APPENDIX A

Claim Element-BRI	PERLMAN & YOHE & SANTOS CLAIM MAPPINGS
Each Claim as a Whole	**Perlman:** Discloses all of the elements and all of the functions of each claim arranged as they are arranged in the claim. See below. (See generally ’820, Abstract, 1:1-9, 3:61-4:4, 8:52-9:2, claims 1, 4-6, 8, 10). E.g.: “The invention comprises a mechanism for efficiently synchronizing the contents of databases stored on nodes of a computer network to ensure that those contents are consistent. Generally, the mechanism comprises a database identifier generated by a node of the computer network and distributed to other receiving nodes coupled to the network. The database identifier is uniquely representative of the contents of the distributing node’s database and the receiving nodes compare this unique identifier with their own generated database identifiers to determine if the identifiers, and thus their databases, are consistent and synchronized.” (id., 3:61-4:4). **Yohe:** Except as otherwise noted, discloses all of the elements and all of the functions of each claim arranged as they are arranged in the claim. See below. (See generally ’943, 2:41-61, claims 1, 6, 8). E.g.: “The performance gains realized by the present invention are derived from the fact that remote clients tend to repetitively access the same data by performing file reads. If a copy of the data can be stored in the permanent storage memory of the remote client computer and also verified to be current when it is subsequently retrieved, this will improve performance significantly. This is because it requires much less bandwidth to verify a block of data than it would to actually transfer a block of data.” (id., 4:32-40). **Santos:** Except as otherwise noted, discloses all of the elements and all of the

MICROSOFT
EXHIBIT 1001

Claim Element-BRI	PERLMAN & YOHE & SANTOS CLAIM MAPPINGS
	functions of each claim arranged as they are arranged in the claim. See below. (See generally Santos, Figs. 4, 5). Sender/Compressor "sends a packet to the decompressor containing the TCP/IP header HdrB and the fingerprint H(X)." (Santos § 3.2.1, ¶ 3). Receiver/Decompressor "determines the payload X that is indexed by H(X) in its cache." (Santos § 3.2.1, ¶ 5). If decompressor does not find H(X) in its cache, i.e., "if the decompressor receives a fingerprint packet {HdrB, H(X)} for which H(X) is not a valid entry in its cache, it sends the entire fingerprint packet (including the header) back to the compressor as a rejection packet." (Santos § 3.2.2, ¶ 3). "Compressor sends the complete TCP/IP packet {HdrB, X} to the decompressor, which processes the packet as if it were receiving a new TCP/IP packet" (Santos § 3.2.2, ¶ 3), i.e., "upon receiving a TCP/IP packet forwarded over the channel, the decompressor also computes H(X), and stores X in its cache, indexed by H(X)." (Santos § 3.2.1, ¶ 2).
1. A system for data access in a packet-switched network, comprising:	**Perlman:** Access to data and transmission of data packets over computer networks including packet-switched networks using the OSI seven-layer protocol model. ('820, Abstract, 1:1-9, 1:16-23, 1:67-2:3, 7:12-22, 8:52-9:2, Fig. 2). --- **Yohe:** "An apparatus for increased data access in a network" ('943, 2:41-42), such as the world wide web (id., 4:23-27) or other wide area network (id., Fig. 2), using "packet[s]" (id., 8:24-25). (See id., title, Abstract, 1:12-15, 2:43-46, 2:51, 2:54-57, 3:8-21, 4:22-24, 5:45-50, 5:59-60, 6:22-23, Fig. 2, claim 1). --- **Santos:** A system for transferring data over the Internet or other packet-switched network for access to such data at client or server computers. (Santos § 1, ¶ 6, § 6, ¶ 1, Abstract).

Claim Element-BRI	PERLMAN & YOHE & SANTOS CLAIM MAPPINGS
(a)[*] a sender/computer including {* - reference labels added throughout this claim listing}	**Perlman:** Each computer is capable of sending information over the network. The "a" sender/computer includes at least designated router R4. (See '820, 5:39-53, 7:24-30, 8:60-9:2, Fig. 2). **Yohe:** Each computer is capable of sending information over the network. The "a" sender/computer is, e.g., the "file server computer 18" combined with the "cache verifying agent 54" residing on the "cache verifying computer 14" or "communication server 16." ('943, 4:42-44; Fig. 2). Alternatively, it is the cache verifying computer integral with the communications server (id., Abstract, 5:33-36, claims 1, 7 ("said cache verifying computer has said communications server integrally formed therewith")). **Santos:** Each computer is capable of sending information over the network. Each computer acts as both a sender (compressor) of packets and a receiver (decompressor) of packets. (See Santos § 2.5, ¶ 2, § 3.1, ¶ 1, § 3.4, ¶ 1, Abstract, ¶ 2).
(i) an operating unit,	**Perlman:** Sender is a "general-purpose computer[]" ('820, 5:41-43) with an "operating system" (id., 5:49) and ability to operate. (See id., 1:11-25, 5:38-53, 8:57-9:2). The '717 does not describe anything reasonably called an "operating unit" which is not also disclosed in this reference. **Yohe:** Sender has an operating system and ability to operate. (See '943, 2:46-47, 5:17-18, 5:22-23, claim 1). The '717 does not describe anything reasonably called an "operating unit" which is not also disclosed in this reference.

Claim Element-BRI	PERLMAN & YOHE & SANTOS CLAIM MAPPINGS
	Santos: Sender implementation is an "Intel-based PentiumII" computer running Linux operating system (Santos § 3.4, ¶ 1) and ability to operate. (Id., §§ 3.4, 4). The '717 does not describe anything reasonably called an "operating unit" which is not also disclosed in this reference.
(ii) a first memory,	**Perlman:** Each computer typically is a "general-purpose computer" and includes "a memory unit 204" which "may comprise storage locations typically composed of random access memory (RAM) devices, which are addressable by the CPU 202 and network adapter 206." ('820, 5:41-49, Fig. 2). (See id., '820, 8:52-9:2). --- **Yohe:** The cache verifying computer includes "a first memory" ('943, 2:47) (e.g., RAM) as does the file server computer. (See id., Abstract, 2:46-47, 5:34-36, claims 1, 6, 8). --- **Santos:** Sender implementation includes 128MB of RAM. (Santos § 3.4, ¶ 1).
(iii) a permanent storage memory and	**Perlman:** Each computer typically is a "general-purpose computer" with an operating system (only portions of which are resident in RAM), and which implements a particular protocol, necessarily using software stored in permanent memory. ('820, 3:14-21, 5:41-52, 8:52-9:2, Fig. 2). --- **Yohe:** File server includes "a DD [(disk driver)] 78 and a PSD [(permanent storage disk)] 80." ('943, 5:22-24). (See id., Abstract, 2:47-49, 3:5-7, 3:22-24, claims 1, 6, 8). The cache verifying computer also necessarily has a permanent memory in order to store its boot-up code, "operating system," LAN Driver 68, Network Transport Layer 66, etc. (Id., 5:14-21, 5:34-36, Fig. 2).

Claim Element-BRI	PERLMAN & YOHE & SANTOS CLAIM MAPPINGS
	Santos: E.g., its general-purpose PentiumII PC necessarily has a ROM and a hard disk storing, e.g., its Linux operating system and "compressor" and "decompressor" code. (Santos § 2.5, ¶ 2). Implementation's 128MB RAM is substantially smaller than the 200MB cache available for each direction of network traffic. (See id., § 3.1, ¶ 1).
(iv) a processor and a	**Perlman:** Each "general-purpose computer" "typically comprises a central processing unit (CPU) 202." ('820, 5:41-44, Fig. 2). (See id., '820, 8:52-9:2). **Yohe:** File server computer includes "a processor" ('943, claim 8) and cache verifying computer includes "a processor" (id., 2:47) and cache verifying agent could be "a stand alone processor with its own memory and operating system" (id., 5:34-36). (See id., Abstract, claim 1). **Santos:** Sender implementation is an "Intel-based PentiumII" computer running Linux operating system. (Santos § 3.4, ¶ 1).
(b) remote receiver/computer including	**Perlman:** Each computer is capable of receiving information over the network. Remote nodes on a computer network receive data from other network nodes, e.g., routers R1-R3 and R5-R6. ('820, 5:39-43, 7:24-30, 8:60-9:2, Fig. 2). **Yohe:** Each computer is capable of receiving information over the network. "A network computer system 10 having at least one remote client computer 12." ('943, 4:42-43). (See id., Abstract, Fig. 2, claims 1, 8).

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