

United States District Court,  
E.D. Virginia, Norfolk Division.

**BELL ATLANTIC NETWORK SERVICES, INC,**  
Plaintiff.

v.  
**COVAD COMMUNICATIONS GROUP, INC. et al,**  
Defendants.

No. CIV. A. 2:99CV712

**April 4, 2000.**

Owner of patent for digital subscriber line transceiver sued competitor for infringement. On cross-motions for summary judgment, the District Court, Friedman, J., held that accused device was not infringing, either literally or under doctrine of equivalents.

Defendant's motion granted.

5,812,786. Not infringed.

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***OPINION AND ORDER***

**FRIEDMAN, District Judge.**

On January 13, 2000, Bell Atlantic Network Services, Inc. ("Bell Atlantic") filed a motion for summary judgment on Covad Communications Group, Inc., Covad Communications Company, Inc., and DIECA Communications, Inc.'s (collectively "Covad") seventh (estoppel) and ninth (implied license) affirmative defenses. On January 14, 2000, Bell Atlantic filed a motion for summary judgment on Covad's fifth (patent misuse) affirmative defense. On January 14, 2000, Bell Atlantic filed a motion for summary judgment on

Covad's eighth (Telecommunications Act) affirmative defense. On January 20, 2000, Covad filed a motion for summary judgment of noninfringement of claims 1, 5, 7, 8, 9, and 21 of the '786 patent. On January 27, 2000, Covad filed a motion for summary judgment on its eighth (Telecommunications Act) affirmative defense. A hearing was held on these motions on February 11, 2000. On February 18, 2000, the Court sent a letter to the parties as a courtesy to inform them of the Court's decision to grant Covad's motion for summary judgment of noninfringement. On February 25, 2000, Bell Atlantic filed a motion for leave to file a supplemental memorandum establishing that Covad's own experts reject and contradict Covad's key noninfringement argument. For the reasons set forth below, Covad's motion for summary judgment of noninfringement is **GRANTED**. The remaining motions for summary judgment are moot in light of the Court's ruling on Covad's motion for summary judgment of noninfringement. Accordingly, these motions need not be addressed by the Court. Bell Atlantic's motion for leave to file a supplemental memorandum is **DENIED**.

### *Factual and Procedural Background*

#### *I. The Lawsuit*

[1] Bell Atlantic filed its application for U.S. Patent No. 5,812,786 ("the '786 patent") with the United States Patent and Trademark Office ("PTO") on June 21, 1995. The patent is entitled "Variable Rate and Variable Mode Transmission System," and describes asymmetrical digital subscriber line interface units operating at variable rates and in variable modes (ADSL/AVR) over a local loop. The PTO allowed the claims in the '786 patent on October 15, 1997. The patent was issued on September 22, 1998. Specifically, the '786 patent contains two independent claims at issue in this case FN1: claim 1 and claim 21.

FN1. It is well established that where independent claims are not infringed, there can be no infringement of the dependent claims. *See Wahpeton Canvas Co., Inc. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed.Cir.1989) ("It is axiomatic that dependent claims cannot be found infringed unless the claims from which they depend have been found to have been infringed."). Therefore, the Court need only address the independent claims at issue in order to resolve this case completely.

Independent claim 1 recites the following:

A transmission system for variably transmitting information data in a plurality of different modes over a network, said transmission system comprising:

a first transceiver, connected to a first end of a subscriber loop, for selectively operating in one of said plurality of different modes, said first transceiver transmitting or receiving signals, at a first transmission rate, on a first channel, and transmitting or receiving signals, at a second transmission rate, on a second channel, in each of said plurality of different modes;

a second transceiver, connected to said first transceiver via said subscriber loop, for selectively operating in one of said plurality of different modes, said second transceiver transmitting or receiving said first channel signals at said first transmission rate on said first channel and transmitting or receiving said second channel signals at said second transmission rate on said second channel; and

a controller connected to said first transceiver for selectively changing said first and second transmission rates.

Col. 17, ll. 5-23.

Independent claim 21 states the following:

An ADSL/AVR transmission system for variably transmitting information data over a plurality of channels, comprising:

a first ADSL/AVR transceiver for transmitting or receiving signals at a first transmission rate on a first channel, and transmitting or receiving signals at a second transmission rate on a second channel;

a second ADSL/AVR transceiver for transmitting or receiving signals at said first transmission rate on said first channel and transmitting or receiving said second channel signals at said second transmission rate on said second channel; and

a subscriber loop for connecting said first and second ADSL/AVR transceivers together; wherein

each of said first and second ADSL/AVR transceivers includes a controller for selectively changing the transmission rates on said first and second channels.

Col. 19, ll. 27-44.

The Telecommunications Act of 1996, Pub.L. No. 104-104, 110 Stat. 56, requires companies such as Bell Atlantic ("incumbent local exchange carriers" or "ILECs") to provide access to their network to any competitive local exchange carrier ("CLEC"). Pursuant to this statute, Bell Atlantic and Covad, a CLEC that provides digital subscriber line ("DSL") services, have negotiated a series of "interconnection" agreements, on a state-by-state basis, affording Covad access to Bell Atlantic's network and allowing it to collocate equipment in Bell Atlantic's central offices. Bell Atlantic offers its "InfoSpeed DSL" service in Northern Virginia and elsewhere throughout the Mid-Atlantic and Northeastern states. *See* Complaint, at para. 11. Covad did not even come into existence until 1996, and it did not begin to offer commercial services until December 1997, well after the application had been filed for what would become the '786 patent.

In May of 1999, eight months after the '786 patent issued, and two weeks after Covad filed an antitrust action alleging that Bell Atlantic is seeking to monopolize the markets related to DSL services, FN2 Bell Atlantic brought this action to enforce its patent against Covad. Having originally identified three of the 26 patent claims as infringed by Covad (claims 1, 5, and 7), Bell Atlantic subsequently asserted infringement of three additional claims (claims 8, 9, and 21). Bell Atlantic asserts that Covad currently offers the Telespeed(R) and Telesurfer<sup>SM</sup> DSL services FN3 in direct competition with Bell Atlantic's DSL services in Northern Virginia and elsewhere in the United States. *See* Complaint, at para. 13. Covad has made no effort to obtain a license for the '786 patent and is not presently licensed under the patent. *See id.* In essence, this dispute centers around Bell Atlantic's assertion that Covad's DSL service infringes on Bell Atlantic's '786 patent. If the Court interprets the disputed claim terms as argued by Covad in its motion for summary judgment of noninfringement, the ultimate conclusion would be that Covad's DSL services employ technology that is different from, and, therefore, not covered by Bell Atlantic's '786 patent. As a result, no infringement could occur since Covad is utilizing technology that is beyond the scope of Bell Atlantic's "right to exclude" as defined by, and limited to the claims in the '786 patent.

FN2. *See Covad Communications Co. v. Bell Atlantic Corp.*, No. 1:99 cv01046 (D.D.C. filed April 28, 1999).

FN3. The accused DSL circuitry contains transceiver chipsets that are assembled into elements known as "linecards." Linecards are circuit boards that plug into a mounting rack to cooperate with other system elements to manage the DSL functions. The majority of the accused system is implemented with SDSL linecards, while the remainder is implemented through ADSL linecards. Therefore, an analysis of the disputed claim terms requires an examination of both ADSL and SDSL linecards in light of the properly construed claims.

## ***II. The Technology*** FN4

FN4. While the majority of the background information with regard to the technology is taken from Covad's brief in support of the motion for summary judgment of noninfringement, Bell Atlantic stated at the hearing on February 11, 2000, that this information accurately described the technology at issue.

Bell Atlantic and Covad operate high speed data networks by using "digital subscriber line" ("DSL") technology.FN5 The DSL system consists of two high speed modems located at each end of a conventional telephone line, one DSL modem at the telephone company's end, and one at the customer's end. At the telephone company's end, a "DSLAM" ("digital subscriber line access multiplexer") manages the flow of data to and from the DSL modem. The DSL modem at the telephone company's end is usually contained within a circuit card that fits into the DSLAM. The actual circuitry responsible for transmitting and receiving data over the telephone line is a "transceiver." The DSL modem at the customer's end is known as a "CPE" ("customer premise equipment"). In DSL, as in other forms of modem communication, transmission rates are measured in kilo-bits per second ("Kbps") or mega-bits per second ("Mbps").

FN5. DSL services provides high-speed access to the Internet over traditional copper-wire telephone lines. While traditional modems offer access speeds of only up to 56 Kbps, DSL services can provide online connections of up to 6 Mbps, roughly 100 times faster. Moreover, unlike users with traditional modems, users of DSL services can continue to make and receive ordinary voice telephone calls while connected, via the same phone line, to the Internet. *See* Complaint, at para. 8.

Common residential telephone service is known as "POTS" ("Plain Old Telephone Service"). POTS is carried over twisted pair copper wires between the telephone company's central office and the customer's home. The sound of the caller's voice is transmitted over the twisted pair. POTS occupies only a small portion of the total capacity of the twisted pair, and additional communications can be carried on the same wire by using a technique known as "frequency division multiplexing." FN6 The total spectrum is divided into numerous channels, and "bandwidth" refers to the amount of frequency band allocated to a particular channel.

FN6. Bell Atlantic refers in its brief to two other methods for separating two flows of information: time separation and echo cancellation. *See* Bell Atlantic's Brief, at 4.

Figure 4 of the '786 patent illustrates how prior art telephone lines have been divided into channels using frequency division multiplexing. *See* Fig. 4 (attached). At the low end of the frequency spectrum, the POTS channel or an ISDN circuit is given about four kilohertz (4KHz) of the available spectrum. This two-way channel is labeled as channel 302. *See* col. 8, ll. 44-46. Above that, the "upstream" channel, defined as the channel carrying communications from the customer to the phone company, is assigned the frequency range from 83 KHz to about 98 KHz. This upstream channel is labeled as control channel 304. *See* col. 8, ll. 47-48. The "downstream" data channel, defined as the channel carrying communications from the phone company to the customer, is assigned the frequency range from about 100 to 500 KHz. This downstream channel is labeled as data channel 306. *See* col. 8, ll. 57-63.

The bandwidth allocations illustrated in Figure 4 of the '786 patent are those used in asymmetric digital subscriber line ("ADSL") prior art technology. The term "asymmetric" comes from the fact that the upstream channel bandwidth is smaller than the downstream channel bandwidth. High-bit-rate digital subscriber line ("HDSL") technology is prior art technology used to transport high speed data over two twisted pair communication lines. Single-pair high-bit-rate digital subscriber line ("SDSL") technology is a subset of HDSL technology that uses one twisted pair instead of two. HDSL and SDSL technology define the entire frequency spectrum of a communication line as a single channel.

The alleged innovation behind the '786 patent is the concept that communications capacity may be shifted back and forth between channels to suit user needs. User needs are defined in terms of whether more data capacity is required in the upstream or downstream channels. Bell Atlantic describes the invention of the '786 patent as relating "to a transmission system for efficiently, selectively, and interactively transmitting video and other information over a subscriber loop of a public switched telephone network (PSTN), at a variable transmission rate." *See* July Amendment, at 11. Bell Atlantic observes that "variable rate transmission is achieved by providing an asymmetrical digital subscriber line (ADSL) interface with an adjustable variable rate (AVR) functionality at both ends of the subscriber loop." *Id.* When obtaining large files from a central repository such as a video-on-demand outlet, a user would like more communications in the downstream channel than in the upstream channel so that the video can be captured more quickly. *See* col. 12, ll. 3-9. When exchanging large amounts of data in both directions for applications like video conferencing, it is more efficient for the user to shift some of the communications capacity from the downstream channel to the upstream channel to allow equal capacity in both directions. *See* col. 12, ll. 10-20. This shifting of capacity is accomplished by adjusting the frequency range assigned to each channel.

In contrast, because SDSL technology does not have unidirectional channels, it is impossible to shift capacity between directions. There is only one channel and one rate, and, as a result, the traffic in one direction is always the same as the traffic in the other direction. SDSL circuits and other bi-directional communications devices are designed according to the same constraints: the data rate in a bi-directional channel is always the same in each direction and is not independently controlled. Further, in a bi-directional channel, the flow of information must always be in opposite directions. As SDSL circuits have only one channel, it is not possible to take bandwidth from one channel and shift it to another.

## *Analysis*

### *I. Standard of Review*

In patent cases, as well as in all other cases, summary judgment is appropriate when it is apparent from the entire record, viewed in light most favorable to the non-moving party, that there are no genuine disputes of

material fact. *See, e.g.,* Clark v. Alexander, 85 F.3d 146, 150 (4th Cir.1996); *see also* Celotex Corp. v. Catrett, 477 U.S. 317, 322-24, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986); United States v. Diebold, 369 U.S. 654, 655, 82 S.Ct. 993, 8 L.Ed.2d 176 (1962). When a court declines to grant summary judgment, sufficient evidence must exist favoring the nonmoving party which would allow a reasonable jury to return a verdict for that party. *See* Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 250, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986).

A properly supported motion for summary judgment may not be defeated by "the mere existence of some alleged factual dispute between the parties." *Id.* at 247-48, 106 S.Ct. 2505. The requirement is that there are no genuine issues of material fact. *See id.* Entry of summary judgment is mandated "against a party who fails to make a sufficient showing to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial." Celotex, 477 U.S. at 322, 106 S.Ct. 2548. Although an infringement analysis usually involves both questions of fact and issues of law, summary judgment of noninfringement may still be proper. *See* Nike, Inc. v. Wolverine World Wide, Inc., 43 F.3d 644, 646 (Fed.Cir.1994); Chemical Eng'g Corp. v. Esfef Indus., Inc., 795 F.2d 1565, 1571 (Fed.Cir.1986). A good faith dispute about the meaning and scope of asserted claims does not, in and of itself, create a genuine dispute to preclude summary judgment in patent cases. *See* Lantech, Inc. v. Keip Mach. Co., 32 F.3d 542, 546 (Fed.Cir.1994).

## ***II. Covad's Motion for Summary Judgment of Noninfringement of Claims 1, 5, 7, 8, 9, and 21 of the '786 Patent***

[2] [3] [4] [5] Claim construction is a matter of law for the court to decide. *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995) ( *en banc* ), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Claims are construed from the perspective of a person of ordinary skill in the art at the time of the invention. *Id.* at 986. Determination of infringement is a two-part analytic procedure, whereby the claims are first construed as a matter of law, and then the claims are applied to the accused device, a question of fact. *See* EMI Group North America, Inc. v. Intel Corp., 157 F.3d 887, 891 (Fed.Cir.1998); Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1476 (Fed.Cir.1998). Factual questions of infringement are often resolved by the court's construction of the claims. *See* Markman, 52 F.3d at 989 (Mayer, J., concurring) ("to decide what the claims mean is nearly always to decide the case"). "Where the parties do not dispute any relevant facts regarding the accused product, ... but disagree over possible claim interpretations, the question of literal infringement collapses into [one of] claim construction and is amenable to summary judgment." General Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978, 983 (Fed.Cir.1997); Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1578 (Fed.Cir.1996); *see also* Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1464 (Fed.Cir.1998) ("Disputes concerning the meaning of claims do not preclude summary judgment, because the resolution of those disputes is part of the process of claim interpretation, a matter of law.").

[6] [7] It is well-settled that in interpreting a disputed claim, the Court must 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. *See* Markman, 52 F.3d at 979. "Such intrinsic evidence is the most significant source of legally operative meaning of the disputed claim language." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). First, the Court must look to the words of the claims themselves to define the scope of the patented invention. *See* Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed.Cir.1995). "Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other

than their ordinary meaning ...." *Vitronics*, 90 F.3d at 1582; *see also* *Hormone Research Found., Inc. v. Genentech, Inc.*, 904 F.2d 1558, 1563 (Fed.Cir.1990) ("It is a well-established axiom in patent law that a patentee is free to be his or her own lexicographer and thus may use terms in a manner contrary to or inconsistent with one or more of their ordinary meanings." (citations omitted)).

Second, the Court must always review the patent specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. *See Vitronics*, 90 F.3d at 1582. "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." *Markman*, 52 F.3d at 979. The Court of Appeals for the Federal Circuit has repeatedly stated that "[c]laims must be read in view of the specification, of which they are a part." *Id.* The patent specification is a written description of the invention itself which must be clear and complete enough to enable those of ordinary skill in the relevant art to make and use the invention. Therefore, the patent specification is not only highly relevant to claim construction, it is usually dispositive and is referred to as "the single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582.

[8] Third, the Court should also consider the patent's prosecution history, if, as here, it is in evidence. *See Markman*, 52 F.3d at 980. The prosecution history is essentially the complete record of the proceedings before the PTO, and as such, the prosecution history is often of critical significance in claim construction. *See id.* An analysis of the prosecution history may include any express representations made by the applicant regarding the scope of the claims and an examination of any of the prior art cited. *See Vitronics*, 90 F.3d at 1583; *Autogiro Co. of America v. United States*, 181 Ct.Cl. 55, 384 F.2d 391, 399 (1967). It is appropriate for the Court to consider not only the changes made during prosecution, but also the reason for the changes. *See Insta-Foam Prods., Inc. v. Universal Foam Sys., Inc.*, 906 F.2d 698, 703 (Fed.Cir.1990) ("A close examination must be made as to not only what was surrendered, but also the reason for such a surrender."). Prosecution history "limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." *Southwall Techs. Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed.Cir.1995) (holding that statements made during the prosecution history may commit the applicant to a particular meaning for a patent term, which meaning is then binding in litigation).

[9] In most disputes over claim construction, an analysis of the intrinsic evidence alone will resolve any ambiguities. Reliance on extrinsic evidence FN7 is improper except in circumstances where analysis of the intrinsic evidence leaves the disputed claim term unclear. *See Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys.*, 132 F.3d 701, 705-06 (Fed.Cir.1997); *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1216 (Fed.Cir.1995). In *Key Pharmaceuticals v. Hercon Laboratories Corp.*, 161 F.3d 709 (Fed.Cir.1998), the Court of Appeals for the Federal Circuit noted that this "court has made strong cautionary statements on the proper use of extrinsic evidence," and further clarified that "[w]hat is disapproved of is an attempt to use extrinsic evidence to arrive at a claim construction that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent." *Id.* at 716. The Court of Appeals for the Federal Circuit aptly observed the rationale behind the exclusive reliance on intrinsic evidence in the absence of any ambiguities, stating that:

FN7. "Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980.

[t]he 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. In other words, competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention.... Allowing the public record to be altered or changed by extrinsic evidence introduced at trial, such as expert testimony, would make this right meaningless.

Vitronics, 90 F.3d at 1583 (citations omitted); *see also* Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed.Cir.1995) ("A patentee may not proffer an interpretation for the purposes of litigation that would alter the indisputable record consisting of the claims, the specification and the prosecution history, and treat the claims as a 'nose of wax.'").

[10] Patent specifications often contain what are referred to as "preferred embodiments," which further serve to illustrate the claimed invention. Although the Court of Appeals for the Federal Circuit has held that claims should be read in view of the specification, *see, e.g.*, Vitronics, 90 F.3d at 1582, the court has cautioned against artificially limiting the scope of a claim to the preferred embodiment. *See, e.g.* Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1053 (Fed.Cir.1989) ("interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification'"). In Wang Laboratories v. America Online, Inc., 197 F.3d 1377 (Fed.Cir.1999), the Court of Appeals for the Federal Circuit addressed the scope of a court's reliance on "preferred embodiments" as part of the intrinsic evidence. In *Wang*, the plaintiff protested that the court's definition limited the claim to the preferred embodiment. *See id.* at 1382. The Federal Circuit replied:

The usage 'preferred' does not broaden the claims beyond their support in the specification.... The only embodiment described in the [patent] specification is the character-based protocol, and the claims were correctly interpreted as limited thereto.

*Id.* at 1383 (citations omitted); *see also* General Am. Transp. Corp. v. Cryo-Trans, Inc., 93 F.3d 766, 770 (Fed.Cir.1996) ("This is not just the preferred embodiment of the invention; it is the *only* one described." (emphasis in original)); Modine Manufacturing Co. v. United States International Trade Commission, 75 F.3d 1545, 1551 (Fed.Cir.1996)(noting that when the "preferred embodiment" is described as the invention itself, the claims are not entitled to a broader scope than the embodiment); Autogiro, 384 F.2d at 398 ("where the patentee describes an embodiment as being the invention itself and not only one way of utilizing it," this description guides understanding the scope of the claims).

[11] Covad has raised three separate claim construction issues: 1) "plurality of different modes" and "ADSL/AVR(dollars)7D transceiver;" 2) "first" and "second" channels; and 3) "selectively changing transmission rates." To demonstrate that the accused system literally infringes any claim of the '786 patent, Bell Atlantic must establish that Covad's system contains every limitation of the claim. *See* Lemelson v. United States, 752 F.2d 1538, 1551 (Fed.Cir.1985). "It is also well settled that each element of a claim is material and essential," *id.* and "the failure to meet a single limitation is sufficient to negate infringement of the claim." Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1535 (Fed.Cir.1991).

#### **A. "Plurality of Different Modes"**

[12] Covad argues that the Court should construe claim 1's transceiver that operates in a "plurality of different modes" and claim 21's "ADSL/AVR" transceiver to be:

a transceiver that operates by dividing available bandwidth between two channels in at least two of the following ways, (1) where the first channel is smaller than the second ("conventional ADSL" mode); (2)



where the two channels are of "roughly" equal size ("bi-directional" mode); and (3) where the first channel is larger than the second ("reversible" mode).

Bell Atlantic asserts that neither claim 1 nor claim 21 makes a reference to "bandwidth" and argues that the Court should construe the term "mode" as used in claim 1 as "the operational state of the claimed transmission system (when transmitting) as defined by the upstream and downstream transmission rates."

Covad relies exclusively on intrinsic evidence in support of its position. The patent explains that the microprocessor assigned to each unit selects "[t]he transmission bandwidth and mode of the ADSL/AVR transceiver." Col. 11, ll. 61-62. In this context, it discusses using filters to ensure that data transmission occurs over the appropriate bandwidths. *See* col. 11, ll. 62-67. The patent discusses three "different modes," which are *the only ones discussed anywhere in the patent*, namely, the "conventional ADSL" mode, the "bi-directional" mode, and the "reversible" mode. The conventional ADSL mode allocates more capacity to the downstream channel than to the upstream channel, as shown in Figure 4 of the patent. *See* col. 12, ll. 3-10; fig. 4 (attached). The bi-directional mode is one in which the transmission capacity is shifted from one channel to the other to provide "roughly equivalent" upstream and downstream channels, as shown in Figure 10 of the patent. *See* col. 12, ll. 11-21; fig. 10 (attached). The reversible mode allocates less capacity to the downstream channel than to the upstream channel, such that the bandwidth allocation is the reverse of the conventional ADSL mode. *See* col. 12, ll. 22-30.

The patent specification explains that the bandwidth may be allocated between the upstream and downstream channels without making changes to the transceivers:

The encoder/decoder in the digital circuit may controllably transmit and receive over, in effect, the entire range, and use the range in different ways. Conventional ADSL has three different predefined spectrums as described previously. The firmware in the microprocessor/controller can enable the ADSL/AVR transceiver to transmit and receive anywhere in the spectrum ... The range of the spectrum can be set so that it is possible to get more bandwidth going upstream and less bandwidth going downstream.

\* \* \* \* \*

The structure of the chips in the chip set does not need to be changed to vary the mode of the transceiver or the transmission rates. Instead, the transceiver may be given another set of program guides telling it how to reallocate the spectrum.

Col. 13, ll. 12-23, 39-43.

The specification clearly states that this ability to manipulate the bandwidth is one of the useful innovations of the '786 patent: "This capability to manipulate the bandwidth range opens up possibilities to obtain transmission rates greater than the ... rate typically used in ADSL systems." Col. 13, ll. 24-26.

Throughout the patent specification, the inventors describe only three "different modes": conventional ADSL, bi-directional, and reversible ADSL. *See, e.g.*, col. 12, ll. 3-30; col. 13, ll. 6-12, 47-62; col. 14, ll. 7-21. As the patent defines different modes as the shifting of bandwidth back and forth between two channels, FN8 then there are only three logical possibilities for the different modes: where the downstream has greater capacity than the upstream, where the two channels have equal capacity, and where the downstream has smaller capacity than the upstream.

FN8. Despite Bell Atlantic's assertion that downstream and upstream flows of information may also be separated by time or through the use of echo cancellation, the '786 patent only refers to the use of frequency separation (manipulation of the available bandwidth) as a means to separate flows of information. No reference is made to either time separation or echo cancellation within the language of the patent itself.

The patent abstract further clarifies that an "ADSL/AVR transceiver" must operate in multiple modes, and the abstract only discusses the same three modes:

Asymmetrical digital subscriber line interface units operating at variable rates and in variable modes (ADSL/AVRs) over a local loop offer one-way video-on-demand and other services and carry the necessary signaling between the subscribers and information providers. In an asymmetric mode, the interface units frequency multiplex digital information with voice information to the subscriber and support transmission of a reverse control channel from the subscriber to the central office for transmission back to the information provider. Other modes are supported which permit selective bi-directional and reversible communications as well.

Abstract.

The patent repeatedly refers to the "ADSL/AVR" transceiver as including multiple modes, and the only three modes discussed are the conventional ADSL mode, the bi-directional mode, and the reversible ADSL mode. *See, e.g.*, col. 4, ll. 20-23; col. 4, ll. 29-32; col. 10, ll. 59-67; col. 11, l. 61-col. 12, l. 2; col. 13, l. 63-col. 14, l. 5; col. 15, ll. 29-35.

The prosecution history also supports Covad's position with regard to the definition of "plurality of different modes" and the "ADSL/AVR" transceiver. The PTO initially rejected the '786 patent claims as obvious over a prior ADSL patent to Arnon. *See* U.S. Patent No. 5,408,260. In Arnon, the bandwidth of the ADSL channels does not change once communications are established. Bell Atlantic then amended the claims and argued that the Arnon prior art did not bar the '786 patent claims because Arnon did not shift bandwidth from one channel to another as it changed modes. *See* July Amendment, at 14. Bell Atlantic described the Arnon prior art reference as having a single conventional fixed bandwidth distribution: "However, with the ADSL unit of Arnon's subscriber loops appear to be [a] conventional ADSL unit having a bandwidth distribution of the type illustrated in Applicant's Fig. 4." *Id.* Bell Atlantic then distinguished this single bandwidth distribution structure from the scope of the '786 patent's claims:

This is completely different from the present invention in which the ADSL terminal selectively changes the bandwidth for both control [upstream] and data [downstream] channels *in the subscriber loop*.... [E]ven though Arnon teaches a fault induced substitution mode in col. 7, lines 26-44, the bandwidth or transmission rates in the ADSL loops during the fault mode or during the normal modes remain unchanged.

*Id.* at 15 (emphasis in original).

Bell Atlantic therefore represented that a conventional bandwidth system is "completely different" from the '786 patent system, which "selectively changes the bandwidth" of the DSL channels. *See id.*

Bell Atlantic has further stated to the PTO that the '786 claims require that bandwidth be reallocated between

channels:

The ADSL/AVR's of the present invention are a modification of, and an improvement over, conventional ADSL units such as those shown in Figs. 3 and 6 of the disclosure. Conventional ADSL units multiplex voice and signaling information and other information on the subscriber loop using frequency multiplexing to divide the available loop bandwidth into three channels, such as channels 302, 304, and 306 of Fig. 4.... In the present invention, the transmission bandwidth of channels 302, 304, and 306 are controlled for various modes using a microprocessor/controller in the ADSL/AVR unit. The exemplary ADSL/AVR embodiment shown in Fig. 7 operates in one of three modes. The first mode is a conventional ADSL mode, as shown in Fig. 4 ... The second mode is a bi-directional transmission mode ... The third mode is a reversible mode ... Hence, an ADSL/AVR unit effectively functions as a variable rate/variable mode modem ...

Id. at 11-12.

Bell Atlantic added that the "ADSL/AVR" functions "as a variable rate/variable mode modem" operating at the "optimum mode." *See id.* at 13. The prosecution history, as with the language in the patent itself, only refers to three modes, and the only means discussed to change modes is through the reallocation of bandwidth.

Bell Atlantic asserts that the term "mode" as used in claim 1 should be construed by the Court as "the operational state of the claimed transmission system (when transmitting) as defined by the upstream and downstream transmission rates." Bell Atlantic relies first on extrinsic evidence in support of this construction. Bell Atlantic cites to two dictionary definitions of the term "mode." The first is "[t]he operational state of a computer or program." *Microsoft Press Computer and Internet Dictionary*. The second is "[a] particular functioning arrangement or condition: STATUS <a spacecraft in reentry~> <a computer operating in parallel~>." *Merriam Webster's Collegiate Dictionary*.

Bell Atlantic challenges Covad's argument that "modes" must differ in "bandwidth" and states that the dictionary definitions make sense in the context of the patent. Bell Atlantic argues that Covad is attempting to read language into the claims that was not intended, and Bell Atlantic refers to the initial description of the object of the invention, which states:

[I]t is the broad object of the invention to controllably operate in one of a plurality of different modes and at any one of a plurality of different bit rates so as to provide a single transmission platform which may support a plurality of different services ...

Col. 2, ll. 48-52.

Bell Atlantic states that while the preferred embodiment addresses the notion of modes and how one changes them, there is no limitation to changing transmission rates by one particular method such as changing bandwidths. Bell Atlantic asserts that Figures 4 and 10 of the patent support Bell Atlantic's construction as these figures serve as mere illustrations of two examples of implementing modes. With regard to the nature of preferred embodiments, the patent states:

Although the present invention has been described and illustrated in detail, it is clearly understood that the same is by way of illustration an example and is not to be taken by way of limitation, the spirit and scope of the present invention being limited only by terms of the appended claims.

Col. 16, l. 66-col. 17, l. 3.

Bell Atlantic argues that additional limitations cannot be imported into a claim from the written description or preferred embodiment. The Court may, however, construe a specifically claimed limitation in light of the specification, which is all the Court does here. *See Phonometrics*, 133 F.3d at 1466. Further, taking guidance from the Court of Appeals for the Federal Circuit in *Wang*, the discussion of the three modes in the preferred embodiment and the means of changing modes by altering bandwidth are the *only references* to "modes" in the patent. The Court will not broaden claims 1 and 21 beyond their support in the specification, as the three modes discussed in the patent specification literally occupy the field of possibilities contemplated by the '786 patent. If the Court broadened the claims beyond technology even referred to in the patent itself, the purpose of the patent to inform the public of the scope of the claim would be defeated entirely. FN9 It is the opinion of this Court that Bell Atlantic's arguments are an attempt to abuse the privileges of the patent by extending the "right to exclude" beyond the scope of the patent itself. During the prosecution history, Bell Atlantic was careful to define the scope of the patent claims narrowly in order to distinguish it from prior patents such as Arnon. Once the '786 patent had been awarded, however, Bell Atlantic may not later alter its claim definitions in an effort to define the patent as broadly as possible in order to establish a better litigation position.

FN9. A patent is a fully integrated written instrument. By statute, a patent must provide a written description of the invention "in such full, clear, concise, and exact terms" that will enable one of ordinary skill in the art to make and use it. *See 35 U.S.C. s. 112*. The applicant for a patent is also required to conclude the specification with claims "particularly pointing out and distinctively claiming the subject matter which the applicant regards as his invention." *Id.* Further, the Court of Appeals for the Federal Circuit in *Markman* emphasized the need to determine the scope of patent: "it is only fair (and statutorily required) that competitors be able to ascertain to a reasonable degree the scope of the patentee's right to exclude." *Markman*, 52 F.3d at 978; *see also Merrill v. Yeomans*, 94 U.S. 568, 573-74, 24 L.Ed. 235 (1877) ("It seems to us that nothing can be more just and fair, both to the patentee and to the public, than that the former should understand, and correctly describe, just what he has invented, and for what he claims a patent.").

The Court further recognizes that the Court of Appeals for the Federal Circuit has described intrinsic evidence as "the most significant source of the legally operative meaning of claim language." *Vitronics*, 90 F.3d at 1582. The Court will not, as Bell Atlantic requests, rely on extrinsic evidence in the form of dictionary definitions and expert testimony referring to time separation and echo cancellation, as an analysis of intrinsic evidence alone will resolve any ambiguities in the disputed claim terms. Thus, the Court finds that claim 1's transceiver that operates in a "plurality of different modes" and claim 21's "ADSL/AVR" transceiver mean:

a transceiver that operates by dividing available bandwidth between two channels in at least two of the following ways, (1) where the first channel is smaller than the second ("conventional ADSL" mode); (2) where the two channels are of "roughly" equal size ("bi-directional" mode); and (3) where the first channel is larger than the second ("reversible" mode).

### ***B. "First" and "Second" Channels***

[13] Covad asserts that the Court should construe each of the first and second channels of claims 1 and 21 as: "An amount of bandwidth isolated for communications that may be either unidirectional or bi-directional." Bell Atlantic argues that the Court should construe each of the first and second channels of claims 1 and 21 as: "A one-way path between communicating entities." Both parties agree that the terms "first" and "second" require that there be two distinct channels and that the meaning of the term "channel" depends on the context in which it is used. The parties also agree that one type of channel contemplated by the '786 patent is the frequency division multiplexed channels shown in Figures 4 and 10 of the '786 patent.FN10

FN10. Frequency division multiplexed channels are regions of the available spectrum reserved for a particular communications task, usually by isolating a range of frequencies using electronic filters.

The '786 patent repeatedly refers to "channels" by the reference numbers 302, 304, 306, 302', 304', and 306'. The patent explains that ADSL transceivers use "frequency multiplexing to divide the available loop bandwidth into three channels 302, 304, and 306 (see FIG.4)." *See* col. 8, ll. 20-23. Figures 4 and 10 show that channels 302, 304, 306, 302', 304', and 306' all correspond to "bands of frequencies"-i.e., bandwidths-along the communications spectrum. *See* Figs. 4, 10 (attached). There are numerous references to these frequency channels scattered throughout the specification. *See, e.g.*, col. 8, ll. 15-26; col. 8, ll. 44-65; col. 9, ll. 8-10; col. 12, ll. 17-20.

The '786 patent repeatedly refers to a bi-directional channel in the singular, which would clearly contradict Bell Atlantic's proposed definition of channel as a "a one-way path between communicating entities." In one instance, the patent states that "... the two-way control *channel* may be unacceptably slow ...." Col. 2, ll. 29-30 (emphasis added). In another instance, the patent refers to "a small ... two-way reverse control *channel* upstream on the ISDN packet data network between the subscriber and the central office." Col. 8, ll. 24-26 (emphasis added). Another reference states that "[t]he frequency channel represented by range 302 in FIG.4 thus establishes a 2-way *channel* used to provide standard POTS service or ISDN (2B+D) service over the ADSL line." Col. 8, ll. 44-46 (emphasis added). The prosecution history also refers to bi-directional channel 302 in the singular. In the July Amendment, Bell Atlantic explained to the PTO that "[t]he bandwidth provided by *channel* 302 provides connectivity for conventional telephone services, usually below 4Khz." FN11 July Amendment, at 12 (emphasis added).

FN11. Conventional telephone service is a bi-directional channel previously described as POTS.

Bell Atlantic states that there is no dispute that, even under Covad's proper construction of "channels," the two "channels" called for by claims 1 and 21 are present in the accused ADSL systems. Thus, regardless of how this Court rules on Covad's "channel" construction, the Court must deny Covad's motion of noninfringement as to its ADSL systems if this Court rejects Covad's other two proposed constructions regarding "mode" and "selectivity."

Bell Atlantic argues that the Court should rely on extrinsic evidence from the *Telecommunications Primer* for the proposed definition of "channel" to be applied: "A one-way path between communicating entities." E. Bryan Carne, *Telecommunications Primer: Data, Voice and Video Communications*, at 35. Bell Atlantic also directs the Court's attention to the definition of "circuit" defined in the text as "the combination of two channels, one in each direction, between communicating entities." *Id.* Bell Atlantic, therefore, argues that based on extrinsic evidence, a path allowing communication from point A to point B is one channel, and a

path allowing communication from point B to point A is a different channel.FN12

FN12. This same text, however, under a section addressing "frequency-division multiplexing," states that "[a] channel is defined by its center frequency, and its bandwidth, or by its upper- and lower-frequency limits." *Id.* at 223.

Bell Atlantic states that the patent refers to channels not separated from one another in frequency. The specification notes that, "[a]lternatively, a fractional T1 interface and control software could be used at the subscriber end to provide separate multiplexed carriers or channels of up to 24 DS-O's on a regular trunk." Col. 14, ll. 34-37. The specification also states that "each of the channels can be combined with others in the 1/0 DSC 15 serving the homes or the 1/0 DCS 14 on the LAN end and thereby connected to the LAN over a single T1 link." Col. 8, ll. 6-9. Plaintiff further relies on extrinsic evidence in the form of expert testimony in support of the assertion that there are various ways of implementing multiple channels in a transmission system, such as separating them by frequency, by time, or through the use of echo cancellation. *See* Bell Atlantic's Brief, at 4.

The patent explicitly refers to a two-way or bi-directional channel in the singular, therefore, an analysis of the intrinsic evidence alone will resolve any ambiguities with regard to the reference to the first and second channels of claims 1 and 21. Bell Atlantic's proposed definition of "channel" from *The Telecommunications Primer* is in direct conflict with the language of the patent, as the inventors clearly intended "channel" to encompass both one-way and two-way segments of bandwidth. Thus, the Court finds that each of the first and second channels of claims 1 and 21 mean: "An amount of bandwidth isolated for communications that may be either unidirectional or bi-directional."

### ***C. "Selectively Changing Transmission Rates"***

[14] Covad asserts that the Court should construe "selectively changing said first and second transmission rates" as altering both the first and second data rates from one level to another during a communication session. Bell Atlantic argues that the phrase "during a communication session" is a limitation that should not be read into the claims. The patent explains that the transmission rate can "be selected in any one of a number of ways during a transmission session." Col. 13, ll. 63-65; *see also* col. 15, ll. 4-6 ("The ADSL/AVR service can be changed over a range from conventional ADSL to full AVR functionality at any time during a transmission session."). To implement the recited change, "[a] menu may be displayed at the subscriber end which queries for desired parameters such as the ... data rate. The subscriber then selects the desired data rate, or indicates transmission at a variable rate, through software or through selection of buttons on the set top box." Col. 14, ll. 11-16. Alternatively, a selected data rate could be "programmed or controlled so that it is executed upon the performance of some event," such as after a search was completed and a file was ready to be downloaded. *See* col. 14, ll. 39-43, 55-58.

With regard to the prosecution history, claim I initially recited a controller "for selecting the mode in which said first transceiver operates or for controlling said first and second transmission rates." July Amendment, at 3. The PTO rejected the claim over the Arnon patent that disclosed a system that selected either a fault or a normal modes before initiating the communication session. *See* Arnon, at col. 7, ll. 26-44. Bell Atlantic amended the claim to include the "selectively changing" limitation and argued that "[e]ven though Arnon teaches a fault induced substitution mode in col. 7, lines 26-44, the bandwidth or transmission rates in the ADSL loops during the fault mode or during the normal modes remains unchanged. Hence it is submitted

that Arnon fails to show, teach, or suggest selectively changing the first and second transmission rates in the subscriber loop." July Amendment, at 15. Covad notes further that one of Bell Atlantic's press releases, issued to announce the grant of the '786 patent refers to the invention's ability to "change the rate of a DSL transmission 'on the fly.'" Bell Atlantic Press Release (December 14, 1998).

With regard to this disputed claim construction, Bell Atlantic first looks to the language of the patent itself to support its position that Covad's proposed construction attempts to read language into the claim that was not contemplated by the inventors. The patent states the following:

When a request for a change in modes (e.g., from ADSL to bi-directional) is received during or prior to a communication session, a negotiation is made between the two ADSL/AVR boxes so that they are operating in a compatible mode within a short period of time.

\* \* \* \* \*

The changes in the mode and rate for the channel can be accomplished by the ADSL/AVR interface in the subscriber's premises. Any intra-session change should be accomplished within 10 seconds and, preferably, within two seconds so that the subscriber does not experience a long delay between mode or rate changes.

\* \* \* \* \*

In addition to direct subscriber selection or control of modes during a communication session mentioned above, the selection of modes may also be made indirectly, programmed or otherwise controlled so that it is executed upon the performance of some event.

Col. 14, ll. 7-11, 22-27, 39-43.

In the alternative, the patent states that "the subscriber could instruct the LAN or file server to utilize a command file to change the mode and download the file or information upon the occurrence of some detectable event or at a designated time." Col. 14, ll. 59-62. In addition, the patent states that:

The use of a common hardware platform and programmable firmware also provides advantages in initial manufacturing and cost, and in product enhancement, upgrade costs, and time to market. For example, a subscriber could receive a fractional T1 service at 384 Kbps using the ADSL/AVR system and then upgrade the capability of the service to higher data rates in the future using a network management system without altering the hardware.

Col. 11, ll. 53-60.

Bell Atlantic states that receiving a 384 Kbps service *now*, and upgrading the service to higher data rates *in the future*, is a contemplated advantage of this "common hardware platform."

Covad is attempting to read limitations into the claims that were not contemplated by the inventors. The Court will not limit the claims in such a way, where the meaning of the claim terms are clear. The patent in several instances refers to changing transmission rates at some time in the future, thus no temporal limitation will be read into the claims. Thus, the Court finds that "selectively changing" the first and second transmission rates in claims 1 and 21 means that a change is chosen and occurs, although it need not occur

during a communication session.

#### ***D. Doctrine of Equivalents***

[15] Even if the accused device differs enough from an asserted claim to preclude a finding of literal infringement, that device may still infringe under the doctrine of equivalents if there is "equivalence between those elements of the accused product and the claimed limitations of the patented invention that are not literally infringed." *Zelinski v. Brunswick Corp.*, 185 F.3d 1311, 1316 (Fed.Cir.1999) (citing *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997)). Infringement occurs under the doctrine of equivalents if the difference between the particular element and the claim limitation are "insubstantial." *See id.* A test to determine "insubstantiality" is whether "the element performs substantially the same function in substantially the same way to obtain substantially the same result as the claim limitation." *See id.* at 1316-17 (citing *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608, 70 S.Ct. 854, 94 L.Ed. 1097 (1950)).

[16] Bell Atlantic has asserted only one issue under the doctrine of equivalents in this case. Bell Atlantic asserts that the single bi-directional channel used by Covad's SDSL linecards is the equivalent of two unidirectional channels required by the claims. The differences between the two distinct channels of claims 1 and 21 and the bi-directional channel of Covad's SDSL linecard are substantial. Covad's single channel utilizes echo cancellation techniques to allow two-way communications, which differs substantially from two separate unidirectional channels. Further, a bi-directional channel has a single rate, as the upstream transmission rate is not controlled independently of the downstream transmission rate. Two unidirectional channels, however, may have different transmission rates which may be controlled independently. As such, Covad's SDSL transceivers perform substantially different functions in a substantially different way to achieve substantially different results. Therefore, Covad's SDSL system does not infringe the '786 patent under the doctrine of equivalents.

#### ***E. Claim Construction and Covad's Motion for Summary Judgment of Noninfringement***

[17] [18] In order for there to be infringement, each and every limitation set forth in a patent claim must be found in the accused device, either literally or under the doctrine of equivalents. *See Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed.Cir.1985). In light of the Court's construction of the disputed claims, the Court **FINDS** that Covad's DSL system, including both ADSL and SDSL linecards, does not infringe the '786 patent, as each of the limitations set forth in claims 1 and 21 are not found in the accused device. Covad's motion for summary judgment of noninfringement of claims 1, 5, 7, 8, 9, and 21 of the '786 patent is **GRANTED**.

#### ***III. Bell Atlantic's Motion for Summary Judgment on Covad's Seventh (Estoppel) and Ninth (Implied License) Affirmative Defenses***

Bell Atlantic's motion for summary judgment on Covad's seventh (estoppel) and ninth (implied license) affirmative defenses is moot in light of the Court's ruling on Covad's motion for summary judgment of noninfringement. Accordingly, this motion need not be addressed by the Court.

#### ***IV. Bell Atlantic's Motion for Summary Judgment on Covad's Fifth (Patent Misuse) Affirmative Defense***

Bell Atlantic's motion for summary judgment on Covad's fifth (patent misuse) affirmative defense is moot in light of the Court's ruling on Covad's motion for summary judgment of noninfringement. Accordingly, this



motion need not be addressed by the Court.

***V. Bell Atlantic's Motion for Summary Judgment on Covad's Eighth (Telecommunications Act) Affirmative Defense***

Bell Atlantic's motion for summary judgment on Covad's eighth (Telecommunications Act) affirmative defense is moot in light of the Court's ruling on Covad's motion for summary judgment of noninfringement. Accordingly, this motion need not be addressed by the Court.

***VI. Covad's Motion for Summary Judgment on its Eighth (Telecommunications Act) Affirmative Defense***

Covad's motion for summary judgment on its eighth (Telecommunications Act) affirmative defense is moot in light of the Court's ruling on Covad's motion for summary judgment of noninfringement. Accordingly, this motion need not be addressed by the Court.

***VII. Bell Atlantic's Motion for Leave to File a Supplemental Memorandum Establishing that Covad's Own Experts Reject and Contradict Covad's Key Noninfringement Argument***

Bell Atlantic's motion for leave to file a supplemental memorandum was not filed until February 25, 2000, two weeks after the Court conducted a hearing on the pending motions for summary judgment and one week after the Court informed the parties as a courtesy via facsimile of its decision to grant Covad's motion for summary judgment of noninfringement. Rule 56(e) of the Federal Rules of Civil Procedure requires Bell Atlantic to timely present its arguments and evidence in opposition to Covad's motion for summary judgment. *See* Fed.R.Civ.P. 56(e); *see also* Cray Communications, Inc. v. Novatel Computer Sys., Inc., 33 F.3d 390, 392-96 (4th Cir.1994) (affirming district court's denial of motion to "supplement" record). Therefore, Bell Atlantic's motion for leave to file a supplemental memorandum establishing that Covad's own experts reject and contradict Covad's key noninfringement argument is DENIED as it was not timely filed and it addresses extrinsic evidence FN13 which the Court is not even considering in ruling on the motion for summary judgment of noninfringement.

FN13. The Court again notes that the Court of Appeals for the Federal Circuit has stated that "[p]atents should be interpreted on the basis of their intrinsic record, not on the testimony of such after-the-fact 'experts' that played no part in the creation and prosecution of the patent." *Bell & Howell*, 132 F.3d at 706.

***Conclusion***

For the reasons stated above, claim 1's transceiver that operates in a "plurality of different modes" and claim 21's "ADSL/AVR" transceiver are construed as:

a transceiver that operates by dividing available bandwidth between two channels in at least two of the following ways, (1) where the first channel is smaller than the second ("conventional ADSL" mode); (2) where the two channels are of "roughly" equal size ("bi-directional" mode); and (3) where the first channel is larger than the second ("reversible" mode).

Each of the first and second channels of claims 1 and 21 are construed as "an amount of bandwidth isolated for communications that may be either unidirectional or bi-directional." The term "selectively changing" in claims 1 and 21 is not construed to include the restriction of changing "during a communication session,"

and the change may occur at any time. Covad's motion for summary judgement of noninfringement of claims 1, 5, 7, 8, 9, and 21 of the '786 patent is **GRANTED**. Bell Atlantic's motion for summary judgment on Covad's seventh (estoppel) and ninth (implied license) affirmative defenses, Bell Atlantic's motion for summary judgment on Covad's fifth (patent misuse) affirmative defense, Bell Atlantic's motion for summary judgment on Covad's eighth (Telecommunications Act) affirmative defense, and Covad's motion for summary judgment on its eighth (Telecommunications Act) affirmative defense are moot in light of the Court's ruling on Covad's motion for summary judgment of noninfringement. Accordingly, these motions need not be addressed by the Court. Bell Atlantic's motion for leave to file a supplemental memorandum establishing that Covad's own experts reject and contradict Covad's key non-infringement argument is **DENIED**.

The Clerk is **REQUESTED** to send copies of this Order and Opinion to Bell Atlantic's counsel and counsel for Covad.

It is so **ORDERED**.

### ATTACHMENT



### FIG 10



E.D.Va.,2000.

Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc.

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