did not yet include titles of programs. Rewritten claim 57 to a television schedule system did include the phrase "said stored broadcast schedule information identifying a broadcast schedule time and channel and a program title for each said related program."

133. In the Amendment After Final, date-stamped at the PTO on January 29, 1993, the

applicant surrendered the "data processor system" language, and instead amended independent process claims 18, 33, 34, 36 and 38 to recite the step of "supplying program schedule information to electronic memory in a data processor, the data processor combining user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in said electronic memory in" the data processor, storing information identifying the selected programs, and using the stored information to tune the television receiver to the selected programs. (RX-3008 at 397). (language added in this amendment is underlined). (RX-3008 at 394-407).

134. On February 11, 1993, the applicant's attorney conducted a telephone interview with the Examiner, in which the Examiner "questioned" the support for the new "electronic memory" recitations. (RX-3008 at 416).

134A. In a Proposed Supplemental Amendment After Final, faxed to the Examiner on February 16, 1993. (RX-3008 at 418 to 435), the applicant deleted the language "comprising an electronic memory" from claim 1. (RX-3008 at 419). Young did not add any claim language in this amendment to the independent process claim 18 to state that the stored information identifies program times, channels and program titles. However in the proposed amendment, independent claim 57 to a "television schedule system" did include the language "said stored broadcast schedule information identifying a broadcast schedule time and channel and a program title for each said selected program." (RX-3008 at 422-431).

135. In a "Reexamination Interview Summary Form," mailed February 17, 1993, the Examiner "questioned" whether the specification provided support/antecedent basis for the retrieving of schedule information from an electronic memory, selecting data therefrom, and

restoring the selected data. (RX-3008 at 416).

136. Telephonic interviews were conducted on each of January 6, 1993 (RX-3008 at 363), January 28, 1993 (RX-3008 at 372) and February 11, 1993 (RX-3008 at 416). In the interview summary forms, there is no indication that applicant Young proposed any claim language explicitly stating that the stored information identifies program times, channels and program titles.

137. In a Reexamination Advisory Action, mailed February 17, 1993, the Examiner considered, but refused to enter, the Amendment After Final maintaining the rejections from the previous Action. The Examiner extended the response period for three months. (RX-3008 at 437).

138. In the Reexmination Advisory Action of February 17, 1993 regarding the applicant's proposal to add the "electronic memory" language, the Examiner noted that:

> [a]pplicant agreed to file a supplemental amendment which would cancel the added limitations in the amended claims directed to the storage and retrieval of schedule information, to/from an electronic memory, in view of questions raised by the examiner as to the lack of support in the specification for such limitations and in view that applicant believed that such limitations were no longer needed."

(RX-3008 at 438).

139. After the Reexamination Advisory Action of 2/17/93 was mailed, and prior to its receipt, the applicant faxed on February 23, 1993 a Proposed Supplemental Amendment After Final (RX-3008 at 441 to 463), adding "electronic memory" language and including the same language in new process claims 67 and 68. (RX-3008 at 442-58). For example new claims 67 and 68 read:

67. A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to electronic memory in a data processor, supplying independent user chosen program selection criteria to the data processor, the data processor combining said user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in said electronic memory in the data processor, storing information identifying the selected programs, and using the stored information to tune the television receiver to the selected programs.

68. A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to electronic memory in a data processor, supplying user program selection criteria to the data processor, the data processor combining said user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in said electronic memory in the data processor, storing information identifying the selected program, and using the stored information to tune the television receiver to the selected programs, wherein a group of said selection criteria are combined by the data processor as logical alternatives so that the combination of said group of selection criteria is satisfied whenever any one of said selection criteria of said group is met.

(Emphasis added). In this proposed supplemental amendment after final no proposal was made to amend the specification. Existing claims were proposed to be amended which included adding the language, "said stored information identifying broadcast schedule times, channels, and program titles" to claim 18. (RX-3008 at 445-46).

140. In the Proposed Supplemental Amendment After Final, with a fax date of 2/23/93 (RX 3008 at 441 - 63), the applicant argued that the specification "inherently" and "implicitly"

supports the "electronic memory" limitations, stating:

> A. Combining User Selection Criteria: A group of claims have been amended to clarify that the schedule information is provided to a storage means (in some claims recited as an electronic memory in the data processor), the data processor combines user selection criteria, and programs meeting the combined criteria are then selected from the schedule information in the storage means. Support for these limitations can be found in a number of locations in the patent, including at column 8, lines 23 et seq., and at column 17, lines 33 et seq. It is believed inherent and implicit that the list operations described in column 17 are performed on information in an electronic memory.

(RX-3008 at 459).

141. The applicant, in the Proposed Supplemental Amendment After Final (RX-3008 at 441-63) faxed on February 23, 1993, proposed amending certain claims "to further clarify that the schedule information stored for the selected programs identifies not only program channels and times, but also program titles." Thus it was stated:

> I. Clarifying Schedule Information: Independent claims 1, 12, 14-15, 18, 33-34, 36-38 and 54 have been amended, in addition to the earlier clarifications agreed upon by the Examiner, to further clarify that the schedule information stored for the selected programs identifies not only program channels and times, but also program titles. New claim 57 also contains this recitation. As previously noted, prior art systems simply program the VCR with the channels and times for selected programs; information identifying the title was not stored.
>
> * * *
>
> Independent claims 65 and 68 [which became claims 64 and 67] now require that at least some of the selection criteria are combined as alternatives. This is supported, for example, at column 14, in the discussion of the Channel Restriction selection criteria. Multiple channels may be specified, and the combined of selection criteria by the present invention versus the 'combining' of paging commands or other selections by the cited prior art systems.

(RX-3008 at 459-60).

142. Applicant in the Proposed Supplemental Amendment After FINAL, faxed on February 23, 1993, represented

A. Combining User Selection Criteria:

> A group of claims have been amended to clarify that the schedule information is provided to a storage means (in some claims recited as an electronic memory in the data processor), the data processor combines user selection criteria, and programs meeting the combined criteria are then selected from the schedule information in the storage means. Support of these limitations can be found in a number of locations in the patent, including at column 8, lines 23 et. seq., and at column 17, lines 33 et seq. It is believed inherent and implicit that the list operations described in column 17 are performed on information in an electronic memory.

(RX-3008 at 459).

143. The Examiner in a Reexamination Interview Summary Form, in reference to interviews that took place on February 19 and 24, stated that he had "expressed concerns that the term 'electronic memory' and the recitations that the schedule data is stored and retrieved from such a memory did not appear to have clear support in the disclosure." (RX-3008 at 465).

144. In a February 26, 1993 Supplemental Amendment After Final (RX-3008 at 467-496), Young attempted to overcome the Examiner's rejections with three amendments to the '121 patent's specification: (1) changing from "A memory" at column 7, line 47 to "An electronic memory;" (2) amending column 17, line 38 to specify that the "program listing" is stored in "program list buffer 303; " and (3) amending column 17, line 49 to read, "Program list buffer 303, screen buffer 353, and the other buffers discussed above are located within an electronic memory coupled to the data processor, such as electronic memory 111." (RX-3008 at 468). Young explained the reason for these proposed amendments to the specification, including attempting to explain why the claimed "electronic memory" was "inherent" and "implicit" in the

original specification, as follows:

> As suggested by the Examiner, various minor amendments have been made to the specification to make explicit various aspects of the invention that were implicit but not totally explicit in the original specification. At column 7, language was added to make explicit the fact that the memory employed by the data processor is an electronic memory. This is believed not to be new matter because it is inherent and implicit in the original specification that in the disclosed embodiment the memory used by the data processor is electronic (as opposed to human, for example).
>
> In several places throughout columns 15 and 16, clarifications were made so the reminder calendar is consistently referred to as the "reminder calendar schedule." This is believed not to be new matter because in this section of the specification the term "schedule" was alternatively used to refer to the reminder calendar. The amendments simply make a consistent usage that was inherent and implicit in the original.
>
> In column 17 language was added to make explicit the facts that program listing 325 is stored in program list buffer 303, and that the various buffers are within electronic memory coupled to the data processor. This is believed not to be new matter because at column 16, lines 45 et. seq., it is stated that the CPU stores the program data in program list buffer 303, and because it is inherent and implicit in the original specification that in the disclosed embodiment the various buffers manipulated by the data processor must be in the electronic memory, or the data processor could not do the recited functions.

(RX-3008 at 486-87).

145. Applicant, in the February 26, 1993 Supplement Amendment After Final, added the following limitation to claim 42 (RX-3008 at 477-478):

> wherein said data processor is configured for a selectable display mode, said data processor being configured to present an initial display of said schedule information stored in said storage means upon selection of said display mode, said initial display automatically comprising schedule information for at least one of a current time period and a current channel of said programmable tuner.

146. In the February 26, 1993 Supplemental Amendment After Final (RX 3008 at 467-96), the applicant added new independent process claims that include the step of "supplying

program schedule information to electronic memory in a data processor." Also certain claims were amended. The amendments included adding to claim 18 the phrase "said stored information identifying broadcast schedule times, channels, and program titles." (RX-3008 at 473, 485-86).

147. In the Supplemental Amendment After Final, stamped as received on February 26, 1993 by Group 260 of the PTO, the applicant proposed amendments to the specification pertaining to memory or storage which included the following: the applicant requested that "[i]n col. 7, line 47, please replace 'A memory' with --An electronic memory –;" the applicant requested that "[i]n col. 17, line 38, after 'program listing 352' and before 'is made' please insert --, stored in program list buffer 303,–;" and the applicant requested that "[i]n col. 17, line 49, after "TV." please insert -- Program list buffer 303, screen buffer 353, and the other buffers discussed above are located within an electronic memory coupled to the data processor, such as electronic memory 111.–" (RX-3008 at 468).

148. Consistent with the specification, the `121 patent file history specifically notes that the channel, theme, and prime time buffers maintain the user's selected criteria. (RX-3008 at 489). Thus in the February 26, 1993 Supplemental Amendment After Final, the applicant stated: "The user selection criteria may be entered and activated independently under different categories (theme, channel, prime time) and are maintained by the data processor whether currently activated or not." (RX-3008 at 489). (Emphasis in original) "Maintained" means kept in the buffers. (Rhyne, Tr. at 3777).

149. Applicant, in the February 26, 1993 Supplemental Amendment, represented (RX-3008 at 490):

Automatically Focusing the Display

Also discussed were clarifications of the preselection of schedule information for display, directed to automatically focusing a display of schedule information according to a current time or a current channel. The Examiner has confirmed that the claims reciting this selective display are believed to be allowable. Support for this selective display can found [sic], for example, at column 10, lines 12-65. Lines 50-59 are an example display for preferred embodiment. Lines 45-46 explain that the listing starts at the nearest previous half-hour. Lines 46-47 explain that a pointer (not shown in the example screen) will be positioned at the last selection made (and thus indicate the current channel). Lines 60 to 62 explain that the screen also includes 3 lines of status information, which at lines 56-59 is shown to include for the currently selected channel the remaining time and program title schedule information. Similar disclosure also appears at column 1, lines 33-37.

150. In the February 26, 1993 Supplemental Amendment, applicant also stated (RX-3008 at 488-90):

> Several of the present claims recite a process in which the user enters user program selection criteria, and the user enters user program selection criteria, and the data processor combines the program selection criteria, searches through the stored selection criteria, searches through the stored schedule information, and creates and stores a display list of program listings that meet the combined criteria. This is disclosed, for example, at col. 17 lines 33 et seq. The user may then make program selection choices (which the Examiner has characterized as further program selection criteria) from this display. The data processor then stores information fo these program sections, including information identifying program titles, in a reminder calender list.
>
> Several claims recite the data processor combining a plurality of user selection criteria other than the program choices. This is different from the scenario that the Examiner has proposed would be inherent in Levine and similar art, namely that the user could enter a date as a first selection criteria, then be presented with a page of program listings, and then enter a program choice as a second selection criteria to be "combined" with the date selection criteria. As amended, several claims (such as claim 1) require the data processor combine a plurality of selection criteria in addition to the program choice. The Examiner's proposed data entry does

not meet the requirement of combined selection criteria even if entered as a series of page commands. Each page command simply establishes a new requirement that supersedes and replaces the previous requirement rather than being combined with it.

In response to earlier arguments that the claims require schedule information including program title to be stored for selected programs, the Examiner only argued that the term "schedule information" was not defined so as to require program title. Several claims have been amended to specify the storage of program title for the selected programs and are thus believed to be allowable. As previously noted, prior art systems simply program the VCR with the channels and times for selected programs; information identifying the title was not stored.

The user selection criteria may be entered and activated independently under different categories (theme, channel, prime time) and are maintained by the data processor whether currently activated or not. This is disclosed, for example, from column 12 line 12 to column 15 line 17 (wherein it is stated that buttons can be pressed to independently activate the THEME, PRIME-TIME, and CHANNEL selection criteria) and from column 18 line 11 to column 20 line 38. Furthermore, the selection criteria can be combined as alternatives (in a logical OR fashion), such as a list of acceptable channels or a list of acceptable themes. This is far different from even the cited teletext art, where search criteria are entered and combined in a dependent, hierarchical fashion. At each stage in the cited teletext art, the available search choices are determined by and dependent upon the previous choices made. Furthermore, they are only combined in a logical AND fashion.

Also the prior art does not allow complex entries (such as theme or channel lists) to be deactivated yet saved in memory.

151. Applicant, in the February 26, 1993 Amendment (RX-3008 at 467 -96), specifically asserted as to claims 18, 32, 33, 36, 42, 51, 54, 57 and 66 (RX-3008 at 492-95):

Claim 18

This claim now requires that the data processor combine a plurality of independent user program selection criteria in addition to a program choice, and that it store information identifying titles for selected programs.

Claim 32

This claim has been confirmed as patentable and recites the display of time remaining for a program being broadcast.

Claim 33

This claim now recites that the data processor automatically focuses the program listing display according to at least one of a current time or channel.

* * *

Claim 36

This claim now requires that the data processor combine a plurality of independent user program selection criteria in addition to a program choice, and that it store information identifying titles for selected programs.

* * *

Claim 42

This claim now recites the focusing of an initial display of schedule information according to at least one of a current time period or channel.

Claim 51

This claim now recites the focusing of an initial display of schedule information according to at least one of a current time period or channel.

* * *

Claim 54

This claim now recites the presentation of entering a plurality user selection criteria to be combined, allow user program selection from a menu of programs meeting the combined selection criteria, and storing a reminder calendar including titles for the chosen programs.

Claim 57

This claim recites the focusing of an initial display of schedule information according to at least one of a current time period or channel, and stores information identifying titles for selected programs.

* * *

Claim 66

This claim requires that the data processor combine a plurality of independent user program selection criteria in addition to a program choice.

152. In the Office Action of March 26, 1993, the Examiner objected to the proposed amendment as "new matter" and stated that "[a]pplicant is required to cancel the new matter in the response to this Office Action." (RX-3008 at 507-08).

153. The Examiner in an Office Action of March 26, 1993 stated in part (RX-3008 at 507):

> 2. The amendment filed 2/26/93 is objected to under 35 U.S.C. § 132 because it introduces new matter into the specification. 35 U.S.C. § 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:
>
> 1) In column 7, line 47, "A memory" has been changed to - - an electronic memory- -. This amendment is considered to introduce new matter because: a) it is not clear from the disclosure as originally filed what kind of memories are included or excluded by the term "electronic memories" (i.e. RAM, disc, tape, storage tubes, etc...), and b) it appears to suggest that said memory is now intended to be limited only to memories of some certain type (i.e. electronic) while the disclosure as originally filed appears to have recited a generic memory (i.e. inclusive of all types).
>
> 2) In column 17, line 49 has been amended to recite that the program list buffer 303, screen buffer 353, and other discussed buffers are located within an electronic memory coupled to the data processor, such as electronic memory 111. This amendment is considered to add new matter because: a) it [The file wrapper does not finish the sentence]
>
> Applicant is required to cancel the new matter in response to the Office action.

154. In the same Office Action dated March 26, 1993, in which the Examiner rejected the applicant's proposed amendments to column 7, line 47 and column 17, line 49 of the specification, the Examiner also rejected, under 35 U.S.C. § 112, ¶ 1, claims 1-12, 14, 15, 18-31, 33, 34, 36, 38, 54-56, and 64-67 on the basis that the claims recited that the schedule information is stored in an electronic memory. (RX-3008 at 508). The Examiner did state that if the claims were amended to overcome the § 112, ¶ 1 problems, they would be found patentable. (RX-3008

at 509).

155. In the Office Action dated March 26, 1993, the Examiner rejected the applicant's proposed amendment at column 17, line 49, which was proposed in a February 26, 1993 Supplemental Amendment After Final, and which stated that "the program list buffer 303, screen buffer 353, and other discussed buffers are located within an electronic memory coupled to the data processor, such as electronic memory 111." In the same Office Action, the Examiner rejected, under § 112 1, claims 1-12, 14, 15, 18-31, 33, 34, 36, 38, 54-56, and 64-67 on the basis that the claims recited that the schedule information is stored in an "electronic memory," and that "[s]uch recitations do not appear to be supported by the specification as originally filed [see paragraph 1 of this Office Action]." (Bracketed material in original). Said paragraph 1 read:

> 1) In column 7, line 47, "A memory" has been changed to –an electronic memory–. This amendment is considered to introduce new matter because: a) it is not clear from the disclosure as originally filed what kind of memories are included or excluded by the term "electronic memories" (i.e. RAM, disc, tape, storage tubes, etc...); and b) it appears to suggest that said memory is how intended to be limited only to memories of some certain type (i.e. electronic) while the disclosure as originally filed appears to have recited a generic memory (i.e. inclusive of all types).

(RX-3008 at 507-508). The Examiner also stated that claims 42 "as amended avoid the art of record and [is] patentable." The Examiner further stated that if the claims were amended to overcome the 35 U.S.C. § 112 problems, they would be found patentable. (RX-3008 at 509).

156. Because the Examiner rejected the proposed claim language ""lectronic memory," the applicant in an amendment dated April 6, 1993 (Amendment E), substituted the term "electronic memory" in the claims (including independent process claims 18, 33, 34, 36, 38, 66 and 67) with "storage means" (RX-3008 at 512-34) and amended the sixth full paragraph of

column 17 ln. 38 to include the language of its sentence as follows: "[p]rogram list buffer 303, screen buffer 353, and the other buffers discussed above are located within a data storage device coupled to the data processor." (RX-3008 at 513-514). The remainder of the paragraph was restored to the language which was found when the '121 patent issued on November 10, 1987. Old claim 18 had read in part: "selecting those programs meeting the combined user selection criteria for viewing from the program schedule information is said electronic memory in the data processor" (RX 3008 at 473). New claim 18 now read in part:

> selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in said storage means in the data processor

(RX-3008 at 520).

157. Applicant in amendment dated April 6, 1993 explained:

> Applicant has amended the specification as requested by the Examiner, and has amended the claims to no longer refer to an electronic memory. It is respectfully submitted that the original specification fully supports the claims and that the objection to the specification and the § 112 rejection of claims is therefore overcome.

(RX-3008 at 534).

158. In a Reexamination Interview Summary Form regarding a telephonic interview held on April 19, 1993, the Examiner stated that "[a]pplicant agreed to change the last two lines in the sixth full paragraph of column 17 so as to avoid the issue of new matter" The last two lines was in reference to the following: "[p]rogram list buffer 303, screen buffer 353, and the other buffers discussed above are located within a data storage device coupled to the data processor." (RX-3008 at 536).

159. The following day, the applicant submitted a Supplemental Amendment dated

April 20, 1993 (amendment F) (RX-3008 at 538-42), that amended the '121 patent's specification to set forth a definition of the term "data storage means," and deleting the language indicating that the storage means was "coupled" to the data processor so that the sixth full paragraph at col. 17 reads:

> A search of the program listing 352, stored in program list buffer 303, is made. The search is dependent on the status of the channel buffer, the theme buffer, the prime time buffer, and the direction of the search. If the page 356 is up, the search direction is forward starting from the list pointer. If the page is down 357, the search direction will be backward 358 from the current list pointer. When the search satisfies the above criteria, the program listing from program list buffer 303 is placed into the screen buffer 353. The search continues until the screen buffer is full 354 in which case the search is terminated. The status line information is passed to the screen buffer and displayed 355 by the TV. Program list buffer 303, screen buffer 353, and the other buffers discussed above comprise a data storage means.

(RX-3008 at 540-41; CX-1, RX-3001, 17:38-49; RX-3002 at 2:38-52 (underlined language amended by April 20, 1993 Supplemental Amendment)).

160. The applicant in the April 20, 1993 amendment explained that this final amendment was made at the Examiner's request: "During the telephone conversation of April 19, 1993, Applicant agreed to correct claim 29 to no longer refer to an electronic memory, agreed to present the earlier amendments to the specification in the format preferred for Reexaminations, and agreed to change the amendment to column 17 of the specification to simply refer to a data storage means. The Examiner indicated that these changes were believed to place the claims in condition for allowance. (RX-3008 at 541-42).

161. The applicant overcame the Examiner's rejection by amending the specification to state that the buffers "comprise a data storage means" and by amending the claim to describe a "storage means in a data processor." (CX-1 (Re-examination certificate), col. 2 lns. 50-52 and

col. 5, ln. 17).

162. Column 2, lines 50-52 of the Re-examination certificate, contain an amendment to the patent's specification stating that that "[p]rogram list buffer 303, screen buffer 353, and the other buffers discussed above comprise a data storage means." The phrase "other buffers discussed above" has antecedent basis earlier in the same paragraph and includes the "channel buffer, the theme buffer, [and] the prime time buffer." (CX-1, '121 Reexamination Certificate, at col. 2, lns. 40-41).

163. In a Notice to Issue Reexamination Certificate, stamped as mailed on June 2, 1993, the Examiner used the term "data storage means" in place of the term "storage means." (RX-3008 at 563). A supplemental notice of intent to issue reexamination certificate issued on August 26, 1993. (RX-3008 at 569-91).

164. In the supplemental notice of intent to issue reexamination certificate mailed August 26, 1993 (RX-3008 at 569-91) the Examiner gave specific reasons as to how independent claims in issue avoid the art of record. Thus it was stated (RX-3008 at 582-90):

> H. Claims 18-31 avoid the art of record in at least the art of record does not show or suggest a process for controlling the presentation of broadcast programs to a television receiver which comprises.
>
> 1) supplying program schedule information to storage means in a data processor;
> 2) supplying user selection criteria, which comprises a plurality of independent user chosen program selection criteria and at least one program choice, to said data processor;
> 3) combining said user selection criteria;
> 4) selecting those programs meeting the combined selection criteria from the schedule information stored in the storage means;
> 5) storing information identifying the selected programs and identifying broadcast schedule times, channels, and titles; and
> 6) using the stored information to tune the television receiver to the

selected programs.

I. Claims 32 avoids the art of record in at least the art of record does not show or suggest a process for controlling the presentation of broadcast programs to a television receiver including:

1) presenting messages to the user, via the television receiver, including the time remaining for a program being broadcast.

J. Claim 33 avoids the art of record in at least the art of record does not show or suggest a process for controlling the presentation of broadcast programs to a television receiver which includes:

1) combining user selection criteria with automatic criteria according to at least one of current time period and a current channel via a data processor; and

2) using the combined criteria to select programs for viewing from program schedule information in a storage means in said data processor.

* * *

M. Claim 36 avoids the art of record in at least the art of record does not show or suggest a process for controlling the presentation of broadcast programs to a television receiver which includes:

1) supplying user program selection criteria, which comprises a plurality of independent user chosen selection criteria and at least on [sic] program choice, to a data processor;

2) combining said user selection criteria via the data processor;

3) using the combined criteria to select programs for viewing from stored schedule information;

4) storing information identifying the selected programs wherein the information includes broadcast schedule times, channels, and program titles; and

5) recording the selected programs by supplying control signals to a remote control device for a program recording device.

* * *

Q. Claims 42-52 avoid the art of record in at least the art of record does not show or suggest a system for controlling a recording device to allow user selection of broadcast programs from schedule information which comprises:

1) a data processor which is configured to present an initial display of schedule information stored in a storage means upon selection of a display mode wherein said initial display automatically comprises schedule information for at least one of a current time period and a current channel of a programmable tuner.

* * *

S. Claims 54-56 avoid the art of record in at least the art of record in at least the art of record [sic] does not show or suggest a system for controlling receipt of broadcast television programs to allow user selection of broadcast programs from broadcast schedule information which is selectively stored in a storage means wherein the system comprises:

1) means for separating broadcast schedule information from the broadcast programs;

2) a processor configured to select programs from the schedule information stored in the storage means based on user inputs wherein the user inputs comprise a plurality of user program selection criteria;

3) said processor being configured to combine said plurality of user selection criteria and to present a list of programs meeting said combined criteria;

4) wherein said user inputs further comprise a program choice from said displayed list of programs; and

5) said storage means being connected to receive a reminder calendar list comprising information identifying titles for the programs selected by said data processor.

T. Claims 57-63 avoid the art of record for at least the same reasons as were set forth for claims 42-52.

U. Claims 64-67 avoid the art at record for at least the following reasons:

Claim 64

This claim recites the presentation of entering a plurality user selection criteria (including a plurality of channels) to be combined, allow user program selection from a menu of programs meeting the combined selection criteria, and storing a reminder calendar including titles for the chosen programs.

Claim 65

This claim recites the presentation of entering a plurality user selection criteria to be combined, where the selection criteria are under a pluralities of categories that can be deactivated while still storing the selecting criteria in

addition to a program choice.

Claim 66

This claim requires that the data processor combine a plurality of independent user program selection criteria in addition to a program choice.

Similar language was found in the Examiner's "Notice Of Intent To Issue Reexamination Certificate" (RX-3008 at 546-57) mailed June 2, 1993.

165. Claim 18 of B1 4,706,121 which issued on December 14, 1993 read (CX-1, col. 5, lns. 14-19):

> A process for controlling the presentation of broadcast programs to a television receiver, which comprises supplying program schedule information to storage means in a data processor, supplying user program selection criteria to the data processor, said user program selection criteria comprising a plurality of independent user program selection criteria and at least one program choice, the data processor combining said user selection criteria, selecting those programs meeting the combined user selection criteria for viewing from the program schedule information in said storage means in the data processor, storing information identifying the selected programs, said stored information identifying broadcast schedule times, channels and program titles, and using the stored information to tune the television to the selected program. (underlined language was added in the reexamination proceeding)

166. The applicant used the terms "data processor" and "CPU" interchangeably in prosecuting the `121 patent. A Supplemental Amendment After Final, file- stamped February 26, 1993 provides an example that demonstrates the synonymous use of these terms is provided by the applicant's rejected proposal that, "In col. 17, line 49, after 'TV.' please insert -- Program list buffer 303, screen buffer 353, and the other buffers discussed above are located within an electronic memory coupled to the data processor, such as electronic memory 111." (RX-3008 at 468). The `121 patent's specification states in describing Figure 3, "A memory 111 is connected to the CPU 110 at 113." (CX-1 at col 7, ln. 47). The parallel manner in which the applicant

described the "CPU" and "data processor" as connected or coupled to "memory 111" demonstrates that the claimed "data processor" is the "CPU."

167. Column 17, lns. 38-49 of the '121 patent, as it issued on November 10, 1987, read (CX-1):

> A search of the program listing 352 is made. The search is dependent on the status of the channel buffer, the theme buffer, the prime time buffer, and the direction of search. If the page 356 is up, the search direction is forward starting from the list pointer. If the page is down 357, the search direction will be backward 358 from the current list pointer. When the search satisfies the above criteria, the program listing is placed into the screen buffer 353. The search continues until the screen buffer is full 354 in which case the search is terminated. The status lines information is passed to the screen buffer and display 355 by the TV.

168. The Supplemental Amendment After Final dated February 26, 2002 (CX-3008 at 71, 467-96), amended the paragraph at col. 17, lns. 38-49 of the '121 patent to read (RX-3008 at 468, underlined material added by amendment):

> A search of the program listing 352 <u>stored in program list buffer 303</u>, is made. The search is dependent on the status of the channel buffer, the theme buffer, the prime time buffer and the direction of search. If the page 356 is up, the search direction is forward starting from the listing pointer. If the page is down 357, the search direction will be backward 358 from the current list pointer. When the search satisfies the above criteria, the program listing <u>from program list buffer 303</u> is placed into the screen buffer 353. The search continues until the screen buffer is full 354 in which case the search is terminated. The status lines information is passed to the screen buffer and displayed 355 by the TV. <u>Program list buffer 303, screen buffer 353, and the other buffers discussed above are located within an electronic memory coupled to the data processor, such as electronic memory 111.</u>

F. Infringement

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XX. CONCLUSIONS OF LAW

1. The Commission has in rem jurisdiction, subject matter jurisdiction and in personam jurisdiction.

2. There has been an importation of certain set-top boxes and components thereof which are the subject of the alleged unfair trade allegation.

3. No domestic industry exists, as required by subsection (a) (2) of section 337, that exploits each of the '121, '268 and '204 patents because complainants have not met their burden in satisfying the technical prong of the domestic industry requirement.

4. Respondents have failed to establish that the asserted claims of each of the '121, '268 and '204 patents are not valid.

5. Complainants have failed to establish that the claims of the '121, '268 and '204 patents asserted against each of the respondents are infringed.

6. It has been established that complainants misused the '121 patent.

7. It has been established that the '121 patent is unenforceable for failure to name a coinventor.

8. Respondents are not in violation of section 337 based on any importation into the United States, sale for importation, and sale within the United States after importation of certain set-top boxes and components thereof which are the subject of the alleged unfair trade allegation.

XXI. ORDER

Based on the foregoing opinion, it is the administrative law judge's final initial determination that there has been no violation by any of the respondents of section 337 in the importation into the United States, sale for importation, and the sale within the United States after importation of certain set-top boxes and components thereof.

The administrative law judge hereby CERTIFIES to the Commission his final initial determination together with the record consisting of the exhibits admitted into evidence. The pleadings of the parties filed with the Secretary and the transcript of the hearing, are not certified, since they are already in the Commission's possession in accordance with Commission rules.

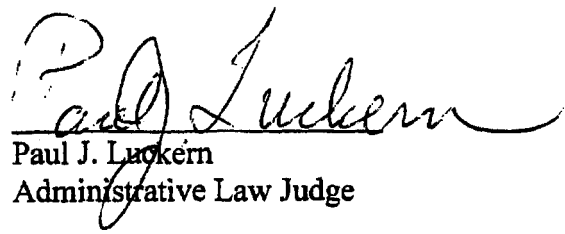
Further it is ORDERED that:

1. In accordance with Commission rule 210.39, all material heretofore marked in camera because of business, financial, and marketing data found by the administrative law judge to be cognizable as confidential business information under Commission rule 201.6(a) is to be given in camera treatment continuing after the date that this investigation is terminated.

2. Counsel for the parties shall have in the hands of the administrative law judge those portions of the final initial determination which contain bracketed confidential business information to be deleted from any public version of said determination, no later than July 12, 2002. Any such bracketed version shall not be served by telecopy on the administrative law judge. If no such bracketed version is received from a party it will mean that the party has no objection to removing the confidential status, in its entirety, from this initial determination.

3. This final initial determination, issued pursuant to Commission rule 210.42(h)(2), shall become the determination of the Commission forty-five (45) days after the service thereof,

unless the Commission, within that period shall have ordered its review in its entirety or certain issues therein, or by order has changed the effective date of said initial determination.



Paul J. Luckern
Administrative Law Judge

Issued: June 21, 2002

IN THE MATTER OF
CERTAIN SET-TOP BOXES
AND COMPONENTS THEREOF

Investigation No. 337-TA-454

CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **Public Version Final Initial Determination** was served upon,Thomas S. Fusco, Esq., Commission Investigative Attorney, and the following parties via first class mail and air mail where necessary on November 8, 2002.

Marilyn R. Abbott

Marilyn R. Abbott, Secretary
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IN THE MATTER OF
CERTAIN SET-TOP BOXES
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IN THE MATTER OF
CERTAIN SET-TOP BOXES
AND COMPONENTS THEREOF

Investigation No. 337-TA-454

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