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No.	Claim(s)	Claim Term	ASSIA's Proposed Construction	AT&T's Proposed Construction
U.S. Patent No. 7,428,669				
1.	14	"A method of adjusting Forward Error Correcting (FEC) coding in a Digital Subscriber Line (DSL) modem in which data is transmitted between a transmitter and a receiver on a channel,"	No construction necessary; this preamble is non-limiting.	Preamble is limiting.
2.	14	"adjusting the CCR when the MEV differs sufficiently from the TEV"	No construction necessary.	Indefinite.
U.S. Patent No. 7,593,458				
3.	1	"A method of evaluating operational characteristics of a multi-line, vectored Digital Subscriber Line (DSL) system having a plurality of crosstalking lines in a common communication channel (channel)"	No construction necessary; this preamble is non-limiting.	Preamble is limiting.
4.	4	"on a periodic basis"	at fixed intervals	Plain and ordinary meaning; no construction necessary.
U.S. Patent No. 7,991,122				
5.	14-18, 20	"DSL line set"	set of one or more DSL lines	Plain and ordinary meaning; no construction necessary.
6.	14, 20	"a data collection unit configured to collect operational data from a new	No construction necessary. These terms are not governed by § 112(f).	Indefinite.

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		DSL line set and an already-operating DSL line set;" "collecting operational data, via a data collection unit, from the new DSL line set and the already-operating DSL line set;"	In the alternative, if § 112(f) does apply, the function for claim 14 is: collecting operational data from a new DSL line set and an already-operating DSL line set; The corresponding structure includes: a computer, processor, IC, computer module, etc. as described at 13:35-39 If § 112(f) does apply, the function for claim 20 is: collecting operational data from a new DSL line set and an already-operating DSL line set; The corresponding structure includes: a computer, processor, IC, computer module, etc. as described at 13:35-39	
7.	14, 20	"an analysis unit coupled to the collection unit, wherein the analysis unit is configured to: analyze the collected operational data; determine an operational configuration for at least one DSL line in the new DSL line set that will	No construction necessary. These terms are not governed by § 112(f). In the alternative, if § 112(f) does apply, the function for claim 14 is: analyzing the collected operational data; determine an operational configuration for at least one DSL line	Indefinite.

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		allow the new DSL line set to join the already-operating DSL line set without disrupting the already-operating DSL line set; evaluate data received by the new DSL line set; and evaluate data received by the already-operating DSL line set;" "performing the following operations, via an analysis unit coupled to the collection unit: analyzing the collected operational data; determining an operational configuration for at least one DSL line in the new DSL line set that will allow the new DSL line set to join the already-operating DSL line set without disrupting the already-operating DSL line set; evaluating data received by the new DSL line set; and evaluating data received by the already-operating DSL line set;"	in the new DSL line set that will allow the new DSL line set to join the already-operating DSL line set without disrupting the already- operating DSL line set; evaluate data received by the new DSL line set; and evaluate data received by the already-operating DSL line set; The corresponding structure includes: a computer, processor, IC, computer module, etc. as described at 13:55-56. If § 112(f) does apply, the function for claim 20 is: analyzing the collected operational data; determining an operational configuration for at least one DSL line in the new DSL line set that will allow the new DSL line set to join the already-operating DSL line set without disrupting the already- operating DSL line set; evaluating data received by the new DSL line set; and evaluating data received by the already-operating DSL line set; The corresponding structure includes: a	

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			computer, processor, IC, computer module, etc. as described at 13:55-56.	
8.	14, 20	"a control signal generator coupled to the analysis unit, wherein the control signal generator is configured to send control signals to the new DSL line set and to the already-operating DSL line set, further wherein the control signals comprise signals controlling operation of at least one of the following: the new DSL line set; or the already-operating DSL line set;" "sending control signals, via a control signal generator coupled to the analysis unit, to the new DSL line set and to the already- operating DSL line set, further wherein the control signals comprise signals controlling operation of at least one of the following: the new DSL line set; or the already-operating DSL line set;"	No construction necessary. These terms are not governed by § 112(f). In the alternative, if § 112(f) does apply, the function for claim 14 is: "sending control signals to the new DSL line set and to the already-operating DSL line set, further wherein the control signals comprise signals controlling operation of at least one of the following: the new DSL line set; or the already-operating DSL line set;" "sending control signals to the new DSL line set and to the already-operating DSL line set, further wherein the control signals comprise signals controlling operation of at least one of the following: the new DSL line set; or the already-operating DSL line set;" The corresponding structure includes: a computer, processor, IC, computer module, etc. as described at 13:65-	Subject to 35 U.S.C. § 112, ¶ 6. **Function**: "send control signals to the new DSL line set and to the already-operating DSL line set, further wherein the control signals comprise signals controlling operation of at least one of the following: the new DSL line set; or the already-operating DSL line set" (claim 14) "sending control signals to the new DSL line set and to the already-operating DSL line set, further wherein the control signals comprise signals controlling operation of at least one of the following: the new DSL line set; or the already-operating DSL line set" **Structure**: "[A] DSLAM, modem and/or system operating signal generating means 350 (which can be a computer, processor, IC, computer module, etc. of the type generally known) inside or outside the controller 310." (13:65-14:2).

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			14:18.	
9.	20	"machine readable medium"	No construction necessary. In the alternative: tangible medium of a computer program product.	transitory or non-transitory machine readable medium
U.S. Patent No. 9,954,631				
10.	1, 34	"substantially not simultaneous"	No construction necessary.	Indefinite.
11.	1, 9, 11, 14, 33, 34, 35, 37	"physical channel"	No construction necessary.	a channel that transmits in only the upstream or the downstream, not both
12.	34	"machine-readable medium"	No construction necessary. In the alternative: tangible medium of a computer program product.	transitory or non-transitory machine readable medium
13.	37	"means for scheduling upstream time slots for upstream transmission in a first physical channel"	Under 35 U.S.C. § 112(6), the function for this term is: "scheduling upstream time slots for upstream transmission in a first physical channel" The corresponding structure for this term includes: a TDD management system, a scheduling module, and/or equivalents thereof as described in the	Subject to 35 U.S.C. § 112, ¶ 6. Function: "scheduling upstream time slots for upstream transmission in a first physical channel" (claim 37) Structure: Structure includes a TDD management system, which "includes a memory 1295 coupled directly or through a bus

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			Summary, Fig. 12, 3:22-26; 5:36-56; 5:61-62; 6:6-8; 8:10-13; 9:41-10:42; 11:11-15; 13:7-33; 13:42-47; 13:62-66; 14:24-34; 14:47-15:3; 16:13-19; and 16:45-18:23.	to a processor or processors 1296. The memory may be a hard drive, non-volatile memory, solid state memory, or a combination of different memory types for different purposes. The processor may also include its own internal memory. The memory may, for example, store instructions to be executed and the processor may execute the stored instructions. The processor may also implement or execute implementing logic 1260 having logic to implement the methodologies discussed herein. System 1200 includes one or more communications buses 1215 to connect the various illustrated components and to transfer transactions, instructions, requests, and data within the system among the components and other peripheral devices. The system further includes a management interface 1225 coupled to the bus and to external management devices, for example, to receive requests, return responses, and otherwise interface with network elements located separately from the system. This information may include Operations Support System (OSS)

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				data and Management Information Database (MIB) parameters. These network elements may include access nodes, a central office, vectoring units, crossboxes, TU-Rs, and TU-Os. The system further includes a LAN (Local Area Network) interface 1230 coupled to the bus and externally to communicate information via a LAN based connection, including collecting network information, reporting information and diagnostics to other entities within the network, and for initiating instructions and commands over the network. The system further includes a WAN (Wide Area Network) interface 1235 coupled to the bus and to an external WAN, to communicate information via a WAN based connection for similar purposes and to reach other more remote devices." '631 patent at 14:47-15:13. **OR** Structure includes a scheduling or analysis module of a management device, which "is coupled to the bus [and] includes a collection module

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No.	Claim(s)	Claim Term	ASSIA's Proposed Construction	AT&T's Proposed Construction
				1270, analysis module 1275, diagnostics module 1280, and implementation module 1285. Management Device 1201 may be installed and configured in a compatible system 1200 as is depicted by FIG. 12A, or provided separately so as to operate in conjunction with appropriate implementing logic 1260 or other software." *Id*. at 15:45-51. "The modules of the management device 1201 may be provided as separate components coupled to the bus 1215 as shown or may be incorporated into the processor or memory or another component. The management device may include its own processing and memory resources that interact with the processor and the external interfaces. The management device may include more or fewer modules than those shown. The TDD management system of FIG. 12 is provided only as an example and may be modified to suit different implementations. It may also be incorporated into another component such as an access node, or a TU-O. In one embodiment, the management

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				system is provided as a card in a system rack with a backplane interface to communicate with local and remote network elements." *Id.* at 16:6-19.
14.		"means for scheduling downstream time slots for downstream transmission in a second physical channel subject to crosstalk from the upstream time slots, wherein transmission in the upstream time slots is substantially not simultaneous with transmission in the downstream time slots"	Under 35 U.S.C. § 112(6), the term under construction should be "means for scheduling downstream time slots for downstream transmission in a second physical channel subject to crosstalk from the upstream time slots." The function for this term is: "scheduling upstream time slots for upstream transmission in a first physical channel subject to crosstalk from the upstream time slots" The corresponding structure for this term includes: a TDD management system, a scheduling module, and/or equivalents thereof as described in the Summary, Fig. 12, 3:22-26; 5:36-56; 5:61-62; 6:6-8; 8:10-13; 9:41-10:42; 11:11-15; 13:7-33; 13:42-47; 13:62-66; 14:24-34;	Subject to 35 U.S.C. § 112, ¶ 6. Function: "scheduling downstream time slots for downstream transmission in a second physical channel subject to crosstalk from the upstream time slots" (claim 37) Structure: Structure includes a TDD management system, which "includes a memory 1295 coupled directly or through a bus to a processor or processors 1296. The memory may be a hard drive, non-volatile memory, solid state memory, or a combination of different memory types for different purposes. The processor may also include its own internal memory. The memory may, for example, store instructions to be executed and the processor may execute the stored instructions. The

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			14:47-15:3; 16:13-19; and 16:45-18:23.	processor may also implement or execute implementing logic 1260 having logic to implement the methodologies discussed herein. System 1200 includes one or more communications buses 1215 to connect the various illustrated components and to transfer transactions, instructions, requests, and data within the system among the components and other peripheral devices. The system further includes a management interface 1225 coupled to the bus and to external management devices, for example, to receive requests, return responses, and otherwise interface with network elements located separately from the system. This information may include Operations Support System (OSS) data and Management Information Database (MIB) parameters. These network elements may include access nodes, a central office, vectoring units, crossboxes, TU-Rs, and TU-Os. The system further includes a LAN (Local Area Network) interface 1230 coupled to the bus and externally to communicate information via a LAN

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				based connection, including collecting network information, reporting information and diagnostics to other entities within the network, and for initiating instructions and commands over the network. The system further includes a WAN (Wide Area Network) interface 1235 coupled to the bus and to an external WAN, to communicate information via a WAN based connection for similar purposes and to reach other more remote devices." '631 patent at 14:47-15:13. **OR** Structure includes a scheduling or analysis module of a management device, which "is coupled to the bus [and] includes a collection module 1270, analysis module 1275, diagnostics module 1280, and implementation module 1285. Management Device 1201 may be installed and configured in a compatible system 1200 as is depicted by FIG. 12A, or provided separately so as to operate in

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				conjunction with appropriate implementing logic 1260 or other software." *Id*. at 15:45-51. "The modules of the management device 1201 may be provided as separate components coupled to the bus 1215 as shown or may be incorporated into the processor or memory or another component. The management device may include its own processing and memory resources that interact with the processor and the external interfaces. The management device may include more or fewer modules than those shown. The TDD management system of FIG. 12 is provided only as an example and may be modified to suit different implementations. It may also be incorporated into another component such as an access node, or a TU-O. In one embodiment, the management system is provided as a card in a system rack with a backplane interface to communicate with local and remote network elements." *Id.* at 16:6-19.

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