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

CROSSROAD SYSTEMS (TEXAS), INC.,
Plaintiff,

-vs-

Case No. A-03-CA-754-SS

DOT HILL SYSTEMS CORPORATION,
Defendant.

REPORT AND RECOMMENDATION OF THE SPECIAL MASTER REGARDING UNITED STATES PATENT NOS. 5,941,972 and 6,425,035 B2

Attached hereto is the Special Master's Report and Recommendation to United States District Judge Sam Sparks regarding the construction of claims in United States Patent Nos. 5,941,972 ("the '972 patent") and 6,425,035 B2 ("the '035 patent").

The Special Master notes that during the course of the pre-hearing and post-hearing briefing as well as the *Markman* hearing itself, the parties reached agreement on certain terms initially identified as being in dispute. For instance, the parties' stipulated definition of the claim term "native low level, block protocol," which is the same in both patents, was incorporated into their Stipulated Definitions of Claim Terms [#131], filed with the Court on August 31, 2004. Also, although Crossroads initially identified the term "remote storage devices" in the '035 patent as one of the terms requiring the Court's construction, it has apparently abandoned that position since the parties' dispute over the meaning of "remote storage devices" may be resolved by the Court's construction of the word "remote" without the need for a separate construction of the entire phrase.

Additionally, in its post-hearing briefing, Crossroads stipulated to Dot Hill's definition of the term "allow access" in both patents based on the representations of Dot Hill's counsel at the hearing and in Dot Hill's briefing that the portion of Crossroads' proposed definition which was excluded by Dot Hill's definition—"preventing unauthorized communication"—is part of the definition of the phrase, "implementing access controls," which also appears in the patents. *See*

Crossroads's Post-Hr'g *Markman* Br. at 8; Tr. of *Markman* Hr'g at 119:2–19; Dot Hill's Post-*Markman* Hr'g Claim Construction Br. at 22.

Proposed constructions for the remaining disputed terms are attached hereto. The parties may file written objections to the recommendations made in this report within ten (10) days from the date of their receipt of it pursuant to the Court's Order of February 23, 2004.

SIGNED this the 19th day of January 2005.

KARL BAYER
SPECIAL MASTER

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

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Civil Case No. A:03-754 SS

Crossroad Systems (Texas) Inc.

VS.

Dot Hill Systems Corporation

Attachments to Document #: 245

Description: Report and Recommendation of the Special Master Regarding U.S. Patent Nos. 5,941,972 and 6,425,035 B2

File Date: January 21, 2005

Prepared by: dm

This sheet to be imaged as the last page.

All additional pages to be sent by certified mail to all parties

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
United States Patent No. 6,425,035 B2					
Claim 1					
A **storage router** for providing virtual local storage on remote storage devices to devices, comprising:	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '035 patent: col. 9, ll. 13-31. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of "storage router" to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '035 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 53-55 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; Col. 3, lines 30-32 Col. 3, lines 51-53 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
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				Col 2, lines 56-58 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; Col. 3, lines 64-66 Col. 3, lines 30-40, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 41-43 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 54-56 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34"	

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				Col. 4, lines 7-8 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript)	

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				Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the	

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				most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a	

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				routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according	

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				to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
A storage router for providing **virtual local storage** on remote storage devices to devices, comprising:	**Virtual Local Storage:** "A specific subset of storage space in a remote storage device that has the appearance and characteristics of local storage."	**Virtual Local Storage:** **Intrinsic:** '035 patent: col. 2, ll. 29-31; col. 4, ll. 7-16; col. 4, ll. 44-47. **Extrinsic:** Tr. 13:3-14; Tr. 18:5-12; Tr. 111:6-15; Tr. 184:8-185:1; Tr. 187:12-20; Webster's II New Riverside University definitions of "appearance" and "characteristics," Shelton Decl. ISO Crossroads' Reply, Ex. 6; ¶ 12 of Hodges Decl. ISO Crossroads' Response.	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device. NOTE: This is the definition of *virtual local storage*, but since this phrase appears only in the preamble to explain the context in which the storage router is used, it is not a limitation of this claim.	**Virtual Local Storage:** **Intrinsic:** '035 Patent: Abstract; Col. 1, lines 19-20; Col. 1, lines 63-65; Col. 2, lines 1-4; Col. 4, lines 51-54; and Claim 1 ("virtual local storage on remote SCSI storage devices") Col. 1, lines 39-42, "Local storage typically consists of a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation." Col. 2, lines 29-31 and Col. 4, lines 19-25,	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.

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				distinguishing virtual local storage from ordinary remote storage. Col. 8, lines 62-65 and Col. 9, lines 3-6 associating virtual local storage with storage space. **Extrinsic:** *Webster's II New Riverside Dictionary* (1984) definition of "virtual" as "[e]xisting or resulting in effect through not in actual fact" (DHS Brief, Ex. 9) *Webster's II New Riverside Dictionary* (1984) definition of "storage" as "a space for storing goods" or " the part of a computer that stores information for subsequent use or retrieval" (DHS Brief, Ex. 9)	

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				Crossroads' *Markman* Brief at 1, stating "The patents-in-suit concern inventions that allow computers to access remote storage devices as if they were local (i.e. 'virtual local storage'), while at the same time providing access controls." (Crossroads' Brief) Crossroads' Markman Brief, Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) ("Crossroads' *Chaparral* Markman Brief", concerning the '972 Patent) at 3, where Crossroads states that "The term 'local storage' typically refers to storage devices which are directly connected to the computer (as opposed to devices connected to a	

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				computer through a network)." (DHS Brief Ex. 10)	
A storage router for providing virtual local storage on **remote** storage devices to devices, comprising: a buffer providing memory work space for the storage router; a first controller operable to connect to and interface with a first transport medium;	**Remote:** "Indirectly connected through at least one serial network transport medium that encapsulates the native low-level block protocol."	**Remote:** **Intrinsic:** '035 patent: col. 1, ll. 23-36; col. 2, ll. 1-34; col. 5, ll. 46-48; col. 5, ll. 52-57; col. 6, ll. 19-31; col. 9, ll. 26-31. **Extrinsic:** Tr. 102:14-20; Rhyne Cross, Tr. 159:17-18; Rhyne Cross, Tr. 161:7-8; Rhyne Cross, Tr. 174:14-24; Tr. 180:5-14; Mr. Erwine's Notes, Shelton Decl. ISO Crossroads' Reply, Ex. 4.	**Remote:** Indirectly connected and capable of physical separation. NOTE: This is the definition of *remote*, but since this phrase appears only in the preamble to explain the context in which the storage router is used, it is not a limitation of this claim.	**Remote:** **Intrinsic:** '035 Patent: Col. 1, lines 39-42 using the term "remote" to refer to storage which is not "local," and defining "local" as "a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation." Col. 1, lines 63-67, describing storage capacity which is not local as "remote." Col. 2, line 32 "significantly remote" **Extrinsic:** *Webopedia* definition of "remote" (Last modified	**Remote:** Indirectly connected through at least one serial network transport medium.

Special Master's Proposed Construction of Disputed Terms					
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				September 1, 1996) as "In networks, remote refers to files, devices, and other resources that are not connected directly to your workstation. Resources at your workstation are considered local" (DHS Brief Ex. 6) *Webopedia* definition of "local" (Last modified September 1, 1996) as "In networks, local refers to files, devices, and other resources at your workstation. Resources located at other nodes on the network are remote." (DHS Brief Ex. 6) Deposition of inventor Hoese, pages 143, 146, 147, 154-155 confirming that "remote" is not a function of distance by stating "It appears to be that the intent was to describe the storage as	

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				not being directly connected as local storage would be, but to be connected remotely, as in across a network or other means." (DHS Brief Ex. 14) Deposition of inventor Russell pages 104-105 confirming that "remote" is not a function of distance by stating "And it might be right next to me or it could be, you know, across the country, but that would allow me to get at that remote storage." (DHS Brief Ex. 15) Declaration of Rhyne, paragraph 19, stating that "[T]he meaning of 'remote' in general and in the specific context of the Crossroads patents has nothing to do with the physical distance between a workstation	

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				and a storage device, but rather has to do with the topological nature of the interconnection between those devices." (DHS Responsive Brief Ex. 18) Declaration of Rhyne, paragraph 27, stating that "[T]he common meaning of 'remote' is the opposite of 'local,' and does not carry a distance characteristic." (DHS Responsive Brief Ex. 18) Declaration of Hodges in Support of Crossroads' Opening Markman Brief (7/27/04), paragraph 9, stating that "The term 'local storage' typically refers to storage devices which are directly connected to the computer (as opposed to storage devices connected to a computer through a network). Local storage also	

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				typically refers to storage devices which are located a very short distance from the computer, i.e. a few feet." (Crossroads' Brief) Markman hearing testimony of Rhyne at 15:3-15, showing that a definition of "remote" could be simply "indirectly connected." (Hearing Transcript)	
a second controller operable to connect to and interface with a second transport medium; and a **supervisor unit** coupled to the first controller, the second controller and the buffer, the **supervisor unit** operable to map between devices connected to the first transport medium and the storage devices,	**Supervisor Unit:** "A computer processing device programmed to process data in a buffer in order to map between device connected to a first transport medium and devices connected to a second transport medium which implements access controls."	**Supervisor Unit:** **Intrinsic:** '035 patent: col. 6, ll. 3-10; col. 9; ll. 22-31. **Extrinsic:** Hodges Direct, Tr. 36:3-37:9.	**Supervisor Unit:** A microprocessor programmed to process data in a buffer in order to map between devices connected to the first transport medium and storage devices and which implements access controls.	**Supervisor Unit:** **Intrinsic:** '035 Patent: Col. 5, lines 12-17, describing a Supervisor Unit that "comprises a microprocessor ..." Col. 1, lines 37-39 and col. 4, lines 39-40 equating a "computing device" with workstations. Compare '035 claims	**Supervisor Unit:** A device comprising at least: (1) a microprocessor, incorporating independent data and program memory spaces; and (2) associated logic required to implement a stand alone processing system and programmed to process data in a buffer in order to map between devices connected to a first transport medium and devices connected to a second transport medium and which implements access controls.

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				with claims of U.S. Patent No. 5,941,972 ('972 Patent), showing that the '035 patent claims closely track the '972 patent claims, except that the limitations of Fibre Channel and SCSI protocols have been replaced with more generic terms. **Extrinsic:** *Chaparral* Markman Order at 9 (DHS Brief Ex. 8) Crossroads' *Chaparral* Markman Brief at 25, where Crossroads argues that the patent specification explicitly states that the supervisor unit comprises a microprocessor. (DHS Brief Ex. 10)	
to implement access controls for storage space on the storage devices and to process	**Data:** "Any digital information excluding commands and	**Data:** **Intrinsic:**	**Data:** Any digital information.	**Data:** **Extrinsic:**	**Data:** Any digital information excluding commands and requests to access

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data in the buffer to interface between the first controller and the second controller to allow access from devices connected to the first transport medium to the storage devices using native low level, block protocols.	requests used to access data in a storage unit."	'035 patent: col. 4, l. 10; col. 4, ll. 48-50; col. 5, ll. 18-32; col. 7, ll. 24-32. **Extrinsic:** Hodges Direct, Tr. 41:14-28; Tr. 202:25-203:8.		*Webster's II New Riverside Dictionary (1984)* definition of "datum" (the singular form of "data") as "[o]ne piece of information." (DHS Brief Ex. 9) *Webopedia* definition of "data" as [d]istinct pieces of information, usually formatted in a special way. Data can exist in a variety of forms - as numbers of text on pieces of paper, as bits and bytes stored in electronic memory or as facts stored in a person's mind." (DHS Brief Ex. 6) Markman Hearing testimony of Hodges at 79:15-22 and 80:4-5 (Hearing Transcript)	digital information.
to implement access controls for storage space on the storage devices and to process	**Allow Access:** "Permit or enable communication in order to	**Allow Access:** **Extrinsic:**	**Allow Access:** Permit or enable communication in order to	**Allow Access:** **Intrinsic:**	**Allow Access:** Permit or enable communication to read or write data.

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data in the buffer to interface between the first controller and the second controller to **allow access** from devices connected to the first transport medium to the storage devices using native low level, block protocols.	read or write data."	Tr. 119:2-5.	read or write data.	'035 Patent: Col. 2, lines 9-15, distinguishing "access controls" from the concept of "allowing access." Claim 1, reciting the term "access controls" separate and apart from the words "allow access," describing "a supervisor unit ... that implements access controls for storage space on the SCSI storage devices; and ... to allow access from Fibre Channel initiator devices to SCSI storage devices" Claim 7, reciting the term "access controls" separate and apart from the words "allow access," describing "a storage router ... operable ... to implement access	

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				controls for storage space on the SCSI storage devices; and to allow access from the workstations to the SCSI storage devices" **Extrinsic:** *Microsoft Computer Dictionary* (5th ed. 2002) definition of "access" as "the act of reading data from or writing data to memory" (DHS Brief Ex. 5) *WordNet Dictionary* definition of "access" as "the operation of reading or writing stored information" (DHS Brief Ex. 13) Crossroads' Post-*Markman* Brief at page 8: "Crossroads agrees that 'allow access' should be construed as 'permit or enable communication in order	

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				to read or write data.' (Tr. 119:2-25.)" (Crossroads' Post-Hearing Brief)	
1. A storage router for providing virtual local storage on remote storage devices to devices, comprising: a buffer providing memory work space for the storage router; a first controller operable to connect to and interface with a **first transport medium**; a second controller operable to connect to and interface with a second transport medium; and a supervisor unit coupled to the first controller, the second controller and the buffer, the supervisor unit operable to map between devices connected to the **first transport medium** and the storage devices, to implement			**First Transport Medium:** A communications link.	**First Transport Medium:** NOTE: Although Crossroads has stipulated to the joint definition of both "first transport medium" and "second transport medium" as "a communications link," Crossroads continues to argue that this does not mean "***any*** communications link," but rather that the '035 patent claims must be construed so as not to include transport media that both follow the SCSI protocol. (See, Hearing Transcript, page 188, line 21 to page 189, line 2) **Intrinsic:** '035 Patent: Col. 2, lines 39-41 "A	**First Transport Medium:** (see attached stipulations)

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access controls for storage space on the storage devices and to process data in the buffer to interface between the first controller and the second controller to allow access from devices connected to the first transport medium to the storage devices using native low level, block protocols.				further technical advantage of the present invention is providing support for SCSI storage devices as local storage for Fiber Channel hosts." Col. 6, lines 21-23, showing that the first transport medium can be SCSI by describing the second mode of operation as "SCSI Initiator to FC Target" and the third mode of operation as "SCSI Initiator to SCSI Target." Col. 5, line 47 using the phrase "SCSI networks." **Extrinsic:** Web page printouts produced at *Markman* Hearing (DHS Hearing Exhibits Ex. 1-4) Network World article (May 8, 1989) describing SCSI networks that	

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				interface multiple, dissimilar workstations" (DHS Post-Hearing Brief Ex. B) Network World article (March 14, 1995) describing extender products that depend upon the existence of SCSI networks" (DHS Post-Hearing Brief Ex. C) Letter from Steve Sprinkle to James Lambert dated October 29, 2002, showing that Crossroads believes that the '035 Patent claims cover "access controls between devices without regard to the protocol." (DHS Post-Hearing Brief, Ex. D) Crossroads' abandoned April 23, 2004 claim term construction proposing that "first	

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				transport medium" be defined as "a communication medium other than SCSI" (DHS Post-Hearing Brief, Ex. E) Stipulated Definition of Claim Terms, page 1, defining "First transport medium" as "A communications link." (Exhibit B of this matrix)	
Claim 2:					
The **storage router** of claim 1,	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '035 patent: col. 9, ll. 13-31. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of "storage router" to one of ordinary skill in the art in 1997), Shelton Decl. ISO	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '035 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 53-55 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; Col. 3,	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

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		Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.		lines 30-32 Col. 3, lines 51-53 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 56-58 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; Col. 3, lines 64-66 Col. 3, lines 30-40, describing a storage network that includes a storage router instead of a network server.	

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				Col. 3, lines 41-43 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3; lines 54-56 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 7-8 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:**	

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				Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief	

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				Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines	

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				29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that	

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				devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
wherein the **supervisor unit** maintains an allocation of subsets of storage space to associated devices connected to the	**Supervisor Unit:** "A computer processing device programmed to process data in a buffer in order to map between device connected to a first transport	**Supervisor Unit:** **Intrinsic:** '035 patent: col. 6, ll. 3-10; col. 9; ll. 22-31.	**Supervisor Unit:** A microprocessor programmed to process data in a buffer in order to map between devices connected to the first transport medium and	**Supervisor Unit:** **Intrinsic:** '035 Patent: Col. 5, lines 12-17, describing a Supervisor	**Supervisor Unit:** A device comprising at least: (1) a microprocessor, incorporating independent data and program memory spaces; and (2) associated logic required to

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
32 of 209	medium and devices connected to a second transport medium which implements access controls."	**Extrinsic:** Hodges Direct, Tr. 36:3-37:9.	storage devices and which implements access controls.	Unit that "comprises a microprocessor ..." Col. 1, lines 37-39 and col. 4, lines 39-40 equating a "computing device" with workstations. Compare '035 claims with claims of U.S. Patent No. 5,941,972 ('972 Patent), showing that the '035 patent claims closely track the '972 patent claims, except that the limitations of Fibre Channel and SCSI protocols have been replaced with more generic terms. **Extrinsic:** *Chaparral* Markman Order at 9 (DHS Brief Ex. 8) Crossroads' *Chaparral* Markman Brief at 25,	implement a stand alone processing system and programmed to process data in a buffer in order to map between devices connected to a first transport medium and devices connected to a second transport medium and which implements access controls.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				where Crossroads argues that the patent specification explicitly states that the supervisor unit comprises a microprocessor. (DHS Brief Ex. 10)	
first transport medium, wherein each subset is only accessible by the associated device connected to the first transport medium			**First Transport Medium:** A communications link.	**First Transport Medium:** NOTE: Although Crossroads has stipulated to the joint definition of both "first transport medium" and "second transport medium" as "a communications link," Crossroads continues to argue that this does not mean "***any*** communications link," but rather that the '035 patent claims must be construed so as not to include transport media that both follow the SCSI protocol. (See, Hearing Transcript, page 188, line 21 to page 189, line 2)	**First Transport Medium:** (see attached stipulations)

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Intrinsic: '035 Patent: Col. 2, lines 39-41 "A further technical advantage of the present invention is providing support for SCSI storage devices as local storage for Fiber Channel hosts." Col. 6, lines 21-23, showing that the first transport medium can be SCSI by describing the second mode of operation as "SCSI Initiator to FC Target" and the third mode of operation as "SCSI Initiator to SCSI Target." Col. 5, line 47 using the phrase "SCSI networks." **Extrinsic:** Web page printouts produced at *Markman* Hearing (DHS Hearing Exhibits Ex. 1-4)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Network World article (May 8, 1989) describing SCSI networks that interface multiple, dissimilar workstations" (DHS Post-Hearing Brief Ex. B) Network World article (March 14, 1995) describing extender products that depend upon the existence of SCSI networks" (DHS Post-Hearing Brief Ex. C) Letter from Steve Sprinkle to James Lambert dated October 29, 2002, showing that Crossroads believes that the '035 Patent claims cover "access controls between devices without regard to the protocol." (DHS Post-Hearing Brief, Ex. D) Crossroads' abandoned	

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				April 23, 2004 claim term construction proposing that "first transport medium" be defined as "a communication medium other than SCSI" (DHS Post-Hearing Brief, Ex. E) Stipulated Definition of Claim Terms, page 1, defining "First transport medium" as "A communications link." (Exhibit B of this matrix)	
Claim 3					
The **storage router** of claim 2, wherein the devices connected to the first transport medium comprise workstations.	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '035 patent: col. 9, ll. 13-31. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '035 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 53-55 "FIG. 2 is a block diagram of one embodiment of a	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
		no accepted meaning of "storage router" to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.		storage network with a storage router that provides global access and routing"; Col. 3, lines 30-32 Col. 3, lines 51-53 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 56-58 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; Col. 3, lines 64-66 Col. 3, lines 30-40,	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				describing a storage network that includes a storage router instead of a network server. Col. 3, lines 41-43 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 54-56 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 7-8 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
first transport medium comprise workstations.			**First Transport Medium:** A communications link.	**First Transport Medium:**	**First Transport Medium:** (see attached stipulations)

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				NOTE: Although Crossroads has stipulated to the joint definition of both "first transport medium" and "second transport medium" as "a communications link," Crossroads continues to argue that this does not mean "***any*** communications link," but rather that the '035 patent claims must be construed so as not to include transport media that both follow the SCSI protocol. (See, Hearing Transcript, page 188, line 21 to page 189, line 2) **Intrinsic:** '035 Patent: Col. 2, lines 39-41 "A further technical advantage of the present invention is providing support for SCSI storage devices as local storage	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				for Fiber Channel hosts." Col. 6, lines 21-23, showing that the first transport medium can be SCSI by describing the second mode of operation as "SCSI Initiator to FC Target" and the third mode of operation as "SCSI Initiator to SCSI Target." Col. 5, line 47 using the phrase "SCSI networks." **Extrinsic:** Web page printouts produced at *Markman* Hearing (DHS Hearing Exhibits Ex. 1-4) Network World article (May 8, 1989) describing SCSI networks that interface multiple, dissimilar workstations" (DHS Post-Hearing Brief Ex. B)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Network World article (March 14, 1995) describing extender products that depend upon the existence of SCSI networks" (DHS Post-Hearing Brief Ex. C) Letter from Steve Sprinkle to James Lambert dated October 29, 2002, showing that Crossroads believes that the '035 Patent claims cover "access controls between devices without regard to the protocol." (DHS Post-Hearing Brief, Ex. D) Crossroads' abandoned April 23, 2004 claim term construction proposing that "first transport medium" be defined as "a communication medium other than SCSI" (DHS	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Post-Hearing Brief, Ex. E) Stipulated Definition of Claim Terms, page 1, defining "First transport medium" as "A communications link." (Exhibit B of this matrix)	
Claim 4					
The **storage router** of claim 2, wherein the storage devices comprise hard disk drives.	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '035 patent: col. 9, ll. 13-31. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of "storage router" to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '035 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 53-55 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; Col. 3, lines 30-32 Col. 3, lines 51-53 (referring to Figure 2)	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				"[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 56-58 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; Col. 3, lines 64-66 Col. 3, lines 30-40, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 41-43 "Storage router 44 routes requests from initiator	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 54-56 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 7-8 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role.	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
Claim 5					
The **storage router** of claim 1, wherein the first controller comprises: a first protocol unit operable to connect to the first transport medium; a first-in-first-out queue coupled to the first protocol unit;	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '035 patent: col. 9, ll. 13-31. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go,*	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '035 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
and a direct memory access (DMA) interface coupled to the first-in-first-out queue and to the buffer.		*Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of "storage router" to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.		Col. 2, lines 53-55 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; Col. 3, lines 30-32 Col. 3, lines 51-53 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 56-58 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; Col. 3, lines	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				64-66 Col. 3, lines 30-40, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 41-43 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 54-56 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 7-8 "According to the present invention, storage router 56 has enhanced functionality ..."	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads'	

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex.	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				A)	
to the **first transport medium**; a first-in-first-out queue coupled to the first protocol unit; and a direct memory access (DMA) interface coupled to the first-in-first-out queue and to the buffer.			**First Transport Medium:** A communications link.	**First Transport Medium:** NOTE: Although Crossroads has stipulated to the joint definition of both "first transport medium" and "second transport medium" as "a communications link," Crossroads continues to argue that this does not mean "***any*** communications link," but rather that the '035 patent claims must be construed so as not to include transport media that both follow the SCSI protocol. (See, Hearing Transcript, page 188, line 21 to page 189, line 2) **Intrinsic:** '035 Patent: Col. 2, lines 39-41 "A further technical advantage of the present	**First Transport Medium:** (see attached stipulations)

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
60 of 209				invention is providing support for SCSI storage devices as local storage for Fiber Channel hosts." Col. 6, lines 21-23, showing that the first transport medium can be SCSI by describing the second mode of operation as "SCSI Initiator to FC Target" and the third mode of operation as "SCSI Initiator to SCSI Target." Col. 5, line 47 using the phrase "SCSI networks." **Extrinsic:** Web page printouts produced at *Markman* Hearing (DHS Hearing Exhibits Ex. 1-4) Network World article (May 8, 1989) describing SCSI networks that interface multiple, dissimilar workstations"	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				(DHS Post-Hearing Brief Ex. B) Network World article (March 14, 1995) describing extender products that depend upon the existence of SCSI networks" (DHS Post-Hearing Brief Ex. C) Letter from Steve Sprinkle to James Lambert dated October 29, 2002, showing that Crossroads believes that the '035 Patent claims cover "access controls between devices without regard to the protocol." (DHS Post-Hearing Brief, Ex. D) Crossroads' abandoned April 23, 2004 claim term construction proposing that "first transport medium" be defined as "a	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				communication medium other than SCSI" (DHS Post-Hearing Brief, Ex. E) Stipulated Definition of Claim Terms, page 1, defining "First transport medium" as "A communications link." (Exhibit B of this matrix)	
Claim 6					
The **storage router** of claim 1, wherein the second controller comprises: a second protocol unit operable to connect to the second transport medium; an internal buffer coupled to the second protocol unit; and a direct memory access (DMA) interface coupled to the internal buffer and to the buffer of the **storage router**.	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '035 patent: col. 9, ll. 13-31. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of "storage router" to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '035 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 53-55 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; Col. 3, lines 30-32	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
63 of 209		Crossroads' Response.		Col. 3, lines 51-53 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 56-58 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; Col. 3, lines 64-66 Col. 3, lines 30-40, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 41-43	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
64 of 209				"Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 54-56 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 7-8 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
65 of 209				Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
66 of 209				*Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
67 of 209				provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as	

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				bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
Claim 7					
A storage network, comprising: a first transport medium; a second transport medium; a plurality of workstations connected to the first transport medium; a plurality of storage devices	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '035 patent: col. 9, ll. 13-31. **Extrinsic:** Marc Songini, *Storage*	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '035 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
connected to the second transport medium; and a **storage router** interfacing between the first transport medium and the second transport medium, the **storage router** providing virtual local storage on the storage devices to the workstations and operable:		*Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of "storage router" to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.		Col. 2, lines 53-55 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; Col. 3, lines 30-32 Col. 3, lines 51-53 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 56-58 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
70 of 209				storage"; Col. 3, lines 64-66 Col. 3, lines 30-40, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 41-43 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 54-56 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 7-8 "According to the present invention, storage router 56 has enhanced functionality	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3)	

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				"router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
74 of 209				device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex.	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				A)	
and a storage router interfacing between the first transport medium and the second transport medium, the storage router providing **virtual local storage** on the storage devices to the workstations and operable:	**Virtual Local Storage:** "A specific subset of storage space in a remote storage device that has the appearance and characteristics of local storage."	**Virtual Local Storage:** **Intrinsic:** '035 patent: col. 2, ll. 29-31; col. 4, ll. 7-16; col. 4, ll. 44-47. **Extrinsic:** Tr. 13:3-14; Tr. 18:5-12; Tr. 111:6-15; Tr. 184:8-185:1; Tr. 187:12-20; Webster's II New Riverside University definitions of "appearance" and "characteristics," Shelton Decl. ISO Crossroads' Reply, Ex. 6; ¶ 12 of Hodges Decl. ISO Crossroads' Response.	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.	**Virtual Local Storage:** **Intrinsic:** '035 Patent: Abstract; Col. 1, lines 19-20; Col. 1, lines 63-65; Col. 2, lines 1-4; Col. 4, lines 51-54; and Claim 1 ("virtual local storage on remote SCSI storage devices") Col. 1, lines 39-42, "Local storage typically consists of a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation." Col. 2, lines 29-31 and Col. 4, lines 19-25, distinguishing virtual local storage from ordinary remote storage. Col. 8, lines 62-65 and Col. 9, lines 3-6	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				associating virtual local storage with storage space. **Extrinsic:** *Webster's II New Riverside Dictionary* (1984) definition of "virtual" as "[e]xisting or resulting in effect through not in actual fact" (DHS Brief, Ex. 9) *Webster's II New Riverside Dictionary* (1984) definition of "storage" as "a space for storing goods" or " the part of a computer that stores information for subsequent use or retrieval" (DHS Brief, Ex. 9) Crossroads' *Markman* Brief at 1, stating "The patents-in-suit concern inventions that allow computers to access remote storage devices	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
77 of 209				as if they were local (i.e. 'virtual local storage'), while at the same time providing access controls." (Crossroads' Brief) Crossroads' Markman Brief, Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) ("Crossroads' *Chaparral* Markman Brief", concerning the '972 Patent) at 3, where Crossroads states that "The term 'local storage' typically refers to storage devices which are directly connected to the computer (as opposed to devices connected to a computer through a network)." (DHS Brief Ex. 10)	
to map between the workstations and the storage devices;	**Allow Access:** "Permit or enable communication in order to	**Allow Access:** **Extrinsic:**	**Allow Access:** Permit or enable communication in order to	**Allow Access:** **Intrinsic:**	**Allow Access:** Permit or enable communication to read or write data.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
to implement access controls for storage space on the storage devices; and to **allow access** from the workstations to the storage devices using native low level, block protocol in accordance with the mapping and access controls.	read or write data."	Tr. 119:2-5.	read or write data.	'035 Patent: Col. 2, lines 9-15, distinguishing "access controls" from the concept of "allowing access." Claim 1, reciting the term "access controls" separate and apart from the words "allow access," describing "a supervisor unit ... that implements access controls for storage space on the SCSI storage devices; and ... to allow access from Fibre Channel initiator devices to SCSI storage devices" Claim 7, reciting the term "access controls" separate and apart from the words "allow access," describing "a storage router ... operable ... to implement access	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				controls for storage space on the SCSI storage devices; and to allow access from the workstations to the SCSI storage devices" **Extrinsic:** *Microsoft Computer Dictionary* (5th ed. 2002) definition of "access" as "the act of reading data from or writing data to memory" (DHS Brief Ex. 5) *WordNet Dictionary* definition of "access" as "the operation of reading or writing stored information" (DHS Brief Ex. 13) Crossroads' Post-*Markman* Brief at page 8: "Crossroads agrees that 'allow access' should be construed as 'permit or enable communication in order	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				to read or write data.' (Tr. 119:2-25.)" (Crossroads' Post-Hearing Brief)	
7. A storage network, comprising: a **first transport medium**; a second transport medium; a plurality of workstations connected to the **first transport medium**; a plurality of storage devices connected to the second transport medium; and a storage router interfacing between the **first transport medium** and the second transport medium,			**First Transport Medium:** A communications link.	**First Transport Medium:** NOTE: Although Crossroads has stipulated to the joint definition of both "first transport medium" and "second transport medium" as "a communications link," Crossroads continues to argue that this does not mean "***any*** communications link," but rather that the '035 patent claims must be construed so as not to include transport media that both follow the SCSI protocol. (See, Hearing Transcript, page 188, line 21 to page 189, line 2) **Intrinsic:** '035 Patent:	**First Transport Medium:** (see attached stipulations)

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Col. 2, lines 39-41 "A further technical advantage of the present invention is providing support for SCSI storage devices as local storage for Fiber Channel hosts." Col. 6, lines 21-23, showing that the first transport medium can be SCSI by describing the second mode of operation as "SCSI Initiator to FC Target" and the third mode of operation as "SCSI Initiator to SCSI Target." Col. 5, line 47 using the phrase "SCSI networks." **Extrinsic:** Web page printouts produced at *Markman* Hearing (DHS Hearing Exhibits Ex. 1-4) Network World article (May 8, 1989) describing	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				SCSI networks that interface multiple, dissimilar workstations" (DHS Post-Hearing Brief Ex. B) Network World article (March 14, 1995) describing extender products that depend upon the existence of SCSI networks" (DHS Post-Hearing Brief Ex. C) Letter from Steve Sprinkle to James Lambert dated October 29, 2002, showing that Crossroads believes that the '035 Patent claims cover "access controls between devices without regard to the protocol." (DHS Post-Hearing Brief, Ex. D) Crossroads' abandoned April 23, 2004 claim term construction	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				proposing that "first transport medium" be defined as "a communication medium other than SCSI" (DHS Post-Hearing Brief, Ex. E) Stipulated Definition of Claim Terms, page 1, defining "First transport medium" as "A communications link." (Exhibit B of this matrix)	
Claim 8					
The storage network of claim 7, wherein the access controls include an allocation of subsets of storage space to associated workstations, wherein each subset is only accessible by the associated workstation	[No claim term at issue]		(No terms at issue in Claim 8)		
Claim 9					
The storage network of claim 7, wherein the storage devices comprise hard disk drives	[No claim term at issue]		(No terms at issue in Claim 9)		
Claim 10					
The storage network of claim 7, wherein the **storage router**	**Storage Router:** [Defined by the plain	**Storage Router:**	**Storage Router:** A device which forwards data	**Storage Router:**	**Storage Router:** A data transmitting device that

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
comprises: a buffer providing memory work space for the **storage router**;	language of the claim]	**Intrinsic:** Claim 1 of the '035 patent: col. 9, ll. 13-31. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of "storage router" to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.	between an initiator device on one side of the router and a target storage device on the other side of the router.	**Intrinsic:** '035 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 53-55 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; Col. 3, lines 30-32 Col. 3, lines 51-53 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2	allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
85 of 209				Col 2, lines 56-58 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; Col. 3, lines 64-66 Col. 3, lines 30-40, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 41-43 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 54-56 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34"	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Col. 4, lines 7-8 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
a first controller operable to connect to and interface with the first transport medium, the first controller further operable to pull outgoing **data** from the buffer and to place incoming **data** into the buffer; a second controller operable to connect to and interface with the second transport medium, the second controller further operable to pull outgoing **data** from the buffer and to place incoming **data** into the buffer;	**Data:** "Any digital information excluding commands and requests used to access data in a storage unit."	**Data:** **Intrinsic:** '035 patent: col. 4, l. 10; col. 4, ll. 48-50; col. 5, ll. 18-32; col. 7, ll. 24-32. **Extrinsic:** Hodges Direct, Tr. 41:14-28; Tr. 202:25-203:8.	**Data:** Any digital information.	**Data:** **Extrinsic:** *Webster's II New Riverside Dictionary (1984)* definition of "datum" (the singular form of "data") as "[o]ne piece of information." (DHS Brief Ex. 9) *Webopedia* definition of "data" as [d]istinct pieces of information, usually formatted in a special way. Data can exist in a variety of forms - as numbers of text on pieces of paper, as bits and bytes stored in electronic memory or as facts stored in a person's mind." (DHS	**Data:** Any digital information excluding commands and requests to access digital information.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Brief Ex. 6) Markman Hearing testimony of Hodges at 79:15-22 and 80:4-5 (Hearing Transcript)	
and a **supervisor unit** coupled to the first controller, the second controller and the buffer, the **supervisor unit** operable:	**Supervisor Unit:** "A computer processing device programmed to process data in a buffer in order to map between device connected to a first transport medium and devices connected to a second transport medium which implements access controls."	**Supervisor Unit:** **Intrinsic:** '035 patent: col. 6, ll. 3-10; col. 9; ll. 22-31. **Extrinsic:** Hodges Direct, Tr. 36:3-37:9.	**Supervisor Unit:** A microprocessor programmed to process data in a buffer in order to map between devices connected to the first transport medium and storage devices and which implements access controls.	**Supervisor Unit:** **Intrinsic:** '035 Patent: Col. 5, lines 12-17, describing a Supervisor Unit that "comprises a microprocessor ..." Col. 1, lines 37-39 and col. 4, lines 39-40 equating a "computing device" with workstations. Compare '035 claims with claims of U.S. Patent No. 5,941,972 ('972 Patent), showing that the '035 patent claims closely track the '972 patent claims, except that the limitations of Fibre	**Supervisor Unit:** A device comprising at least: (1) a microprocessor, incorporating independent data and program memory spaces; and (2) associated logic required to implement a stand alone processing system and programmed to process data in a buffer in order to map between devices connected to a first transport medium and devices connected to a second transport medium and which implements access controls.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Channel and SCSI protocols have been replaced with more generic terms. **Extrinsic:** *Chaparral* Markman Order at 9 (DHS Brief Ex. 8) Crossroads' *Chaparral* Markman Brief at 25, where Crossroads argues that the patent specification explicitly states that the supervisor unit comprises a microprocessor. (DHS Brief Ex. 10)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
to map between devices connected to the first transport medium and the storage devices, to implement the access controls for storage space on the storage devices and to process **data** in the buffer to interface between the first controller	**Data:** "Any digital information excluding commands and requests used to access data in a storage unit."	**Data:** **Intrinsic:** '035 patent: col. 4, l. 10; col. 4, ll. 48-50; col. 5, ll. 18-32; col. 7, ll. 24-32. **Extrinsic:** Hodges Direct, Tr. 41:14-28; Tr. 202:25-203:8.	**Data:** Any digital information.	**Data:** **Extrinsic:** *Webster's II New Riverside Dictionary (1984)* definition of "datum" (the singular form of "data") as "[o]ne piece of information." (DHS Brief Ex. 9) *Webopedia* definition of "data" as [d]istinct pieces of information, usually formatted in a special way. Data can exist in a variety of forms - as numbers of text on pieces of paper, as bits and bytes stored in electronic memory or as facts stored in a person's mind." (DHS Brief Ex. 6) Markman Hearing testimony of Hodges at 79:15-22 and 80:4-5 (Hearing Transcript)	**Data:** Any digital information excluding commands and requests to access digital information.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
and the second controller to **allow access** from workstations to storage devices.	**Allow Access:** "Permit or enable communication in order to read or write data."	**Allow Access:** **Extrinsic:** Tr. 119:2-5.	**Allow Access:** Permit or enable communication in order to read or write data.	**Allow Access:** **Intrinsic:** '035 Patent: Col. 2, lines 9-15, distinguishing "access controls" from the concept of "allowing access." Claim 1, reciting the term "access controls" separate and apart from the words "allow access," describing "a supervisor unit ... that implements access controls for storage space on the SCSI storage devices; and ... to allow access from Fibre Channel initiator devices to SCSI storage devices" Claim 7, reciting the term "access controls" separate and apart from the words "allow access," describing "a	**Allow Access:** Permit or enable communication to read or write data.

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				storage router ... operable ... to implement access controls for storage space on the SCSI storage devices; and to allow access from the workstations to the SCSI storage devices" **Extrinsic:** *Microsoft Computer Dictionary* (5th ed. 2002) definition of "access" as "the act of reading data from or writing data to memory" (DHS Brief Ex. 5) *WordNet Dictionary* definition of "access" as "the operation of reading or writing stored information" (DHS Brief Ex. 13) Crossroads' Post-*Markman* Brief at page 8: "Crossroads agrees that 'allow access'	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				should be construed as 'permit or enable communication in order to read or write data.' (Tr. 119:2-25.)" (Crossroads' Post-Hearing Brief)	
10. The storage network of claim 7, wherein the storage router comprises: a buffer providing memory work space for the storage router; a first controller operable to connect to and interface with the **first transport medium**, the first controller further operable to pull outgoing data from the buffer and to place incoming data into the buffer; a second controller operable to connect to and interface with the second transport medium, the second controller further operable to pull outgoing data from the buffer and to place incoming data			**First Transport Medium:** A communications link.	**First Transport Medium:** NOTE: Although Crossroads has stipulated to the joint definition of both "first transport medium" and "second transport medium" as "a communications link," Crossroads continues to argue that this does not mean "***any*** communications link," but rather that the '035 patent claims must be construed so as not to include transport media that both follow the SCSI protocol. (See, Hearing Transcript, page 188, line 21 to page 189, line 2)	**First Transport Medium:** (see attached stipulations)

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
into the buffer; and a supervisor unit coupled to the first controller, the second controller and the buffer, the supervisor unit operable: to map between devices connected to the **first transport medium** and the storage devices,				**Intrinsic:** '035 Patent: Col. 2, lines 39-41 "A further technical advantage of the present invention is providing support for SCSI storage devices as local storage for Fiber Channel hosts." Col. 6, lines 21-23, showing that the first transport medium can be SCSI by describing the second mode of operation as "SCSI Initiator to FC Target" and the third mode of operation as "SCSI Initiator to SCSI Target." Col. 5, line 47 using the phrase "SCSI networks." **Extrinsic:** Web page printouts produced at *Markman* Hearing (DHS Hearing	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Exhibits Ex. 1-4) Network World article (May 8, 1989) describing SCSI networks that interface multiple, dissimilar workstations" (DHS Post-Hearing Brief Ex. B) Network World article (March 14, 1995) describing extender products that depend upon the existence of SCSI networks" (DHS Post-Hearing Brief Ex. C) Letter from Steve Sprinkle to James Lambert dated October 29, 2002, showing that Crossroads believes that the '035 Patent claims cover "access controls between devices without regard to the protocol." (DHS Post-Hearing Brief, Ex. D)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Crossroads' abandoned April 23, 2004 claim term construction proposing that "first transport medium" be defined as "a communication medium other than SCSI" (DHS Post-Hearing Brief, Ex. E) Stipulated Definition of Claim Terms, page 1, defining "First transport medium" as "A communications link." (Exhibit B of this matrix)	
Claim 14					
A method for providing **virtual local storage** on remote storage devices connected to one transport medium to devices connected to another transport medium, comprising:	**Virtual Local Storage:** "A specific subset of storage space in a remote storage device that has the appearance and characteristics of local storage."	**Virtual Local Storage:** **Intrinsic:** '035 patent: col. 2, ll. 29-31; col. 4, ll. 7-16; col. 4, ll. 44-47. **Extrinsic:** Tr. 13:3-14; Tr. 18:5-12;	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.	**Virtual Local Storage:** **Intrinsic:** '035 Patent: Abstract; Col. 1, lines 19-20; Col. 1, lines 63-65; Col. 2, lines 1-4; Col. 4, lines 51-54; and Claim 1 ("virtual local storage on remote SCSI storage devices")	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
		Tr. 111:6-15; Tr. 184:8-185:1; Tr. 187:12-20; Webster's II New Riverside University definitions of "appearance" and "characteristics," Shelton Decl. ISO Crossroads' Reply, Ex. 6; ¶ 12 of Hodges Decl. ISO Crossroads' Response.		Col. 1, lines 39-42, "Local storage typically consists of a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation." Col. 2, lines 29-31 and Col. 4, lines 19-25, distinguishing virtual local storage from ordinary remote storage. Col. 8, lines 62-65 and Col. 9, lines 3-6 associating virtual local storage with storage space. **Extrinsic:** *Webster's II New Riverside Dictionary* (1984) definition of "virtual" as "[e]xisting or resulting in effect through not in actual fact" (DHS Brief, Ex. 9)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Webster's II New Riverside Dictionary (1984) definition of "storage" as "a space for storing goods" or " the part of a computer that stores information for subsequent use or retrieval" (DHS Brief, Ex. 9) Crossroads' *Markman* Brief at 1, stating "The patents-in-suit concern inventions that allow computers to access remote storage devices as if they were local (i.e. 'virtual local storage'), while at the same time providing access controls." (Crossroads' Brief) Crossroads' Markman Brief, Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				("Crossroads' *Chaparral* Markman Brief", concerning the '972 Patent) at 3, where Crossroads states that "The term 'local storage' typically refers to storage devices which are directly connected to the computer (as opposed to devices connected to a computer through a network)." (DHS Brief Ex. 10)	
A method for providing virtual local storage on **remote** storage devices connected to one transport medium to devices connected to another transport medium, comprising: interfacing with a first transport medium; interfacing with a second transport medium; mapping between devices connected to the first transport medium and the storage devices and implementing access controls for storage space on the	**Remote:** "Indirectly connected through at least one serial network transport medium that encapsulates the native low-level block protocol."	**Remote:** **Intrinsic:** '035 patent: col. 1, ll. 23-36; col. 2, ll. 1-34; col. 5, ll. 46-48; col. 5, ll. 52-57; col. 6, ll. 19-31; col. 9, ll. 26-31. **Extrinsic:** Tr. 102:14-20; Rhyne Cross, Tr. 159:17-18; Rhyne Cross, Tr. 161:7-8;	**Remote:** Indirectly connected and capable of physical separation.	**Remote:** **Intrinsic:** '035 Patent: Col. 1, lines 39-42 using the term "remote" to refer to storage which is not "local," and defining "local" as "a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation." Col. 1, lines 63-67,	**Remote:** Indirectly connected through at least one serial network transport medium.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
storage devices; and allowing access from devices connected to the first transport medium to the storage devices using native low level, block protocols.		Rhyne Cross, Tr. 174:14-24; Tr. 180:5-14; Mr. Erwine's Notes, Shelton Decl. ISO Crossroads' Reply, Ex. 4.		describing storage capacity which is not local as "remote." Col. 2, line 32 "significantly remote" **Extrinsic:** *Webopedia* definition of "remote" (Last modified September 1, 1996) as "In networks, remote refers to files, devices, and other resources that are not connected directly to your workstation. Resources at your workstation are considered local" (DHS Brief Ex. 6) *Webopedia* definition of "local" (Last modified September 1, 1996) as "In networks, local refers to files, devices, and other resources at your workstation. Resources located at other nodes on	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				the network are remote." (DHS Brief Ex. 6) Deposition of inventor Hoese, pages 143, 146, 147, 154-155 confirming that "remote" is not a function of distance by stating "It appears to be that the intent was to describe the storage as not being directly connected as local storage would be, but to be connected remotely, as in across a network or other means." (DHS Brief Ex. 14) Deposition of inventor Russell pages 104-105 confirming that "remote" is not a function of distance by stating "And it might be right next to me or it could be, you know, across the country, but that would allow me to get at that remote storage." (DHS	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Brief Ex. 15) Declaration of Rhyne, paragraph 19, stating that "[T]he meaning of 'remote' in general and in the specific context of the Crossroads patents has nothing to do with the physical distance between a workstation and a storage device, but rather has to do with the topological nature of the interconnection between those devices." (DHS Responsive Brief Ex. 18) Declaration of Rhyne, paragraph 27, stating that "[T]he common meaning of 'remote' is the opposite of 'local,' and does not carry a distance characteristic." (DHS Responsive Brief Ex. 18) Declaration of Hodges in Support of Crossroads' Opening Markman Brief	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				(7/27/04), paragraph 9, stating that "The term 'local storage' typically refers to storage devices which are directly connected to the computer (as opposed to storage devices connected to a computer through a network). Local storage also typically refers to storage devices which are located a very short distance from the computer, i.e. a few feet." (Crossroads' Brief) Markman hearing testimony of Rhyne at 15:3-15, showing that a definition of "remote" could be simply "indirectly connected." (Hearing Transcript)	
interfacing with a first transport medium; interfacing with a second transport medium;			**Allow Access:** Permit or enable communication in order to read or write data.	**Allow Access:** **Intrinsic:** '035 Patent: Col. 2, lines 9-15, distinguishing "access	**Allow Access:** Permit or enable communication to read or write data.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
mapping between devices connected to the first transport medium and the storage devices and that implements access controls for storage space on the storage devices; and **allowing access** from devices connected to the first transport medium to the storage devices using native low level, block protocols.				controls" from the concept of "allowing access." Claim 1, reciting the term "access controls" separate and apart from the words "allow access," describing "a supervisor unit … that implements access controls for storage space on the SCSI storage devices; and … to allow access from Fibre Channel initiator devices to SCSI storage devices" Claim 7, reciting the term "access controls" separate and apart from the words "allow access," describing "a storage router … operable … to implement access controls for storage space on the SCSI storage devices; and to	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				allow access from the workstations to the SCSI storage devices" **Extrinsic:** *Microsoft Computer Dictionary* (5th ed. 2002) definition of "access" as "the act of reading data from or writing data to memory" (DHS Brief Ex. 5) *WordNet Dictionary* definition of "access" as "the operation of reading or writing stored information" (DHS Brief Ex. 13) Crossroads' Post-*Markman* Brief at page 8: "Crossroads agrees that 'allow access' should be construed as 'permit or enable communication in order to read or write data.' (Tr. 119:2-25.)" (Crossroads' Post-	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Hearing Brief)	
interfacing with a **first transport medium**; interfacing with a second transport medium; mapping between devices connected to the **first transport medium** and the storage devices and that implements access controls for storage space on the storage devices; and allowing access from devices connected to the **first transport medium** to the storage devices using native low level, block protocols.			**First Transport Medium:** A communications link.	**First Transport Medium:** NOTE: Although Crossroads has stipulated to the joint definition of both "first transport medium" and "second transport medium" as "a communications link," Crossroads continues to argue that this does not mean "***any*** communications link," but rather that the '035 patent claims must be construed so as not to include transport media that both follow the SCSI protocol. (See, Hearing Transcript, page 188, line 21 to page 189, line 2) **Intrinsic:** '035 Patent: Col. 2, lines 39-41 "A further technical advantage of the present invention is providing	**First Transport Medium:** (see attached stipulations)

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				support for SCSI storage devices as local storage for Fiber Channel hosts." Col. 6, lines 21-23, showing that the first transport medium can be SCSI by describing the second mode of operation as "SCSI Initiator to FC Target" and the third mode of operation as "SCSI Initiator to SCSI Target." Col. 5, line 47 using the phrase "SCSI networks." **Extrinsic:** Web page printouts produced at *Markman* Hearing (DHS Hearing Exhibits Ex. 1-4) Network World article (May 8, 1989) describing SCSI networks that interface multiple, dissimilar workstations"	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				(DHS Post-Hearing Brief Ex. B) Network World article (March 14, 1995) describing extender products that depend upon the existence of SCSI networks" (DHS Post-Hearing Brief Ex. C) Letter from Steve Sprinkle to James Lambert dated October 29, 2002, showing that Crossroads believes that the '035 Patent claims cover "access controls between devices without regard to the protocol." (DHS Post-Hearing Brief, Ex. D) Crossroads' abandoned April 23, 2004 claim term construction proposing that "first transport medium" be defined as "a	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				communication medium other than SCSI" (DHS Post-Hearing Brief, Ex. E) Stipulated Definition of Claim Terms, page 1, defining "First transport medium" as "A communications link." (Exhibit B of this matrix)	
Claim 12 The method of claim 11 wherein mapping between devices connected to the first transport medium and the storage devices includes allocating subsets of storage space to associated devices connected to the first transport medium wherein each subset is only accessible by the associated device connected to the first transport medium	[No claim term at issue]		**First Transport Medium:** A communications link	**First Transport Medium:** NOTE: Although Crossroads has stipulated to the joint definition of both "first transport medium" and "second transport medium" as "a communications link," Crossroads continues to argue that this does not mean *any* "communications link," but rather that the '035 patent claims must be construed so as not to include transport media that both follow the SCSI	**First Transport Medium:** (see attached stipulations)

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				protocol. (See Hearing Transcript page 188, line 24 to page 189, line 2). Intrinsic: '035 Patent Col. 2 lines 39-41 "A further technical advantage of the present invention is providing support for SCSI storage devices as local storage for Fiber Channel hosts." Col. 6 lines 21-23 "showing that the first transport medium can be SCSI by describing the second mode of operation as SCSI initiator to FC target and the third mode of operation as SCSI initiator to SCSI target." Col. 5 line 47 using the phrase "SCSI networks"	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Extrinsic: Webpage printouts produced at *Markman* Hearing (DHS Hearing Exhibits Ex. 1-4) Network World article (May 8, 1989) describing SCSI networks that interface multiple dissimilar workstations (DHS Post-Hearing Brief Ex. D) Network World article (March 14, 1995) describing extender products that depend upon the existence of SCSI networks (DHS Post-Hearing Brief Ex. C) Letter from Steve Sprinkle to James Lambert dated October 29, 2002 showing that Crossroads believes that the '035 Patent claims cover "access controls	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				between devices without regard to the protocol" (DHS Post Hearing Brief, Ex. D). Crossroads "abandoned" April 23, 2004 claim term construction proposing that "first transport medium" be defined as "a communication medium other than SCSI" (DHS Post Hearing Brief, Ex. E). Stipulated Definition of Claim Terms, page 1, defining "first transport medium" as "a communications link" (Exhibit 3 of this matter).	
Claim 13					
The method of claim 12 wherein the devices connected to the first transport medium comprise workstations.	[No claim term at issue]		First Transport Medium: A communications link	First Transport Medium: NOTE: Although Crossroads has stipulated to the joint definition of both "first transport medium" and "second	First Transport Medium: (see attached stipulations)

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				transport medium" as "a communications link." Crossroads continues to argue that this does not mean *any* communications link, but rather that the '035 patent claims must be construed so as not to include transport media that path follow the SCSI protocol. (See Hearing Transcript page 188, line 24 to page 189, line 2). Intrinsic: '035 Patent: Col. 2 lines 39-41: "A further technical advantage of the present invention is providing support for SCSI storage devices as local storage for Fiber Channel hosts." Col. 6 lines 21-23: "showing that the first transport medium can be SCSI by describing the	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				second mode of operation as "SCSI initiator to FC target," and the third mode of operation as "SCSI initiator to SCSI target" (col. 3, line 4) using the phrase "SCSI networks." Extrinsic: Webpage printouts produced at *Markman* Hearing (DHS Hearing Exhibits DX-1-4). Network World article (May 8, 1998) describing SCSI networks that interface multiple dissimilar workstations (DHS Post-Hearing Brief Ex. B). Network World article (March 14, 1995) describing extender products that depend upon the existence of	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				SCSI networks." (DHS Post-Hearing Brief Ex. C) Letter from Steve Sprinkle to James Lambert dated October 29, 2002 showing that Crossroads believes that the '03's Parent claims cover "access controls between devices without regard to the protocol." (DHS Post-Hearing Brief Ex. D). Crossroads abandoned April 23, 2004 claim term construction proposing that "first transport medium" be defined as "a communication medium other than SCSI." (DHS Post-Hearing Brief Ex. D). Stipulated Definition of Claim Terms, page 1, defining "First transport(	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				medium "as a communications link" (Exhibit B of this matrix)?	
Claim 14					
The method of claim 12 wherein the storage devices comprise hard disk drives.	[No claim term at issue]		(No terms at issue in Claim 14)		

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
United States Patent No. 5,941,972					
Claim 1					
A **storage router** for providing virtual local storage on remote SCSI storage devices to Fibre Channel devices, comprising:	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '972 patent at col. 9, ll. 5-27. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of storage router to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router	**Storage Router:** **Intrinsic:** '972 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 47-49 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; also Col. 3, lines 24-26 Col. 3, lines 45-47 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
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				Figure 2 Col 2, lines 50-52 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; also Col. 3, lines 58-60 Col. 3, lines 24-34, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 35-37 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 48-50 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 1-2 "According	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
122 of 209				to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402	

Special Master's Proposed Construction of Disputed Terms					
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				assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the	

Special Master's Proposed Construction of Disputed Terms					
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				characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
A storage router for providing **virtual local storage** on remote SCSI storage devices to Fibre Channel devices, comprising:	**Virtual Local Storage:** "A specific subset of storage space in a remote storage device that has the appearance and characteristics of local storage."	**Virtual Local Storage:** **Intrinsic:** '972 patent: col. 2, ll. 20-22; col. 4, ll. 1-10; col. 4, ll. 37-41. **Extrinsic:** Tr. 13:3-14; Tr. 18:5-12;	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device. NOTE: This is the definition of *virtual local storage*, but	**Virtual Local Storage:** **Intrinsic:** '972 Patent: Abstract; Col. 1, lines 7-8; Col. 1, lines 53-55; Col. 1, lines 58-61; Col. 4, lines 44-47; and Claim 1 ("virtual local storage on remote SCSI storage devices")	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
		Tr. 111:6-15; Tr. 184:8-185:1; Tr. 187:12-20; Webster's II New Riverside University definitions of "appearance" and "characteristics," Shelton Decl. ISO Crossroads' Reply, Ex. 6; ¶ 12 of Hodge Decl. ISO Crossroads' Response.	since this phrase appears only in the preamble to explain the context in which the storage router is used, it is not a limitation of this claim.	Col. 1, lines 28-31, "Local storage typically consists of a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation." Col. 2, lines 20-22; Col. 4, lines 5-7; and Col. 4, lines 13-18, distinguishing virtual local storage from ordinary remote storage. Col. 8, lines 54-57 and 62-65 associating virtual local storage with storage space. **Extrinsic:** *Webster's II New Riverside Dictionary* (1984) definition of "virtual" as "[e]xisting or resulting in effect through not in actual fact" (DHS Brief, Ex. 9) *Webster's II New Riverside Dictionary* (1984) definition of "storage" as "a space for storing goods" or " the part of	

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				a computer that stores information for subsequent use or retrieval" (DHS Brief, Ex. 9) Crossroads' *Markman* Brief at 1, stating "The patents-in-suit concern inventions that allow computers to access remote storage devices as if they were local (i.e. 'virtual local storage'), while at the same time providing access controls." (Crossroads' Brief) Crossroads' Markman Brief, Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) ("Crossroads' *Chaparral* Markman Brief", concerning the '972 Patent) at 3, where Crossroads states that "The term 'local storage' typically refers to storage devices which are directly connected to the computer (as opposed to devices connected to a computer through a	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
128 of 209				network.)" (DHS Brief Ex. 10) Crossroads' *Chaparral* Markman Brief at 1, where Crossroads interprets virtual local storage by stating "The '972 Patent concerns an invention which allows computers to access remote storage devices as if they were local - thus the term 'virtual local storage.'" (DHS Brief Ex. 10) Crossroads' *Chaparral* Markman Brief at 19, where Crossroads states that "[t]he term 'virtual local storage' refers to the remote storage of data that, from the perspective of the computer, has the appearance and characteristics of locally stored data." (DHS Brief Ex. 10) Markman Hearing testimony of Hodges at 83:3-8, admitting that Crossroads'	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				proposed definition does not explain "characteristics of local storage," but that, instead of defining this term at the Markman hearing, Crossroads "will certainly be able to describe that" to the jury. (Hearing Transcript)	
A storage router for providing virtual local storage on remote SCSI storage devices to Fibre Channel devices, comprising:	**Remote:** "Indirectly connected through at least one serial network transport medium that encapsulates the native low-level block protocol."	**Remote:** **Intrinsic:** '972 patent: col. 1, ll. 12-25; col. 1, l. 58 – col. 2, l. 24; col. 5, ll. 38-48; col. 6, ll. 12-24; col. 9, ll. 23-27. **Extrinsic:** Tr. 102:14-20; Rhyne Cross, Tr. 159:17-18; Rhyne Cross, Tr. 161:7-8; Rhyne Cross, Tr. 174:14-24; Tr. 180:5-14; Mr. Erwine's Notes, Shelton Decl. ISO Crossroads' Reply, Ex. 4.	**Remote:** Indirectly connected and capable of physical separation. NOTE: This is the definition of *remote*, but since this phrase appears only in the preamble to explain the context in which the storage router is used, it is not a limitation of this claim.	**Remote:** **Intrinsic:** '972 Patent: Col. 1, lines 28-31 using the term "remote" to refer to storage which is not "local," and defining "local" as "a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation." Col. 1, lines 53-57, describing storage capacity which is not local as "remote." Col. 2, line 23 "significantly remote"	**Remote:** Indirectly connected through at least one serial network transport medium.

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				Extrinsic: *Webopedia* definition of "remote" (Last modified September 1, 1996) as "In networks, remote refers to files, devices, and other resources that are not connected directly to your workstation. Resources at your workstation are considered local" (DHS Brief Ex. 6) *Webopedia* definition of "local" (Last modified September 1, 1996) as "In networks, local refers to files, devices, and other resources at your workstation. Resources located at other nodes on the network are remote." (DHS Brief Ex. 6) Deposition of inventor Hoese, pages 143, 146, 147, 154-155 confirming that "remote" is not a function of distance by stating "It appears to be that the intent was to describe the storage as not being directly	

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				connected as local storage would be, but to be connected remotely, as in across a network or other means." (DHS Brief Ex. 14) Deposition of inventor Russell pages 104-105 confirming that "remote" is not a function of distance by stating "And it might be right next to me or it could be, you know, across the country, but that would allow me to get at that remote storage." (DHS Brief Ex. 15) Declaration of Rhyne, paragraph 19, stating that "[T]he meaning of 'remote' in general and in the specific context of the Crossroads patents has nothing to do with the physical distance between a workstation and a storage device, but rather has to do with the topological nature of the interconnection between those devices." (DHS Responsive Brief Ex. 18)	

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
132 of 209				Declaration of Rhyne, paragraph 27, stating that "[T]he common meaning of 'remote' is the opposite of 'local,' and does not carry a distance characteristic." (DHS Responsive Brief Ex. 18) Declaration of Hodges in Support of Crossroads' Opening Markman Brief (7/27/04), paragraph 9, stating that "The term 'local storage' typically refers to storage devices which are directly connected to the computer (as opposed to storage devices connected to a computer through a network). Local storage also typically refers to storage devices which are located a very short distance from the computer, i.e. a few feet." (Crossroads' Brief) Markman hearing testimony of Rhyne at 15:3-15, showing	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				that a definition of "remote" could be simply "indirectly connected." (Hearing Transcript)	
a buffer providing memory work space for the **storage router**; a Fibre Channel controller operable to connect to and interface with a Fibre Channel transport medium;	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '972 patent at col. 9, ll. 5-27. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of storage router to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.	**Storage Router:** The storage router mentioned earlier in this claim.	**Storage Router:** **Intrinsic:** '972 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 47-49 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; also Col. 3, lines 24-26 Col. 3, lines 45-47 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Storage Router 44 depicted in Figure 2 Col 2, lines 50-52 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; also Col. 3, lines 58-60 Col. 3, lines 24-34, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 35-37 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 48-50 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34"	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Col. 4, lines 1-2 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads'	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
a SCSI controller operable to connect to and interface with a SCSI bus transport medium; and a **supervisor unit** coupled to the Fibre Channel controller, the SCSI controller and the buffer, the **supervisor unit** operable: to maintain a configuration for SCSI storage devices connected to the SCSI bus transport medium that maps	**Supervisor Unit:** "A computer processing device programmed to process data in a buffer in order to map between FC devices and SCSI devices and which implements access controls."	**Supervisor Unit:** **Intrinsic:** '972 patent: col. 5, l. 63 – col. 6, l. 3; col. 9; ll. 18-27. **Extrinsic:** Hodges Direct, Tr. 36:3-37:9.	**Supervisor Unit:** A microprocessor programmed to process data in a buffer in order to map between Fibre Channel devices and SCSI devices and which implements access controls.	**Supervisor Unit:** **Intrinsic:** '972 Patent: Col. 5, lines 5-10, describing a Supervisor Unit that "comprises a microprocessor ..." Col. 1, lines 26-28 and col. 4, lines 32-33 equating a "computing device" with	**Supervisor Unit:** A device comprising at least: (1) a microprocessor, incorporating independent data and program memory spaces; and (2) associated logic required to implement a stand alone processing system and programmed to process data in a buffer in order to map between FC devices and

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
between Fibre Channel devices and SCSI storage devices and that implements access controls for storage space on the SCSI storage devices;				workstations. **Extrinsic:** *Chaparral* Markman Order at 9 (DHS Brief Ex. 8) Crossroads' *Chaparral* Markman Brief at 25, where Crossroads argues that the patent specification explicitly states that the supervisor unit comprises a microprocessor. (DHS Brief Ex. 10)	SCSI devices and which implements access controls.
and to process **data** in the buffer			**Data:** Any digital information.	**Data:** **Extrinsic:** *Webster's II New Riverside Dictionary (1984)* definition of "datum" (the singular form of "data") as "[o]ne piece of information." (DHS Brief Ex. 9) *Webopedia* definition of "data" as [d]istinct pieces of information, usually formatted in a special way. Data can exist in a variety of forms - as numbers of text on	**Data:** Any digital information excluding commands and requests to access digital information.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				pieces of paper, as bits and bytes stored in electronic memory or as facts stored in a person's mind." (DHS Brief Ex. 6) Markman Hearing testimony of Hodges at 79:15-22 and 80:4-5 (Hearing Transcript)	
10 interface between the Fibre Channel controller and the SCSI controller to allow access from Fibre Channel initiator devices to SCSI storage devices using native low level, block protocol in accordance with the configuration.	**Allow Access:** "Permit or enable communication in order to read or write data."	**Allow Access:** **Extrinsic:** Tr. 119:2-5.	**Allow Access:** Permit or enable communication in order to read or write data.	**Allow Access:** **Intrinsic:** '972 Patent: Col. 1, line 66 to col. 2, line 5, distinguishing "access controls" from the concept of "allowing access." Claim 1, reciting the term "access controls" separate and apart from the words "allow access," describing "a supervisor unit ... that implements access controls for storage space on the SCSI storage devices; and ... to allow access from Fibre Channel initiator devices to SCSI storage devices" Claim 7, reciting the term	**Allow Access:** Permit or enable communication to read or write data.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				"access controls" separate and apart from the words "allow access," describing "a storage router ... operable ... to implement access controls for storage space on the SCSI storage devices; and to allow access from the workstations to the SCSI storage devices" **Extrinsic:** *Microsoft Computer Dictionary* (5th ed. 2002) definition of "access" as "the act of reading data from or writing data to memory" (DHS Brief Ex. 5) *WordNet Dictionary* definition of "access" as "the operation of reading or writing stored information" (DHS Brief Ex. 13) Crossroads' Post-*Markman* Brief at page 8: "Crossroads agrees that 'allow access' should be construed as 'permit or enable communication in order to	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				read or write data.' (Tr. 119:2-25.)" (Crossroads' Post-Hearing Brief)	
Claim 2					
The **storage router** of claim 1, wherein the configuration maintained by the supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Channel device.	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '972 patent at col. 9, ll. 5-27. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of storage router to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '972 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 47-49 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; also Col. 3, lines 24-26 Col. 3, lines 45-47 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Figure 2 Col 2, lines 50-52 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; also Col. 3, lines 58-60 Col. 3, lines 24-34, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 35-37 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 48-50 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 1-2 "According	

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a	

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
The storage router of claim 1, wherein the configuration maintained by the **supervisor unit** includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Channel device.	**Supervisor Unit:** "A computer processing device programmed to process data in a buffer in order to map between FC devices and SCSI devices and which implements access controls."	**Supervisor Unit:** **Intrinsic:** '972 patent: col. 5, l. 63 – col. 6, l. 3; col. 9; ll. 18-27. **Extrinsic:** Hodges Direct, Tr. 36:3-37:9.	**Supervisor Unit:** A microprocessor programmed to process data in a buffer in order to map between Fibre Channel devices and SCSI devices and which implements access controls.	**Supervisor Unit:** **Intrinsic:** '972 Patent: Col. 5, lines 5-10, describing a Supervisor Unit that "comprises a microprocessor ..." Col. 1, lines 26-28 and col. 4, lines 32-33 equating a "computing device" with workstations.	**Supervisor Unit:** A device comprising at least: (1) a microprocessor, incorporating independent data and program memory spaces; and (2) associated logic required to implement a stand alone processing system and programmed to process data in a buffer in order to map between FC devices and

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Extrinsic: *Chaparral* Markman Order at 9 (DHS Brief Ex. 8) Crossroads' *Chaparral* Markman Brief at 25, where Crossroads argues that the patent specification explicitly states that the supervisor unit comprises a microprocessor. (DHS Brief Ex. 10)	SCSI devices and which implements access controls.
Claim 3					
The **storage router** of claim 2, wherein the Fibre Channel devices comprise workstations.	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '972 patent at col. 9, ll. 5-27. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of storage router to one of ordinary skill in the art in 1997), Shelton Decl. ISO	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '972 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 47-49 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; also Col. 3, lines 24-26	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
		Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.		Col. 3, lines 45-47 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 50-52 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; also Col. 3, lines 58-60 Col. 3, lines 24-34, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 35-37 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes	

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				data between the target and the initiator" Col 3, lines 48-50 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 1-2 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix)	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
Claim 4					
The storage router of claim	**Storage Router:**	**Storage Router:**	**Storage Router:**	**Storage Router:**	**Storage Router:**

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
2, wherein the SCSI storage devices comprise hard disk drives.	[Defined by the plain language of the claim]	**Intrinsic:** Claim 1 of the '972 patent at col. 9, ll. 5-27. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of storage router to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.	A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router	**Intrinsic:** '972 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 47-49 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; also Col. 3, lines 24-26 Col. 3, lines 45-47 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 50-52 "FIG. 3 is a block diagram of one embodiment of a storage	A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				network with a storage router that provides virtual local storage"; also Col. 3, lines 58-60 Col. 3, lines 24-34, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 35-37 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 48-50 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 1-2 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				"storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex.	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article	

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				(December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
Claim 5					
The **storage router** of claim 1, wherein the Fibre Channel controller comprises: a Fibre Channel (FC) protocol unit operable to connect to the Fibre Channel transport medium; a first-in-first-out queue coupled to the Fibre Channel protocol unit; and a direct memory access (DMA) interface coupled to the first-in-first-out queue and to the buffer.	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '972 patent at col. 9, ll. 5-27. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of storage router to one of ordinary skill in the art in 1997), Shelton Decl. ISO	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '972 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 47-49 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; also Col. 3, lines 24-26	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
		Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.		Col. 3, lines 45-47 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 50-52 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; also Col. 3, lines 58-60 Col. 3, lines 24-34, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 35-37 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes	

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				data between the target and the initiator" Col 3, lines 48-50 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 1-2 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix)	

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				Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct	

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				remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
Claim 6					
The storage router of claim	**Storage Router:**	**Storage Router:**	**Storage Router:**	**Storage Router:**	**Storage Router:**

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
1, wherein the SCSI controller comprises: a SCSI protocol unit operable to connect to the SCSI bus transport medium; an internal buffer coupled to the SCSI protocol unit; and a direct memory access (DMA) interface coupled to the internal buffer and to the buffer of the **storage router.**	[Defined by the plain language of the claim]	**Intrinsic:** Claim 1 of the '972 patent at col. 9, ll. 5-27. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of storage router to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.	A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Intrinsic:** '972 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 47-49 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; also Col. 3, lines 24-26 Col. 3, lines 45-47 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 50-52 "FIG. 3 is a block diagram of one embodiment of a storage	A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
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				network with a storage router that provides virtual local storage"; also Col. 3, lines 58-60 Col. 3, lines 24-34, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 35-37 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 48-50 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 1-2 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				"storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex.	

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				4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For	

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				example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article	

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				(December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
Claim 7					
A storage network, comprising: a Fibre Channel transport medium; a SCSI bus transport medium; a plurality of workstations connected to the Fibre Channel transport medium; a plurality of SCSI storage devices connected to the SCSI bus transport medium; and a **storage router** interfacing between the Fibre Channel transport medium and the SCSI bus transport medium, the **storage router** providing	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '972 patent at col. 9, ll. 5-27. **Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of storage router to one of ordinary skill in the art in 1997), Shelton Decl. ISO	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the other side of the router.	**Storage Router:** **Intrinsic:** '972 Patent: Figure 2, depicting Storage Router 44 with workstations and disks, but no access controls Col. 2, lines 47-49 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; also Col. 3, lines 24-26	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage network.

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
virtual local storage on the SCSI storage devices to the workstations and operable: to map between the workstations and the SCSI storage devices; to implement access controls for storage space on the SCSI storage devices;		Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.		Col. 3, lines 45-47 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 50-52 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; also Col. 3, lines 58-60 Col. 3, lines 24-34, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 35-37 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes	

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				data between the target and the initiator" Col 3, lines 48-50 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 1-2 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:** Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix)	

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				Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002) definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient	

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				available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct	

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				remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
the storage router providing **virtual local storage** on the	**Virtual Local Storage:** "A specific subset of storage	**Virtual Local Storage:**	**Virtual Local Storage:** Storage space, in a device that	**Virtual Local Storage: Intrinsic:**	**Virtual Local Storage:** Storage space, in a device that

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
SCSI storage devices to the workstations and operable: to map between the workstations and the SCSI storage devices; to implement access controls for storage space on the SCSI storage devices;	space in a remote storage device that has the appearance and characteristics of local storage."	**Intrinsic:** '972 patent: col. 2, ll. 20-22; col. 4, ll. 1-10; col. 4, ll. 37-41. **Extrinsic:** Tr. 13:3-14; Tr. 18:5-12; Tr. 111:6-15; Tr. 184:8-185:1; Tr. 187:12-20; Webster's II New Riverside University definitions of "appearance" and "characteristics," Shelton Decl. ISO Crossroads' Reply, Ex. 6; ¶ 12 of Hodge Decl. ISO Crossroads' Response.	is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.	'972 Patent: Abstract; Col. 1, lines 7-8; Col. 1, lines 53-55; Col. 1, lines 58-61; Col. 4, lines 44-47; and Claim 1 ("virtual local storage on remote SCSI storage devices") Col. 1, lines 28-31, "Local storage typically consists of a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation." Col. 2, lines 20-22; Col. 4, lines 5-7; and Col. 4, lines 13-18, distinguishing virtual local storage from ordinary remote storage. Col. 8, lines 54-57 and 62-65 associating virtual local storage with storage space. **Extrinsic:** *Webster's II New Riverside Dictionary* (1984) definition of "virtual" as "[e]xisting or	is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.

Special Master's Proposed Construction of Disputed Terms					
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				resulting in effect through not in actual fact" (DHS Brief, Ex. 9) *Webster's II New Riverside Dictionary* (1984) definition of "storage" as "a space for storing goods" or " the part of a computer that stores information for subsequent use or retrieval" (DHS Brief, Ex. 9) Crossroads' *Markman* Brief at 1, stating "The patents-in-suit concern inventions that allow computers to access remote storage devices as if they were local (i.e. 'virtual local storage'), while at the same time providing access controls." (Crossroads' Brief) Crossroads' Markman Brief, Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) ("Crossroads' *Chaparral* Markman Brief", concerning	

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				the '972 Patent) at 3, where Crossroads states that "The term 'local storage' typically refers to storage devices which are directly connected to the computer (as opposed to devices connected to a computer through a network.)" (DHS Brief Ex. 10) Crossroads' *Chaparral* Markman Brief at 1, where Crossroads interprets virtual local storage by stating "The '972 Patent concerns an invention which allows computers to access remote storage devices as if they were local - thus the term 'virtual local storage.'" (DHS Brief Ex. 10) Crossroads' *Chaparral* Markman Brief at 19, where Crossroads states that "[t]he term 'virtual local storage' refers to the remote storage of data that, from the perspective of the computer,	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				has the appearance and characteristics of locally stored data." (DHS Brief Ex. 10) Markman Hearing testimony of Hodges at 83:3-8, admitting that Crossroads' proposed definition does not explain "characteristics of local storage," but that, instead of defining this term at the Markman hearing, Crossroads "will certainly be able to describe that" to the jury. (Hearing Transcript)	
and to **allow access** from the workstations to the SCSI storage devices using native low level, block protocol in accordance with the mapping and access controls.	**Allow Access:** "Permit or enable communication in order to read or write data."	**Allow Access:** **Extrinsic:** Tr. 119:2-5.	**Allow Access:** Permit or enable communication in order to read or write data.	**Allow Access:** **Intrinsic:** '972 Patent: Col. 1, line 66 to col. 2, line 5, distinguishing "access controls" from the concept of "allowing access." Claim 1, reciting the term "access controls" separate and apart from the words "allow access," describing "a supervisor unit ... that implements access controls	**Allow Access:** Permit or enable communication to read or write data.

Special Master's Proposed Construction of Disputed Terms					
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				for storage space on the SCSI storage devices; and ... to allow access from Fibre Channel initiator devices to SCSI storage devices" Claim 7, reciting the term "access controls" separate and apart from the words "allow access," describing "a storage router ... operable ... to implement access controls for storage space on the SCSI storage devices; and to allow access from the workstations to the SCSI storage devices" **Extrinsic:** *Microsoft Computer Dictionary* (5th ed. 2002) definition of "access" as "the act of reading data from or writing data to memory" (DHS Brief Ex. 5) *WordNet Dictionary* definition of "access" as "the operation of reading or writing stored information" (DHS Brief Ex. 13)	

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				Crossroads' Post-*Markman* Brief at page 8: "Crossroads agrees that 'allow access' should be construed as 'permit or enable communication in order to read or write data.' (Tr. 119:2-25.)" (Crossroads' Post-Hearing Brief)	
Claim 8					
The storage network of claim 7, wherein the access controls include an allocation of subsets of storage space to associated workstations, wherein each subset is only accessible by the associated workstation.	[No claim term at issue]		(No terms at issue in Claim 8)		
Claim 9					
The storage network of claim 7, wherein the SCSI storage devices comprise hard disk drives.	[No claim term at issue]		(No terms at issue in Claim 9)		
Claim 10					
The storage network of claim 7, wherein the **storage router** comprises: a buffer providing memory work space for the **storage**	**Storage Router:** [Defined by the plain language of the claim]	**Storage Router:** **Intrinsic:** Claim 1 of the '972 patent at col. 9, ll. 5-27.	**Storage Router:** A device which forwards data between an initiator device on one side of the router and a target storage device on the	**Storage Router:** **Intrinsic:** '972 Patent: Figure 2, depicting Storage Router 44 with workstations	**Storage Router:** A data transmitting device that allows users to integrate different servers or work stations into a storage

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router;		**Extrinsic:** Marc Songini, *Storage Routing is the Way to Go, Crossroads says*, Network World, Dec. 8, 1997, at 19 (demonstrating that there was no accepted meaning of storage router to one of ordinary skill in the art in 1997), Shelton Decl. ISO Crossroads' Reply, Ex. 5; ¶¶ 9-10 of Hodges Decl. ISO Crossroads' Response.	other side of the router.	and disks, but no access controls Col. 2, lines 47-49 "FIG. 2 is a block diagram of one embodiment of a storage network with a storage router that provides global access and routing"; also Col. 3, lines 24-26 Col. 3, lines 45-47 (referring to Figure 2) "[A]ny workstation ... can access any storage device ..." Figures 3, 4 and 5, distinguishing a Storage Router 56, which provides virtual local storage, from the Storage Router 44 depicted in Figure 2 Col 2, lines 50-52 "FIG. 3 is a block diagram of one embodiment of a storage network with a storage router that provides virtual local storage"; also Col. 3, lines 58-60	network.

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				Col. 3, lines 24-34, describing a storage network that includes a storage router instead of a network server. Col. 3, lines 35-37 "Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator" Col 3, lines 48-50 "... storage router 44 which routes requests and data as a generic transport between Fiber Channel 32 and SCSI bus 34" Col. 4, lines 1-2 "According to the present invention, storage router 56 has enhanced functionality ..." Claim 7 (including term "storage router" in body of claim, not just in preamble) **Extrinsic:**	

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				Testimony of Geoffrey Hoese in Crossroads Systems (Texas), Inc. v. Chaparral Network Storage Inc., No. A00 CA 217SS (W.D. Tex.) (concerning the '972 Patent) starting at page 81, line 3, stating "Figure 2 is not my invention." (Exhibit A of this matrix) Markman Hearing testimony of Hodges at 75:4-17 (Hearing Transcript) Joshua Eddings, *How the Internet Works* (1994), pp. 21, 23, 29 (DHS Brief Ex. 3) Glossary on Crossroads' Internet Website defining a router as "[a] device which selectively forwards data between networks based on administratively defined preferences" (DHS Brief Ex. 4) *Microsoft Computer Dictionary* (5th ed. 2002)	

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				definition of "router" as "an intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available router ..." (DHS Brief Ex. 5) *Webopedia* definition of "router" as "a device that forwards packets along networks" (DHS Brief Ex. 6) U.S. Patent No. 6,718,402 assigned to Crossroads, Col. 1, lines 29-32 "A Fibre Channel-to-SCSI router thus provides a pass-through data management role. For example, when a Fibre Channel host issues a command to a SCSI target, the SCSI router receives the	

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				command and forwards it to the target." (DHS Brief Ex. 7) Crossroads' *Markman* Brief at 12 and 14, stating that Crossroads' invention perform a routing function. ("[T]he Crossroads invention routes native low level block protocols to the correct remote storage device over a fiber network without involving a server.") (Crossroads' Brief) Markman Hearing testimony of Hodges at 77:7-14, showing that devices other than storage routers, such as bridges, may have all the characteristics listed in the body of Claim 1 (Hearing Transcript) Network World article (December 8, 1997) describing the Crossroads' 4100 product as a "storage router" without mentioning	

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				access controls, stating that "[a] storage router, according to Crossroads, is a data transmitting device that allows users to integrate different servers into a storage network." (DHS Post-Hearing Brief Ex. A)	
a Fibre Channel controller operable to connect to and interface with a Fibre Channel transport medium, the Fibre Channel controller further operable to pull outgoing **data** from the buffer and to place incoming **data** into the buffer; a SCSI controller operable to connect to and interface with a SCSI bus transport medium, the SCSI controller further operable to pull outgoing **data** from the buffer and to place incoming **data** into the buffer; and a supervisor unit coupled to the Fibre Channel controller, the SCSI controller and the buffer, the supervisor unit operable: to maintain a configuration	**Data:** "Any digital information excluding commands and requests used to access data in a storage unit."	**Data:** **Intrinsic:** '972 patent: col. 4, l. 4; col. 4, ll. 40-42; col. 5, ll. 11-25; col. 7, ll. 18-23. **Extrinsic:** Hodges Direct, Tr. 41:14-28; Tr. 202:25-203:8.	**Data:** Any digital information.	**Data:** **Extrinsic:** *Webster's II New Riverside Dictionary (1984)* definition of "datum" (the singular form of "data") as "[o]ne piece of information." (DHS Brief Ex. 9) *Webopedia* definition of "data" as [d]istinct pieces of information, usually formatted in a special way. Data can exist in a variety of forms - as numbers of text on pieces of paper, as bits and bytes stored in electronic memory or as facts stored in a person's mind." (DHS Brief Ex. 6)	**Data:** Any digital information excluding commands and requests to access digital information.

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for the SCSI storage devices that maps between Fibre Channel devices and SCSI storage devices and that implements the access controls for storage space on the SCSI storage devices;				Markman Hearing testimony of Hodges at 79:15-22 and 80:4-5 (Hearing Transcript)	
a SCSI controller operable to connect to and interface with a SCSI bus transport medium, the SCSI controller further operable to pull outgoing data from the buffer and to place incoming data into the buffer; and a **supervisor unit** coupled to the Fibre Channel controller, the SCSI controller and the buffer, the **supervisor unit** operable: to maintain a configuration for the SCSI storage devices that maps between Fibre Channel devices and SCSI storage devices and that implements the access controls for storage space on the SCSI storage devices;	**Supervisor Unit:** "A computer processing device programmed to process data in a buffer in order to map between FC devices and SCSI devices and which implements access controls."	**Supervisor Unit:** **Intrinsic:** '972 patent: col. 5, l. 63 – col. 6, l. 3; col. 9; ll. 18-27. **Extrinsic:** Hodges Direct, Tr. 36:3-37:9.	**Supervisor Unit:** A microprocessor programmed to process data in a buffer in order to map between Fibre Channel devices and SCSI devices and which implements access controls.	**Supervisor Unit:** **Intrinsic:** '972 Patent: Col. 5, lines 5-10, describing a Supervisor Unit that "comprises a microprocessor ..." Col. 1, lines 26-28 and col. 4, lines 32-33 equating a "computing device" with workstations. **Extrinsic:** *Chaparral* Markman Order at 9 (DHS Brief Ex. 8) Crossroads' *Chaparral* Markman Brief at 25, where Crossroads argues that the patent specification explicitly states that the supervisor unit	**Supervisor Unit:** A device comprising at least: (1) a microprocessor, incorporating independent data and program memory spaces; and (2) associated logic required to implement a stand alone processing system and programmed to process data in a buffer in order to map between FC devices and SCSI devices and which implements access controls.

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				comprises a microprocessor. (DHS Brief Ex. 10)	
and to process data in the buffer to interface between the Fibre Channel controller and the SCSI controller to allow access from workstations to SCSI storage devices in accordance with the configuration.	**Data:** "Any digital information excluding commands and requests used to access data in a storage unit."	**Data:** **Intrinsic:** '972 patent: col. 4, l. 4; col. 4, ll. 40-42; col. 5, ll. 11-25; col. 7, ll. 18-23. **Extrinsic:** Hodges Direct, Tr. 41:14-28; Tr. 202:25-203:8.	**Data:** Any digital information.	**Data:** **Extrinsic:** *Webster's II New Riverside Dictionary (1984)* definition of "datum" (the singular form of "data") as "[o]ne piece of information." (DHS Brief Ex. 9) *Webopedia* definition of "data" as [d]istinct pieces of information, usually formatted in a special way. Data can exist in a variety of forms - as numbers of text on pieces of paper, as bits and bytes stored in electronic memory or as facts stored in a person's mind." (DHS Brief Ex. 6) Markman Hearing testimony of Hodges at 79:15-22 and 80:4-5 (Hearing Transcript)	**Data:** Any digital information excluding commands and requests to access digital information.
and to process data in the buffer to interface between the Fibre Channel controller	**Allow Access:** "Permit or enable communication in order to	**Allow Access:** **Extrinsic:**	**Allow Access:** Permit or enable communication in order to	**Allow Access:** **Intrinsic:** '972 Patent:	**Allow Access:** Permit or enable communication to read or

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and the SCSI controller to **allow access from** workstations to SCSI storage devices in accordance with the configuration.	read or write data."	Tr. 119:2-5.	read or write data.	Col. 1, line 66 to col. 2, line 5, distinguishing "access controls" from the concept of "allowing access." Claim 1, reciting the term "access controls" separate and apart from the words "allow access," describing "a supervisor unit ... that implements access controls for storage space on the SCSI storage devices; and ... to allow access from Fibre Channel initiator devices to SCSI storage devices" Claim 7, reciting the term "access controls" separate and apart from the words "allow access," describing "a storage router ... operable ... to implement access controls for storage space on the SCSI storage devices; and to allow access from the workstations to the SCSI storage devices" **Extrinsic:** *Microsoft Computer*	write data.

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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				Dictionary (5th ed. 2002) definition of "access" as "the act of reading data from or writing data to memory" (DHS Brief Ex. 5) *WordNet Dictionary* definition of "access" as "the operation of reading or writing stored information" (DHS Brief Ex. 13) Crossroads' Post-*Markman* Brief at page 8: "Crossroads agrees that 'allow access' should be construed as 'permit or enable communication in order to read or write data.' (Tr. 119:2-25.)" (Crossroads' Post-Hearing Brief)	
Claim 1					

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A method for providing **virtual local storage** on remote SCSI storage devices to Fibre Channel devices, comprising: interfacing with a Fibre Channel transport medium; interfacing with a SCSI bus transport medium; maintaining a configuration for SCSI storage devices connected to the SCSI bus transport medium that maps between Fibre Channel devices and the SCSI storage devices and that implements access controls for storage space on the SCSI storage devices; and allowing access from Fibre Channel initiator devices to SCSI storage devices using native low level, block protocol in accordance with the configuration.	**Virtual Local Storage:** "A specific subset of storage space in a remote storage device that has the appearance and characteristics of local storage."	**Virtual Local Storage:** **Intrinsic:** '972 patent: col. 2, ll. 20-22; col. 4, ll. 1-10; col. 4, ll. 37-41. **Extrinsic:** Tr. 13:3-14; Tr. 18:5-12; Tr. 111:6-15; Tr. 184:8-185:1; Tr. 187:12-20; Webster's II New Riverside University definitions of "appearance" and "characteristics," Shelton Decl. ISO Crossroads' Reply, Ex. 6; ¶ 12 of Hodge Decl. ISO Crossroads' Response.	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.	**Virtual Local Storage:** **Intrinsic:** '972 Patent: Abstract; Col. 1, lines 7-8; Col. 1, lines 53-55; Col. 1, lines 58-61; Col. 4, lines 44-47; and Claim 1 ("virtual local storage on remote SCSI storage devices") Col. 1, lines 28-31, "Local storage typically consists of a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation." Col. 2, lines 20-22; Col. 4, lines 5-7; and Col. 4, lines 13-18, distinguishing virtual local storage from ordinary remote storage. Col. 8, lines 54-57 and 62-65 associating virtual local storage with storage space. **Extrinsic:** *Webster's II New Riverside*	**Virtual Local Storage:** Storage space, in a device that is remotely connected to an initiator device, such that the storage space appears to the initiator device to be within or locally connected to the initiator device.

Special Master's Proposed Construction of Disputed Terms					
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Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
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				data that, from the perspective of the computer, has the appearance and characteristics of locally stored data." (DHS Brief Ex. 10) Markman Hearing testimony of Hodges at 83:3-8, admitting that Crossroads' proposed definition does not explain "characteristics of local storage," but that, instead of defining this term at the Markman hearing, Crossroads "will certainly be able to describe that" to the jury. (Hearing Transcript)	
A method for providing virtual local storage on **remote** SCSI storage devices to Fibre Channel devices, comprising: interfacing with a Fibre Channel transport medium; interfacing with a SCSI bus transport medium; maintaining a configuration for SCSI storage devices connected to the SCSI bus	**Remote:** "Indirectly connected through at least one serial network transport medium that encapsulates the native low-level block protocol."	**Remote:** **Intrinsic:** '972 patent: col. 1, ll. 12-25; col. 1, l. 58 – col. 2, l. 24; col. 5, ll. 38-48; col. 6, ll. 12-24; col. 9, ll. 23-27. **Extrinsic:** Tr. 102:14-20;	**Remote:** Indirectly connected and capable of physical separation.	**Remote:** **Intrinsic:** '972 Patent: Col. 1, lines 28-31 using the term "remote" to refer to storage which is not "local," and defining "local" as "a disk drive, tape drive, CD-ROM drive or other storage device contained within, or locally connected to the workstation."	**Remote:** Indirectly connected through at least one serial network transport medium.

Special Master's Proposed Construction of Disputed Terms					
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transport medium that maps between Fibre Channel devices and the SCSI storage devices and that implements access controls for storage space on the SCSI storage devices; and allowing access from Fibre Channel initiator devices to SCSI storage devices using native low level, block protocol in accordance with the configuration. '609 '196		Rhyne Cross, Tr. 159:17-18; Rhyne Cross, Tr. 161:7-8; Rhyne Cross, Tr. 174:14-24; Tr. 180:5-14; Mr. Erwine's Notes, Shelton Decl. ISO Crossroads' Reply, Ex. 4.		Col. 1, lines 53-57, describing storage capacity which is not local as "remote." Col. 2, line 23 "significantly remote" **Extrinsic:** *Webopedia* definition of "remote" (Last modified September 1, 1996) as "In networks, remote refers to files, devices, and other resources that are not connected directly to your workstation. Resources at your workstation are considered local" (DHS Brief Ex. 6) *Webopedia* definition of "local" (Last modified September 1, 1996) as "In networks, local refers to files, devices, and other resources at your workstation. Resources located at other nodes on the network are	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Dot Hill's Proposed Construction	Dot Hill's Evidence	Special Master's Construction
				remote." (DHS Brief Ex. 6) Deposition of inventor Hoese, pages 143, 146, 147, 154-155 confirming that "remote" is not a function of distance by stating "It appears to be that the intent was to describe the storage as not being directly connected as local storage would be, but to be connected remotely, as in across a network or other means." (DHS Brief Ex. 14) Deposition of inventor Russell pages 104-105 confirming that "remote" is not a function of distance by stating "And it might be right next to me or it could be, you know, across the country, but that would allow me to get at that remote storage." (DHS Brief Ex. 15) Declaration of Rhyne, paragraph 19, stating that "[T]he meaning of 'remote' in general and in the specific	

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				context of the Crossroads patents has nothing to do with the physical distance between a workstation and a storage device, but rather has to do with the topological nature of the interconnection between those devices." (DHS Responsive Brief Ex. 18) Declaration of Rhyne, paragraph 27, stating that "[T]he common meaning of 'remote' is the opposite of 'local,' and does not carry a distance characteristic." (DHS Responsive Brief Ex. 18) Declaration of Hodges in Support of Crossroads' Opening Markman Brief (7/27/04), paragraph 9, stating that "The term 'local storage' typically refers to storage devices which are directly connected to the computer (as opposed to storage devices connected to a computer through a	

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				network). Local storage also typically refers to storage devices which are located a very short distance from the computer, i.e. a few feet." (Crossroads' Brief) Markman hearing testimony of Rhyne at 15:3-15, showing that a definition of "remote" could be simply "indirectly connected." (Hearing Transcript)	
allowing access from Fibre Channel initiator devices to SCSI storage devices using native low level, block protocol in accordance with the configuration.			**Allow Access:** Permit or enable communication in order to read or write data.	**Allow Access:** **Intrinsic:** '972 Patent: Col. 1, line 66 to col. 2, line 5, distinguishing "access controls" from the concept of "allowing access." Claim 1, reciting the term "access controls" separate and apart from the words "allow access," describing "a supervisor unit … that implements access controls for storage space on the SCSI storage devices; and … to	**Allow Access:** Permit or enable communication to read or write data.

Special Master's Proposed Construction of Disputed Terms					
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				allow access from Fibre Channel initiator devices to SCSI storage devices" Claim 7, reciting the term "access controls" separate and apart from the words "allow access," describing "a storage router ... operable ... to implement access controls for storage space on the SCSI storage devices; and to allow access from the workstations to the SCSI storage devices" **Extrinsic:** *Microsoft Computer Dictionary* (5th ed. 2002) definition of "access" as "the act of reading data from or writing data to memory" (DHS Brief Ex. 5) *WordNet Dictionary* definition of "access" as "the operation of reading or writing stored information" (DHS Brief Ex. 13) Crossroads' Post-*Markman*	

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Special Master's Proposed Construction of Disputed Terms					
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				Brief at page 8: "Crossroads agrees that 'allow access' should be construed as 'permit or enable communication in order to read or write data.' (Tr. 119:2-25.)" (Crossroads' Post-Hearing Brief)	
Claim 12					
The method of claim 11, wherein maintaining the configuration includes allocating subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Channel device.	[No claim term at issue]		[No terms at issue in Claim 12]		
Claim 13					
The method of claim 12, wherein the Fibre Channel devices comprise workstations.	[No claim term at issue]		[No terms at issue in Claim 13]		
Claim 14					
The method of claim 12, wherein the SCSI storage devices comprise hard disk drives.	[No claim term at issue]		[No terms at issue in Claim 14]		

ORIGINAL

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

CROSSROADS SYSTEMS (TEXAS), INC., a Texas Corporation,

Plaintiff and Counterclaim Defendant,

v.

DOT HILL SYSTEMS CORPORATION, a Delaware Corporation,

Defendant and Counterclaim Plaintiff

Case No. A-03-CV-754-SS

STIPULATED DEFINITIONS OF CLAIM TERMS

Plaintiff Crossroads Systems (Texas), Inc. and Defendant Dot Hill Systems Corporation, hereby stipulate to the following definitions of claim terms of U.S. Patent Nos. 5,941,972 ("the '972 Patent") and 6,425,035 ("the '035 Patent"):[1]

Claim Term	Where Used	'972 Patent Stipulated Definition	'035 Patent Stipulated Definition
Buffer	1, 5, 6, 10	A memory device that is utilized to temporarily hold data.	Same as '972.
Devices	1, 2, 3, 10-13	Any type of electronic device including, but not limited to, workstations.	Same as '972.
Direct memory access (DMA) interface	5, 6	A device that acts under little or no microprocessor control to access memory for data transfer.	Same as '972.
First transport medium	1-3, 5, 7, 10-13	n/a	A communications link.

[1] 3rd Party Defendant FalconStor Software, Inc. has settled this action with Plaintiff, is to be dismissed from this action shortly, and is, therefore, not a party to this Stipulation.

Claim Term	Where Used	'972 Patent Stipulated Definition	'035 Patent Stipulated Definition
Second transport medium	1, 6, 7, 10, 11	n/a	A communications link.
Workstation	3, 7, 8, 10, 13	A computing device that connects to the Fibre Channel, and may consist of a personal computer.	A computing device that connects to the first transport medium, and may consist of a personal computer.
Implement access controls for storage space on the SCSI storage devices. Implement access controls for storage space on the storage devices.	1, 7, 10, 11	Provide controls which limit a computer's access to a specific subset of storage devices or sections of a single storage devices.	Same as '972.
Allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Channel device	2, 12	Subsets of storage space are allocated to specific Fibre Channel devices.	n/a
Allocation of subsets of storage space to associated devices connected to the first transport medium, wherein each subset is only accessible by the associated device connected to the first transport medium	2, 12	n/a	Subsets of storage space are allocated to specific devices connected to the first transport medium.
Allocation of subsets of storage space to associated workstations, wherein each subset is only accessible by the associated workstation	8	Subsets of storage space are allocated to specific workstations.	Same as '972.
Storage Devices	1, 4, 7, 9-12, 14	n/a	Any storage device, including, for example, a tape drive, CD-ROM drive, an optical drive or a hard disk drive.

Claim Term	Where Used	'972 Patent Stipulated Definition	'035 Patent Stipulated Definition
Map and Mapping	1, 7, 10, 11, 12	To create a path from a device on one side of the storage router to a device on the other side of the router, i.e. from a Fibre Channel device to a SCSI device (or vice-versa). A "map" contains a representation of devices on each side of the storage router, so that when a device on one side of the storage router wants to communicate with a device on the other side of the storage router, the storage router can connect the devices.	To create a path from a device on one side of the storage router to a device on the other side of the router. A "map" contains a representation of devices on each side of the storage router, so that when a device on one side of the storage router wants to communicate with a device on the other side of the storage router, the storage router can connect the devices.
First controller	1, 5, 10	n/a	A device that interfaces with the first transport medium.
Second controller	1, 6, 10	n/a	A device that interfaces with the second transport medium.
First protocol unit	5	n/a	A portion of the first controller that connects with the first transport medium.
Second protocol unit	6	n/a	A portion of the second controller that connects with the second transport medium.
First-in-first-out queue	5	A multi-element data structure from which elements can be removed only in the same order in which they were inserted; that is, it follows a first in, first out (FIFO) constraint.	Same as '972.
Hard disk drive	4, 9, 14	A well known magnetic storage media, and includes a SCSI hard disk drive.	A well-known magnetic storage media.
Initiator device	1, 11	A device that issues requests for data or storage.	n/a

Claim Term	Where Used	'972 Patent Stipulated Definition	'035 Patent Stipulated Definition
Maintaining a configuration	1, 2, 10, 11, 12	Keep(ing) a modifiable setting of information.	n/a
Fibre Channel	1, 2, 3, 5, 7, 10, 11, 12, 13	A known high-speed serial interconnect, the structure and operation of which is described, for example, in Fibre Channel Physical and Signal Interface (FC-PH), ANSI X3.230 Fibre Channel Arbitrated Loop (FC-AL), and ANSI X3.272 Fibre Channel Private Loop Direct Attach (FC-PLDA).	n/a
Fibre Channel protocol	5	A set of rules that apply to Fibre Channel.	n/a
Fibre Channel device	1, 2, 3, 10, 11, 12, 13	Any device, such as a computer, that understands Fibre Channel protocol and can communicate using Fibre Channel protocols.	n/a
Fibre Channel controller	1, 3, 10	A device that interfaces with a Fibre Channel transport medium.	n/a
Fibre Channel transport medium	1, 5, 7, 10, 11	A serial optical or electrical communications link that connects devices using the Fibre Channel protocol.	n/a

Claim Term	Where Used	'972 Patent Stipulated Definition	'035 Patent Stipulated Definition
Fibre Channel protocol unit	5	A portion of the Fibre Channel controller which connects to the Fibre Channel transport medium.	n/a
SCSI	1, 4, 6, 7, 9, 10, 11, 14	A high speed parallel interface that may be used to connect components of a computer system.	n/a
SCSI storage device	1, 4, 7, 9, 10, 11, 14	Any storage device including, for example, a tape drive, CD-ROM drive, or hard disk drive that understands the SCSI protocol and can communicate using the SCSI protocol.	n/a
SCSI controller	1, 6, 10	A device that interfaces with the SCSI bus transport medium.	n/a
SCSI bus transport medium	1, 6, 7, 10, 11	A cable consisting of a group of parallel wires (normally 68) that forms a communications path between a SCSI storage device and another device, such as a computer.	n/a

Claim Term	Where Used	'972 Patent Stipulated Definition	'035 Patent Stipulated Definition
SCSI protocol unit	6	A portion of the SCSI controller which interfaces to the SCSI bus.	n/a
Native low level block protocol	1 - 14	A set of rules or standards that enable computers to exchange information and do not involve the overhead of high level protocols and file systems typically required by network servers.	Same as '972.

Respectfully Submitted,

Dated: August 25, 2004 By:

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CERTIFICATE OF SERVICE

I hereby certify that on the 31st day of August 2004, a true and correct copy of the above and foregoing document was forwarded via facsimile and Federal Express to counsel as follows:

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