IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

Valtrus Innovations Ltd. and Key Patent Innovations Ltd.,	§	
Plaintiffs	§	
v.	§	**CIVIL ACTION NO. 2:24-CV-00021-JRG**
SAP America, Inc. and SAP, SE.	§	**JURY TRIAL DEMANDED**
Defendants.	§	

JOINT CLAIM CONSTRUCTION AND PREHEARING STATEMENT

Pursuant to P.R. 4-3 of the Rules of Practice for Patent Cases before the United States District Court for the Eastern District of Texas, and the Court's First Amended Docket Control Order (Dkt. No. 65), Plaintiffs Valtrus Innovations Ltd. and Key Patent Innovations Ltd. (collectively, "Plaintiffs") and Defendants SAP America, Inc. and SAP, SE (collectively, "SAP") hereby submit this Joint Claim Construction and Prehearing Statement.

The patents asserted in this case are U.S. Patent No. 6,823,409 ("the '409 Patent"), U.S. Patent No. 6,871,264 ("the '264 Patent"), U.S. Patent No. 6,889,244 ("the '244 Patent"), U.S. Patent No. 7,313,575 ("the '575 Patent"), U.S. Patent No. 6,691,139 ("the '139 Patent"), U.S. Patent No. 7,936,738 ("the '738 Patent").

I. P.R. 4-3(a)(1): Agreed Constructions

Pursuant to P.R. 4-3(a)(1), the parties have agreed on the following constructions:

Term	Asserted Patents, Claims	Agreed Construction
a plurality of cache memory blocks, allocable cache memory block, allocable upper level cache memory blocks	'264 patent, claims 1, 3, 5, 9	Plain and ordinary meaning, where the blocks are composed of memory cache rather than disk cache

Term	Asserted Patents, Claims	Agreed Construction
non-allocable cache memory blocks	’264 patent, claims 8	Plain and ordinary meaning, where the blocks are composed of memory cache rather than disk cache
transmitting the send message to from the FTSS to a service on the second node	’244 patent, claim 4	transmitting the send message [] from the FTSS to a service on the second node
Claim 1 Preamble	’139 patent, claim 1	Limiting
Claim 5 Preamble	’139 patent, claim 5	Limiting
Claim 12 Preamble	’139 patent, claim 12	Limiting
wherein the outgoing message is sent from the node is to a remote node across a network	’738 patent, claim 3	wherein the outgoing message [] sent from the node is to a remote node across a network
Claim 1 Preamble	’738 patent, claim 1	Limiting
Claim 33 Preamble	’738 patent, claim 33	Limiting

II. P.R. 4-3(a)(2): Proposed Constructions of Disputed Terms; Intrinsic and Extrinsic Evidence

Plaintiffs’ proposed constructions for each disputed claim term and intrinsic and other evidence in support are identified in Exhibit A. Defendants’ proposed constructions for each disputed claim term and intrinsic and other evidence in support are identified in Exhibit B. Where intrinsic and extrinsic citations have been made for a particular claim term, phrase, or clause they should be understood as applicable to each other instance where the same term, phrase, or clause appears elsewhere.

III. P.R. 4-3(a)(3): Anticipated Length of Hearing

The claim construction hearing in this action is scheduled to occur on March 14, 2025 at 9:00 a.m. in Marshall, Texas before Judge Rodney Gilstrap. Dkt. No. 65 at 4. Plaintiffs anticipate four (4) hours will be required, with each side being allotted two (2) hours. Defendants anticipate

3 hours will be required, with each side being allotted 1.5 hours.

IV. P.R. 4-3(a)(4): Witnesses

The parties do not expect to call any witnesses at the claim construction hearing.

V. P.R. 4-3(a)(5): Other Issues for a Prehearing Conference

Pursuant to P.R. 4-3(a)(5), the parties are unaware of any other issues that would be appropriate for a prehearing conference.

Date: December 20, 2024

Respectfully Submitted,

By: */s/ Matthew G. Berkowitz by permission Claire Henry*

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system pursuant to Local Rule CV-5(a)(3) on December 20, 2024.

/s/ Claire Henry
Claire Henry

CERTIFICATE OF CONFERENCE

The undersigned hereby certifies that counsel for Plaintiffs and Defendants met and conferred, and all parties agree to filing the foregoing document as a joint statement.

/s/ Claire Henry
Claire Henry

EXHIBIT A - Plaintiffs' Preliminary Claim Constructions for P.R. 4-3 Joint Statement

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
1	coherency control module* coherence control module operably coupled…* coherency control module configured to…* '409 Patent: 1, 2, 4, 10, 12	Plain and ordinary meaning. Not subject to § 112, ¶ 6. Not indefinite. Alternatively, to the extent this term is found subject to § 112, ¶ 6, structure is disclosed at Figs. 2, 3, 5:13-8:39, 7:13-11:65.	The claims, specification, and prosecution history of the '409 patent, including but not limited to the following exemplary portions: '409 patent at 1:66-11:65, 13:18-14:48, Figs. 1-3; Mar. 12, 2004 Non-Final Office Action; Jun. 14, 2004 Response to Office Action and exhibits thereto; Aug. 4, 2004 Notice of Allowance. The references cited during prosecution of the '409 patent, including but not limited to the following exemplary portions: U.S. Patent No. 5,893,151 at 1:12-2:20; U.S. Patent No. 5,966,729 at 1:20-62; U.S. Patent No. 6,345,341 at 1:26-2:36; U.S. Pat. App. Pub. No. 2003/0200397 at [0008]-[0010]. Testimony of Dr. Michael C. Brogioli, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '409 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions; whether these claim terms should be governed by 35 U.S.C. § 112, ¶ 6. *See* John L. Hennessy & David A. Patterson, *Computer Architecture: A Quantitative Approach* (2d Ed. 1996) ("Hennessy & Patterson") (*e.g.*, VAL-SAP00016654 *et seq.*); David J. Lilja, *Cache Coherence in Large-Scale Shared-Memory Multiprocessors: Issues and Comparisons*, 25 ACM Computing Surveys 303 (Sept. 1, 1993) (*e.g.*, VAL-SAP00016806 *et seq.*); John Hennessy et al., *Cache-Coherent Distributed Shared Memory: Perspectives on Its Development and Future Challenges*, 87 Proceedings of the IEEE 418 (Mar. 1999) (*e.g.*, VAL-SAP00016749 *et seq.*); A.K. Nanda et al., *High-throughput coherence control and hardware messaging in Everest*, 45 IBM J. Res. & Dev. 229 (Mar. 2, 2001) (*e.g.*, VAL-SAP00016910 *et seq.*).

[1] Plaintiffs reserve the right to rely on any evidence or alleged prior art identified by Defendants. Plaintiffs further reserve the right to rely on

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
2	request module* request module configured to…* '409 Patent: 1, 2, 7, 10, 15	Plain and ordinary meaning. Not subject to § 112, ¶ 6. Not indefinite. Alternatively, to the extent this term is found subject to § 112, ¶ 6, structure is disclosed at Figs. 2, 3, 5:13-6:2, 7:13-8:15, 10:30-56, 11:9-65.	The claims, specification, and prosecution history of the '409 patent, including but not limited to the following exemplary citations: '409 patent at 1:66-11:65, 13:18-14:58, Figs. 1-3; Mar. 12, 2004 Non-Final Office Action; Jun. 14, 2004 Response to Office Action and exhibits thereto; Aug. 4, 2004 Notice of Allowance. The references cited during prosecution of the '409 patent, including but not limited to the following exemplary portions: U.S. Patent No. 5,819,105 at 1:21-33; U.S. Patent No. 6,345,341 at 1:59–2:21; U.S. 5,966,729 at 1:63–3:13, Figs. 1A & 1B; U.S. Pat. App. Pub. No. 2003/0200397 at [0007]-[0012]. Testimony of Dr. Michael C. Brogioli, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '409 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions; whether these claim terms should be governed by 35 U.S.C. § 112, ¶ 6. *See* Hennessy & Patterson.

additional intrinsic evidence necessary for a full and complete understanding of the evidence cited by any party. Plaintiffs further reserve the right to, if needed upon reviewing Defendants' brief, identify and rely on additional evidence not presently known to it to oppose Defendants' proposed construction.

3	static RAM interface module* static RAM interface module configured to…* '409 Patent: 1, 7, 9, 15, 17	Plain and ordinary meaning. Not subject to § 112, ¶ 6. Not indefinite. Alternatively, to the extent this term is found subject to § 112, ¶ 6, structure is disclosed at Figs. 2, 3, 6:3-7:12, 10:20-11:8.	The claims, specification, and prosecution history of the '409 patent, including but not limited to the following exemplary citations: '409 patent at 1:66-11:65, 13:18-14:58, Figs. 1–4; Mar. 12, 2004 Non-Final Office Action; Jun. 14, 2004 Response to Office Action and exhibits thereto; Aug. 4, 2004 Notice of Allowance. The references cited during prosecution of the '409 patent, including but not limited to the following exemplary portions: U.S. Patent No. 5,991,819 at , 4:47-5:10, 16:10-29, Figs.3, 4; U.S. Patent No. 5,822,611 at 2:1-14; U.S. Patent No. 6,223,301 at 4:59-5:24, Fig. 7; U.S. Patent No. 6,279,087 at 4:28-39, 5:23-32, Figs. 1, 2; U.S. Patent No. 6,487,621 at Abstract, 6:14-40, Figs. 3, 4. Testimony of Dr. Michael C. Brogioli, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '409 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions; whether these claim terms should be governed by 35 U.S.C. § 112, ¶ 6. *See* Hennessy & Patterson; Microsoft Press, *Microsoft Computer Dictionary* (4th Ed., 1999) ("Microsoft") (*e.g.*, VAL-SAP00016890 *et seq.* and VAL-SAP00016905 *et seq.*); Rudolf F. Graf, *Modern Dictionary of Electronics* (7th Ed. 1999) ("Graf") (*e.g.*, VAL-SAP00016641 et seq., VAL-SAP00016979 *et seq.*, and SAP_VAL_0391014 e*t seq.*); IEEE, *The IEEE Standard Dictionary of Electrical and Electronics Terms* (6th Ed. 1997) ("IEEE (1997)") (*e.g.*, VAL-SAP00016766 *et seq.*); IBM Dictionary of Computing (10th Ed. 1994) ("IBM") (*e.g.*, VAL-SAP00016765 *et seq.*); Stan Giblisco, *The Illustrated Dictionary of Electronics* (8th Ed. 2001) ("Giblisco") (*e.g.*, VAL-SAP00016635 *et seq.*); McGraw-Hill Dictionary of Scientific and Technical Terms (6th Ed. 2003) ("McGraw Scientific (2003)") (*e.g.*, VAL-SAP00016849 *et seq.* and VAL-SAP00016859 *et seq.*); McGraw-Hill Dictionary of Scientific and Technical Terms (3rd Ed. 1984) ("McGraw Scientific (1984)") (*e.g.*, VAL-SAP00016842 *et seq.*); Steven M. Kaplan, *Wiley Electrical and Electronics Engineering Dictionary* (2004) ("Kaplan") (*e.g.*, VAL-SAP00016775 *et seq.* and SAP_VAL_0391054 *et seq.*); Oxford University Press, *A Dictionary of Computing* (5th Ed. 2004) ("Oxford") (*e.g.*, SAP_VAL_0390897 *et seq.*).

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
4	the first processor bus . . . the second processor bus '409 Patent: 12	Plain and ordinary meaning. Not indefinite.	The claims, specification, and prosecution history of the '409 patent, including but not limited to the following exemplary portions: '409 patent at 1:66-11:65, 13:18-14:58, Figs. 1-3; Mar. 12, 2004 Non-Final Office Action; Jun. 14, 2004 Response to Office Action and exhibits thereto; Aug. 4, 2004 Notice of Allowance. Testimony of Dr. Michael C. Brogioli, Ph.D. regarding the level of ordinary skill in the art; the meaning of this claim term in the context of the '409 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed construction. *See* Graf; IEEE (1997); IEEE, The New IEEE Standard Dictionary of Electrical and Electronic Terms (5th Ed., 1993) (*e.g.*, VAL-SAP00016938 *et seq.*); IBM; Giblisco; McGraw Scientific (2003); McGraw Scientific (1984); Microsoft; Kaplan.
5	high-speed interconnect coupling '264 Patent: 1	Plain and ordinary meaning. Not indefinite.	The claims, specification, and prosecution history of the '264 patent, including but not limited to the following exemplary portions: '264 patent at 2:11-49; 4:9-67, 5:43-6:59, Figs. 1–2; Nov. 18, 2003 Non-Final Office Action; Feb. 18, 2004 Response to Non-Final Office Action; Mar. 23, 2004 Final Office Action; Aug. 20, 2004 Appeal Brief; Oct. 26, 2004 Notice of Allowance. The references cited during prosecution of the '264 patent, including but not limited to the following exemplary portions: U.S. Patent No. 6,681,296 at 1:43–2:21; U.S. Patent No. 6,604,174 at 1:12–42; U.S. Patent No. 5,809,537 at 1:17–48. Testimony of Dr. Michael C. Brogioli, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '264 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions. *See* Hennessy & Patterson; Graf; McGraw Scientific (2003); Kaplan.

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
6	accessing determining which nodes should receive the broadcast message based on the broadcast message '244 Patent: 10	determining which nodes should receive the broadcast message based on the broadcast message	The claims, specification, and prosecution history of the '244 patent, including but not limited to the following exemplary portions: '244 patent at claim 6; claim 10; 7:14-8:29, 11:59-14:53; 11:10-25; 9:18-44; Fig. 2; Fig. 7; Fig. 10; Jul. 18, 2003 Non-Final Office Action; Nov. 24, 2003 Response to Non-Final Office Action; Feb. 25, 2004 Final Office Action; Apr. 30 2004 Response to Final Office Action; Aug. 30 2004 Appeal Brief; Dec. 21 2004 Notice of Allowance; Oct. 31, 2000 Claims. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '244 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions.

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
7	the first and second nodes are each coupled to a fault tolerant storage system (FTSS) '244 Patent: 1	Plain and ordinary meaning. Not indefinite.	The claims, specification, and prosecution history of the '244 patent, including but not limited to the following exemplary portions: '244 patent at 1:26-40; 2:4-33; 4:28-48, 4:49-61; 6:28-41, 7:57-8:12, 11:59-14:53, Figs. 2, 4; Jul. 18, 2003 Non-Final Office Action; Nov. 24, 2003 Response to Non-Final Office Action; Feb. 25, 2004 Final Office Action; Apr. 30 2004 Response to Final Office Action; Aug. 30 2004 Appeal Brief; Dec. 21 2004 Notice of Allowance. The references cited during prosecution of the '244 patent, including but not limited to the following exemplary portions: U.S. Patent No. 5,815,649 at Fig. 1; 2:61-3:15. The application and corresponding patent incorporated by reference into the '244 patent at 1:9-15, U.S. Patent No. 6,938,071, including, but not limited to '071 patent at 11:43-12:5; claim 1. Testimony of Martin Farach-Colton regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions. *See* Harry Newton, *Newton's Telecom Dictionary* (2000) ("Newton") (*e.g.*, VAL-SAP00016650 *et seq.*); Microsoft.

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
8	highly reliable fault-tolerant storage media '244 Patent: 1, 2, 3, 6, 9, 10	Plain and ordinary meaning. Not indefinite	The claims, specification, and prosecution history of the '244 patent, including but not limited to the following exemplary portions: '244 patent at 1:26-53; 2:4-16; 3:9-11; 4:5-48; 4:49-5:6; 5:17-21; 5:60-65; 6:21-27; 6:54-67; 3:7-11, 4:49-5:6, 11:26-35, 11:59-14:53, Figs. 1, 2; Jul. 18, 2003 Non-Final Office Action; Nov. 24, 2003 Response to Non-Final Office Action; Feb. 25, 2004 Final Office Action; Apr. 30 2004 Response to Final Office Action; Aug. 30 2004 Appeal Brief; Dec. 21 2004 Notice of Allowance. The references cited during prosecution of the '244 patent, including but not limited to the following exemplary portions: U.S. Patent No. 5,815,649 at 1:41-62; U.S. Patent No. 6,574,655 at 1:30-53. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '244 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions. *See* Newton, Microsoft.
9	the real time information director comprises a logic that cleanses and enriches the data, supplies data security, and insures data integrity '575 Patent: 3	the real time information director comprises a logic that cleanses and enriches the data, supplies data security, and ensures data integrity	The claims, specification, and prosecution history of the '575 patent, including but not limited to the following exemplary portions: '575 patent at 3:22-57, 4:28-33, 4:57-5:6, 5:48-57, 8:19-21, 9:32-43, 11:1-10, 24:33-39, 29:54-30:44, 55:16-60:33, Figs. 3A-3B, 12A-12E; Dec. 13, 2006 Non-Final Office Action; Mar. 13, 2007 Response to Office Action; May 16, 2007 Notice of Allowance. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '244 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions.

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
10	a logic that automatically generates and caches prepare SQL statements from a content metadata portion of document metadata according to the schema '575 Patent: 11	a logic that automatically generates and caches prepared SQL statements from a content metadata portion of document metadata according to the schema	The claims, specification, and prosecution history of the '575 patent, including but not limited to the following exemplary portions: '575 patent at 16:30-50; 17:1-39; 18:40-19:24; 29:63-30:34; 55:16-60:33, Figs. 3A-3B, 12A-12E; Dec. 13, 2006 Non-Final Office Action; Mar. 13, 2007 Response to Office Action; May 16, 2007 Notice of Allowance. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '244 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions.

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
11	the RTID that creates at least one disassembler defined according to the polymorphic metadata that disassembles inbound data documents into multiple records in preparation for insertion into metadata tables and create at least one assembler defined according to the polymorphic metadata that assembles outbound data documents from at least one record selected from at least one metadata-selected table whereby data is transformed for supply, consumption, or both '575 Patent: 28	the RTID that creates at least one disassembler defined according to the polymorphic metadata that disassembles inbound data documents into multiple records in preparation for insertion into metadata tables and creates at least one assembler defined according to the polymorphic metadata that assembles outbound data documents from at least one record selected from at least one metadata-selected table whereby data is transformed for supply, consumption, or both	The claims, specification, and prosecution history of the '575 patent, including but not limited to the following exemplary portions: '575 patent at 3:22-4:9, 4:18-56, 5:7-14, 5:48-57, 9:33-43, 10:1-16, 11:1-10, 12:17-39, 12:47-67, 15:18-29, 15:36-60, 30:22-57, 55:16-60:33, Figs. 3A-3B, 12A-12E; Dec. 13, 2006 Non-Final Office Action; Mar. 13, 2007 Response to Office Action; May 16, 2007 Notice of Allowance. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '244 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions.

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
12	polymorphic metadata '575 Patent: 1, 2, 4, 7, 22, 23, 24, 25, 28, 33	Plain and ordinary meaning. Not indefinite	The claims, specification, and prosecution history of the '575 patent, including but not limited to the following exemplary portions: '575 patent at 2:31-34; 29:53-61; 3:22-31; 3:46-64; 4:6-26; 4:34-5:6; 5:6-14; 5:48-67; 8:66-9:12; 9:32-43; 10:1-16; 11:33-40; 12:18-39; 13:5-19; 15:36-60; 25:58-26:3; 29:53-67; 30:22-67; 31:1-14; 31:48-50; 32:3-14; 32:59-65; 55:16-60:33; Figs. 1A; 3A-3B; 12A-12E; Dec. 13, 2006 Non-Final Office Action; Mar. 13, 2007 Response to Office Action; May 16, 2007 Notice of Allowance. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '575 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions. *See* McGraw-Hill, *Dictionary of Electrical & Computer Engineering* (6th Ed. 2003) (*e.g.*, VAL-SAP00016855 *et seq.*); McGraw Scientific (2003); Kaplan; Wikipedia, *Polymorphism (Computer Science)*, (Jun. 4, 2004) (*e.g.*, VAL-SAP00016974 *et seq.*); Thomas J. Sheffler, *A Portable MPI-Based Parallel Vector Template Library* (1995) (*e.g.*, VAL-SAP00016942 *et seq.*); Barbara Liskov, *Program Development in Java* (2001) (*e.g.*, VAL-SAP00016580 *et seq.*); Douglass Downing and Michael Covington, Dictionary of Computer and Internet Terms, Seventh Ed. (2000) (*e.g.*, VAL-SAP00016631 *et seq.*).

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
13	assembler '575 Patent: 1, 4, 22, 33, 36	Plain and ordinary meaning. Not indefinite	The claims, specification, and prosecution history of the '575 patent, including but not limited to the following exemplary portions: '575 patent at 2:31-34; 29:53-61; 3:22-31; 3:46-64; 4:6-26; 4:34-5:6; 5:6-14; 5:48-67; 8:66-9:12; 9:32-43; 10:1-16; 11:33-40; 12:18-39; 13:5-19; 15:36-60; 25:58-26:3; 29:53-67; 30:22-67; 31:1-14; 31:48-50; 32:3-14; 32:59-65; 55:16-60:33; Figs. 1A; 3A-3B; 12A-12E; Dec. 13, 2006 Non-Final Office Action; Mar. 13, 2007 Response to Office Action; May 16, 2007 Notice of Allowance. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '575 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions. *See* Microsoft Biztalk Server 2004 Unleashed (2005) ("Biztalk") (*e.g.*, VAL-SAP00016863 *et seq.*); Simon St. Laurent and Robert Biggar, *Inside XML DTDs* (1999) ("St. Laurent & Biggar") (*e.g.*, VAL-SAP00016925 *et seq.*); Candee Wilde, *The Vanguard Group*, Computer World (Aug. 1996) ("Wilde") (*e.g.*, VAL-SAP00016629 *et seq.*).

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
14	disassembler '575 Patent: 1, 4, 22, 33, 36	Plain and ordinary meaning. Not indefinite	The claims, specification, and prosecution history of the '575 patent, including but not limited to the following exemplary portions: '575 patent at 2:31-34; 29:53-61; 3:22-31; 3:46-64; 4:6-26; 4:34-5:6; 5:6-14; 5:48-67; 8:66-9:12; 9:32-43; 10:1-16; 11:33-40; 12:18-39; 13:5-19; 15:36-60; 25:58-26:3; 29:53-67; 30:22-67; 31:1-14; 31:48-50; 32:3-14; 32:59-65; 55:16-60:33; Figs. 1A; 3A-3B; 12A-12E; Dec. 13, 2006 Non-Final Office Action; Mar. 13, 2007 Response to Office Action; May 16, 2007 Notice of Allowance. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '575 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions. *See* Biztalk; St. Laurent & Biggar; Wilde.

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
15	a logic that…*[2] '575 Patent: 6, 7, 11, 12	Plain and ordinary meaning. Not subject to § 112, ¶ 6. Not indefinite Alternatively, to the extent this term is found subject to § 112, ¶6: Claim 6: Structure is disclosed at 3:65-4:11; 4:34-5:6; 13:1-36; 14:1-37; 15:30-35; and 16:13-17. Claim 7: Structure is disclosed at 3:65-4:11; 4:34-5:6; 13:20-27. Claim 11: Structure is disclosed at 16:30-50; 17:1-39; 18:40-19:24. Claim 12: Structure is disclosed at Fig. 10B; 27:40-47; 10:1-16. *See also* 3:22-57; Figs. 12A-12E and accompanying description; 29:54-30:44.	The claims, specification, and prosecution history of the '575 patent, including but not limited to the following exemplary portions: '575 patent at 3:22-57, 3:65-4:11, 4:28-5:6, 5:48-57, 8:19-21, 9:32-43, 10:1-16, 10:28-34, 11:1-10, 13:1-50, 14:1-37, 15:30-35, 16:13-17, 16:30-51, 17:1-56, 18:40-19:24, 24:33-39, 27:40-47, 29:54-30:44, 43:51-44:67, 51:50-57, 55:16-60:33, 29:62-36:47, Figs. 3A-3B, 10B, 12A-12E; Dec. 13, 2006 Non-Final Office Action; Mar. 13, 2007 Response to Office Action; May 16, 2007 Notice of Allowance. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '575 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions.

[2] Defendants have identified "a logic that*" for claims 3, 5, 6, 7, 9, 11, 12, and 35. Claims 3, 5, and 9 have been dropped by Plaintiffs, and "a logic that" does not appear in claim 35.

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
16	a business rules engine that…* '575 Patent: 21	Plain and ordinary meaning. Not subject to § 112, ¶ 6. Not indefinite Alternatively, to the extent this term is found subject to § 112, ¶ 6, structure is disclosed at Fig. 8; 18:25-30; 19:39-20:50; Fig. 7B; 25:52-56; 26:25-27:31; 28:25-29:52. *See also* 3:22-57; Figs. 12A-12E and accompanying description; and 29:54-30:44.	The claims, specification, and prosecution history of the '575 patent, including but not limited to the following exemplary portions: '575 patent at 18:21-39, 19:39-20:50, 25:52-56, 26:25-27:31, 27:61-63, 28:25-29:52, 55:16-60:33, Figs. 7B, 8; Dec. 13, 2006 Non-Final Office Action; Mar. 13, 2007 Response to Office Action; May 16, 2007 Notice of Allowance. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '575 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions. *See* Business Wire, *Blaze Software Ships New Blaze Advisor Innovator, Letting Business Managers Adapt Systems to Changing Conditions without Programming* (June 6, 2000) (*e.g.*, VAL-SAP00016623 *et seq.*); Microsoft; Beth Bacheldor, *Personalized Shopping on the Internet*, Information Week (Oct. 4, 1999) (*e.g.*, VAL-SAP00016622 *et seq.*); Layna Fischer, Workflow Handbook (2002) (*e.g.*, VAL-SAP00016784 *et seq.*).
17	context information '738 Patent: 1, 2, 5, 6, 10, 33	Plain and ordinary meaning. Not indefinite	The claims, specification, and prosecution history of the '738 patent, including but not limited to the following exemplary portions: '738 patent at 1:1-5, 1:21-35, 1:45-56, 1:63-3:45, 2:1-3:45, 3:65-4:5, 4:6-13, 4:18-34, 5:3-42, 5:43-58, 6:21-62, 7:1-35, 7:53-63, 8:1-10:49, Figs. 1, 4, 5, 6; Apr. 2, 2009 Non-Final Office Action; Jun. 11, 2009 Response to Office Action; Sep. 18, 2009 Final Office Action; Jan. 28, 2010 Appeal Brief; May 14, 2010 Non-Final Office Action; Jul. 29, 2010 Response to Office Action; Oct. 15, 2010 Final Office Action; Jan. 11, 2011 Response to Office Action; Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '738 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions. *See* Oxford.

No.	Term/Phrase/ Clause Claims (per SAP's P.R. 4-1 Disclosures) * - identified by SAP as means plus function	Plaintiffs' Proposed Construction (and structure where SAP has identified a term as means plus function)	Plaintiffs' Identification of Supporting Evidence[1]
18	potentially inaccurate or incomplete '738 Patent: 10	Plain and ordinary meaning. Not indefinite	The claims, specification, and prosecution history of the '738 patent, including but not limited to the following exemplary portions: '738 patent at 2:25-27, 3:5-7, 7:28-52, 8:1-10:49; Apr. 2, 2009 Non-Final Office Action; Jun. 11, 2009 Response to Office Action; Sep. 18, 2009 Final Office Action; Jan. 28, 2010 Appeal Brief; May 14, 2010 Non-Final Office Action; Jul. 29, 2010 Response to Office Action; Oct. 15, 2010 Final Office Action; Jan. 11, 2011 Response to Office Action. Testimony of Dr. Martin Farach-Colton, Ph.D. regarding the level of ordinary skill in the art; the meaning of these claim terms in the context of the '738 patent to a person of ordinary skill in the art; response and comments on Defendants' proposed constructions.

Exhibit B – SAP's Proposed Constructions and Supporting Evidence

'409 Patent			
Claim Term or Element	**Claim(s)**	**Proposed Construction**	**Supporting Evidence**
coherency control module coherence control module operably coupled… coherency control module configured to…	1, 2, 4, 10, 12	Indefinite Alternatively, subject to § 112(6/f) and indefinite for failing to recite corresponding structure.	Claims 1, 2, 4, 10, 12 Figures 1, 2, 3. Specification, 2:57-64. "In a multi-processor system, each processor may have a corresponding main memory, with each main memory reserving a portion for cache memory. The process of managing the caches in a multi-processor system is complex. 'Cache coherence' refers to a protocol for managing the caches of a multi-processor system so that no data is lost or over-written before the data is transferred from a cache to a requesting or target memory." Specification, 2:66-3:16. "When these multi-processors with separate caches share a common memory, it is necessary to keep the caches in a state of coherence by insuring that any shared operand that has changed in any cache is changed throughout the entire system. Cache coherency is generally maintained through either a directory based or a snooping system. In a directory based system, the data being shared is placed in a common directory that maintains the coherence between the caches. The directory acts as a filter through which the processor must ask permission to load an entry from the primary memory to its cache. When an entry is changed, the directory either updates or invalidates the other caches with that entry. Disadvantageously, directory based coherency systems add to the cycle time (previously reduced by the implementation of cache memory) by requiring that each access to the cache memory go through the common directory."

			Specification, 3:21-27. "Thus, cache coherence aims at solving problems associated with sharing data in a multi-processor computer system which maintains separate caches. This problem is further promulgated when the computer system includes multiple processor buses. In a multi-processor-bus shared memory system, a host controller must maintain memory coherency throughout all the processor caches." Specification, 4:55-65. "Coherency between the caches found in each CPU 12A-12H is further complicated by the split bus configuration since coherency must be maintained between the separate buses. Also, because requests may originate from or be directed to not only one of the CPUs 12A-12H but also from one of the peripheral devices 32A-B, 34A-B, or 36A-B, cache coherency must be maintained along the I/O bus 27, as well. To maintain coherency, a mechanism is provided in the host/ data controller 16, 18 to efficiently facilitate snooping of the buses in the present multi-processor/multi-bus system 10." File History, 06-18-2004 Applicant Remarks. "While the coherency control module may be a part of the host controller, the coherency control module may also be a separate element from the host controller." Standard Dictionary of Electrical and Electronic Terms (2004) SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
request module request module configured to…	1, 2, 7, 10, 15	Subject to § 112(6/f) and indefinite for failing to recite corresponding structure.	Claims 1, 2, 7, 10, 15 Figures 1, 2, 3. Specification, 5:25-40. "There are four main functional blocks within the TCON module 40. The first block is the request module 42. The request module 42 accepts the cycle requests from the processor controllers

			PCON0, PCON1, and PCON2 (FIG. 1) and schedules the cycles to be run through the tag look up. Generally, the request module 42 maintains proper request order, prioritizes the input, and establishes each of the queues or list structures. The request module 42 insures memory coherency through proper cycle order, arbitrates access to the memory among the processor and I/ O buses 14 a, 14B, and 27, and optimally utilizes the tag look up bandwidth. As previously stated, the request module 42 is responsible for maintaining proper cycle order. This is accomplished using content addressable memory (CAM) of new cycles against existing cycles." Specification, 5:58-64. "If, for instance, a WRITE request is issued to a particular location in memory, and subsequently, a READ request is issued to that same location in memory, the request module 42 will insure that the WRITE request is executed before the READ request." Specification, 7:42-47 "The request module 42 controls the CAM requests 62A-62C for each of the respective READ buffers 54A-54C. Depending on the response from the CAM request 62A-62C, the request module 42 may reprioritize the present READ request." SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
static RAM interface module static RAM interface module configured to…	1, 7, 9, 15, 17	Subject to § 112(6/f) and indefinite for failing to recite corresponding structure.	Claims 1, 7, 9, 15, 17 Figures 1, 2, 3. Specification, 2:44-55. "A 'tag RAM' identifies which data from the main memory is currently stored in each cache line. The data is stored in the cache. The values stored in the tag RAM determine whether the actual data can be retrieved quickly from the cache or if the requesting device will have to access the slower DRAM portion of the main memory. The size of

			the data store determines how much data the cache can hold at any one time. The size of the tag RAM determines what range of main memory can be cached. Many computer systems, for example, are configured with a 256 k L2 cache and tag RAM that is 8 bits wide." Specification, 6:7-24. "In general, the ASQ 44 includes buffers to maintain a list of current cycles that are being processed through the tag RAM interface module 46. The ASQ 44 only permits one access per cache line index at a time to maintain proper cycle order and cache state information. In the present embodiment, there is one ASQ 44 for each tag RAM interface module 46. A single ASQ 44 and tag RAM interface module 46 are illustrated in FIG. 2. However, as further explained with reference to FIG. 3, it may be advantageous to incorporate more than one ASQ 44 and tag RAM interface module 46. In the present embodiment, each ASQ 44 permits sixteen cycles to be active at a time, with each of these cycles being processed independently. Because the ASQ 44 buffers include a fixed number of locations, the number of tag lines that are currently active is limited by the size of the buffers in the ASQ 44. The ASQ 44 will be further discussed with reference to FIG. 3." Specification, 6:25-30. "The tag RAM interface module 46 provides the interface with the tag RAM 29. The tag RAM 29 is a separate memory storage device from main memory 26 that keeps track of all cachelines in use by the CPUs 12A-12H. Thus, the tag RAM 29 provides a look-up table for the cache state in cache memory. The tag RAM interface module 46 is optimized to make efficient use of the bandwidth in the SRAM (i.e., cache memory)." SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.

the first processor bus . . . the second processor bus	12	Indefinite. Independent claim 10 fails to provide requisite antecedent basis.	Claims 10, 12 SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
'264 Patent			
Claim Term or Element	**Claim(s)**	**Proposed Construction**	**Supporting Evidence**
high-speed interconnect coupling	1	Indefinite	Claim 1 Figures 1, 2, 3. Specification, 3:22-27. "The integrated circuit also has high-speed interconnect that permits use of the dynamically allocable cache units by more than one real or virtual processor, and a cache allocation register." Specification, 4:15-20. "Each second level cache controller 110 is coupled to a high-speed interconnect 120. High-speed interconnect 120 allows the second level cache controllers 110 to each access one or more of a plurality of cache memory blocks 122 and 124." Standard Dictionary of Electrical and Electronic Terms (2004) Oxford's Dictionary of Computing (2004) Newton's Telecom Dictionary (2004) SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.

’244 Patent			
Claim Term or Element	**Claim(s)**	**Proposed Construction**	**Supporting Evidence**
the first and second nodes are each coupled to a fault tolerant storage system (FTSS)	1	Plain and ordinary meaning, where the coupling to the FTSS provides for transmitting messages by a store-and-forward method (i.e., not through a conventional computer network such as a local area network (Ethernet) or wide area network (Internet))	Claim 1 Figures 1, 2, 5, 8, 9 Specification, 4:35048 “Typically an FTSS is coupled to a server using a high-speed interface, such as an Ultra160 SCSI interface, a fiber channel interface, or an enterprise system connectivity (ESCON) interface. Such systems are highly reliable and fault tolerant. For example, the SureStore® XP512 Disk Array uses a fault-tolerant, redundant architecture that ensures there is no single point-of-failure, and has a mean time between failure (MTBF) of 2.5 million hours, or alternatively 285 years. Such systems are also incredibly fast. A single fiber channel port can support transfer rates of 100 megabytes per second, and ports can be ganged together to increase transfer rates even further. Moreover, the internal crossbar architecture of the XP512 has a bandwidth of 6.4 gigabytes per second.” Specification, 4:49-61. “FIG. 1 shows such a highly reliable fault-tolerant prior art system 58, which may be used to host a distributed application. System 10 comprises computer systems 12, 14, 16, 18, 20, and 22, and fault tolerant storage system (FTSS)24. Computer systems 12, 14, 16, 18, 20, and 22 are coupled to FTSS 24 via FTSS interconnection fabric 28 to carry file 110 transactions between the computer systems and FTSS 24. Typically, interconnection fabric 28 couples each computer system directly to the FTSS, but does not directly couple the computer systems to each other. In addition, computer systems 12, 14, 16, 18, 20, and 22 are coupled to together by highly reliable, fault tolerant network interconnection fabric 26 to carry messages between the computer systems.” Specification, 4:61-5:6. “Note that interconnection fabrics 26 and 28 are both highly reliable and fault tolerant. Accordingly, a customer configuring

			a system such as that shown in FIG. 1 ends up paying for two interconnection fabrics. Furthermore, interconnection fabric 26 does not include any type of persistent storage. If a client suffers some type of error after receiving a message, the client is not able to request retransmission of the message from fabric 26. What is needed in the art is a practical way for a customer to use the same highly reliable and fault tolerant interconnection fabric to carry both file I/O transactions and messaging traffic, and also allowing a client to request retransmission of messages." Specification, 5:9-18. "The present invention is a method and apparatus for passing messages between server and client applications using a fault tolerant storage system (FTSS). The interconnection fabric that couples the FTSS to the computer systems that host the client and server applications may also be used to carry messages. In accordance with the present invention, a networked system capable of hosting a distributed application includes a plurality of computer systems coupled to an FTSS via an FTSS interconnection fabric." Specification, 5:35-44. "The present invention enhances the reliability and fault tolerance of messaging in several ways. First, messages may be transmitted between nodes using the FTSS interconnection fabric, which is highly reliable and fault tolerant. Since many systems that host distri+C6buted applications already include an FTSS, using the FTSS fabric instead of a less reliable network media, such as Ethernet, increases availability of the distributed application without the customer having to incur additional hardware costs." Specification, 6:28-41. "FIG. 2 shows a networked system 30 in accordance with the present invention. Networked system 30 may be used to host a distributed application, such as an on-line store accessible from the Internet. System 30 includes computer systems 32, 34, 36, 38, 40, and 42, fault tolerant storage system (FTSS) 44, and FTSS interconnection fabric 46. Although only computer systems are shown in FIG. 2, those

			skilled in the art will recognize that other network nodes may be coupled to FTSS 44 via fabric 46, such as printers, scanners, backup systems, and the like. Although not shown in FIG. 2, computer systems 32, 34, 36, 38, 40, and 42 may be coupled to each other and to other computers via another interconnection fabric, such as an Ethernet network, which in turn may be coupled to the Internet via a gateway." Specification, 6:42-49. "Typically, interconnection fabric 46 will be comprised of high-speed interfaces and related cabling used to connect computer systems to storage systems, such as small computer system interfaces (SCSI), fiber channel interfaces, or enterprise system connectivity (ESCON) interfaces. In a typical FTSS, these interfaces tend to connect each computer system directly to the FTSS, but do not connect the computer systems to each other." File History, 11-24-2003 Applicant Remarks. "The term 'node' is defined in the current application, in the paragraph beginning on line 19 of page 1, as being either a server computer intercommunicating with a client computer or a client computer intercommunicating with a server computer through a network. Messages are defined in the paragraph beginning on line 3 of page 3 of the current application as the units of information exchanged between a server application running on a server computer and a client application running on a client computer. Claim 1 is consistent with the above-quoted portions of the summary of the present invention, and with the above references to Figure 1. In order for a cited reference to anticipate claim 1, the cited reference would need to show messages passed between a server computer and a client computer through an FTSS.""); (""Applicants' representative cannot find a single teaching or suggestion in Utter of a message being passed form a first user terminal through the fault-tolerant computer system to a second user terminal. In short, Utter describes a distributed FTSS that executes I/O requests and data-processing requests, returning responses to the requestors. For Utter to anticipate, or even be relevant to, the invention claimed in claim 1 of the

			current application, Utter would need to disclose or suggest a message passed from one user terminal through the fault-tolerant computer system to another user terminal - but Utter does not." File History, 04-30-2004 Applicant Remarks. "Claim 1 thus specifically claims transmitting a message from a first computer to a second computer, both the first and second computers coupled to a fault-tolerant storage system. The first computer transits the message to the fault-tolerant storage system {FTSS), the message is then stored in highly reliable fault-tolerant storage media of the FTSS, the message is later processed by the FTSS, and the message is finally transmitted from the FTSS to the second computer." File History, 04-30-2004 Applicant Remarks. "Indeed, Applicants' representative agrees that, as shown in Figure 1, and according to Utter's disclosure, one of the four user terminals may exchange messages with another of the four user terminals via the two conventional Ethernet networks, and that the two user terminals are coupled through the two conventional Ethernet networks to a fault-tolerant computer system. However, in Utter's system, communications between user terminals is conducted in an entirely conventional manner, via entirely conventional Ethernet links, and not through the FTSS, as clearly claimed in the elements of claim 1 directed to Applicants' invention, and as discussed below." File History, 04-30-2004 Applicant Remarks. "Claim 1 claims a message sent from a first computer through an FTSS to a second computer." File History, 04-30-2004 Applicant Remarks. "However, there is no mention in the cited passage that the Ethernet networks would behave in a decidedly unconventional fashion by arranging for a message sent by a first user terminal to a second user terminal using the address of the second user terminal to not be directly sent from the first user terminal to the

			second user terminal, but to be instead intercepted by the FTSS, to which the message is not addressed, stored in highly reliable FTSS data storage, retrieved from the FTSS data storage, and then forwarded to the second computer. It is not surprising that the Examiner's proposed interpretation of Utter is not disclosed or suggested in Utter, because it would make no sense to do so. It would be extremely inefficient and slow to send a message through the FTSS Ethernet controller and have the message stored and forwarded by the FTSS when the message can be directly sent via the Ethernet network from one user terminal to another user terminal, and the conventional Ethernet would need to be greatly modified to an unconventional Ethernet to provide this capability, both at the Ethernet controller level as well as the operating system level. By contrast, in Applicants' system, an alternative, high-bandwidth data storage communication, referred to as the 'FTSS interconnection fabric,' which directly interconnects computer systems to the FTSS, shown in Figure I of the current application as clouds labeled 28, and which does not directly interconnect computers with each other, is modified to allow computers directly connected to the FTSS through the FTSS interconnection fabric, but not directly to one another through the FTSS interconnection fabric, to address and send messages to one another through the FTSS interconnection fabric and the FTSS, either obviating the need for the direct network interconnection between the computers (26 in Figure I), or providing a second, entirely separate, high-throughput communications medium through which the computers can send messages to one another." File History, 08-30-2004 Appeal Brief. Modern Dictionary of Electronics (1999) Standard Dictionary of Electrical and Electronic Terms (2004) Oxford's Dictionary of Computing (2004)

			Newton's Telecom Dictionary (2004) SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
highly reliable fault-tolerant storage media	1, 2, 3, 6, 9, 10	Indefinite	Claims 1, 2, 3, 6, 9, 10 Figures 1, 2, 5, 8, 9 Specification, 1:20-24. "More specifically, the present invention relates to a messaging architecture wherein messages are transmitted over the interconnection fabric of a fault tolerant storage system and are stored within the fault tolerant storage system." Specification, 3:65-4:9. "To ensure that a distributed application has a high rate of availability, it is important to make each component that hosts the distributed application as reliable and fault-tolerant as possible. As discussed above, messaging is critical in a distributed application, and two components critical in the communication of messages are the persistent storage media, such as the hard drives, and the transient communication network. Accordingly, a designer of a distributed application will often specify that the application be implemented using highly reliable and fault tolerant interconnection fabrics and storage systems." Specification, 4:28-48. "A fault tolerant storage systems (FTSS), such as the SureStore® XP512 Disk Array, which is a product of Hewlett-Packard Company, guarantees the availability and integrity of files stored by the FTSS. Fault tolerant storage systems are also available from other companies, such as Hitachi Data Systems Corporation and EMC Corporation. Typically an FTSS is coupled to a server using a high-speed interface, such as an Ultra160 SCSI interface, a fiber channel interface, or an enterprise system connectivity (ESCON) interface. Such systems are

			highly reliable and fault tolerant. For example, the SureStore® XP512 Disk Array uses a fault-tolerant, redundant architecture that ensures there is no single point-of-failure, and has a mean time between failure (MTBF) of 2.5 million hours, or alternatively 285 years. Such systems are also incredibly fast. A single fiber channel port can support transfer rates of 100 megabytes per second, and ports can be ganged together to increase transfer rates even further. Moreover, the internal crossbar architecture of the XP512 has a bandwidth of 6.4 gigabytes per second." Specification, 8:29-25. "A variety of queues and other data structures will be illustrated. All of these data structures are stored in fault tolerant storage, such: as RAID 100 and/or nonvolatile write cache 98. In addition, all incoming messages are immediately stored in fault tolerant storage." File History, 04-30-2004 Applicant Remarks "Next, the Examiner states that Utter discloses ""storing the message in a data structure in highly reliable fault-tolerant storage media of the FTSS,"" referring to lines 25-30 of column 2. That portion of column is provided below: The storage nodes store data in at least one replicated partition group comprising a plurality of replicated partitions distributed across the storage nodes. A storage node, on receiving a retrieval request from a processing node provide the requested data to the processing node. This passage does not teach, mention, or even remotely suggest storing messages in the highly reliable fault-tolerant storage media of the FTSS for later forwarding to another computer. The passage instead is directed to an entirely conventional FTSS operation of storing data in replicated partitions, as is done in disk arrays by RAID controllers, and retrieving the stored data." SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.

accessing determining which nodes should receive the broadcast message based on the broadcast message	10	Indefinite	Claims 6, 10. SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
'575 Patent			
Claim Term or Element	**Claim(s)**	**Proposed Construction**	**Supporting Evidence**
polymorphic metadata	1, 2, 4, 7, 22, 23, 24, 25, 28, 33	Indefinite	Claims 1, 2, 4, 7, 22, 23, 24, 25, 28, 33 Figure 1. Specification, 1:54-60. "In accordance with an embodiment of a data services system, a data services handler comprises an interface between a data store and applications that supply and consume data, and a real time information director (RTID) that transforms data under direction of polymorphic metadata that defines a security model and data integrity rules for application to the data." Specification, 3:56-64 "Each class of documents is defined through descriptive metadata. Assemblers and disassemblers are created on-the fly, based entirely on the descriptive metadata and on the schema of the tables read on demand from the database. Because the metadata is descriptive rather than procedural, the same metadata is used to build both assemblers and disassemblers of the same document class." Specification, 4:18-26. "The real time information director uses metadata, defined as data that describes various aspects of other data, for multiple purposes. In various embodiments, the real time information director uses the same descriptive metadata for purposes including controlling disassembly of documents for loading into a database, controlling

			assembly of documents from records in the database, generating an eXtended Markup Language (XML) schema that describes the document format, and other purposes." Specification, 4:27-34. "Descriptive metadata is typically very concise in comparison to procedural code. For example, real time information director (RTID) metadata for individual SAP IDocs is typically about one-tenth the size of the eXtensible Stylesheet Language Transformations (XSLT) style sheets that have been created to map the IDoc to the Real-Time Supply Chain (RTSC) data model." Specification, 4:34-50. "Polymorphic metadata can be used to enable extension of the real time information director to facilitate and address new functionality and behaviors. Polymorphic metadata is metadata that takes many forms, using polymorphism to flexibly represent different patterns economically and facilitate evolution of metadata as new circumstances arise. Generally, an individual metadata class can be used to represent a different common pattern, defined with attributes that are specific to the pattern. For example, circles and rectangles can be assigned to different classes of Shape with Circle having a defining attribute called diameter, and Rectangle having defining attributes called length and width. The polymorphic representation is economical because specified attributes or parameters of metadata can be limited to those that are applicable to a specific pattern under consideration. New metadata classes can be rapidly generated to solve new problems outside of the patterns previously encountered." Specification, 4:50-56. "In some embodiments, polymorphic metadata can be expressed in Java, enabling usage of descriptive language for new classes of metadata to be implemented at the same time as the behavior that carries out that metadata. The descriptive power of the metadata can be embodied in Java constructors."

			Specification, 5:54-57. “Real time information director 108 supports a customizable data model that is not constrained to a particular program code, through usage of polymorphic metadata.” Specification, 11:48-40. “Polymorphic metadata defines the security model and data integrity rules, and defines the mapping between external document formats and the data model.” Specification, 15:36-60. “Polymorphic metadata has functional characteristics that improve over other techniques. For example, most data transformation tools generate maps or style sheets that transform in one direction only. Reverse transformation uses a separate map or style sheet, a deficiency that arises since the mappings are, at least in part, procedural rather than descriptive. In a specific instance, the other data transformation tools allow expressions and calls to various transformation functions. XSLT (extensible Stylesheet Language Transformations) Style Sheets are often used to transform XML documents. XSLT is a very high level scripting language, implemented in XML, which enables implementation of a tree-oriented transformation language for transmuting instances of XML. Comparable style sheets can be constructed that disassemble SAP IDocs into rows and columns in the database. XSLT is a procedural language and thus can be used to implement all mappings directly. However, resulting style sheets for the IDoc are highly verbose, measured in terms of either characters or lines, in comparison to the corresponding Java metadata class for the IDoc. The resulting style sheets transform in only one direction so that a separate style sheet is implemented for the reverse transformation. Also the XSLT style sheet is an order of magnitude slower to execute than the real time information director mapping." Barron’s Dictionary of Computer and Internet Terms (2003) Standard Dictionary of Electrical and Electronic Terms (2004)

			Oxford's Dictionary of Computing (2004) Newton's Telecom Dictionary (2004) SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
assembler disassembler	1, 4, 22, 33, 36	Indefinite	Claims 1, 4, 22, 33, 36 Figures 3, 8, 9, 12 Specification, 3:46-57. "A 'document disassembler' contains prepared statements for inserting or updating various records related to a particular class of inbound documents into the data store. A "document assembler" contains prepared statements for selecting various records related to a particular class of outbound documents from the data store. The real time information director can instantiate and cache for reuse as many disassemblers and assemblers of each document class as is appropriate to handle peak concurrent demand." Specification, 3:56-64 "Each class of documents is defined through descriptive metadata. Assemblers and disassemblers are created on-the fly, based entirely on the descriptive metadata and on the schema of the tables read on demand from the database. Because the metadata is descriptive rather than procedural, the same metadata is used to build both assemblers and disassemblers of the same document class." Specification, 4:18-26. "The real time information director uses metadata, defined as data that describes various aspects of other data, for multiple purposes. In various embodiments, the real time information director uses the same descriptive metadata for purposes including controlling disassembly of documents for loading into a database, controlling assembly of documents from records in the database, generating an

			eXtended Markup Language (XML) schema that describes the document format, and other purposes." Specification, 9:32-51. "The data services handler 300 further comprises a disassembly logic 304 that disassembles documents for loading into a database 306, assembly logic 308 that assembles documents from records in the database 306, and a generator logic 310 that generates an eXtended Markup Language (XML) Schema that describes format of the documents. The disassembly 304, assembly 308, and generator logic 310 can operate using a single descriptive polymorphic metadata." Specification, 12:34-40. "Two basic services offered by the real time information director 302 include disassembly of inbound XML documents into multiple records in preparation for insertion into various tables, and assembly of outbound XML documents from multiple records selected from various tables. The services can be driven entirely by polymorphic metadata." File History, 03-13-2007 Amendment. "The RTID to dynamically instantiate, create, and cache for reuse disassemblers and assemblers according to demand, the RTID further comprising: at least one disassembler defined according to the polymorphic metadata that disassembles inbound data documents into multiple records in preparation for insertion into metadata tables; and at least one assembler defined according to the polymorphic metadata that assembles outbound data documents from at least one record selected from at least one metadata-selected table whereby data is transformed for supply, consumption or both." SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.

a logic that…	3, 6, 7, 9, 11, 12, 35	Subject to § 112(6/f) and indefinite for failing to recite corresponding structure.	Claims 3, 6, 7, 9, 11, 12, 35 SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
a business rules engine that…	21	Subject to § 112(6/f) and indefinite for failing to recite corresponding structure.	Claim 21 SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
the real time information director comprises a logic that cleanses and enriches the data, supplies data security, and insures data integrity	3	Subject to § 112(6/f) and indefinite for failing to recite corresponding structure. *See* above.	Claim 3 SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
a logic that automatically generates and caches prepare SQL statements from a content metadata portion of document metadata according to the schema	11	Subject to § 112(6/f) and indefinite for failing to recite corresponding structure. *See* above.	Claim 11 SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
the RTID that creates at least one disassembler defined according	28	Indefinite. *See* above.	Claim 28 Specification, 3:46-57. "A 'document disassembler' contains prepared statements for inserting or updating various records related to a particular

to the polymorphic metadata that disassembles inbound data documents into multiple records in preparation for insertion into metadata tables and create at least one assembler defined according to the polymorphic metadata that assembles outbound data documents from at least one record selected from at least one metadata-selected table whereby data is transformed for supply, consumption, or both			class of inbound documents into the data store. A "document assembler" contains prepared statements for selecting various records related to a particular class of outbound documents from the data store. The real time information director can instantiate and cache for reuse as many disassemblers and assemblers of each document class as is appropriate to handle peak concurrent demand." Specification, 3:56-64 "Each class of documents is defined through descriptive metadata. Assemblers and disassemblers are created on-the fly, based entirely on the descriptive metadata and on the schema of the tables read on demand from the database. Because the metadata is descriptive rather than procedural, the same metadata is used to build both assemblers and disassemblers of the same document class." Specification, 4:18-26. "The real time information director uses metadata, defined as data that describes various aspects of other data, for multiple purposes. In various embodiments, the real time information director uses the same descriptive metadata for purposes including controlling disassembly of documents for loading into a database, controlling assembly of documents from records in the database, generating an eXtended Markup Language (XML) schema that describes the document format, and other purposes." Specification, 9:32-51. "The data services handler 300 further comprises a disassembly logic 304 that disassembles documents for loading into a database 306, assembly logic 308 that assembles documents from records in the database 306, and a generator logic 310 that generates an eXtended Markup Language (XML) Schema that describes format of the documents. The disassembly 304, assembly 308, and generator logic 310 can operate using a single descriptive polymorphic metadata." Specification, 12:34-40. "Two basic services offered by the real time information director 302 include disassembly of inbound XML documents

			into multiple records in preparation for insertion into various tables, and assembly of outbound XML documents from multiple records selected from various tables. The services can be driven entirely by polymorphic metadata." File History, 03-13-2007 Amendment. "The RTID to dynamically instantiate, create, and cache for reuse disassemblers and assemblers according to demand, the RTID further comprising: at least one disassembler defined according to the polymorphic metadata that disassembles inbound data documents into multiple records in preparation for insertion into metadata tables; and at least one assembler defined according to the polymorphic metadata that assembles outbound data documents from at least one record selected from at least one metadata-selected table whereby data is transformed for supply, consumption or both." SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
'738 Patent			
Claim Term or Element	**Claim(s)**	**Proposed Construction**	**Supporting Evidence**
context information	1, 2, 5, 6, 10, 33	Indefinite	Claims 1, 2, 5, 6, 10, 33 Figures 1, 2, 4, 5, 6 Specification, 1:45-52. "In order to provide task preservation a common storage element is often provided in addition to a high-availability configuration. Context data relating to each task is stored in the common storage area, and may be used in the event of a switchover for reinitializing the new active system with the context of any tasks which were in progress when the switchover occurred."

			Specification, 1:53-62. "In a telephony network, this context information may relate to the state of different protocol layers of a protocol stack as well as any application specific data related to individual calls." Specification, 4:18-34. "Each of the peer systems 104 and 110 comprise numerous elements, such as an application (106 and 112 respectively) and a protocol stack (108 and 114 respectively). The systems 104 and 110 also have access to a common storage element, such as a database 118. As calls are processed on the active server the application 106 may decide to store context data in the storage element 118. The context data may relate, for each call, to both application context data and context data relating to one or more layers of the protocol stack 108. In the event of a switchover from the active server to the standby server, the stored context data may be retrieved by the application on the new active server, and be used to rebuild, for each call, the context of the application 112 and the protocol stack 114." Specification, 5:24-42. "Additionally, the application indicates that context data should be stored to enable the context of one of more layers of the protocol stack of system 402 to be rebuilt in case of switchover the high-availability node 402. An application may indicate that it requests context data of the protocol stack to be stored in a number of different ways. For example, the application may add an additional field or flag when sending the message 418 via an API or function call used for sending messages. Alternatively, a flag may be set in the message sent from the application which indicates to each layer whether context data should be stored. It may also be desirable to automatically store context data for the protocol stack in every message sent from a HA node. In this case, it may not be required for the application to request that the context data should be stored, since this may be configured to occur automatically." Specification, 5:59-67. "The application layer 406 receives the message from the application (step 500) and, in response to the indication to store

			context data (step 502), obtains context data 420 (step 506) for the application layer 406. The application layer appends the context data 420 to the message 418 (step 508), forming a message 422 comprising the original message 418 and the context data 420. Preferably, a separate field 424 is used to store the context data 420. The message 422 is then passed to the underlying signaling layer 408." File History, 06-11-2009 Applicant Remarks. "Iyer fails to teach or even suggest an application provides a message to a layer of the protocol stack and the protocol stack layer adds layer context to the message. Instead, Iyer teaches an application sets socket options that instruct a socket to establish a redundant socket. (Iyer, [0044]). The socket layer 415 sends a message with the socket parameters to the standby socket layer 430 instructing it to create the socket. (Iyer, [0044]). The socket 415 does not add layer context to the outgoing message provided by the application because there is no outgoing message provided by the application.)" File History, 01-28-2010 Appeal Brief. "Independent claim 1 requires 'adding, by the computing device, the obtained context information to the outgoing message.' The 'obtained context information' is obtained in accordance with a selective indication 'to the layer of the protocol stack that context information is to be obtained for that layer.' . . .. None of the cited passages of Iyer, or any other portion of Iyer teach or suggest that context of a selected protocol layer is added to an outgoing message sent from an application on a node to an application on a destination node. The Examiner contended that ""all socket operations, i.e., context information at socket layer, are automatically transferred by socket layer, i.e., computing device, to the standby node. . . . However, while Iyer does teach that 'all new socket control operations ... are transferred,' such teaching does not suggest that any protocol layer context is added to an inter-application message. Ho fails to satisfy this deficiency of Iyer."

			SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.
potentially inaccurate or incomplete	10	Indefinite	Claim 10 Specification, 7:28-52. "One problem is that, at this stage, the call has not yet been established. For example, if the application running at the application layer of the HA node 704 is a billing application the context data stored in the TAG message may not accurately represent the actual data related to the call. For example, a billing application will generally be required to know the time a call is established and the time a call ended in order to generate a billing record. However, when the called party receives the INVITE message an indeterminable amount of time may exist between the time the phone starts ringing and the time the call is answered. Hence, by having to store context data relating to the start time of the call before the call is answered may lead to inaccurate context data being stored. In the event of a Switchover occurring, and the protocol stack being re-initialized as described above, the restored billing information may be inaccurate, which could result in a user being overcharged. Hence, preferably any billing record generated as a result of restored context data should be flagged as such, thereby allowing the service provider to either offer the call free of charge, or to reduce the cost of the call in question to take into account that the billing record generated thereby may be inaccurate. Alternatively, it may be preferable to flag the context data as being inaccurate, or at least potentially inaccurate, when adding the context data to the outgoing message." SAP further reserves the right to rely on any supporting evidence cited by or relied on by Plaintiffs.