IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

INTELLECTUAL VENTURES II, LLC, PLAINTIFF, V. AT&T CORP. D/B/A AT&T ADVANCED SOLUTIONS D/B/A SBC ADVANCED SOLUTIONS; AT&T COMMUNICATIONS OF TEXAS, LLC; AT&T OPERATIONS, INC.; AT&T SERVICES, INC.; AT&T VIDEO SERVICES, INC. A/K/A AT&T VIDEO SERVICES, LLC; SBC INTERNET SERVICES, INC. D/B/A AT&T ENTERTAINMENT SERVICES D/B/A AT&T INTERNET SERVICES D/B/A PACIFIC BELL INTERNET SERVICES; AND SOUTHWESTERN BELL TELEPHONE COMPANY, DEFENDANTS.	§	CAUSE NO. 1:13-CV-116-LY (LEAD CASE)
INTELLECTUAL VENTURES II, LLC, PLAINTIFF, V. CENTURYTEL BROADBAND SERVICES, LLC D/B/A CENTURYLINK; AND QWEST CORP. D/B/A CENTURYLINK QC, DEFENDANTS.	§	CAUSE NO. 1:13-CV-118-LY
INTELLECTUAL VENTURES II, LLC, PLAINTIFF, V. WINDSTREAM COMMUNICATIONS TELECOM, LLC; WINDSTREAM COMMUNICATIONS KERRVILLE,	§	CAUSE NO. 1:13-CV-119-LY

LLC; WINDSTREAM SUGARLAND,	§
INC.; TEXAS WINDSTREAM, INC.,	§
VALOR TELECOMMUNICATIONS OF	§
TEXAS, LLC D/B/A WINDSTREAM	§
COMMUNICATIONS SOUTHWEST;	§
PAETEC COMMUNICATIONS, INC.;	§
AND MCLEOD USA	§
TELECOMMUNICATIONS SERVICES,	§
LLC D/B/A PAETEC BUSINESS	§
SERVICES,	§
DEFENDANTS.	§

MEMORANDUM OPINION AND ORDER REGARDING CLAIMS CONSTRUCTION

Before the court are the parties' Amended Joint Claim Construction Statement filed June 18, 2014 (Clerk's Doc. No. 70); Plaintiff's Opening Claim Construction Brief filed April 11, 2014 (Clerk's Doc. No. 52); Defendants' Opening Claim Construction Brief filed April 11, 2014 (Clerk's Doc. No. 53); Plaintiff's Reply Claim Construction Brief filed May 23, 2014 (Clerk's Doc. No. 55); Defendants' Reply Claim Construction Brief filed May 23, 2014 (Clerk's Doc. No. 56); Plaintiff's Addendum to the Declaration of Dr. George A. Zimmerman and Supplemental Declaration of Dr. Douglas A. Chrissan in Support of Plaintiff's Reply Claim Construction Brief filed June 18, 2014 (Clerk's Doc. Nos. 67-1 & 67-2); Defendants' Notice of Supplemental Authority filed June 18, 2014 (Clerk's Doc. No. 68); and the parties' claim-construction presentations.

The court held a two day claim-construction hearing beginning on June 19, 2014. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996). After considering the patents and their prosecution history, the parties' claim-construction briefs and additional filings, the applicable law regarding claim construction, and argument of counsel, the court now renders its order with regard to claim construction.

1. Introduction

The court renders this memorandum opinion and order to construe the claims in U.S. Patent No. 6,246,695 ("'695 Patent"); U.S. Patent No. 6,424,636 ("'636 Patent"); U.S. Patent No. 6,798,735 ("'735 Patent"); U.S. Patent No. 7,817,532 ("'532 Patent"); U.S. Patent No. 6,266,348 ("'348 Patent"); U.S. Patent No. 5,534,912 ("'912 Patent"); 5,790,548 ("'548 Patent"); U.S. Patent No. 6,101,182 ("'182 Patent"); U.S. Patent No. 6,567,473 ("'473 Patent"); U.S. Patent No. 6,667,991 ("'991 Patent"); U.S. Patent No. 7,649,928 ("'928 Patent"); U.S. Patent No. 7,860,175 ("'175 Patent"); U.S. Patent No. 8,045,601 ("'601 Patent"); U.S. Patent No. 6,498,808 ("'808 Patent"); U.S. Patent No. 6,654,410 ("'410 Patent"); U.S. Patent No. 7,508,876 ("'876 Patent"); U.S. Patent No. 6,647,068 ("'068 Patent"); U.S. Patent No. 7,272,171 ("'171 Patent"); and U.S. Patent No. 7,826,545 ("'545 Patent") (collectively "patents-in-suit"). The parties have divided the above-listed 19 patents into eight "families," wherein each family possesses the same specification and priority date. The patents-in-suit generally relate to digital subscriber line ("DSL") technology.

Plaintiff Intellectual Ventures II, LLC ("Intellectual Ventures" or "IV") alleges that Defendants[1] infringe the patents-in-suit.

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[1] By its order of June 17, 2013 (Clerk's Doc. No. 39) the court informally consolidated Case Nos. 1:13-cv-00116-LY (the '116 case), 1:13-cv-00118-LY, and 1:13-cv-00119-LY for pretrial purposes only. The court ordered all filings in the three cases to be made under the '116 case. The constructions set forth in this order apply in all three cases.

Additionally, as the claim-construction arguments and interests of Defendants AT&T Corp. d/b/a AT&T Advanced Solutions d/b/a SBC Advanced Solutions, AT&T Communications of Texas, LLC, AT&T Operations, Inc., AT&T Services, Inc., AT&T Video Services, Inc. a/k/a AT&T Video Services, LLC, SBC Internet Services, Inc. d/b/a AT&T Entertainment Services d/b/a AT&T Internet Services d/b/a Pacific Bell Internet Services, Southwestern Bell Telephone Company, Centurytel BroadBand Services, LLC d/b/a CenturyLink, Inc., Qwest Corp. d/b/a CenturyLink QC, McLeodUSA Telecommunications Services, LLC d/b/a PaeTec Business Services, PaeTec Communications, Inc., Texas Windstream, Inc., Valor Telecommunications of Texas, LLC d/b/a Windstream Communications Southwest, Windstream Communications Kerrville, LLC, Windstream Communications Telecom, LLC, Windstream Communications, Inc., and Windstream Sugar Land,

2. Legal Principles of Claim Construction

Determining infringement is a two-step process. *See Markman,* 52 F.3d at 976 ("[There are] two elements of a simple patent case, construing the patent and determining whether infringement occurred . . . ."). First, the meaning and scope of the relevant claims must be ascertained. *Id.* Second, the properly construed claims must be compared to the accused device. *Id.* Step one, claim construction, is the current issue before the court.

The court construes patent claims without the aid of a jury. *See Markman* 52 F.3d at 979. The "words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). The ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention. *Id.* at 1313. The person of ordinary skill in the art is deemed to have read the claim term in the context of the entire patent. *Id.* Therefore, to ascertain the meaning of claims, courts must look to the claims, the specification, and the patent's prosecution history. *Id.* at 1314–17; *Markman*, 52 F.3d at 979.

Claim language guides the court's construction of claim terms. *Phillips*, 415 F.3d at 1314. "[T]he context in which a term is used in the asserted claim can be highly instructive." *Id.* Other claims, asserted and unasserted, can provide additional instruction because "terms are normally used consistently throughout the patent." *Id.* Differences among claims, such as additional limitations in dependent claims, can provide further guidance. *Id.*

Inc. do not diverge with regard to claim construction, the court will refer to Defendants collectively as "AT&T."

Claims must also be read "in view of the specification, of which they are a part." *Markman*, 52 F.3d at 979. The specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed.Cir.2002) (internal citations omitted). In the specification, a patentee may define a term to have a meaning that differs from the meaning that the term would otherwise possess. *Phillips*, 415 F.3d at 1316. In such cases, the patentee's lexicography governs. *Id.* The specification may also reveal a patentee's intent to disclaim or disavow claim scope. *Id.* Such intentions are dispositive for claim construction. *Id.* Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiment. *Electro Med. Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

The prosecution history is another tool to supply the proper context for claim construction because it demonstrates how the inventor understood the invention. *Phillips*, 415 F.3d at 1317. A patentee may serve as his own lexicographer and define a disputed term in prosecuting a patent. *Home Diagnostics, Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1356 (Fed.Cir.2004). Similarly, distinguishing the claimed invention over the prior art during prosecution indicates what the claims do not cover. *Spectrum Int'l v. Sterilite Corp.*, 164 F.3d 1372, 1378–79 (Fed.Cir.1988). The doctrine of prosecution disclaimer precludes patentees from recapturing specific meanings that were previously disclaimed during prosecution. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed.Cir.2003). Disclaimers of claim scope must be clear and unambiguous. *Middleton, Inc. v. 3M Co.*, 311 F.3d 1384, 1388 (Fed.Cir.2002).

Although "less significant than the intrinsic record in determining the legally operative meaning of claim language," the court may rely on extrinsic evidence to "shed useful light on the relevant art." *Phillips*, 415 F.3d at 1317 (quotation omitted). Technical dictionaries and treatises may help the court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but such sources may also provide overly broad definitions or may not be indicative of how terms are used in the patent. *Id.* at 1318. Similarly, expert testimony may aid the court in determining the particular meaning of a term in the pertinent field, but "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful." *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.* Extrinsic evidence may be useful when considered in the context of the intrinsic evidence, *id.* at 1319, but it cannot "alter a claim construction dictated by a proper analysis of the intrinsic evidence." *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1139 (Fed. Cir. 2004).

3. Discussion

A. Agreed Terms

Prior to the claims-construction hearing, the parties agreed to the construction of various claim terms. The following table summarizes the parties' agreement. The court hereby adopts the agreed construction of all claim terms as listed below.[2]

Term; Patent - Claim	Agreed Construction
U.S. Patent Nos. 6,798,735 and 7,817,532	
"bit allocation table" '735-Claims 1, 9, 10	**table that indicates for all subchannels of a multicarrier signal, the number of bits to be encoded on each subchannel**
"developing a second bit allocation table" '735-Claim 1	**forming or updating a second bit allocation table that is non-duplicative of the first bit allocation table**
"frame" '735-Claim 10 '532-Claims 4, 6, 8, 9, 11	**grouping of bits to be modulated into a DMT symbol and/or demodulated from a DMT symbol**
"...a method for modulation bits onto subchannels..." '735-Claim 1	**typo; should read: ...a method for modulating bits onto subchannels...**

[2] Throughout, the **bolded** terms indicate the court's adopted construction.

Term; Patent - Claim	Agreed Construction
U.S. Patent Nos. 6,567,473, 7,860,175, 6,667,991, 7,649,928, 8,045,601 and 6,498,808	
"seamlessly changing" "seamlessly transitioning" "seamlessly transition" "seamless transition" '808-Claims 1, 3, 7, 10, 40, 109 '473-Claims 42, 57 '991-Claims 9, 12, 13, 18 '928-Claims 1, 2, 3, 5, 6, 7 '601-Claims 17, 19, 21, 23	**changing, during data [transmission/reception] and not during initialization, without an interruption in the [transmission/reception] of data**
"seamlessly changes" '808-Claims 40, 109	**changes, during data [transmission/reception] and not during initialization, without an interruption in the [transmission/reception] of data**
"seamlessly entering" '473-Claims 32, 37, 42, 57, 366, 372	**entering, during data [transmission/reception] and not during initialization, without an interruption in the [transmission/reception] of data**
"second transmission bit rate" '808-Claims 1, 3, 5, 40, 41	**second bit rate used to transmit bits different from the first bit rate**
"second reception bit rate" '808-Claims 7, 10, 109	**second bit rate used to receive bits different from the first bit rate**

Term; Patent - Claim	Agreed Construction
"second data rate" '473-Claims 32, 37, 366, 372 '601-Claim 6	**second data rate used to transmit or receive data different from the first data rate**
"second bit rate" '473-Claims 42, 57 '991-Claims 9, 12, 13, 18	**second bit rate used to transmit or receive data different from the first bit rate**
"frame" '928-Claims 2, 6 '601-Claim 16	**grouping of bits to be modulated into a DMT symbol and/or demodulated from a DMT symbol**
"codeword" '808-Claims 1, 3, 4, 5, 7, 8, 10, 40, 41, 109 '473-Claims 32, 37, 42, 57, 366, 372 '991-Claims 9, 12, 13, 18 '928-Claims 1, 2, 3, 5, 6, 7 '175-Claims 1, 7 '601-Claims 6, 7, 9, 11, 17, 21	**R-S codeword, which includes overhead framing bytes, user data bytes, and Reed-Solomon FEC check bytes**

Term; Patent - Claim	Agreed Construction
"bit allocation table" "Bit Allocation Table" '808-Claims 1, 3, 5, 7, 10, 19, 20, 41, 43, 109 '473-Claims 32, 35, 37, 40, 42, 50, 57, 366, 367, 372, 373 '991-Claims 9, 12, 13, 18 '601-Claim 13	**table that indicates for all subchannels of a multicarrier signal, the number of bits to be encoded on each subchannel**
"...transmitting the plurality codewords..." '991-Claims 9, 12	**typo; should read: ...transmitting the plurality of codewords...**
"...receiving the plurality codewords..." '991-Claims 13, 18	**typo; should read: ...receiving the plurality of codewords...**
"inverted synch symbol" '928-Claim 6	**typo; should read: inverted sync symbol**
[Preambles various of claims] '175-Claims 1, 7 '991-Claims 9, 12, 13, 18 '473-Claims 32, 37, 42, 57, 366, 372	**preambles are limitations**

Term; Patent - Claim	Agreed Construction
"In a multicarrier a transceiver..." '928-Claims 1, 5	**a typo; should read: In a multicarrier transceiver...**
U.S. Patent No. 6,266,348	
"first and second parameter sets defining data communications over said channels" '348-Claims 47, 49, 52	**first and second parameter sets, each of which defines data communications over both the upstream and downstream channels**
U.S. Patent No. 5,534,912	
"subscriber loops" "subscriber loop" '912-Claims 2, 3	**twisted pair or copper, telephone wires**
[Preamble of Claim 1] '912-Claim 1	**Preamble is a limitation**
U.S. Patent Nos. 5,790,548 and 6,101,182	
"Internet address" '548-Claim 26	**a number that identifies an entity on the Internet**
"Internetwork addresses" '182-Claim 3	**numbers that identify entities on the data internetwork**

Term; Patent - Claim	Agreed Construction
"local loops" "subscriber lines" '182-Claim 1 '182-Claim 14	**twisted pair or copper, telephone wires**
"said Internet service providers providing selective connection to information providers via said Internet subscriber lines" '182-Claim 4	**said Internet service providers transferring data between users and information providers**
"domain name server means" '182-Claim 2	**a server that translates domain names (e.g., www.yahoo.com) into an internet address (e.g., 164.109.211.239)**
U.S. Patent Nos. 6,654,410 and 7,508,876	
"second data rate" '410-Claims 1, 12, 14, 77, 78 '876-Claim 1	**second data rate used to transmit or receive data different from the first data ratebytes, and Reed-Solomon FEC check bytes**
"codeword" '410-Claims 12, 14, 77, 78 '876-Claim 1	**R-S codeword, which includes overhead framing bytes, user data bytes, and Reed-Solomon FEC check bytes**

Term; Patent - Claim	Agreed Construction
"bit allocation table" '410-Claims 14, 77, 78 '876-Claim 1	**table that indicates for all subchannels of a multicarrier signal, the number of bits to be encoded on each subchannel**
"seamless change" '410-Claims 12, 14, 77, 78 '876-Claim 1	**change, during data [transmission / reception], without an interruption in the [transmission / reception] of data** IV stipulates that **the revised construction of "seamless[ly] change / adapting" in the '410 and '876 Patents does not cover changing the data rate by restarting the initialization process.** IV stipulates that **the phrase "the [transmission / reception] of data" in the revised construction refers to user data, as opposed to data used only for the purpose of initialization.**
"seamlessly adapting" '410-Claims 12, 14, 77, 78 '876-Claim 1	**changing, during data [transmission / reception], without an interruption in the [transmission / reception] of data** IV stipulates that **the revised construction of "seamless[ly] change / adapting" in the '410 and '876 Patents does not cover changing the data rate by restarting the initialization process.** IV stipulates that **the phrase "the [transmission / reception] of data" in the revised construction refers to user data, as opposed to data used only for the purpose of initialization.**

B. Disputed Terms

The parties dispute the construction of 66 terms. The following table summarizes the parties' proposed constructions of the disputed terms.

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
U.S. Patent Nos. 6,246,695 and 6,424,636		
1. "transceiver" '695-Claim 20	plain and ordinary meaning; no construction needed. Alternatively: a device that is capable of both transmitting and receiving signals	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)
2. "DSL modem or line-card" '636-Claims 52, 75	a modulator/demodulator or an electronic circuit board for DSL signals	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)

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
3. "available operation modes" '695-Claim 20	available states of operation wherein the set of downstream and upstream transmission rates is different for each state	at least two of the following three modes characterizing bandwidth allocation between first and second channels: (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)
4. "at least two asymmetrical digital subscriber line ADSL modes" "said at least two ADSL operation modes" '695-Claim 20	at least two states of operation wherein the set of downstream and upstream transmission rates is unequal and different for each state	a "conventional ADSL" mode where the bandwidth allocation of the first channel is smaller than the second channel, and a "reversible" mode where the bandwidth allocation of the first channel is larger than the second channel
U.S. Patent Nos. 6,798,735 and 7,817,532		
5. "allocation of bits to subchannels" "allocation of bits" '532-Claims 4, 6-12	indication of the number of bits to be encoded to subchannels of a multicarrier signal	allocation of bits for all subchannels of a multicarrier signal that indicates the number of bits to be encoded on each subchannel

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
6. "storing the first and second bit allocation tables at each of the communication units" '735-Claim 1	plain and ordinary meaning; no construction needed	at each of the communication units, maintaining the first and second bit allocation tables such that the first bit allocation table can be updated while the second bit allocation table is being used for communications
7. "select a first allocation of bits to subchannels" '532-Claim 4	plain and ordinary meaning; no construction needed beyond where IV has offered constructions for terms contained within this broader limitation	choose the first allocation of bits to subchannels from two stored allocations of bits to subchannels
8. "select, in response to receipt of a flag from the other transceiver, a second allocation of bits to subchannels" '532-Claim 4	plain and ordinary meaning; no construction needed beyond where IV has offered constructions for terms contained within this broader limitation	choose the second allocation of bits to subchannels from two stored allocations of bits to subchannels, in response to receipt of a flag from the other transceiver
9. "selecting, by the transceiver, a different allocation of bits to subchannels" '532-Claims 6, 9	plain and ordinary meaning; no construction needed	choosing the different allocation of bits to subchannels from two stored allocation of bits to subchannels
10. "flag" '735-Claims 9, 10	a signal that has only two states to indicate an action or condition	signal to request a switch from using one bit allocation table to another bit allocation table

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
11. "flag" '532-Claims 4, 6, 8, 9, 11	a signal that has only two states to indicate an action or condition	signal to request a switch from using one allocation of bits to subchannels to another allocation of bits to subchannels
12. [entire claim] '735-Claims 1, 9, 10	Method steps in claim are NOT limited to the order in which they are recited.	Method steps in claim are limited to the order in which they are recited.
13. [entire claim] '532-Claims 4, 6, 9	Method steps in claim are NOT limited to the order in which they are recited.	Method steps in claim are limited to the order in which they are recited.
U.S. Patent Nos. 6,567,473, 7,860,175, 6,667,991, 7,649,928, 8,045,601 and 6,498,808		
14. "changing transmission parameters" "changing subchannel transmission parameters" '928-Claim 1 '175-Claim 1	plain and ordinary meaning; no construction needed alternatively: changing one or more [subchannel] parameters defining how to transmit data	changing [subchannel] parameters to adapt the rate for transmitting data
15. "changing reception parameters" "changing subchannel reception parameters" '928-Claim 5 '175-Claim 7	plain and ordinary meaning; no construction needed alternatively: changing one or more [subchannel] parameters defining how to receive data	changing [subchannel] parameters to adapt the rate for receiving data

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
16. "change at least one transmission parameter" '928-Claim 1	plain and ordinary meaning; no construction needed alternatively: change at least one parameter defining how to transmit data	change at least one parameter to adapt the rate for transmitting data
17. "change at least one reception parameter" '928-Claim 5	plain and ordinary meaning; no construction needed alternatively, change at least one parameter defining how to receive data	change at least one parameter to adapt the rate for receiving data
18. "change in subchannel transmission parameters" '175-Claims 1, 3	plain and ordinary meaning; no construction needed alternatively: change in subchannel parameters defining how to transmit data	change in subchannel parameters to adapt the rate for transmitting data
19. "change in subchannel reception parameters" '175-Claim 9	plain and ordinary meaning; no construction needed alternatively: change in subchannel parameters defining how to receive data	change in subchannel parameters to adapt the rate for receiving data

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
20. "transition, during the data communications, from reception of a plurality of codewords at the first data rate to reception of the plurality of codewords at the second data rate" '601-Claim 6	plain and ordinary meaning; no construction needed beyond where IV has offered constructions for terms contained within this broader limitation	change from reception of plurality of codewords at the first data rate to reception of the plurality of codewords at the second data rate during data reception and not during initialization, without an interruption in the reception of data
21. "transition to use of the new bit rate" '601-Claim 11	plain and ordinary meaning; no construction needed	change to a new bit rate during data transmission and not during initialization, without an interruption in the transmission of data
22. "transition to use of the new data rate" '601-Claim 16	plain and ordinary meaning; no construction needed	change to a new data rate during data transmission and not during initialization, without an interruption in the transmission of data
23. "ADSL frame" '473-Claims 32, 37 '175-Claims 1, 7	unit of data at the framing layer including overhead framing bytes, user data bytes, and Reed-Solomon FEC check bytes in an ADSL system	Indefinite
24. "frame size" '928-Claims 3, 7 '601-Claims 9, 11, 19, 23	number of bytes of a unit of data at the framing layer including overhead framing bytes, user data bytes, and Reed-Solomon FEC check bytes	number of bytes in an ADSL frame

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
25. "full power mode" '473-Claims 32, 37, 366, 372	the power mode used by a transceiver during normal operation	highest power level
26. "flag" "flag signal" '473-Claims 32, 37, 43, 50, 58, 366, 372 '991-Claims 12, 18	a signal that has only two states to indicate an action or condition	signal sent in response to a request to change data rate and used to synchronize changes in bit allocation tables
U.S. Patent No. 6,266,348		
27. "storing at least first and second parameter sets" '348-Claims 47, 49, 52	plain and ordinary meaning; no construction needed	maintaining at least first and second parameter sets such that at least one parameter set can be reverted to for use after another parameter set has been used
28. "selecting a parameter set" '348-Claims 47, 49, 52	plain and ordinary meaning; no construction needed	choosing one of the previously stored at least first and second parameter sets
29. "a signal that identifies the parameter set to be selected" '348-Claims 47, 49	plain and ordinary meaning; no construction needed	a signal that identifies one of the previously stored parameter sets to be selected

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
30. "wire line" '348-Claims 47, 49, 52	plain and ordinary meaning; no construction needed alternatively: a metallic twisted pair	telephone wire line without a splitter at the subscriber premises, the line simultaneously carrying both voice and data
31. [entire claim] '348-Claims 47, 49, 52	Method steps in claim are NOT limited to the order in which they are recited.	Method steps in claim are limited to the order in which they are recited.

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
U.S. Patent No. 5,534,912		
32. "a mechanism by which the subscriber selects one or more sources of video information to be provided to the subscriber's individual subscriber loop" '912-Claim 3	plain and ordinary meaning; no construction needed Alternative Construction if the Court construes as a means-plus-function term: **Function**: subscriber selects one or more sources of video information to be provided to the subscriber's individual subscriber loop **The corresponding structure is**: (1) channel selector (240), or (2) a circuit including a voltage controlled oscillator (350, 545) that outputs a local oscillator frequency, based on a channel change control signal from a subscriber, to a mixer (530) for frequency shifting a composite FDM spectrum so that the frequency of a desired video channel is shifted into a passband of a subscriber filter, or channel selector 240.	The term should be construed under a means plus function analysis. **Function**: subscriber selects one or more sources of video information to be provided to the subscriber's individual subscriber loop **The corresponding structure is**: a circuit including a voltage controlled oscillator (350, 545) that outputs a local oscillator frequency, based on a channel change control signal from a subscriber, to a mixer (345, '345, 530) for frequency shifting a composite FDM spectrum so that the frequency of a desired video channel is shifted into a passband of a subscriber filter Alternative construction if the Court does not construe as means plus function: a circuit by which a subscriber selects any video channel from a combined spectrum by selecting a local oscillator frequency to input to a mixer assigned to the subscriber

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
33. "a source side interface unit of each pair being located relatively closer to a source of video information than a subscriber side interface unit" '912-Claim 1	a source side interface unit located at an intermediate point in the communications path between the source of video information and the subscriber side interface unit	Indefinite
34. [Claim preamble] '912-Claim 2	Preamble is NOT a limitation	Preamble is a limitation
U.S. Patent Nos. 5,790,548 and 6,101,182		
35. "assigning a temporary Internet address to the requesting entity" '548-Claim 26	plain and ordinary meaning; no construction needed.	issuing a temporary Internet address to a customer personal computer, the temporary Internet address determined by a DHCP server based on an identifier for the customer personal computer, a customer name, and password
36. "dynamic host configuration protocol server means" '182-Claim 2	A server that provides internetwork protocol (IP) addresses in response to requests.	a dynamic host configuration protocol (DHCP) server that dynamically issues internetwork addresses to customer personal computers, each internetwork address determined by the DHCP server based on an identifier for the customer personal computer, a customer name, and password

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
37. "providing dynamic handling of addresses" '182-Claim 1	providing addresses in response to requests.	dynamically issuing internetwork addresses to customer personal computers, each internetwork address determined by a DHCP server based on an identifier for the customer personal computer, a customer name, and password
38. "dynamically administer internetwork addresses for communications of the data processor terminals" '182-Claim 14	providing internetwork addresses for communications of data processor terminals at the customer premises in response to requests	dynamically issuing internetwork addresses to data processor terminals, each internetwork address determined by a DHCP server based on an identifier for the data processor terminal, a customer name, and password
39. "provides to customer premises data terminals dynamic assignment of temporary internetwork addresses" '182-Claim 3	provides temporary internetwork addresses to the customer premises data terminals upon request	dynamically issuing temporary internetwork addresses to customer personal computers, each temporary internetwork address determined by the DHCP server based on an identifier for the customer personal computer, a customer name, and password
40. "providing dynamic temporary assignment of one of a plurality of internetwork addresses" '182-Claim 15	assigning one of a plurality of temporary internetwork addresses to a data processor terminal in response to a request	dynamically issuing one of a plurality of temporary internetwork addresses to a data processor terminal, the temporary internetwork address determined by the DHCP server based on an identifier for the data processor terminal, a customer name, and password

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
41. "routing data signals . . . from said central office splitting means" '182-Claim 1	plain and ordinary meaning; no construction necessary.	routing data signals received from a customer personal computer, via the central office splitting means, by determining where on a data internetwork to forward the data signals based on the source IP address of the customer personal computer
42. "a router . . . to provide packet switched communications for the data processor terminals via a public wide area data internetwork" '182-Claim 14	a router to send data packets from a data processor terminal towards a destination on a pubic wide area data internetwork based on address information contained in the packets.	a gateway router that determines where on a public wide area data internetwork to forward packets from a data processor terminal based on the source IP address of the data processor terminal
43. "customer premises processor terminal" '548-Claim 26	a processor at the customer premises that acts as a source or destination for data.	customer personal computer
44. "the requesting entity" '548-Claim 26	an entity at the customer premises that requests assignment of a temporary Internet address	customer premises processor terminal
45. "Internet connected information service provider" '548-Claim 26	Internet connected information provider	Indefinite

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
46. "said Internet connected service provider" '548-Claim 26	Internet connected information provider	Indefinite
47. "asymmetric digital subscriber line (ADSL)" '548-Claim 26	a bi-directional communications link that uses telephone wiring to transmit data faster in one direction over a first set of frequencies than in the opposite direction over a second set of frequencies.	the ADSL standard
48. "telephone Internet service provider network" '548-Claim 26	a portion of the network operated by the company providing telephone services that transfers data to and from a subscriber and an ISP	a portion of an available public switched telephone network allowing a customer to access an Internet service provider
49. "internetwork addresses" '182-Claims 14, 15	numbers that identify entities on a data internetwork	numbers that identify entities on the public wide area data internetwork
50. "assigned addresses" '182-Claim 16	assigned numbers that identify entities on a data internetwork	assigned numbers that identify entities on the public wide area data internetwork

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
51. "splitting means (subscriber premises)" '182-Claim 1	Function: splitting signals received over said local loops into data signals connected to said data terminals and telephony signals connected to said telephone terminals Corresponding Structure: (1) a passive filter, or (2) a POTS splitter	Function: splitting signals received over said local loops into data signals connected to said data terminals and telephony signals connected to said telephone terminals Corresponding Structure: a passive filter or a POTS splitter located in a remote ADSL Terminal Unit (ATU-R)
52. "splitting means (central office switching system)" '182-Claim 1	Function: splitting signals received over said local loops into data signals and telephony signals Corresponding Structure: (1) a passive filter, or (2) a POTS splitter	Function: splitting signals received over said local loops into data signals and telephony signals Corresponding Structure: Indefinite

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
53. "processor means" '182-Claims 1, 2, 3, 4	Function: switching, addressing and routing data signals received by said processor means from said central office splitting means; (Claim 1) providing dynamic handling of addresses for data signals from said central office splitting means corresponding to signals from one of said local loops directed to said data internetwork (Claim 1) provides to customer premises data terminals dynamic assignment of temporary internetwork addresses and domain name to internetwork address translations (Claim 3) providing connectivity to said Internet service providers (Claim 4) Corresponding Structure: an Ethernet switch, a router, a DNS server and a DHCP server.	Function: switching, addressing and routing data signals received by said processor means from said central office splitting means; (Claim 1) providing dynamic handling of addresses for data signals from said central office splitting means corresponding to signals from one of said local loops directed to said data internetwork (Claim 1) provides to customer premises data terminals dynamic assignment of temporary internetwork addresses and domain name to internetwork address translations (Claim 3) providing connectivity to said Internet service providers (Claim 4) Corresponding Structure: Indefinite
54. "telephony switch means" '182-Claim 1	a device that connects communication paths for voice signals	POTS or PSTN switch
U.S. Patent Nos. 6,654,410 and 7,508,876		

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
55. "approximate(s)" '410-Claims 1, 2, 14, 77, 78	enable(s) the communication link to operate until an actual value can be determined	estimate(s) based on known or determinable values
56. "approximation" '410-Claims 1, 14, 77, 78	a value expected to enable the communication link to operate until an actual value can be determined	estimation based on known or determinable values
57. "actual parameter value"/"actual . . . bit allocation table" '410-Claims 1, 2, 6, 8, 14, 77, 78	a parameter value of the communication link determined by measurement and/or analysis that occurs during data communication at the first data rate.	parameter value corresponding to the maximum data rate for required bit error rate of the system
58. "wherein the step of determining each of the plurality of actual parameter values is attained iteratively in a manner wherein at least one actual parameter value is determined in each iteration" '410-Claim 8	plain and ordinary meaning; no construction needed Alternatively, Iteration: the process of repeating a set of instructions a specified number of times or until a specific result is achieved. Iteratively: relating to or being iteration of an operation or procedure	wherein during the step of determining, each of the plurality of actual parameter values are determined at least one parameter value at a time and each parameter value is used upon determination
59. "flag" "flag signal" '410-Claims 14, 77, 78	a signal that has only two states to indicate an action or condition	signal sent in response to a request to change data rate and used to synchronize changes in bit allocation tables

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
U.S. Patent Nos. 6,647,068, 7,272,171 and 7,826,545		
60. "variable state length initialization" '068-Claims 4, 7, 13, 16 '171-Claims 2, 3 '545-Claims 5, 6	Not a limitation for '068 and '171 patents. a state during initialization whose length can be varied	initialization during which transceivers change initialization state lengths
61. "message includes [a/the] selected number of multicarrier symbols" '545-Claims 5, 6	a message comprising multicarrier symbols, where the number of multicarrier symbols in the message is at least [a/the] selected number	message specifying [a/the] selected number of multicarrier symbols
62. "a transmitter configured to cooperatively perform a variable state length initialization with a receiver" '545-Claim 5	plain and ordinary meaning; no construction necessary. Alternatively, cooperatively: work together	Indefinite
63. "the transmitter is further configured to determine the selected number of multicarrier symbols in cooperation with the receiver" '545-Claim 5	plain and ordinary meaning; no construction necessary. Alternatively, cooperation: working together	Indefinite

Term - Claim	Intellectual Venture's Proposed Construction	AT&T's Proposed Construction
64. "selecting a number of multicarrier symbols by a transmitter of the multicarrier communication system in cooperation with a receiver of the multicarrier communication system as a part of a variable state length initialization of the transmitter and the receiver" '545-Claim 6	plain and ordinary meaning; no construction necessary. Alternatively, cooperation: working together	Indefinite
65. [Preamble] '068-Claims 4, 7, 13, 16	Preambles are NOT limiting	Preambles are limiting
66. [Preamble] '171-Claims 2, 3	Preambles are NOT limiting	Preambles are limiting

1. "transceiver"

AT&T argues that the Federal Circuit has already construed this term in the context of U.S. Patent No. 5,812,786 (the "'786 Patent"), the '695 and '636 Patents' parent, with which they share a common specification. *See Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc.*, 262 F.3d 1258 (Fed. Cir. 2001). AT&T contends that in *Bell Atlantic*, "the Federal Circuit made critical determinations regarding the meaning of three terms – 'mode,' 'rate,' and 'transceiver.'" These determinations, AT&T argues, should guide this court's construction of disputed terms from the '695 and '636 Patents. AT&T's proposed construction of this term is based upon the Federal Circuit's definition of "transceiver" being synonymous with that court's construction of "mode." *Bell Atlantic*, 262 F.3d at 1275.

Intellectual Ventures argues that the language of the asserted claims of the '695 and '636 Patents is "significantly different than the claims previously construed by the Federal Circuit." Further, Intellectual Ventures contends generally that terms previously construed are not present in the asserted claims of the '636 Patent and that the inventors made clear during the '636 Patent's prosecution that the claims were specifically prepared so as not to implicate the claim construction in *Bell Atlantic.* Intellectual Ventures further argues that because the term "available operating modes" in Claim 20 of the '695 should not have the identical construction as the Federal Circuit gave "mode" in the '786 Patent, the "transceiver" term should also not be so limited. According to Intellectual Ventures, "there is no reasonable dispute that the ordinary meaning of 'transceiver' is simply a device that transmits and receives; thus, Intellectual Ventures urges that the plain and ordinary meaning is the proper construction.

The court, having carefully reviewed the parties' arguments, the Federal Circuit's analysis in *Bell Atlantic*, the similarities and differences in claim language of the '695 and '786 Patents, and the identical specifications of both patents, concludes that the Federal Circuit's prior constructions properly guide this court in construing this term. As the Federal Circuit concluded: "[T]here is no question that the . . . specification uses the terms 'mode' and 'rate' to refer to two different and distinct concepts." *Id.* at 1272. Despite the differences in the two patents' claim language, their shared specification makes clear that rate and mode are related but distinct concepts. Additionally, the court concludes, like the Federal Circuit concluded with regard to the '786 Patent, that the transceiver described in Claim 20 of the '695 Patent is defined in the specification and claims synonymously with mode and that the transceiver of the claimed invention operates in conventional, bi-directional, and reversible modes. *Id.* at 1275.

Accordingly, the court construes the term "transceiver" to mean "**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"[3] 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).**"

2. "DSL modem or line-card"

AT&T argues that the prosecution history of the '636 Patent demonstrates that the patentee equated "DSL[4] modems" and "line-cards" to the meaning of "transceiver." AT&T also argues that the

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[3] The initialism ADSL means "asymmetrical digital subscriber line."

[4] The initialism DSL means "digital subscriber line."

specification does not support a construction of the term that is any broader than the proper construction of transceiver, and that the Federal Circuit used the terms interchangeably in *Bell Atlantic*. Intellectual Ventures argues that AT&T misrepresents the contents of the prosecution history and that a dictionary-based definition is the proper construction. Intellectual Ventures also contends that the Federal Circuit did not conclude that modems and line-cards were the same as transceivers in *Bell Atlantic*.

After thorough consideration of the '636 Patent's prosecution history, read in light of both *Bell Atlantic* and the differences and similarities between the '786 and '636 Patents, the court concludes that the patentee's statements in prosecuting the patent combined with the disclosures made in the specification essentially equates the usage of "DSL modem or line-card" with the specification-disclosed transceiver, which the court construed above.

Accordingly, the court construes the term "DSL modem or line-card" to mean "**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).**"

3. "available operation modes"

The crux of the dispute over this term is whether "available operation modes" is defined based on bandwidth allocation, as is argued by AT&T, or transmission rates, as argued by Intellectual Ventures. The parties again focus much of their argument on the Federal Circuit's definition of "modes" in *Bell Atlantic*. 262 F.3d at 1269-75. At base, Intellectual Ventures argues that while there

are three broad categories of modes, there are also separate modes within the broad categories based on different data rates, each of which defines an available operation mode.

The court disagrees. As previously discussed, the court is informed by the Federal Circuit's analysis in *Bell Atlantic* and finds that the concepts of rate and mode, as clearly outlined in the specification, are distinct concepts. Despite the differences in the claim language, the terms' usage in the '695 Patent is similar. Reading the claim language in light of the specification, available operation modes clearly refers to one of three that are defined in the specification.

The court construes the term "available operation modes" to mean "**at least two of the following three modes characterizing bandwidth allocation between first and second channels: (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).**"

4. "at least two asymmetrical digital subscriber line ADSL modes" / "said at least two ADSL operation modes"

Like the previous three terms, the dispute over this term revolves around whether the *Bell Atlantic* decision is applicable to the patents-in-suit. The court agrees with the Federal Circuit's analysis that there are three general modes taught by the patent's specification: conventional ADSL, bi-directional, and reversible ADSL. Only the conventional and reversible modes are asymmetrical modes. The court concludes, after a thorough reading of the claim language in light of the specification and the *Bell Atlantic* decision, that the "at least two [ADSL modes]" of the claim refers to the conventional and reversible modes.

Accordingly, the court construes the terms "at least two asymmetrical digital subscriber line ADSL modes" and "said at least two ADSL operation modes" to mean "**at least a "conventional ADSL" mode where the bandwidth allocation of the first channel is smaller than the second channel, and a "reversible" mode where the bandwidth allocation of the first channel is larger than the second channel.**"

5. "allocation of bits to subchannels" / "allocation of bits"

AT&T seeks to define this term through a reiteration of the words "allocation of bits" with an additional limitation that the allocation be for all subchannels of a multicarrier signal. Intellectual Ventures opposes this additional limitation and instead proposes a definition which would allow the allocation to be for all, or a subset of all, subchannels. The parties agree that the term "bit allocation table" used in the patent means a table that indicates the allocation of bits for all subchannels. AT&T argues that "bit allocation table" and "allocation of bits" have the same scope and should be afforded identical constructions. Intellectual Ventures argues that the terms are distinct, are used distinctly in the patent and specification, and should have distinct construction. Intellectual Ventures also argues that its definition represents the plain and ordinary meaning of the term and that the intrinsic record shows no disavowal of claim scope or evidence of the patentee defining the term in a way distinguishable from the plain and ordinary meaning.

The court agrees with Intellectual Ventures that the term is used distinctly and in conjunction with "bit allocation table." The court finds no direct support in the claims themselves or in the patents' specification to justify the introduction of AT&T's suggested limiting language. Although an allocation

of bits may be applied to all channels, there is no suggestion in the language that the disputed terms refer only to an allocation to all channels.

The court construes the terms "allocation of bits to subchannels" and "allocation of bits" to mean "**indication of the number of bits to be encoded to subchannels of a multicarrier signal.**"

6. "storing the first and second bit allocation tables at each of the communication units"

Although Intellectual Ventures proposes that no construction is necessary, and that the plain and ordinary meaning of this term is the correct construction, AT&T argues that the parties' true dispute is whether "storing" is limited to simultaneous storage or if the term can allow sequential storage. After considering the language of the claim in light of the specification, intrinsic record, and surrounding claims, the court finds no compelling support to justify AT&T's narrowing limitation of the claim language. The disputed claim phrase consists of easily understood words combined such that a person of reasonable skill in the art would understand their contours. Moreover, the claim language is clear and the court finds merit in none of AT&T's arguments to the contrary. With no unequivocal disavowal or lexicography appearing in the intrinsic record, AT&T's proposed construction is improper.

The court concludes that the term "storing the first and second bit allocation tables at each of the communication units" should be afforded its **plain and ordinary meaning** with no further construction required.

7. "select a first allocation of bits to subchannels"

8. "select, in response to receipt of a flag from the other transceiver, a second allocation of bits to subchannels"

9. "selecting, by the transceiver, a different allocation of bits to subchannels"

The parties appear to agree that, by and large, these terms have a plain and ordinary meaning which would be readily understood. AT&T proposes a construction replacing "select" or "selecting" with "choose" or "choosing" and replacing the indefinite article "a" with "the." However, AT&T also adds the limitation "from two stored allocations of bits to subchannels" to each of the three disputed claim phrases. The remainder of the claim phrase is left unaltered. With regard to the first two replacements, the court finds the difference between AT&T's proposed definitions and the plain and ordinary meaning of the words they replace insignificant. The patentee chose "select[ing] [ ] a" and the court finds no reason to substitute "choose[ing] [ ] the." Therefore, the court must only decide if AT&T's additional limitation on these disputed claim terms is warranted.

AT&T references the '532 Patent's specification, with particular focus on a section titled "Detailed Description of an Illustrative Embodiment." Essentially, AT&T argues that the specification explains that the invention operates with paired bit allocation tables and that the "selecting" step of the disputed claim language is only done between the two prestored table pairs. The court finds that AT&T's proposed constructions attempt to import limitations from the specification's discussion of a preferred embodiment. While the specification details selecting between two prestored tables, the claim language used is broader. The court finds no intrinsic support to construe the disputed claim terms in the limited way that AT&T suggests.

The court concludes that the terms "select a first allocation of bits to subchannels," "select, in response to receipt of a flag from the other transceiver, a second allocation of bits to subchannels," and "selecting, by the transceiver, a different allocation of bits to subchannels" shall be given their **plain and ordinary meaning** with no further construction required.

10. "flag"

11. "flag"

Intellectual Ventures proposes that this term has a plain and ordinary meaning in the art and that a person having skill in the art would understand it; however, Intellectual Ventures' proposed construction is actually based on language found in patents that are cited by the '735 and '532 Patents. AT&T argues that its position is based on the patents-in-suit's specification and the language of the claims themselves, and that AT&T's definition necessarily represents the purpose and function of the claimed "flag." Both parties agree that a flag is a type of signal.

Outside of the claims, "flag" appears in the specification in only three places. However, the word's usage in the invention is exceedingly clear. As used in the patents-in-suit, the word "flag" could easily be replaced by the word "signal." A flag is transmitted from one transceiver to another to signal an action, as described in the claims. AT&T attempts to expand this definition into a claim limitation by explaining the function of the flag in its proposed construction. However, from the context of the claim language itself, read along with the surround claims and the patents' specification, the function of the flag needs no further definition. AT&T's proposal simply goes to far. The function of the flag is described in the claims. The court concludes that each parties' proposed definition misses the mark, and that the use of "flag" in the patents' claims is readily understood.

The court construes the disputed terms "flag" in the '735 and '532 Patents to mean "**signal**."

12. [Claims 1, 9, 10] of '735 Patent

13. [Claims 4, 6, 9] of '532 Patent

The parties dispute whether the method steps in the above-listed claims must be performed in the order in which they are recited in the patent. AT&T insists that they do; Intellectual Ventures argues that they do not.

The order in which steps of a method appear in a claim is not a limitation on that claim unless either (1) "as a matter of logic or grammar, [the steps] must be performed in the order written", or (2) the specification "directly or implicitly requires such a narrow construction." *Altiris Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369-70 (Fed.Cir. 2003) (internal quotations and citations omitted). However, it is clear that the specification and prosecution history can support a construction requiring the steps to be performed in the order written in the claims. *See e.g. Loral Florchild Corp. v. Sony Corp.*, 181 F.3d 1313, 1321-22 (Fed.Cir. 1999); *Function Media, LLC v Google, Inc.*, 708 F.3d 1310, 1320 (Fed. Cir. 2013).

The court does not find compelling evidence in the language of the claims themselves or in the specification that, as a matter of logic or grammar, the steps must be performed in exactly the order they are written. Further, the specification does not directly or implicitly require such ordering. It is clear in the context of the claims which action occurs in response to other actions, but the court does not read the claim language so narrowly as to only function in sequential order. Several of the steps could conceivably be performed simultaneously or in a different order than claimed in the patent. In the cases cited by AT&T, the implied or expressed order of the at-issue claims was much clearer. Here, though there is some suggestion of sequence in some of the steps, there is no indication that all steps

must be performed in an exact order. Additionally, the court does not agree that the depended claims also indicate a required order.

Accordingly, the court concludes that steps contained in Claims 1, 9, and 10 of the '735 Patent and Claims 4, 6, and 9 of the '532 Patent are **not limited to the order in which they are recited in the claims**.

14. "changing transmission parameters" / "changing subchannel transmission parameters"

15. "changing reception parameters" / "changing subchannel reception parameters"

16. "change at least one transmission parameter"

17. "change at least one reception parameter"

18. "change in subchannel transmission parameters"

19. "change in subchannel reception parameters"

The parties dispute whether the "change(ing) . . . parameters" terms require adapting the data rate. The '928, '473, '175, '991, '601, 'and '808 Patents, from which these terms hail, are all related, share common inventors, and also share most of the same figures and written descriptions, with minor differences. AT&T argues that these terms require the court to include a limitation that the changing parameters must be for adapting the data rate "because the specification read as a whole leads to the inescapable conclusion that the claimed invention requires it." Intellectual Ventures argues that the claims, and the specification supporting the claims, are broad enough to allow changes to any transmission parameter, regardless of whether a data rate is adapted. Intellectual Ventures further argues that the disputed terms have plain and ordinary meanings and that further construction would be unhelpful to a jury.

The court has undertaken a thorough review of the specification and file history of this patent family in light of the patents' claims, the disputed terms, and the parties' opposing arguments. Despite Intellectual Ventures arguments to the contrary, it is exceedingly clear to the court that adapting data rates is the core of the claimed invention. AT&T is correct in its argument that the patents' "Titles, Abstracts, Field of the Invention, Summary of the Invention and every disclosed embodiment describes adapting data rates as the invention." Throughout the specification, the descriptions and explanations of all disclosed embodiments stress the advantages in seamless data rate adaptation. Even portions of the specification cited by Intellectual Ventures, when read in the context of the surrounding paragraphs, support the notion that the invention is solely focused on adapting the data rate in a seamless fashion. The court concludes that, with regards to these disputed claim terms, it is proper to narrow the claim terms in light of the totality of the patent and the disclosed invention. *See Alloc, Inc. v. International Trade Com'n*, 342 F.3d 1361, 1370 (Fed.Cir. 2003) ("[W]here the specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims.").

The court construes the term "changing transmission parameters" / "changing subchannel transmission parameters" to mean "**changing [subchannel] parameters to adapt the rate for transmitting data**." The court further construes the term "changing reception parameters" / "changing subchannel reception parameters" to mean "**changing [subchannel] parameters to adapt the rate for receiving data**." The court further construes the term "change at least one transmission parameter" to mean "**change at least one parameter to adapt the rate for transmitting data**." The court further construes the term "change at least one reception parameter" to mean "**change at least one parameter to adapt the rate for receiving data**." The court further construes the term "change in subchannel

transmission parameters" to mean "**change in subchannel parameters to adapt the rate for transmitting data.**" The court further construes the term "change in subchannel reception parameters" to mean "**change in subchannel parameters to adapt the rate for receiving data.**"

20. "transition, during the data communications, from reception of a plurality of codewords at the first data rate to reception of the plurality of codewords at the second data rate"

21. "transition to use of the new bit rate"

22. "transition to use of the new data rate"

The parties dispute whether transitioning to a new rate in the '601 Patent requires a "seamless" transition. In essence, the parties agree that the terms are otherwise entitled to their plain and ordinary meaning; however, AT&T argues that the claim terms require the additional limitation of a seamless transition. AT&T's proposed construction incorporates the parties' agreed construction of "seamless" into the transitioning terms. AT&T's argument is similar to the previous group of "change(ing) . . . parameters" terms: despite the fact that seamless does not modify every usage of "transition" in the disputed claims, the patent specification, read as a whole, only supports claims that are so limited.

Intellectual Ventures argues that, under the doctrine of claim differentiation, the patentee's use of "seamless" as a modifier of "transition" in Claims 17, 19, 21, and 23 indicates that the disputed claims, which do not use such a modifier, must not import that limitation. According to Intellectual Ventures, had the patentee wished to so limit the claims, he could have used identical language.

The court disagrees that the specification, viewed as a whole, requires only seamless transitions. Certainly, seamless transitions are a particularly important part of the '601 Patent. However, that the patentee specifically claimed apparatuses requiring a seamless transition is particularly convincing to

the court that the claims without the seamless limitation were not intended to be so limited. The court agrees with Intellectual Ventures that the plain and ordinary meaning of transition "encompasses both seamless and non-seamless changes." The specification's support does not rise to the level of justifying the seamless limitation being imposed on all usages of transition in the claims.

The court concludes that the terms "transition, during the data communications, from reception of a plurality of codewords at the first data rate to reception of the plurality of codewords at the second data rate," "transition to use of the new bit rate," and "transition to use of the new data rate" are to be given their **plain and ordinary meaning** with no further construction required.

23. "ADSL frame"

AT&T argues that the term "ADSL frame" has no single ordinary meaning in the art and that the specification defines the term in two contradictory ways without reconciling the differences. Therefore, argues AT&T, the term as used in the '473 and '175 Patents' disputed claims is indefinite.

Intellectual Ventures acknowledges that an ADSL frame is described in two ways in the specification, but contends that one description is used in reference to prior-art ADSL frames. The other description–which forms the basis for Intellectual Ventures's proposed construction–references the claimed inventive aspects covered by the patent. Intellectual Ventures further argues that the claims' consistent use of "decoupled" language links the disputed claims with the specification's definition of ADSL frames in the Detailed Description section of the patent.

After a detailed reading of the specification, particularly in light of how prior-art ADSL frames are contrasted with the claimed ADSL frames (which are decoupled from the DMT signals), the court concludes that ADSL frame is not indefinite. Specifically, a person having ordinary skill in the art

would understand, with a reasonable level of certainty, that ADSL frames, as used in the claims, are consistent with the description contained in the Detailed Description of the specification, and not the prior art ADSL frames, which the specification also discusses at length. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S.Ct. 2120, 2123 (2014).

The court construes "ADSL frame" to mean "**unit of data at the framing layer including overhead framing bytes, user data bytes, and Reed-Solomon check bytes in an Asymmetric Digital Subscriber Line (ADSL) system.**"

24. "frame size"

The dispute between the parties with regard to this term can be succinctly stated: does the word "frame" in "frame size" refer only to ADSL frames or can it refer to frames in systems other than asymmetric DSL systems? AT&T argues that the specification only discloses ADSL frames and the only embodiments refer to ADSL systems. Intellectual Ventures argues that the patentee specifically stated that the claimed invention could be used in systems other than ADSL systems. In addition, Intellectual Ventures contends that because "ADSL" modifies "frames" in the phrase "ADSL frames," the fact that the patentee used the word "frame" alone indicates that "frame size" does not refer only to ADSL frames.

The court agrees with Intellectual Ventures. The court finds no compelling reason to limit the claim language to be congruent only with the disclosed preferred embodiment. At the conclusion of the specification, the patentee states "[w]hile the invention has been disclosed in connection to ADSL systems it can also be applied to any system that utilizes multicarrier modulation." '928 Patent, 19:3-5.

The court declines to narrow the claim language absent a clear disavowal of claim scope in the specification.

The court therefore construes "frame size" to mean "**number of bytes in a unit of data at the framing layer including overhead framing bytes, user data bytes, and Reed-Solomon check bytes in a system that utilizes multicarrier modulation.**"

25. "full power mode"

Intellectual Ventures argues that "full power mode" is the mode used by a transceiver during normal operations, in contrast to a power-saving low power mode. AT&T contends that the term refers only to the "highest power level" available. The parties accuse each other of providing unsupported constructions that propose definitions at either extreme of the term's meaning.

The '473 Patent uses "full power mode" in more than 200 places, mainly in the claims; the specification references the phrase fewer than 10 times. Read in light of the claim language and entire specification, "full power mode" is used exclusively to contrast a "low power mode," which is defined as a mode that allows operation at a low power level when transmission requirements are reduced. The only other description of "full power mode" states that "full power mode is used during normal operations of the transceiver." '473 Patent 14:31-32. The patent is focused on the transition from "low power mode" to "full power mode." The language of the patent makes it clear that power modes and power levels are distinct concepts and the terms are not interchangeable, despite the occasional inconsistent usage of the words. The parties do not appear to disagree about the meaning of "low power mode."

The court construes the term "full power mode" to mean "**power mode that is used during normal operations of the transceiver and that is not a low power mode.**"

26. "flag" / "flag signal"

The parties again dispute the meaning of flag.[5] Flag and flag signal are used interchangeably in the '473 and '991 Patents and are terms that would be well understood by one skilled in the art. In the context of the patents, flags are used "to signal" and "flag signal" is used in a way synonymous with signal. The parties seek to overcomplicate and limit the term with tortured proposed constructions, and the court finds insufficient support for either proposed definition in the intrinsic record. The term is simple and uncomplicated and would be readily understood by both a person skilled in the art and a jury.

The court construes the terms "flag" and "flag signal" to mean "**signal.**"

27. "storing at least first and second parameter sets"

The parties dispute whether this term should be given its plain and ordinary meaning or if the term should be limited to maintaining parameter sets which "can be reverted to" after one of the sets is used. AT&T seeks to add the functional limitation while Intellectual Ventures urges that no further construction is required.

The court does not find compelling support for AT&T's argument that the term, as used in the claim, should be narrowed to maintaining only parameter sets that can be reverted to. Absent a clear limitation in the specification, which the court does not find, it is improper to narrow the terms as they

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[5] See *supra* discussion, p. 39.

are used in the claim. Although some preferred embodiments discuss that the system reverts between parameter sets, at least one embodiment appears to describe a broader system where the system establishes a newly defined parameter set. The court finds that the term has a clear and concise meaning that would be understood by a person having ordinary skill in the art without the additional limitations added by AT&T.

The court therefore concludes that "storing at least first and second parameter sets" is given its **plain and ordinary meaning** with no further construction required.

28. "selecting a parameter set"

29. "a signal that identifies the parameter set to be selected"

AT&T argues that the parameter set in these claim phrases must be one that is previously stored during the "storing at least [two] parameter sets" phase of the claimed invention. AT&T does not argue that any part of the disputed phrases are unclear, it just inserts the "previously stored" limitation. This argument dovetails into AT&T's position that the steps in Claims 47, 49, and 52 must be performed in the recited order, in part due to the antecedent basis problems between *the* parameter set and *a* parameter set.

Intellectual Ventures argues that the plain and ordinary meaning is appropriate, with no further construction required. In conjunction with its argument that the claims' steps are independent of their stated order, Intellectual Ventures argues that the parameter sets to be selected do not require being prestored by the earlier steps of the claim. Intellectual Ventures claims that the "fast retrain" embodiment of the patent demonstrates that the language is broader than AT&T's definition allows.

The court finds AT&T's argument concerning the antecedent basis and the ordering of the claimed steps compelling. The language of the claim, read in light of the multiple places in the specification where the prestored parameter set is a touted feature, indicates to the court that the claim term should be so limited. Without reading in AT&T's proposed limitation, the antecedent basis would be unresolved and the claims would be broader than is supported by the specification.

The court concludes that "selecting a parameter set" means "**selecting one of the previously stored at least first and second parameter sets**" and "a signal that identifies the parameter set to be selected" means "**a signal that identifies one of the previously stored parameter sets to be selected**."

30. "wire line"

The parties disagree whether this term should be given its plain and ordinary meaning or if the wire line of the claims must be limited to a telephone wire without a splitter that simultaneously carries voice and data. The court concludes that AT&T's attempt to import such a limitation goes too far.

The specification does not explicitly use the term "wire line" in describing the invention. Nor does the specification support the limitation that the claimed wire line must always simultaneously carry voice and data, as AT&T's definition would necessarily require. Wire line is such an easily grasped and readily understood term that the court believes that a person skilled in the art would know, even without explicit reference in the specification, what the term means. Without concrete support for AT&T's limitation, the court declines to import such narrowing language.

The court concludes that "wire line" is to be given its **plain and ordinary meaning** with no further construction required.

31. [Claims 47, 49, 52] of '348 Patent

The parties disagree whether the claim steps, which are labeled with capitol letters A, B, C (for claims 47 and 49), are required to be performed in order. This limitation is a main point of contention between the parties with regard to this patent and underlies the patent's other disputed claim terms.

As stated earlier,[6] steps in a claim do not need to be performed in a specific order unless the claims themselves read in light of the specification or the basic logic and grammar of the claims compel such a result. Here, the claims do require such limitation. Intellectual Ventures argues that the labels "A," "B," and "C" "merely delineate the different steps and do not indicate a necessary order for performance." The court disagrees. In view of the antecedent basis issue discussed in the context of the previous disputed claim terms, a plain reading of the claims is that the order of performance is limited. This is reinforced by the ordinal nature of the patentee's choice in labeling the steps. The patentee did not choose to delineate all breaks in the claims with ordinal letters. In some claims, delineating different lines of the claim is done with spacing and punctuation. However, in disputed claims 47, 49, and 52, it is apparent that the alphabetic designations do indicate an intended order for the performance of the steps.

Therefore, the court concludes that the method steps in the disputed claims **are limited to the order in which they are recited**.

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[6] See discussion, *supra*, pp 40-41.

32. "a mechanism by which the subscriber selects one or more sources of video information to be provided to the subscriber's individual subscriber loop"

The parties dispute whether this claim limitation is subject to means-plus-function construction. Additionally, if the term is so construed, the parties disagree whether the "channel selector (240)" is included as a structure. The parties also present arguments for alternative constructions if the court concludes that this claim limitation is not a means-plus-function term.

AT&T argues that "mechanism by which" is a substitution for, and conveys no more structure than, a claim where the patentee had used "means for." Intellectual Ventures argues that, although "mechanism" has previously been construed by other courts to implicate a means-plus-function construction, here, because the claim is a method claim–and not an apparatus claim–a means-plus-function construction does not apply. Intellectual Ventures further argues that the full claim, which reads "providing a mechanism by which . . ." indicates that the claims cover performing steps, not tangible physical components. Intellectual Ventures also points out that the patentee used explicit means-plus-function language in other claims in the '912 Patent; Intellectual Ventures claims this indicates that the patentee specifically intended for this method claim not to implicate a means-plus-function construction.

When a claim term lacks the word "means," the presumption that it requires a means-plus function construction can be overcome if the challenger demonstrates that the claim term fails to "recite sufficiently definite structure" or else recites "function without reciting sufficient structure for performing that function." *Williamsont v. Citrix Online, LLC*, — F.3d —, No. 2013-1130, 2015 WL 3687459, at *7 (Fed. Cir. June 16, 2015). Conversely, "use of the word 'means' creates a presumption that § 112, ¶ 6 applies." *Id.*

While the court takes note that the disputed claim term comes in a method claim, "method claims often include structural details." *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 629 F.3d 1311, 1329 (Fed. Cir. 2010), *vacated sub nom., Akamai Techs., Inc. v. Massachusetts Inst. of Tech.*, 419 F. App'x 989 (Fed. Cir. 2011), *rev'd and remanded sub nom., Limelight Networks, Inc. v. Akamai Techs., Inc.*, 134 S. Ct. 2111 (2014), *aff'd sub nom., Akamai Techs., Inc. v. Limelight Networks, Inc.*, 786 F.3d 899 (Fed. Cir. 2015). Here, the claim uses the term "providing" followed by a structure that must be provided to infringe the claims. This structural limitation is at the core of the providing step. The court finds that the claim term itself, when construed in light of the entire specification, does not provide sufficiently definitive structure to avoid a means-plus-function construction.

As to whether "channel selector (240)" should be included as a corresponding structure, the court concludes that it should not. Intellectual Ventures argues that the specification teaches a channel selector "by which 'the subscriber selects one or more sources of video.'" This merely restates the claim without adding any specific detail of what comprises the structure. Additionally, Intellectual Ventures argues that prior art cited by the '912 Patent shows that "channel selector" is a known term of art. The court disagrees. The mechanism by which channels are selected in the claimed invention can be easily distinguished by the prior-art channel selectors, and there is no indication that the term, as used in the '912 Patent, is a "term of art" or would be readily understood by a person of ordinary skill in the art. Moreover, in light of the specification, "channel selector" is described as no more than a "black box" in the patent, with little guidance as to what the structure entails. The court declines to include "channel selector (240)" as a second alternative corresponding structure in this means-plus-function claim.

The court therefore concludes that "a mechanism by which the subscriber selects one or more sources of video information to be provided to the subscriber's individual subscriber loop" is properly construed as a means-plus-function term. The function is: "**subscriber selects one or more sources of video information to be provided to the subscriber's individual subscriber loop.**" The corresponding structure is: "**a circuit including a voltage controlled oscillator (350, 545) that outputs a local oscillator frequency, based on a channel change control signal from a subscriber, to a mixer (530) for frequency shifting a composite FDM spectrum so that the frequency of a desired video channel is shifted into a passband of a subscriber filter.**"

33. "a source side interface unit of each pair being located relatively closer to a source of video information than a subscriber side interface unit"

The parties agree that the preamble of Claim 1 is limiting but dispute whether this claim phrase is indefinite. AT&T argues that "being located relatively closer . . . than" has multiple meanings that cannot be resolved from the intrinsic evidence. Intellectual Ventures proposes a construction, which AT&T argues is an unhelpful attempt to rewrite the claim to salvage it from indefiniteness.

The court finds AT&T's multiple-meaning argument unavailing. Only through a tortured reading including ellipses, parenthetical inclusions, and made-up diagrams does AT&T attempt to establish the ambiguity of the phrase. To the contrary, the court finds the language of the preamble clear, especially when read in light of the entire claim, surrounding claims, the specification, and the specification's discussion of prior art. Intellectual Ventures correctly points out that the preamble for Claim 1 introduces a Jepson-type claim, which specifically claims advantages over the prior art. As such, the court concludes that a person of skill in the art would be informed, with reasonable certainty,

of the meaning of "relatively closer" in the context of the patent's specification. *Nautilus,* 134 S.Ct. at 2123.

The court also rejects Intellectual Ventures's attempt to rewrite the claim phrase. Intellectual Ventures's proposal does not clarify the meaning of the phrase as much as it attempts to broaden it even further. For the same reasons that the court concludes that the term is not indefinite, the court finds that a person having skill in the art would require no further construction other than the plain and ordinary meaning of the term. Read in light of the surrounding claims, the discussed prior art, and the entirety of the specification, the term is understandable and clear.

The court concludes that "a source side interface unit of each pair being located relatively closer to a source of video information than a subscriber side interface unit" is to be given its **plain and ordinary** meaning with no further construction required.

34. [Preamble of Claim 2] of '912 Patent

AT&T argues that the preamble of Claim 2 of the '912 Patent is a limitation, whereas Intellectual Ventures argues that it is not. "In considering whether a preamble limits a claim, the preamble is analyzed to ascertain whether it states a necessary and defining aspect of the invention, or is simply an introduction to the general field of the claim." *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1343 (Fed. Cir. 2006). Here, the court finds that the preamble is not a "necessary and defining" aspect of the claim. The preamble does serve to set forth an intended purpose of the claim and references one of several enumerated "advantages" of the invention. However, neither the specification nor the language of the claim supports that the claim should be so narrowly limited. AT&T's antecedent-basis argument is specious and the court rejects it.

The court concludes that the preamble of Claim 2 of the '912 Patent is **not a limitation**.

35. "assigning a temporary Internet address to the requesting entity"

Intellectual Ventures argues that this term needs no further construction than its plain and ordinary meaning. AT&T, on the other hand, seeks to define the term, it argues, consistentl with the specification's disclosure of an authentication mechanism for the disclosed "new" DHCP[7] process. AT&T contends that the patent's repeated reference to this limitation as "the invention" and consistent statements contrasting the advantages of the new form of DHCP with the prior-art disadvantages supports such a limiting construction.

The court largely agrees with AT&T's arguments regarding the clear scope of the specification, what the patentee regarded as "the invention," and the requirement to narrow the claim language to be congruent with what was actually invented and no more. The specification's contrast between prior-art DHCP and the "new" method of the invention is exceedingly clear. According to the patent's specification, and applicable to the entire invention–not just an embodiment–a temporary Internet address is assigned based on the MAC address[8] or other unique computer identifier, a customer username, and password. There is no support in the specification to allow the broad language of the claim subsume the prior-art DHCP method, as Intellectual Ventures seeks.

However, the court is not wholly satisfied with AT&T's proposed construction. AT&T seeks to incorporate its proposed constructions of other disputed terms in the construction of this term; also,

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[7] The initialism "DHCP" stands for "Dynamic Host Configuration Protocol."

[8] The initialism "MAC" stands for "Media Access Control" and a "MAC address" is a unique identifier assigned to network interfaces for communications on the physical network segment.

AT&T needlessly complicates the construction, substituting certain words that do not need to be changed from the original claim language.

The court concludes that "assigning a temporary Internet address to the requesting entity" is construed to mean "**assigning a temporary Internet address to the requesting entity, the temporary Internet address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password**."

36. "dynamic host configuration protocol server means"

Neither party proposes that this term is due a means-plus-function construction. Instead, the basis of the parties' arguments is very similar to the previous term's. Intellectual Ventures proposes a generic definition that could be applied to any DHCP server. AT&T's construction seeks to limit the term consistent with its previous arguments regarding the new DHCP protocol of the invention and how the specification is clear that the term should be so narrowly construed.

For substantially similar reasons stated in the discussion of the previous term, the court agrees with AT&T. The court concludes that "dynamic host configuration protocol server means" is construed to mean "**a dynamic host configuration protocol (DHCP) server that assigns an internetwork address to a requesting entity, the internetwork address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password.**"

37. "providing dynamic handling of addresses"

38. "dynamically administer internetwork addresses for communications of the data processor terminals"

39. "provides to customer premises data terminals dynamic assignment of temporary internetwork addresses"

40. "providing dynamic temporary assignment of one of a plurality of internetwork addresses"

These four disputed claim terms relate to dynamically assigning "addresses" and "internetwork addresses" and can be construed by the court simultaneously, as the parties' arguments closely track one another. The parties' arguments roughly parallel the arguments and positions relating to the previous two disputed terms. Intellectual Ventures seeks a broad interpretation of the claim language without the limitations of the new DHCP system disclosed in the patent. The court again disagrees with Intellectual Ventures that "the specification does not contain expressions of manifest exclusion or restriction." (internal quotation and citation omitted). Although the specification does disclose many different aspects of "an overall network architecture," the improved DHCP process is the only source for dynamic providing, assigning, and administering addresses. As such, the court finds it proper to so limit the claim terms.

The court construes "providing dynamic handling of addresses" to mean "**dynamically providing addresses to a requesting entity, each address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password.**" The court further construes "dynamically administer internetwork addresses for communications of the data processor terminals" to mean **"dynamically provide internetwork addresses to data processor terminals, each internetwork address determined by a DHCP server based on a MAC address**

or other computer identifier, a customer login, and a password." The court further construes "provides to customer premises data terminals dynamic assignment of temporary internetwork addresses" to mean "**dynamically assign temporary internetwork addresses to customer premises data terminals, each temporary internetwork address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password.**" The court further construes "providing dynamic temporary assignment of one of a plurality of internetwork addresses" to mean **"dynamically providing temporary assignment of one of a plurality of internetwork addresses, the internetwork address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password.**"

41. "routing data signals . . . from said central office splitting means"

The parties dispute whether this term requires construction; Intellectual Ventures argues that "routing" as used in the '182 Patent is well known in the art and that the term requires no further construction. AT&T acknowledges that the concept of routing was well known at the time of the invention but insists that the specification clearly limits the routing claimed in Claim 1 to include routing based on the source address of the data signals. Intellectual Ventures argues that AT&T's support for its position can be ascribed to a preferred embodiment only, not the entire invention. AT&T argues that the patent only discusses destination-based routing in discussing the prior art, and that the patents claims, read in light of the entire specification, strongly supports the limitation AT&T proposes.

The court concludes that the specification's discussion of routing is broad, relatively generic, and does not clearly indicate a limiting disclaimer on the breadth of the language contained in the claims. AT&T's proposed construction simply goes too far and is not as clearly supported by the

specification as its arguments suggest. The court finds that the language in the disputed term is clear, has a plainly understood meaning to one of skill in the art, particularly when read in the context of the specification, and need not be limited in the way AT&T suggests.

The court concludes that "routing data signals . . . from said central office splitting means" shall be given its **plain and ordinary meaning** with no further construction required.

42. "a router . . . to provide packet switched communications for the data processor terminals via a public wide area data internetwork"

The parties' dispute over this term is very similar to the previous term, with AT&T urging a limiting construction focused on source-based routing. AT&T's arguments and citations to the '182 Patent specification are largely the same as the previous routing term. So too are Intellectual Ventures's. Here, however, Intellectual Ventures proposes its own construction "mainly because 'packet switched communications' is a term of art that may be unfamiliar to lay jurors."

For reasons consistent with the court's conclusion regarding the previous term, the court rejects both parties' proposed constructions. Here again, the court finds that the claim language at issue has a readily understood meaning to a person of ordinary skill in the art, and that no construction is required for "lay juror[]" comprehension or otherwise. The court does not construe terms primarily for reasons of juror comprehension–the meaning of the claim terms read in light of the specification is the court's guiding principle. The intrinsic record does not directly support either parties' proposed constructions and the extrinsic sources cited by Intellectual Ventures further suggest to the court that the plain and ordinary meaning of the words within the disputed term would have clear meaning to a skilled artisan.

The court concludes that "a router . . . to provide packet switched communications for the data processor terminals via a public wide area data internetwork" shall be given its **plain and ordinary meaning** with no further construction required.

43. "customer premises processor terminal"

Intellectual Ventures argues that this term should be given a broad interpretation that covers any processor that acts as a source or destination of data. Intellectual Ventures further argues that the specification's references to personal computers or PCs are merely exemplars of processor terminals and that those references in no way limit the scope of the claim term to only personal computers. AT&T argues that the term should be limited to a "customer personal computer" as customer personal computers are "the only devices that the specification describes as being assigned Internet addresses in order to connect to the Internet." AT&T accuses Intellectual Ventures of attempting to capture a meaning far beyond the originally intended scope of the specification, and that according to Intellectual Ventures's construction, ADSL modems, servers, or printers would qualify as customer premises processor terminals.

The court finds Intellectual Ventures's proposal too broad; however, the court also finds AT&T's construction too restrictive. References in the specification to PCs and personal computers are used as exemplary, and the specification is careful to treat them as such. The patentee certainly knew the terms "computer" and "personal computer" and "PC" and chose to define the claims with a broader genus of processor terminals. Yet it is also clear from the specification that the invention, as a whole, read in light of the entire disclosure, only contemplates a customer premises processor terminal

as devices which could be classified as "computers"–a term that certainly was well known to a person of skill in the art.

The court concludes that the term "customer premises processor terminal" is construed to mean "**customer premises computer**."

44. "the requesting entity"

AT&T argues that "the requesting entity" must be a "customer premises processor terminal" due to the context of the entire claim's language and the fact that "the requesting entity" has no express antecedent in the claim. Further, AT&T argues, a customer premises processor terminal is the only "entity" that requests an IP address. Intellectual Ventures proposes a broad construction because the claim implies an antecedent of "an entity" before the requesting step of the claim. Intellectual Ventures argues that the patentee "intentionally drafted the claim such that the temporary Internet address could be requested by another entity other than the customer premises processor terminal." The court disagrees.

The court finds that the invention, as detailed by the specification and the exact claim language, leads to only one conclusion: that the requesting entity is the customer premises processor terminal that is connecting to the information service provider. To read the claim any differently would expand the invention beyond a plain reading of the claim language and beyond the specification's disclosure. Furthermore, the court arrives at its construction based on the court's construction of the previous term, "customer premises processor terminal."

The court therefore concludes that "the requesting entity" is construed to mean "**customer premises computer**."

45. "Internet connected information service provider"

46. "said Internet connected service provider"

These two disputed claim terms are not introduced in the specification exactly as they are written in the claims. Instead the specification repeatedly describes, as separate and distinct, either an Internet Service Provider (ISP) or an Information Provider (IP), each of which serves a different purpose. However, the specification also makes clear that an internet service provider can also be an information provider. AT&T argues that the ambiguity in the claim language renders the claim indefinite. Intellectual Ventures seems to acknowledge that the ambiguity is a case of imprecise claim drafting, but offers several explanations that "correct" the ambiguities. According to AT&T, Intellectual Ventures asks the court to rewrite both claim terms to read "Internet connected information provider"–thereby removing the word "service" from the first term and replacing the word "service" with "information" in the second term.

The court must closely examine both the claim language and the entire specification to determine if a person of skill in the art would be informed, with reasonable certainty, of the meaning of the disputed claim terms in the context of the patent's specification. *Nautilus,* 134 S.Ct. at 2123. Here, after thoroughly considering both parties' strenuous argument, the court concludes that, though inartfully drafted, the claim language does not rise to the level of introducing to the claims ambiguity resulting in indefiniteness. The court finds that a skilled artisan would be able to understand, with reasonable certainty, that the "information service provider" of the claim relates to the information providers described in the specification. Further, "said . . . service provider" logically refers to the antecedent basis of the information service provider despite lacking the word "information." The court arrives at this conclusion after considering the described purpose of the invention, the level of

understanding of that purpose that a person of ordinary skill would bring to reading the claims and specification of the patent, and the language of the claims. Furthermore, the court disagrees with AT&T's characterization that, in proposing a construction for the disputed term, Intellectual Ventures is asking the court to rewrite the claim term. The court's understanding of the meaning of the two claim terms flows from a holistic reading of the entire claim, surrounding claims, and the entire specification.

The court concludes that "Internet connected information service provider" is construed to mean "**Internet connected information provider**." The court further concludes that "said Internet connected service provider" is construed to mean "**Internet connected information provider**."

47. "asymmetric digital subscriber line (ADSL)"

AT&T argues that the patentee, in order to secure the allowance of Claim 26 of the '548 Patent, limited the term to "then-existing 'ADSL' standards." AT&T contends that this is significant because "next-generation asymmetric digital subscriber line technology (such as [very high bit-rate digital subscriber line] VDSL) was known and explicitly referenced in the specification." However, the patentee "did not claim [VDSL] or refer to [VDSL] in amending the claims" or overcoming the rejection. Thus, AT&T seeks to limit the definition to "the ADSL standard," despite the fact that ADSL "standard" is not referenced within the specification or the intrinsic record, and despite the fact that there exist several existing ADSL standards. Intellectual Ventures proposes a definition that AT&T contends extends the boundaries of the clear claim limitations and encompasses technologies that the patentee specifically disclaimed.

The court again takes issue with both parties' proposed constructions. The court finds that neither construction conveys the full picture of how ADSL is referenced in the patent, nor do the definitions sufficiently distinguish between what the patentee meant defined ADSL as opposed to successor technologies like VDSL. Indeed, the dictionary relied upon by the patentee suggests that VDSL is another version of a standard for implementing ADSL technology.

However, as ubiquitous as references to ADSL technology are in the specification, and as generic as those references appear to be, the court concludes that "asymmetric digital subscriber line (ADSL)" is a term that has a clearly understood meaning to a person of ordinary skill in the art at the time of invention. Indeed, the specification makes no attempt to define the term according to a specific standard; instead, the specification largely uses the term with no further explanation or discussion of a particular "standard." This is a strong indication to the court that a skilled artisan would know exactly what the term means with no further definition required. Even the portion cited by the patentee to overcome rejection is not specific about one standard or another. At most, the court would have to make an inferential leap that a specific "standard" was defined by the distance and speed limitations discussed in the specification. The court believes this to be unnecessary.

The court concludes that "asymmetric digital subscriber line (ADSL)" is to be given its **plain and ordinary meaning** with no further construction required.

48. "telephone Internet service provider network"

The specific combination of words that make up this disputed claim term only appears in the claims themselves. There is no definition appearing in the specification that describes exactly what the patentee meant by "telephone Internet service provider network.," nor is it clear that this is a term of art that would have a specific meaning to a skilled artisan. Thus, the court is left to examine the words' usage in disputed Claim 26, as well as the other claims in which the term appears. When interpreting the term in light of the specification, the court finds that AT&T's proposed definition is the most consistent with the term's usage throughout the claims. Although Intellectual Ventures insists that the specification's consistent use of Telco and telephone company indicate that the network must be operated by the phone company, the court does not find the language of the claims so requires. There is no indication that the term's use is tied to the company providing telephone services. The claim language is broader than that; clearly, the patentee knew how to describe networks operated by a Telco in words that were clear. References in the specification, using different combinations of words, to such arrangement are numerous. Thus, the patentee's choice of language must be given weight.

The court concludes that "telephone Internet service provider network" is construed to mean "**a portion of an available public switched telephone network allowing a customer to access an Internet service provider**."

49. "internetwork addresses"

50. "assigned addresses"

The parties largely agree on the construction of these two terms, but disagree as to whether the construction should contain the limitation "public wide area" or if the data internetwork is of a more generic variety. Unsurprisingly, AT&T argues for the narrowing limitation and Intellectual Ventures argues that the term should be given the broader interpretation.

Here, AT&T's argument is persuasive. The court finds that the term "internetwork addresses" which only appears in the claims, refers only to the previously introduced public wide-area data network. Claim 14 describes a router providing data processor terminals communication via a public wide area data network. The very next clause describes administering addresses *for communications* of the terminals, which, according to the previous clause, occurs via the public wide area data internetwork. Therefore, a person of skill in the art would understand that those addresses would necessarily be addresses on the public wide area data internetwork. Without those addresses, according to the patent's specification, communication on the public wide area data internetwork could not occur.

The court concludes that "internetwork addresses" is construed to mean "**numbers that identify entities on the public wide area data internetwork.**" The court further concludes that "assigned addresses" is construed to mean "**numbers that identify entities on the public wide area data internetwork.**"

51. "splitting means (subscriber premises)"

The parties agree that the "splitting means" in the subscriber premises is a means-plus-function term, and that a "passive filter" or a "POTS[9] splitter" are required structures for performing the function. The parties' only dispute over this term's construction is whether the passive filter or POTS splitter performing the function is located in the ADSL Terminal Unit (ATU-R).

Intellectual Ventures argues that the claim language does not require the splitting means to be located in any particular location. Intellectual Ventures further argues that the passive filter and POTS splitter are the actual disclosed structures that perform the claimed function, but their location is not functional. Intellectual Ventures stresses that "the structure corresponding to a means-plus-function element is only that structure that is *necessary* for the performance of the claimed function." (Intellectual Ventures's emphasis, citing *Acromed Corp. v. Sofamor Danek Group, Inc.*, 253 F.3d 1371, 1382 (Fed. Cir. 2001)).

Although Intellectual Ventures correctly cites Federal Circuit guidance on the issue, AT&T correctly points out that Intellectual Ventures's argument misses one key element: the parties agree that the function includes "data signals connected to said data terminals" and "telephony signals connected to said telephone signals." The ATU-R is the only disclosed structure in the specification that performs this essential part of the function. Indeed, certain structures that are part of the ATU-R that Intellectual Ventures argues do not perform the claimed function are actually essential to the function's performance. Although Intellectual Ventures is correct that the proper structure includes only what is necessary to perform the claimed function, there is no inverse requirement that the

[9] The initialism "POTS" is not defined in the specification or by the parties in their briefing. The court assumes without deciding that POTS is a term of art that would be understood by a person of ordinary skill in the art.

corresponding structure perform only the claimed function. *See Engineered Prods. Co. v. Donaldson Co.*, 147 F. App'x 979, 985 (Fed. Cir. 2005). Additionally, Intellectual Ventures incorrectly applies general claim construction principles to a means-plus-function element. The fact that the specification references the location of the POTS splitter and passive filter in what would typically be an expression of the preferred embodiment does not carry the day here. It is well-settled law that the structure for a means-plus-function claim element must be disclosed in the specification. Therefore, the patentee is limited by the structures disclosed and linked to performing the claimed function.

The court concludes that the subscriber premises "splitting means" is construed as follows: the function is "**splitting signals received over said local loops into data signals connected to said data terminals and telephony signals connected to said telephone terminals**." The corresponding structure is: "**a passive filter or a POTS splitter located in a remote ADSL Terminal Unit (ATU-R)**."

52. "splitting means (central office switching system)"

The second splitting means term in Claim 1 of the '182 Patent is at the central office switching system. The parties agree that the claimed function is "splitting signals received over said local loops into data signals and telephony signals" and is located at the central office switching system. The parties dispute whether the claim is indefinite. AT&T argues that the specification fails to disclose structure corresponding to the claimed function. Intellectual Ventures argues that the corresponding structure is the previously discussed passive filter or POTS splitter.

After a thorough review of the patent's specification, the court concludes that the structure for performing the claimed function at the central office switching system is simply not disclosed anywhere

in the body of the patent. The court rejects Intellectual Ventures's attempts to rely on what a person of ordinary skill would infer from the specification and the knowledge that person would bring to the art. So too does the court reject arguments in reference to the prosecution history. While those sources guide the court in interpreting the specification and supporting the linkage between the function and structure, they are no substitute for the requirement that corresponding structure must be linked to the claimed function and disclosed in the specification. *See Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1302 (Fed. Cir. 2005) ("[T]he specification must nonetheless disclose some structure. Stated differently, the testimony of one of ordinary skill in the art cannot supplant the total absence of structure from the specification.").

The court concludes that, due to the total lack of disclosure of structure corresponding to the central office splitting means claim limitation, the claim term is **indefinite**.

53. "processor means"

The parties agree that this term is a means-plus-function claim and must be construed as such. The parties further agree on the function. The parties disagree, however, on the corresponding structure for "processor means." AT&T argues that the term is indefinite whereas Intellectual Ventures argues that the claimed functions are performed by an ethernet switch, a router, a DNS[10] server, and a DHCP server.

AT&T posits several reasons why the processor means term is indefinite. First, AT&T argues that *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.* compels the court to find that when a single structure is claimed for performing multiple recited functions, a single structure must be disclosed and

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[10] The initialism "DNS" stands for "Domain Name System."

clearly linked to all recited functions. 296 F.3d 1106, 1114-15 (Fed. Cir. 2002). The court finds that AT&T's arguments overreach both the rule of that case and the facts present here. In *Cardiac Pacemakers*, the Federal Circuit stressed that "the language of the claim compels the conclusion that the same means must perform both function." *Id.* at 1115. A close examination of the claim language at issue here reveals no such conclusion. Despite AT&T's argument to the contrary, the court does not read the "processor means" recited in the claims as limited to a single structure. The claim simply recites "processor means," not "*a* processor means" or "*the* processor means." Thus, the court finds that there may be one processor means or more than one processor means; both would be subsumed under the claimed "processor means."

The claim language here can be further distinguished from *Cardiac Pacemakers*. Here, the claim language essentially refers to "'a means for doing X and Y' . . . one means for performing function X and one (potentially different) means for performing function Y. *Id.* (capitalization altered from original) (citing *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1313 (Fed. Cir. 2001) and "noting that . . . a single function *may* be performed by two structures, but that there must be a clear link between the claimed function and the corresponding structure."). In fact, the claim language here is even stronger than the hypothetical raised by the Federal Circuit. Instead of "a means for doing X and Y," here we have simply "means for doing X and Y." Thus, the court cannot conclude that the language of the claim clearly compels a single structure to perform all recited functions.

The court further rejects AT&T's arguments that Intellectual Ventures's proposed structures are not clearly linked to the recited functions. The court finds ample support in the specification for

each aspect of the agreed-upon functions and concludes that there is enough description to "clearly link" the structures to the recited functions of the "processor means."

Finally, AT&T argues that "processor means" is indefinite because the specification fails to disclose a sufficient algorithm for performing all the recited functions. The court concludes that this argument also fails. AT&T cites *Aristocrat Techs. Austl. Pty LTD. v. Int'l Game Tech.* for this argument. 521 F.3d 1328, 1336-37 (Fed. Cir. 2008). Here, however, the court does not read the claim's usage of "processor means" to be analogous to a generic computer or microprocessor. The court instead understands the term more generically: something that processes. A thorough reading of the claim language in light of the specification's disclosure convinces the court that the usage of "processor means" in this set of claims does not trigger the requirement of algorithmic disclosure compelled by *Aristocrat Techs.* and argued by AT&T.

The court therefore concludes that "processor means" is **not indefinite**. The court further concludes that "processor means" is construed as follows: the functions are "**switching, addressing and routing data signals received by said processor means from said central office splitting means (Claim 1); providing dynamic handling of addresses for data signals from said central office splitting means corresponding to signals from one of said local loops directed to said data internetwork (Claim 1); provides to customer premises data terminals dynamic assignment of temporary internetwork addresses and domain name to internetwork address translations (Claim 3); providing connectivity to said Internet service providers (Claim 4)**" The corresponding structure is: "**an Ethernet switch, a router, a DNS server and a DHCP server.**"

54. "telephony switch means"

Claim 1 of the '182 Patent recites a "telephony switch means included with said central office switching system." The parties agree that there is no recited function for the telephony switch means and neither party contends that it is a means-plus-function term.

AT&T argues that the only telephony switch disclosed in the specification in the central office switching system is a "POTS voice switch" and that the prosecution history confirms that this is the telephony switch of the claims.

Intellectual Ventures first directs the court to extrinsic evidence for support of "IV's ordinary meaning construction." Intellectual Ventures also argues that AT&T seeks to rewrite the claim to limit it to a preferred embodiment. Intellectual Ventures further argues that the prosecution history shows that the patentee actually characterized telephony switches as a "broad class" with several exemplars. Finally, Intellectual Ventures contends that prior art shows that a "telephony switch" was a known category of devices that was not limited to POTS or PSTN[11] switches.

Here, the court finds that the claim language, read in light of the specification and prosecution history, compels AT&T's construction. The court finds the statements in the prosecution history, and the changes made to the specification to overcome rejection, inform the court of the patentee's intended meaning of the term. *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1158 (Fed. Cir. 1997) ("[T]hrough statements made during prosecution . . . an Applicant for a patent . . . may commit to a particular meaning for a patent term, which meaning is then binding in litigation.").

The court concludes that "telephony switch means" is construed to mean "**POTS or PSTN switch**."

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[11] The initialism "PSTN" stands for "public switched telephone network."

55. "approximate(s)"

56. "approximation"

The disputed claim term at issue here can best be understood in context of a simplified reading of the surrounding claim language of one exemplar claim. Disputed Claim 1 of the '410 Patent recites "providing . . . [a] . . . [first] value . . . that *approximates* . . . [a] . . . corresponding . . . [second] value." The claim further recites "establishing a . . . link . . . using the . . . [first] value . . . as an *approximation* of the [second] value." (emphasis added).

The court has considered both parties arguments regarding this term and finds them largely unhelpful. AT&T seeks an unworkably narrow construction and Intellectual Ventures seeks to define the term in an exceedingly broad fashion that the court finds unsupported in the intrinsic record. Many pages of briefing and minutes of argument were expended by both parties in an attempt to define a verb (and derivative noun) that the court ultimately finds easy to understand within the context of the entire patent and a normal understanding of the English language.

Interpreting the claim language in light of the specification's four areas disclosing different embodiments for establishing predetermined parameter values, the court rejects both parties' constructions and instead provides its own construction which better captures the plain and ordinary meaning of the claim language when informed by the entire specification. Furthermore, the court believes that it is impossible to construe only the words approximate(s) and approximation without construing them in context of their surrounding phrase.

After a thorough analysis of the claim language interpreted in light of the specification, the court concludes that in Claim 1, the phrase "that approximates at least one corresponding actual parameter value of the communication link" is construed to mean "**that comes close enough to at least one**

corresponding actual parameter value of the communication link as to allow operation of said communication link." The court further concludes that in Claim 1, the phrase "an approximation of the at least one actual parameter value of the communication link to allow the multicarrier transmission system to transmit data between the transceivers at the first data rate" is construed to mean "**a value that comes close enough to the at least one actual parameter value of the communication link as to allow the multicarrier transmission system to transmit data between the transceivers at the first data rate.**"

The court further concludes that in Claim 2, the phrase "that approximate a plurality of actual parameter values" is construed to mean "**that come close enough to a plurality of actual parameter values of the communication link as to allow operation of said communication link.**"

The court further concludes that in Claim 14, the phrase "that approximates a corresponding actual parameter value of the communication link" is construed to mean "**that comes close enough to a corresponding actual parameter value of the communication link as to allow operation of said communication link.**" The court further concludes that in Claim 14, the phrase "an approximation of the actual parameter value of the communication link to allow the multicarrier transmission system to transmit data between transceivers at the first data rate" is construed to mean "**a value that comes close enough to the actual parameter value of the communication link as to allow the multicarrier transmission system to transmit data between the transceivers at the first data rate.**"

The court further concludes that in Claim 77, the phrase "that approximates a corresponding actual second bit allocation table, having an associated second data rate, of the communication link" is construed to mean "**that comes close enough to a corresponding actual second bit allocation**

table, having an associated second data rate, of the communication link as to allow operation of said communication link." The court further concludes that in Claim 77, the phrase "an approximation of the actual second bit allocation table of the communication link to allow the multicarrier transmission system to transmit data between transceivers at the first data rate" is construed to mean "**a value that comes close enough to the actual second bit allocation table of the communication link as to allow the multicarrier transmission system to transmit data between transceivers at the first data rate.**"

The court further concludes that in Claim 78, the phrase "that approximates a corresponding actual second bit allocation table, having an associated second data rate, of the communication link" is construed to mean "**that comes close enough to a corresponding actual second bit allocation table, having an associated second data rate, of the communication link as to allow operation of said communication link.**" The court further concludes that in Claim 78, the phrase "an approximation of the actual second bit allocation table of the communication link to allow the multicarrier transmission system to transmit data between transceivers at the first data rate" is construed to mean "**a value that comes close enough to the actual second bit allocation table of the communication link as to allow the multicarrier transmission system to transmit data between transceivers at the first data rate.**"

57. "actual parameter value" / "actual . . . bit allocation table"

The parties do not dispute the meaning of "parameter value" or "bit allocation table." Instead, they disagree about the limitations that should be applied to the "*actual* parameter value" and "*actual* bit allocation table," terms that are used frequently in the claims and specification. Although both

parties cite the court to multiple paragraphs in the specification, Intellectual Ventures argues that AT&T tries to apply too narrow a construction, and one that is not true to the specification. Conversely, AT&T argues that Intellectual Ventures's construction completely excludes one disclosed embodiment and is also not faithful to the specification.

The court finds that the specification, when read in light of the claims, sheds ample light on the meaning of these claim terms, and that meaning lies in between each parties' proposed construction. The actual value/allocation table is thoroughly described in the specification and the purpose and method for arriving at such is clearly explained. The specification frequently refers to the actual parameter being "optimized" or providing a "optimized" data rate. It is clear that such value is arrived at through measuring or analyzing the communications while they are occurring in order to seamlessly arrive at an optimal data rate.

The court concludes that "actual parameter value" is construed to mean "**parameter value of the communication link determined by measurement, analysis, or both, such determination occurring during data communications, said value corresponding to the optimal data rate for the required bit error rate of the system.**" The court further construes "actual . . . bit allocation table" to mean "**bit allocation table determined by measurement, analysis, or both, such determination occurring during data communications, said table corresponding to the optimal data rate for the required bit error rate of the system.**"

58. "wherein the step of determining each of the plurality of actual parameter values is attained iteratively in a manner wherein at least one actual parameter value is determined in each iteration"

AT&T proposes a construction for this claim phrase that incorporates a "using" step where "each parameter value is used upon determination." Intellectual Ventures contends that this additional language is not only not necessary, it violates claim construction tenants by introducing into the claim an action where none previously existed. Furthermore, Intellectual Ventures argues that AT&T's support for its construction comes from a preferred embodiment which should not limit the claim language. Intellectual Ventures provides a proposed definition for the words "iteration" and "iteratively" in case "some lay jurors may not know what" those terms mean.

The court agrees with Intellectual Ventures with regard to the fact that the claim phrase is straightforward and does not use technical terms of art. The court does not find sufficient support in the specification to justify AT&T's additional limitations. The additional language is simply not part of the claim itself, is not required by the specification–with the exception of an example which is a preferred embodiment–and its inclusion in this court's construction would violate sound claim-construction principles.

The court concludes that "wherein the step of determining each of the plurality of actual parameter values is attained iteratively in a manner wherein at least one actual parameter value is determined in each iteration" is to be given its **plain and ordinary meaning** with no additional construction required.

59. "flag" / "flag signal"

The parties' arguments regarding the '410 Patent's "flag" terms are the same as their arguments for the same term in the '928 Patent family and the '473 Patent family. For substantially the reasons as previously stated, the court construes "flag" and "flag signal" to mean "**signal**."

60. "variable state length initialization"

The parties' disagreement over this claim phrase can be summed up succinctly: is the correct subject noun in the term "variable state length initialization" "state," as Intellectual Ventures proposes, or "initialization" as AT&T proposes? Despite the parties' arguments directing the court to various points in the specification and attempting to explain the parties' opposed views of the meaning of the patents, the court need look no further than the abstract of the patent to define the term. Reading the claims in light of the entire specification, of which the Abstract is part, the court can easily determine that the claims, and indeed the entire patents, are directed at "variable state length initialization, through which transceivers "can have control of the length of one or more initialization states." The specification and claims abundantly supports this simple statement, which concisely defines what a variable state length initialization is in the context of the patent.

The court therefore concludes that "variable state length initialization" is construed to mean "**initialization through which transceivers can change the length of one or more initialization states**."

61. "message includes [a/the] selected number of multicarrier symbols"

Because the court finds the immediately following "cooperation" and "cooperatively" terms indefinite, the court declines to construe this disputed term.

62. "a transmitter configured to cooperatively perform a variable state length initialization with a receiver"

63. "the transmitter is further configured to determine the selected number of multicarrier symbols in cooperation with the receiver"

64. "selecting a number of multicarrier symbols by a transmitter of the multicarrier communication system in cooperation with a receiver of the multicarrier communication system as a part of a variable state length initialization of the transmitter and the receiver"

AT&T argues that this group of terms is indefinite because the "cooperatively" and "cooperation" limitations have unclear scope. Intellectual Ventures contends that the terms should be given their plain and ordinary meaning and provides an alternative construction for cooperation/cooperatively as "work together."

The court agrees with AT&T's characterization of Intellectual Ventures's arguments which identify one broad category of embodiments as "cooperative" and the other one as "non-cooperative." To the court, the distinctions that Intellectual Ventures argue seem arbitrary and counterintuitive to a normal understanding of the word cooperative. This is further exacerbated by the complete lack of any support in the specification for the distinction as argued by Intellectual Ventures. In fact, the court finds that Intellectual Ventures's convoluted argument in some ways actually supports AT&T's position that a person of skill in the art would not be informed, with reasonable certainty, of the contours of

those claims that use "cooperative" or "cooperatively." The court can find no clear distinction in the specification or the surrounding claim language that gives a clue about when transceivers work cooperatively and when they don't. In a broad sense, and using Intellectual Ventures's alternative construction as an example, any part of a system that is conceived to "work together" can be said to perform a task cooperatively. Without further support in the specification that distinguishes the disputed claim's cooperation from the prior art specifically, and cooperative systems generally, the court cannot conclude that this term, read in light of the specification and prosecution history, inform, with reasonable certainty, one skilled in the art about the scope of the claim. *Nautilus*, 134 S. Ct. at 2124.

The court concludes that the disputed claim terms containing "cooperatively" and "cooperation" are **indefinite**.

65. [Preamble to Claims 4, 7,13, 16] of '068 Patent

66. [Preamble to Claims 2, 3] of '171 Patent

AT&T argues that the preambles of several disputed claims in the '068 and '171 patent are limiting because the preamble (identical in each disputed claim) provides an antecedent basis for terms in the body of the claim and was used by the patentee to distinguish the claims over prior art during prosecution. Intellectual Ventures argues that the patentee did not rely on the preamble of the disputed claim to distinguish prior art. Intellectual Ventures further argues that the preambles do not provide an antecedent basis required for the remainder of the claim. Finally, Intellectual Ventures contends that the repeated reference to "variable state length initialization" do not render the preamble limiting.

The court flatly disagrees with Intellectual Ventures's argument that the preamble phrase "in

a multicarrier transceiver" does not provide antecedent basis to the claim's later step of "transmitting to a second multicarrier transceiver." Without the former, the latter holds no clear meaning. The court finds, at a minimum, that the claims rely on the preamble for antecedent basis and the preamble is "necessary to give life, meaning, and vitality" to the claim. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002).

The court therefore concludes that the preamble to Claims 4, 7, 13, 16 of the '068 Patent and Claims 2 and 3 of the '171 Patent **are limiting**.

C. Summary Table of Adopted Agreed and Disputed Constructions

Term; Patent - Claim	Adopted Construction
"bit allocation table" '735-Claims 1, 9, 10	**table that indicates for all subchannels of a multicarrier signal, the number of bits to be encoded on each subchannel**
"developing a second bit allocation table" '735-Claim 1	**forming or updating a second bit allocation table that is non-duplicative of the first bit allocation table**
"frame" '735-Claim 10 '532-Claims 4, 6, 8, 9, 11	**grouping of bits to be modulated into a DMT symbol and/or demodulated from a DMT symbol**
"...a method for modulation bits onto subchannels..." '735-Claim 1	**typo; should read: ...a method for modulating bits onto subchannels...**
"seamlessly changing" "seamlessly transitioning" "seamlessly transition" "seamless transition" '808-Claims 1, 3, 7, 10, 40, 109 '473-Claims 42, 57 '991-Claims 9, 12, 13, 18 '928-Claims 1, 2, 3, 5, 6, 7 '601-Claims 17, 19, 21, 23	**changing, during data [transmission/reception] and not during initialization, without an interruption in the [transmission/reception] of data**

Term; Patent - Claim	Adopted Construction
"seamlessly changes" '808-Claims 40, 109	**changes, during data [transmission/reception] and not during initialization, without an interruption in the [transmission/reception] of data**
"seamlessly entering" '473-Claims 32, 37, 42, 57, 366, 372	**entering, during data [transmission/reception] and not during initialization, without an interruption in the [transmission/reception] of data**
"second transmission bit rate" '808-Claims 1, 3, 5, 40, 41	**second bit rate used to transmit bits different from the first bit rate**
"second reception bit rate" '808-Claims 7, 10, 109	**second bit rate used to receive bits different from the first bit rate**
"second data rate" '473-Claims 32, 37, 366, 372 '601-Claim 6	**second data rate used to transmit or receive data different from the first data rate**
"second bit rate" '473-Claims 42, 57 '991-Claims 9, 12, 13, 18	**second bit rate used to transmit or receive data different from the first bit rate**
"frame" '928-Claims 2, 6 '601-Claim 16	**grouping of bits to be modulated into a DMT symbol and/or demodulated from a DMT symbol**

Term; Patent - Claim	Adopted Construction
"codeword" '808-Claims 1, 3, 4, 5, 7, 8, 10, 40, 41, 109 '473-Claims 32, 37, 42, 57, 366, 372 '991-Claims 9, 12, 13, 18 '928-Claims 1, 2, 3, 5, 6, 7 '175-Claims 1, 7 '601-Claims 6, 7, 9, 11, 17, 21	**R-S codeword, which includes overhead framing bytes, user data bytes, and Reed-Solomon FEC check bytes**
"bit allocation table" "Bit Allocation Table" '808-Claims 1, 3, 5, 7, 10, 19, 20, 41, 43, 109 '473-Claims 32, 35, 37, 40, 42, 50, 57, 366, 367, 372, 373 '991-Claims 9, 12, 13, 18 '601-Claim 13	**table that indicates for all subchannels of a multicarrier signal, the number of bits to be encoded on each subchannel**
"...transmitting the plurality codewords..." '991-Claims 9, 12	**typo; should read: ...transmitting the plurality of codewords...**

Term; Patent - Claim	Adopted Construction
"...receiving the plurality codewords..." '991-Claims 13, 18	**typo; should read: ...receiving the plurality of codewords...**
"inverted synch symbol" '928-Claim 6	**typo; should read: inverted sync symbol**
[Preambles various of claims] '175-Claims 1, 7 '991-Claims 9, 12, 13, 18 '473-Claims 32, 37, 42, 57, 366, 372	**preambles are limitations**
"In a multicarrier a transceiver..." '928-Claims 1, 5	**a typo; should read: In a multicarrier transceiver...**
"first and second parameter sets defining data communications over said channels" '348-Claims 47, 49, 52	**first and second parameter sets, each of which defines data communications over both the upstream and downstream channels**
"subscriber loops" "subscriber loop" '912-Claims 2, 3	**twisted pair or copper, telephone wires**
[Preamble of Claim 1] '912-Claim 1	**Preamble is a limitation**

Term; Patent - Claim	Adopted Construction
"Internet address" '548-Claim 26	**a number that identifies an entity on the Internet**
"Internetwork addresses" '182-Claim 3	**numbers that identify entities on the data internetwork**
"local loops" "subscriber lines" '182-Claim 1 '182-Claim 14	**twisted pair or copper, telephone wires**
"said Internet service providers providing selective connection to information providers via said Internet subscriber lines" '182-Claim 4	**said Internet service providers transferring data between users and information providers**
"domain name server means" '182-Claim 2	**a server that translates domain names (e.g., www.yahoo.com) into an internet address (e.g., 164.109.211.239)**
"second data rate" '410-Claims 1, 12, 14, 77, 78 '876-Claim 1	**second data rate used to transmit or receive data different from the first data ratebytes, and Reed-Solomon FEC check bytes**

Term; Patent - Claim	Adopted Construction
"codeword" '410-Claims 12, 14, 77, 78 '876-Claim 1	**R-S codeword, which includes overhead framing bytes, user data bytes, and Reed-Solomon FEC check bytes**
"bit allocation table" '410-Claims 14, 77, 78 '876-Claim 1	**table that indicates for all subchannels of a multicarrier signal, the number of bits to be encoded on each subchannel**
"seamless change" '410-Claims 12, 14, 77, 78 '876-Claim 1	**change, during data [transmission / reception], without an interruption in the [transmission / reception] of data** **The revised construction of "seamless[ly] change / adapting" in the '410 and '876 Patents does not cover changing the data rate by restarting the initialization process.** **The phrase "the [transmission / reception] of data" in the revised construction refers to user data, as opposed to data used only for the purpose of initialization.**
"seamlessly adapting" '410-Claims 12, 14, 77, 78 '876-Claim 1	**changing, during data [transmission / reception], without an interruption in the [transmission / reception] of data** **The revised construction of "seamless[ly] change / adapting" in the '410 and '876 Patents does not cover changing the data rate by restarting the initialization process.** **The phrase "the [transmission / reception] of data" in the revised construction refers to user data, as opposed to data used only for the purpose of initialization.**

Term; Patent - Claim	Adopted Construction
1. "transceiver" '695-Claim 20	**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)**
2. "DSL modem or line-card" '636-Claims 52, 75	**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)**
3. "available operation modes" '695-Claim 20	**at least two of the following three modes characterizing bandwidth allocation between first and second channels: (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)**
4. "at least two asymmetrical digital subscriber line ADSL modes" "said at least two ADSL operation modes" '695-Claim 20	**at least a "conventional ADSL" mode where the bandwidth allocation of the first channel is smaller than the second channel, and a "reversible" mode where the bandwidth allocation of the first channel is larger than the second channel**
5. "allocation of bits to subchannels" "allocation of bits" '532-Claims 4, 6-12	**indication of the number of bits to be encoded to subchannels of a multicarrier signal**

Term; Patent - Claim	Adopted Construction
6. "storing the first and second bit allocation tables at each of the communication units" '735-Claim 1	**[plain and ordinary meaning]**
7. "select a first allocation of bits to subchannels" '532-Claim 4	**[plain and ordinary meaning]**
8. "select, in response to receipt of a flag from the other transceiver, a second allocation of bits to subchannels" '532-Claim 4	**[plain and ordinary meaning]**
9. "selecting, by the transceiver, a different allocation of bits to subchannels" '532-Claims 6, 9	**[plain and ordinary meaning]**
10. "flag" '735-Claims 9, 10	**signal**
11. "flag" '532-Claims 4, 6, 8, 9, 11	**signal**

Term; Patent - Claim	Adopted Construction
12. [entire claim] '735-Claims 1, 9, 10	**[not limited to order in which they are recited]**
13. [entire claim] '532-Claims 4, 6, 9	**[not limited to order in which they are recited]**
14. "changing transmission parameters" "changing subchannel transmission parameters" '928-Claim 1 '175-Claim 1	**changing [subchannel] parameters to adapt the rate for transmitting data**
15. "changing reception parameters" "changing subchannel reception parameters" '928-Claim 5 '175-Claim 7	**changing [subchannel] parameters to adapt the rate for receiving data**
16. "change at least one transmission parameter" '928-Claim 1	**change at least one parameter to adapt the rate for transmitting data**

Term; Patent - Claim	Adopted Construction
17. "change at least one reception parameter" '928-Claim 5	**change at least one parameter to adapt the rate for receiving data**
18. "change in subchannel transmission parameters" '175-Claims 1, 3	**change in subchannel parameters to adapt the rate for transmitting data**
19. "change in subchannel reception parameters" '175-Claim 9	**change in subchannel parameters to adapt the rate for receiving data**
20. "transition, during the data communications, from reception of a plurality of codewords at the first data rate to reception of the plurality of codewords at the second data rate" '601-Claim 6	**[plain and ordinary meaning]**
21. "transition to use of the new bit rate" '601-Claim 11	**[plain and ordinary meaning]**
22. "transition to use of the new data rate" '601-Claim 16	**[plain and ordinary meaning]**

Term; Patent - Claim	Adopted Construction
23. "ADSL frame" '473-Claims 32, 37 '175-Claims 1, 7	**unit of data at the framing layer including overhead framing bytes, user data bytes, and Reed-Solomon check bytes in an Asymmetric Digital Subscriber Line (ADSL) system**
24. "frame size" '928-Claims 3, 7 '601-Claims 9, 11, 19, 23	**number of bytes in a unit of data at the framing layer including overhead framing bytes, user data bytes, and Reed-Solomon check bytes in a system that utilizes multicarrier modulation**
25. "full power mode" '473-Claims 32, 37, 366, 372	**power mode that is used during normal operations of the transceiver and that is not a low power mode**
26. "flag" "flag signal" '473-Claims 32, 37, 43, 50, 58, 366, 372 '991-Claims 12, 18	**signal**
27. "storing at least first and second parameter sets" '348-Claims 47, 49, 52	**[plain and ordinary meaning]**
28. "selecting a parameter set" '348-Claims 47, 49, 52	**selecting one of the previously stored at least first and second parameter sets**

Term; Patent - Claim	Adopted Construction
29. "a signal that identifies the parameter set to be selected" '348-Claims 47, 49	**a signal that identifies one of the previously stored parameter sets to be selected**
30. "wire line" '348-Claims 47, 49, 52	**[plain and ordinary meaning]**
31. [entire claim] '348-Claims 47, 49, 52	**[steps are limited to the order in which they are recited]**
32. "a mechanism by which the subscriber selects one or more sources of video information to be provided to the subscriber's individual subscriber loop" '912-Claim 3	The function is: **subscriber selects one or more sources of video information to be provided to the subscriber's individual subscriber loop** The corresponding structure is: **a circuit including a voltage controlled oscillator (350, 545) that outputs a local oscillator frequency, based on a channel change control signal from a subscriber, to a mixer (530) for frequency shifting a composite FDM spectrum so that the frequency of a desired video channel is shifted into a passband of a subscriber filter**
33. "a source side interface unit of each pair being located relatively closer to a source of video information than a subscriber side interface unit" '912-Claim 1	**[plain and ordinary meaning]**

Term; Patent - Claim	Adopted Construction
34. [Claim preamble] '912-Claim 2	**[preamble is not a limitation]**
35. "assigning a temporary Internet address to the requesting entity" '548-Claim 26	**assigning a temporary Internet address to the requesting entity, the temporary Internet address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password**
36. "dynamic host configuration protocol server means" '182-Claim 2	**a dynamic host configuration protocol (DHCP) server that assigns an internetwork address to a requesting entity, the internetwork address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password**
37. "providing dynamic handling of addresses" '182-Claim 1	**dynamically providing addresses to a requesting entity, each address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password.**
38. "dynamically administer internetwork addresses for communications of the data processor terminals" '182-Claim 14	**dynamically provide internetwork addresses to data processor terminals, each internetwork address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password**
39. "provides to customer premises data terminals dynamic assignment of temporary internetwork addresses" '182-Claim 3	**dynamically assign temporary internetwork addresses to customer premises data terminals, each temporary internetwork address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password**

Term; Patent - Claim	Adopted Construction
40. "providing dynamic temporary assignment of one of a plurality of internetwork addresses" '182-Claim 15	**dynamically providing temporary assignment of one of a plurality of internetwork addresses, the internetwork address determined by a DHCP server based on a MAC address or other computer identifier, a customer login, and a password**
41. "routing data signals . . . from said central office splitting means" '182-Claim 1	**[plain and ordinary meaning]**
42. "a router . . . to provide packet switched communications for the data processor terminals via a public wide area data internetwork" '182-Claim 14	**[plain and ordinary meaning]**
43. "customer premises processor terminal" '548-Claim 26	**customer premises computer**
44. "the requesting entity" '548-Claim 26	**customer premises computer**
45. "Internet connected information service provider" '548-Claim 26	**Internet connected information provider**

Term; Patent - Claim	Adopted Construction
46. "said Internet connected service provider" '548-Claim 26	**Internet connected information provider**
47. "asymmetric digital subscriber line (ADSL)" '548-Claim 26	**[plain and ordinary meaning]**
48. "telephone Internet service provider network" '548-Claim 26	**a portion of an available public switched telephone network allowing a customer to access an Internet service provider**
49. "internetwork addresses" '182-Claims 14, 15	**numbers that identify entities on the public wide area data internetwork**
50. "assigned addresses" '182-Claim 16	**numbers that identify entities on the public wide area data internetwork**
51. "splitting means (subscriber premises)" '182-Claim 1	The function is: **splitting signals received over said local loops into data signals connected to said data terminals and telephony signals connected to said telephone terminals** The structure is: **a passive filter or a POTS splitter located in a remote ADSL Terminal Unit (ATU-R)**

Term; Patent - Claim	Adopted Construction
52. "splitting means (central office switching system)" '182-Claim 1	**[indefinite]**
53. "processor means" '182-Claims 1, 2, 3, 4	The functions are: **"switching, addressing and routing data signals received by said processor means from said central office splitting means (Claim 1); providing dynamic handling of addresses for data signals from said central office splitting means corresponding to signals from one of said local loops directed to said data internetwork (Claim 1); provides to customer premises data terminals dynamic assignment of temporary internetwork addresses and domain name to internetwork address translations (Claim 3); providing connectivity to said Internet service providers (Claim 4)** The structure is: **an Ethernet switch, a router, a DNS server and a DHCP server**
54. "telephony switch means" '182-Claim 1	**POTS or PSTN switch**

Term; Patent - Claim	Adopted Construction
55. "approximate(s)" '410-Claims 1, 2, 14, 77, 78	Claim 1: "that approximates at least one corresponding actual parameter value of the communication link" is construed to mean "**that comes close enough to at least one corresponding actual parameter value of the communication link as to allow operation of said communication link**" Claim 2: "that approximate a plurality of actual parameter values" is construed to mean "**that come close enough to a plurality of actual parameter values of the communication link as to allow operation of said communication link**" Claim 14: "that approximates a corresponding actual parameter value of the communication link" is construed to mean "**that comes close enough to a corresponding actual parameter value of the communication link as to allow operation of said communication link**" Claim 77: "that approximates a corresponding actual second bit allocation table, having an associated second data rate, of the communication link" is construed to mean "**that comes close enough to a corresponding actual second bit allocation table, having an associated second data rate, of the communication link as to allow operation of said communication link**." Claim 78: "that approximates a corresponding actual second bit allocation table, having an associated second data rate, of the communication link" is construed to mean "**that comes close enough to a corresponding actual second bit allocation table, having an associated second data rate, of the communication link as to allow operation of said communication link**."

Term; Patent - Claim	Adopted Construction
56. "approximation" '410-Claims 1, 14, 77, 78	Claim 1: "an approximation of the at least one actual parameter value of the communication link to allow the multicarrier transmission system to transmit data between the transceivers at the first data rate" is construed to mean "**a value that comes close enough to the at least one actual parameter value of the communication link as to allow the multicarrier transmission system to transmit data between the transceivers at the first data rate.**" Claim 14: "an approximation of the actual parameter value of the communication link to allow the multicarrier transmission system to transmit data between transceivers at the first data rate" is construed to mean "**a value that comes close enough to the actual parameter value of the communication link as to allow the multicarrier transmission system to transmit data between the transceivers at the first data rate.**" Claim 77: "an approximation of the actual second bit allocation table of the communication link to allow the multicarrier transmission system to transmit data between transceivers at the first data rate" is construed to mean "**a value that comes close enough to the actual second bit allocation table of the communication link as to allow the multicarrier transmission system to transmit data between transceivers at the first data rate.**" Claim 78: "an approximation of the actual second bit allocation table of the communication link to allow the multicarrier transmission system to transmit data between transceivers at the first data rate" is construed to mean "**a value that comes close enough to the actual second bit allocation table of the communication link as to allow the multicarrier transmission system to transmit data between transceivers at the first data rate**

Term; Patent - Claim	Adopted Construction
57. "actual parameter value"/"actual . . . bit allocation table" '410-Claims 1, 2, 6, 8, 14, 77, 78	**parameter value of the communication link determined by measurement, analysis, or both, such determination occurring during data communications, said value corresponding to the optimal data rate for the required bit error rate of the system** **bit allocation table determined by measurement, analysis, or both, such determination occurring during data communications, said table corresponding to the optimal data rate for the required bit error rate of the system**
58. "wherein the step of determining each of the plurality of actual parameter values is attained iteratively in a manner wherein at least one actual parameter value is determined in each iteration" '410-Claim 8	**[plain and ordinary meaning]**
59. "flag" "flag signal" '410-Claims 14, 77, 78	**signal**
60. "variable state length initialization" '068-Claims 4, 7, 13, 16 '171-Claims 2, 3 '545-Claims 5, 6	**initialization through which transceivers can change the length of one or more initialization states**

Term; Patent - Claim	Adopted Construction
61. "message includes [a/the] selected number of multicarrier symbols" '545-Claims 5, 6	**[no construction]**
62. "a transmitter configured to cooperatively perform a variable state length initialization with a receiver" '545-Claim 5	**[indefinite]**
63. "the transmitter is further configured to determine the selected number of multicarrier symbols in cooperation with the receiver" '545-Claim 5	**[indefinite]**
64. "selecting a number of multicarrier symbols by a transmitter of the multicarrier communication system in cooperation with a receiver of the multicarrier communication system as a part of a variable state length initialization of the transmitter and the receiver" '545-Claim 6	**[indefinite]**

Term; Patent - Claim	Adopted Construction
65. [Preamble] '068-Claims 4, 7, 13, 16	**[preamble is limiting]**
66. [Preamble] '171-Claims 2, 3	**[preamble is limiting]**

4. Conclusion

For the above reasons, the court construes the agreed and disputed claims as noted and so **ORDERS**. No further claim terms require construction.

IT IS FURTHER ORDERED that this case is set for a **Scheduling Conference** on **August 28, 2015, at 2:00 p.m.**, in Courtroom 7, Seventh Floor, United States Courthouse, 501 W. 5th Street, Austin, Texas 78701. The parties shall meet and confer in advance of that date in an attempt to settle this case. If the case is not settled, the parties shall confer in an attempt to reach agreement on a schedule to follow for the remainder of this case. The court will render a Scheduling Order as a result of the **August 28, 2015** conference.

SIGNED this 8th day of July 2015.

LEE YEAKEL
UNITED STATES DISTRICT JUDGE