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).

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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;

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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.

{* * *}

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

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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,

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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. [FN90] 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 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); {* * *}

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; {* * *}

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:

{* [FN91] [FN92] * *} {* * *}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{* * *}

FN1. Pioneer Electronics USA, Inc. is the successor to Pioneer New Media and Technologies, Inc. See Order No. 35 which issued on November 2, 2001.

FN2. 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.

FN3. All of the asserted claims are not in issue with respect to each of the respondents. Specifically complainants have accused Pioneer of infringing claims

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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.

FN4. 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).

FN5. 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).

FN6. See, e.g., Hill-Rom Co., Inc. v. Kinetic Concepts, Inc., 209 F.3d 1337, 1341, n (Fed. Cir. 2000).

FN7. 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.

FN8. 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 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 generally 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).

FN9. 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).

FN10. 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).

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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.

FN11. 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."

FN12. 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.

FN13. For substantive purposes, the specifications of the '268 and '204 patents are identical.

FN14. 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.

FN15. 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."

FN16. Figure 22B does show a Video Display Generator.

FN17. 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

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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.

FN18. An "overlay" is defined as "a covering either permanent or temporary." (Webster's Seventh New Collegiate Dictionary (1963) at 601).

FN19. 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).

FN20. 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.

FN21. 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).

FN22. The administrative law judge finds that the accused EchoStar set-top boxes{* * *}

FN23. {* * *}

FN24. {* * *}

FN25. 35 U.S.C. § 271(d) states:

No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement; (4) refused to license or use any rights to the patent; or (5) conditioned the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the licensed or sale is conditioned. The primary emphasis of the 1988 Act was a limitation created in the misuse defense whereby an infringer will have to prove economic impact in the patented product market. Congress intended that this change "should have a procompetitive effect, insofar as [it] require[s] some linkage between the patent licensing practice and anticompetitive conduct." 134 Cong. Rec. H10, 648 (Daily Ed. Oct. 20, 1988).

FN26. The provisions of 35 U.S.C. § 271(d) effecitively confer upon the patentee, as a lawful adjunct of his patent rights, a limited power to exclude others from competition in nonstaple goods. Dawson Chemical Company v. Rohm and Haas Company, 448 U.S. 176, 201 (1980).

FN27. Respondents argued that while "unlawful" grantbacks and covenants not to sue are not a per se category of patent misuse they do constitute patent misuse if they

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are employed in ways that harm competition. Transparent-Wrap Mach. Corp. v. Stokes & Smith Co., 329 U.S. 637, 646 (1947). (PEPost at 263). Respondents also argued that while package licensing in and of itself is not necessarily patent misuse, coercing a license to accept a package license without providing the option of licensing individual patents is patent misuse per se. (RPPost at 306-7). It was also argued that a provision in a patent license requiring a party not to deal in products that compete with the patented product, i.e., exclude or "tie-out" competition, constitutes patent misuse per se. (RPPost at 278).

FN28. Courts, in an antitrust context, have considered the four basic elements of a per se tying claim as:
1) that there are two separate products, a "tying" product and a "tied" product; 2) that those products are in fact "tied" together - that is, the buyer was forced to buy the tied product to get the tying product; 3) that the seller possesses sufficient economic power in the tying product market to coerce buyer acceptance of the tied product; and 4) involvement of a "not insubstantial" amount of interstate commerce in the market of the tied product.
See Thompson v. Metropolitan Multi-List, Inc., 934 F.2d 1566, 1574 (11th Cir. 1991).

FN29. The American College Dictionary at 745 (1970) defines market as "the field of trade or business: the best shoes in the market."

FN30. The information and documents Hoffman relied on are summarized in RX-4363.

FN31. In this investigation, complainants have defined "IPG" as follows:
The term "IPG" means any interactive electronic program guide (interactive viewing guide or interactive electronic viewing guide) for displaying on a television information relating to current and future television programming and which enables the viewer to select and implement various functions and features. The term "IPG" also specifically includes, but is not limited to, interactive features and functions included with an IPG, such as view current program, favorite channels, sleep timer, pay-per view, video on demand, parental control, pass code, program timer, and program recording.
(RX-4775C at 3). Respondents have not disputed the definition. See RFF 2949. Complainants' IPG products include the following: (i) TV Guide Plus (ii) GuidePlus+ for use with consumer electronic devices (iii) GuidePlus+ for use by MPVDs with set-top boxes (iv) GuidePlus+ for Windows (v) StarSight IPG (vi) VideoGuide IPG (vii) Electronic TV Host (viii) TV Guide Interactive, and (ix) Prevue Express (RX-4775C at 17 (Interrogatory No. 9)). (Unobjected RFF 2954).

FN32. An "MSO" is a cable company that operates multiple cable systems. (Allen DOJ dep. JX-100C, at 11).

FN33. {* * *}

FN34. For the past two years and three months, Mark Allen has served as President of TV Guide Affiliate Sales and Vice President of other entities involved in contract negotiations. (Allen, Tr. at 5437). Allen's principal responsibility is negotiating contracts with large cable and satellite companies, almost exclusively focused on the TV Guide Interactive IPG, (Allen, Tr. at 5437).

FN35. {* * *}

FN36. {* * *}

FN37. Jonathan Orlick has been the Vice-President of Intellectual Property and General Counsel for StarSight Telecast since 1996 and the Vice-President of

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Licensing for Gemstar since May/June 1997. (JX-110C, Orlick DOJ Dep. at 7-8).

FN38. Doughlas McCrae was president of Video Guide, Inc., a wholly-owned subsidiary of Gemstar. (Tr. at 446).

FN39. James Knowles is the manager of service provider software in StarSight. (Tr. at 605).

FN40. Macrae testified that he founded VideoGuide in 1993 "to invent and design an [IPG] that would allow the user to see TV schedule information" as well as "information about news, sports and weather." (Macrae, Tr. at 501). At that time, VideoGuide planned on designing a separate box that would connect to a television set to give a user these features and capabilities. Id. In 1995, this product entered the market and was sold in various consumer electronic retail stores Id. at 501-502.

FN41. {* * *}

FN42. DirecTV and EchoStar's DISH Network are the two main players in the direct broadcast satellite, or "DBS" industry. (RX-2333 at SA ITC 900000 4939).

FN43. See FF 73.

FN44. See FF 74.

FN45. See FF 71, 72.

FN46. {* * *}

FN47. Senza-Gel, 803 F.2d at 670 n. 14.

FN48. {* * *}

FN49. The record establishes that Peter C. Boylan, III, is the Co-President, Co-COO, member of the Board of Directors, and Member of the Office of the Chief Executive with Gemstar-TV Guide International. He is also chairman and CEO of a number of subsidiaries, including TV Guide Interactive. (Boylan ITC dep. JX-8C, at 6, 7; Boylan, Tr. at 5239, 5216-17). Boylan reports to Henry Yuen. (Boylan, Tr. at 5239). Boylan has been employed by Gemstar-TV Guide International and predecessor entities since 1994. (Boylan ITC dep. JX-8C, at 13 - 14, Boylan Superguide dep. JX-102C at 11). Boylan joined United Video Satellite Group in 1994 as Executive Vice President and Chief Financial Officer. (Boylan, Tr. at 5201 - 02). In March of 1999, United Video Satellite Group acquired TV Guide Magazine. (Boylan, Tr. at 5203). Prior to TV Guide, Inc.'s merger with Gemstar, Boylan served as President and COO, and was a member of the Board of Directors, of TV Guide, Inc. (Boylan DOJ dep. JX-101C at 8 - 9). Boylan had direct responsibility for the TV Guide Interactive business, among other business groups. (Boylan DOJ dep. JX-101C at 8). Boylan had a beneficial ownership of 1,640,830 shares of common stock in Gemstar-TV Guide International as of March 31, 2001 (13,597 shares and 1,627,233 options) (RX-2052 at 15). From July 12, 2000 (the date of the merger between Gemstar and TV Guide) through December 31, 2000, Boylan earned $548,444 in salary and bonus. (RX-2052 at 6-8).

FN50. See also FF 76.

FN51. {* * *}

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FN52. That language is used in CRRFF3940.

FN53. It is uncontroverted that the '204 and '268 patents cover two-dimensional grid guides and that the TV Guide Interactive IPG is a listings guide, not a grid guide (unobjected RFF 3917, unobjected RFF 3918).

FN54. {* * *} {* * *}

FN55. {* * *}

FN56. {* * *}

FN57. {* * *}

FN58. {* * *}

FN59. See FF 72 for a list of Gemstar's license agreements with an explicit grantback provision.

FN60. {* * *}

FN61. Assuming arguendo, any weight is to be given to Lechner's opinion that Gemstar has a blocking portfolio, Lechner conceded that three of four Levine patents involved in alleged blocking layer A in his expert report all expired during the hearing in this investigation. (Lechner, Tr. at 5384-86).

FN62. 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 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.

FN63. Pioneer incorporated by reference the arguments of S-A and EchoStar. (PPost at 1, 231).

FN64. 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.

FN65. 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.

FN66. 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

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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.

FN67. 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.

FN68. 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.

FN69. 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.

FN70. The Commission, has no power in section 337 investigations to correct inventorship. 7/9/98 op. at 9.

FN71. 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.

FN72. 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).

FN73. 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

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wanted. And then I approved it.
Q Did you conceive figure 1, the block diagram?
A Yes.

* * *

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.

FN74. 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.

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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?

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A I described that it had to be low cost because the customers would not pay 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.

FN75. 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).

FN76. 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.

FN77. {* * *}

FN78. {* * *} {* * *}

FN79. {* * *}

FN80. {* * *}

FN81. {* * *} {* * *}

FN82. 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

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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).

FN83. 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.

FN84. {* * *}

FN85. 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 guide, in which case the screen will scroll a half hour ahead with each press of the arrow key. (Tr. at 300-01).

FN86. 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.

FN87. 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).

FN88. 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{* * *}

FN89. 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).

FN90. {* * *}

FN91. {* * *}

FN92. {* * *}

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).

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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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21. {* * *}

22. {* * *}

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

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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),

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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

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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

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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, 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.
(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 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

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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.
(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).

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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 '121 patent, 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,

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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

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