

Appendix A

Taxonomies

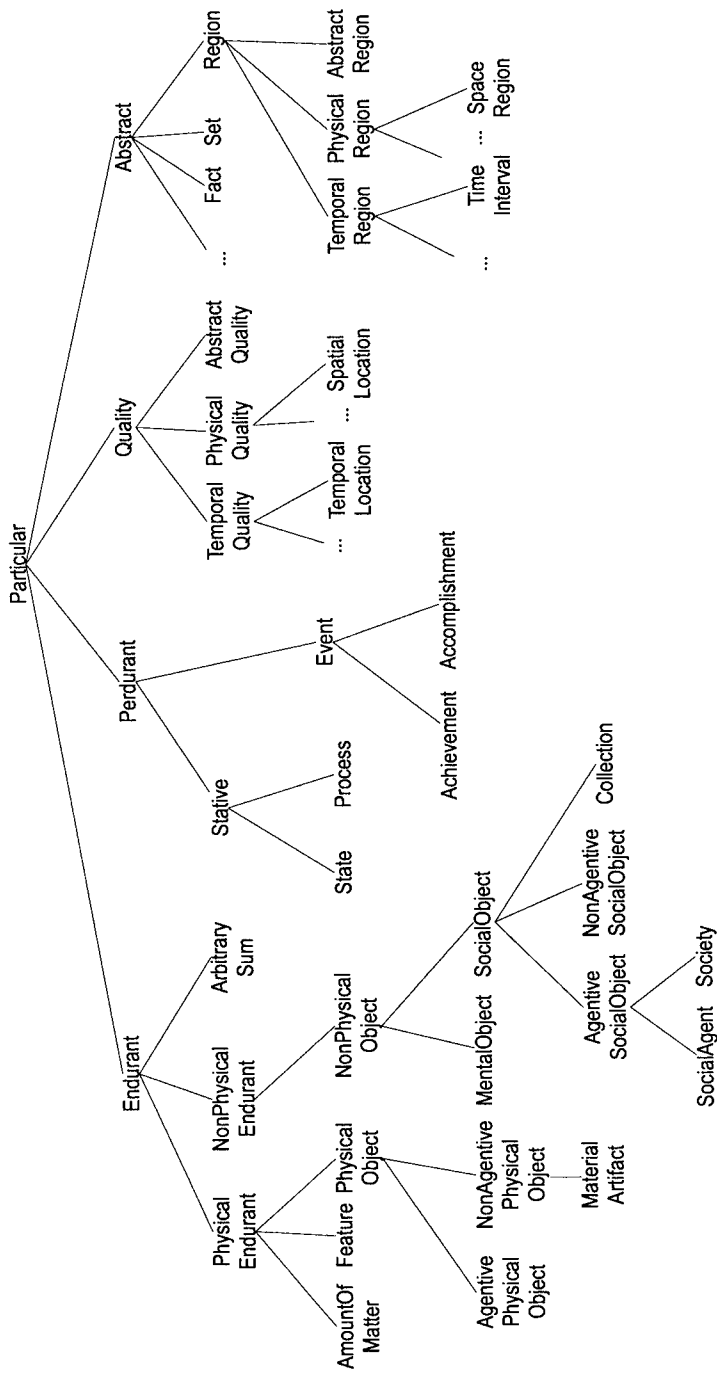


Figure A.1. DOLCE.

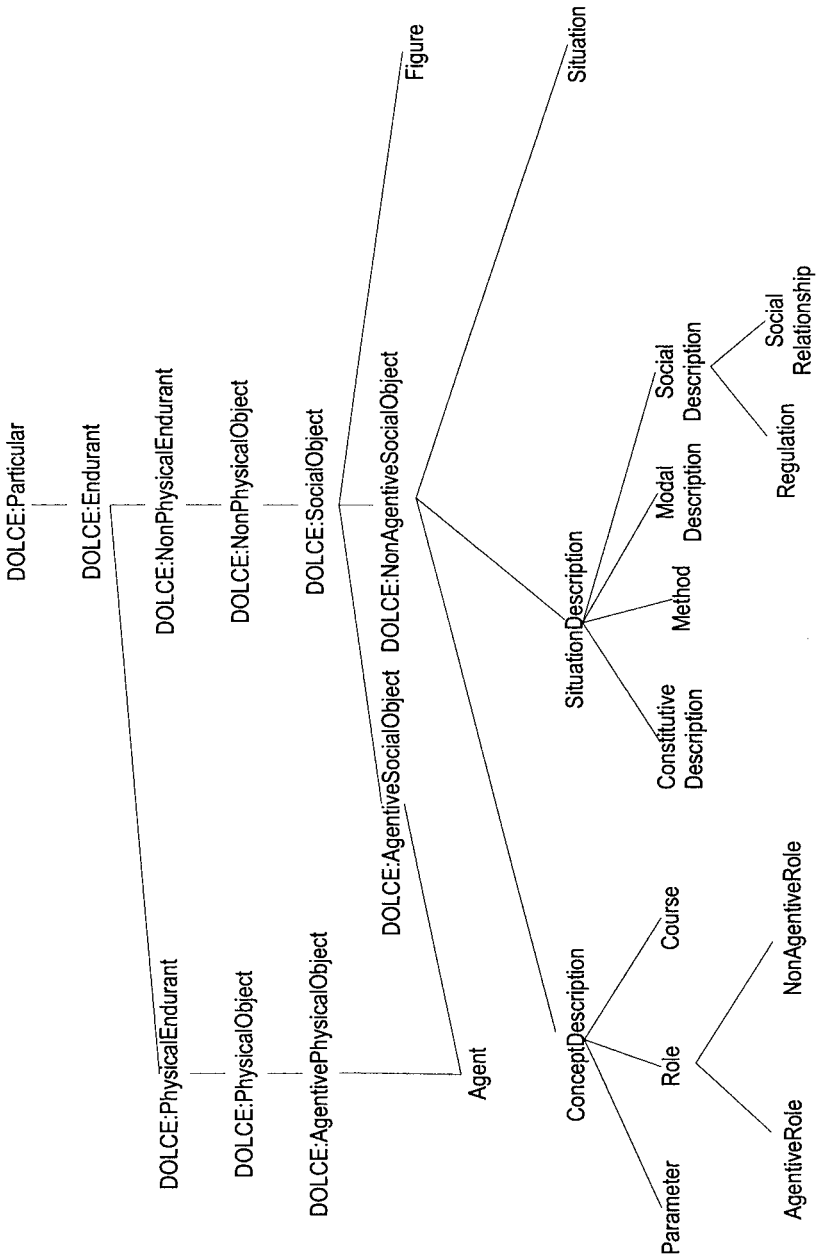


Figure A.2. Descriptions & Situations.

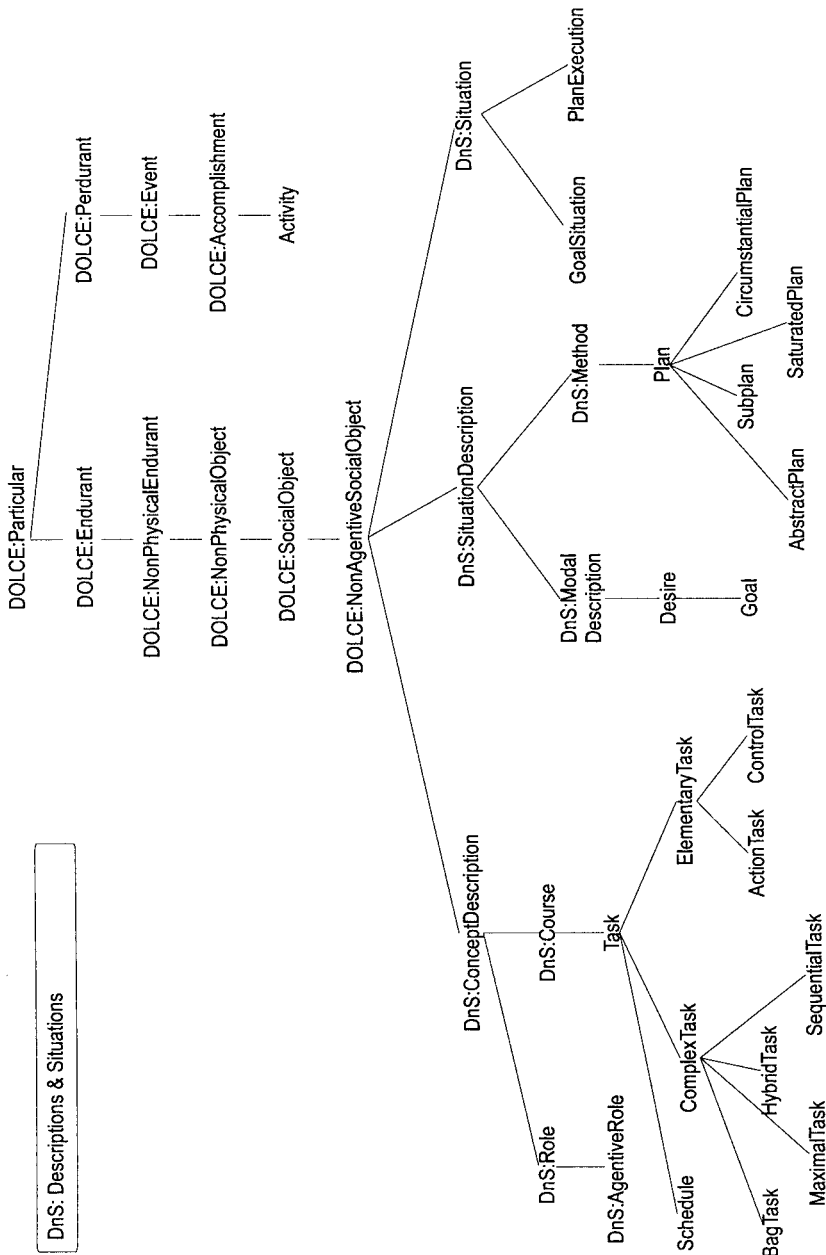


Figure A.3. Ontology of Plans.

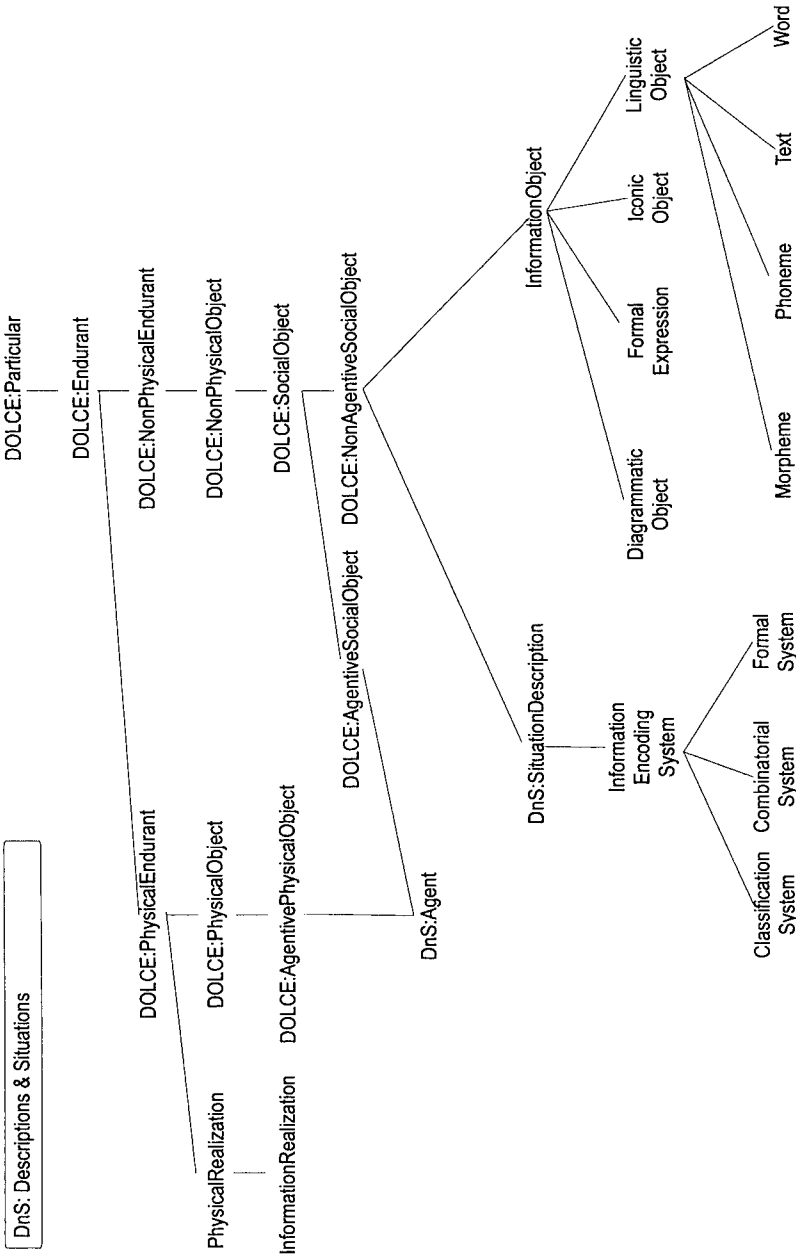


Figure A.4. Ontology of Information Objects.

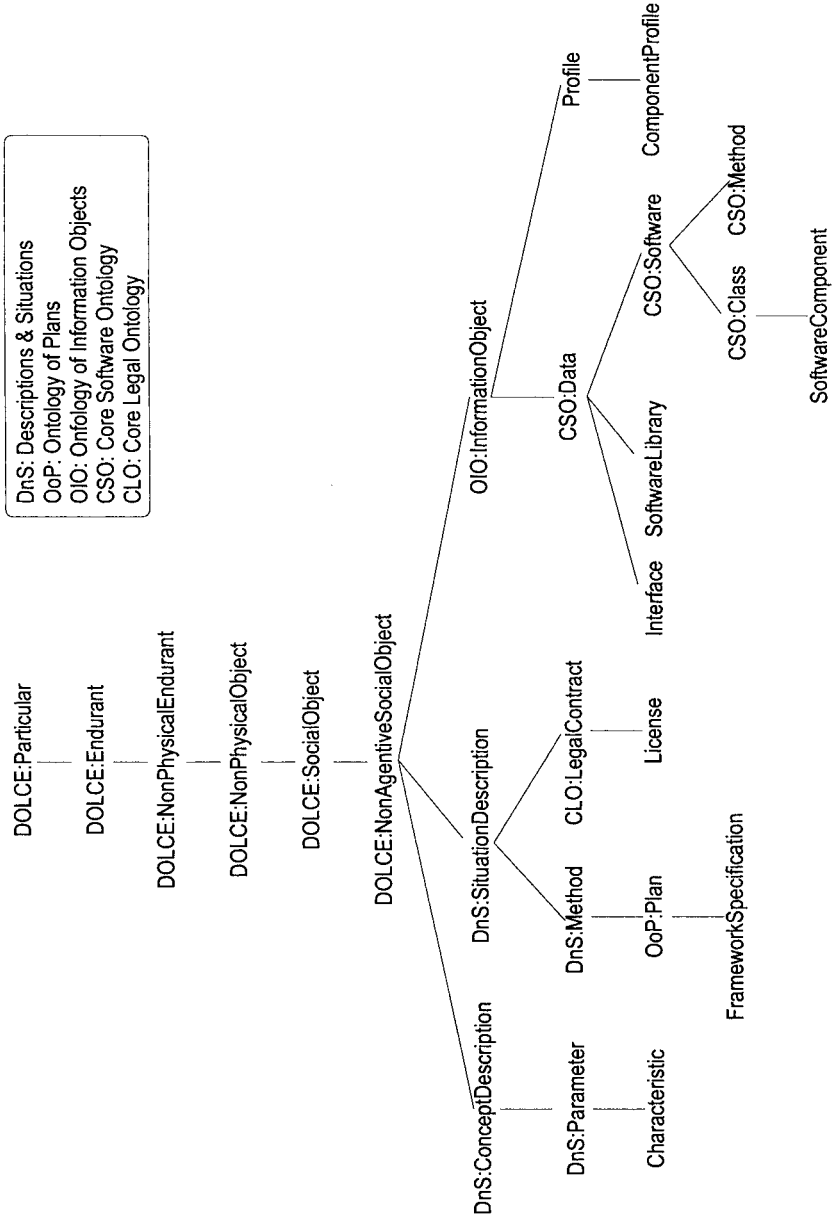


Figure A.6. Core Ontology of Software Components.

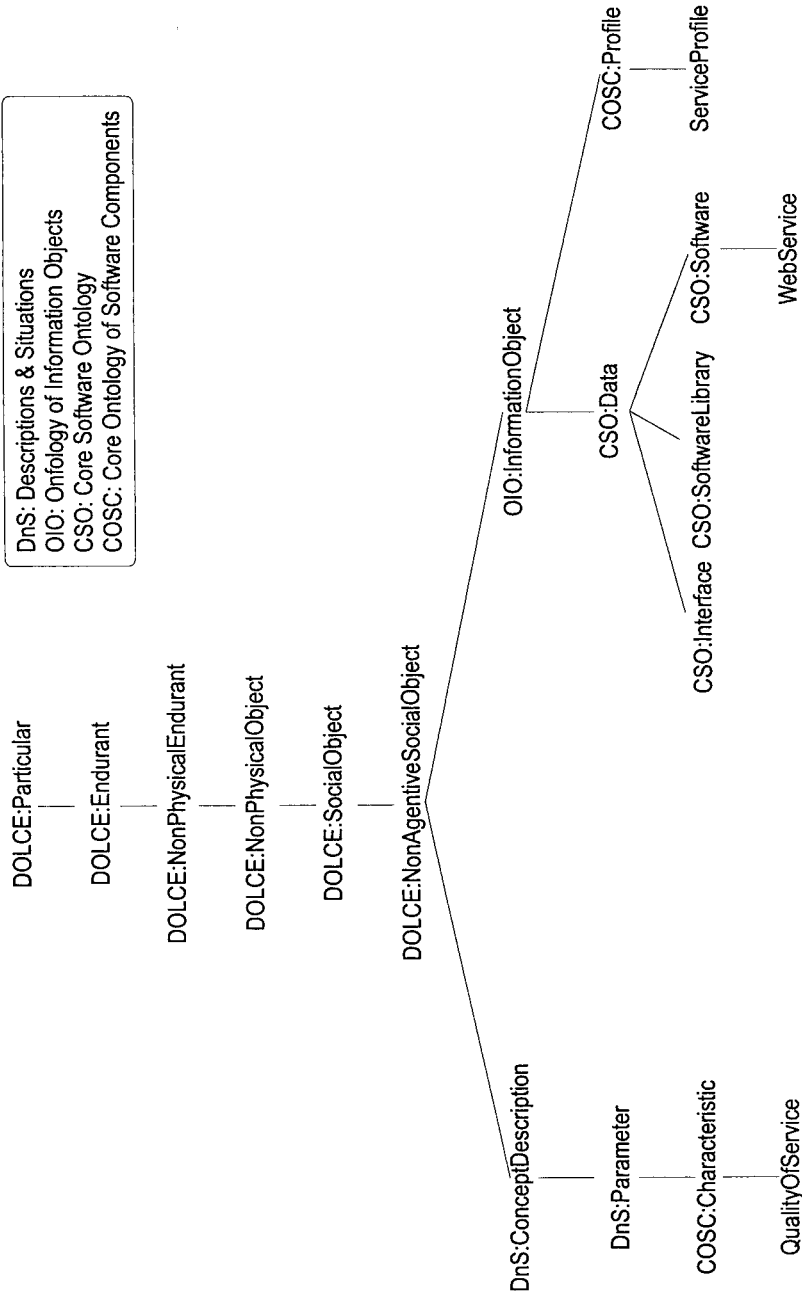


Figure A.7. Core Ontology of Web Services.

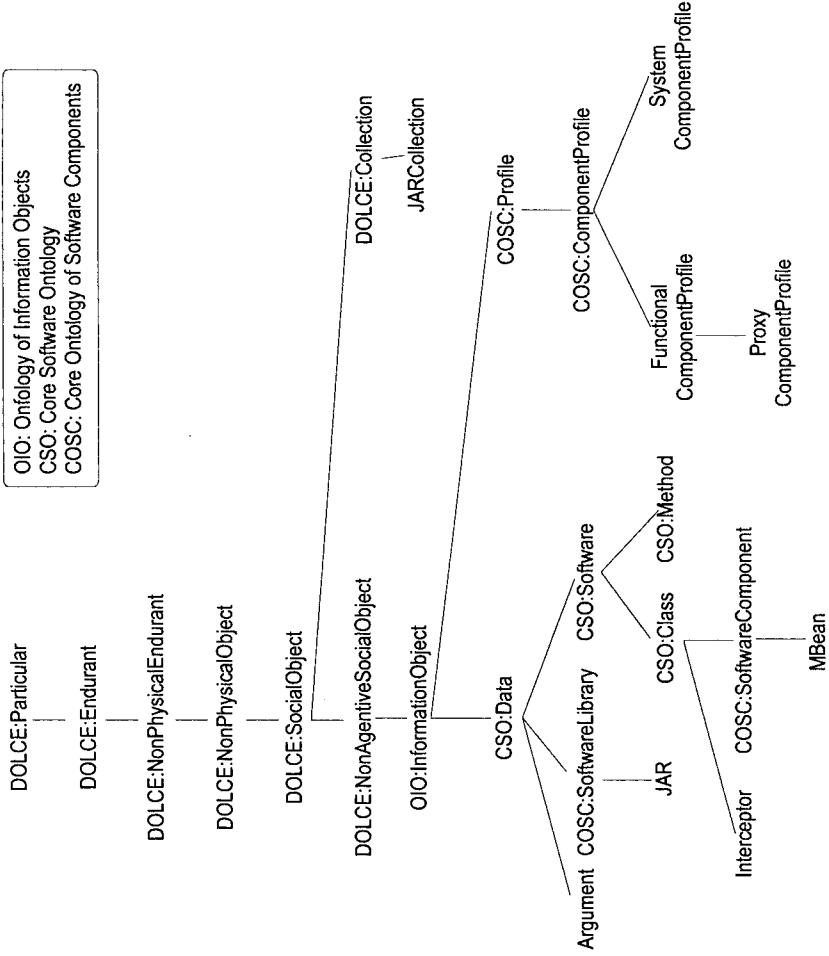


Figure A.8. KAON SERVER Ontology.

References

- Abiteboul, Serge, Hull, Richard, and Vianu, Victor (1995). *Foundations of Databases*. Addison-Wesley.
- Agarwal, Sudhir, Handschuh, Siegfried, and Staab, Steffen (2004). Annotation, Composition and Invocation of Semantic Web Services. *Journal of Web Semantics*, 2(1):31–48.
- Agarwal, Sudhir and Sprick, Barbara (2004). Access Control for Semantic Web Services. In *Proceedings of the IEEE International Conference on Web Services (ICWS'04), June 6-9, 2004, San Diego, California, USA*, pages 770–773. IEEE Computer Society.
- Agarwal, Vikas, Dasgupta, Koustuv, Karnik, Neeran, Kumar, Arun, Kundu, Ashish, Mittal, Sumit, and Srivastava, Biplav (2005). A Service Creation Environment Based on End to End Composition of Web Services. In Ellis, Allan and Hagino, Tatsuya, editors, *Proceedings of the 14th International Conference on World Wide Web, WWW 2005, Chiba, Japan, May 10-14, 2005*, pages 128–137. ACM.
- Aggarwal, Rohit, Verma, Kunal, Miller, John, and Milnor, William (2004). Constraint Driven Web Service Composition in METEOR-S. In *Proceedings, 2004 IEEE International Conference on Services Computing (SCC'04)*, pages 23–30. IEEE Computer Society.
- Aiken, David and Zaremba, Maciej (2005). WSMX Documentation. WSMX Working Draft D22.0v0.2, SDK WSMX working group.
- Akkiraju, Rama, Farrell, Joel, Miller, John, Nagarajan, Meenakshi, Schmidt, Marc-Thomas, Sheth, Amit, and Verma, Kunal (2005). Web Service Semantics - WSDL-S. Technical report, IBM Research and LSDIS Lab, University of Georgia.
- Allen, James (1984). Towards a General Theory of Action and Time. *Artificial Intelligence*, 23:123–154.
- Alonso, Gustavo, Casati, Fabio, Kuno, Harumi, and Machiraju, Vijay (2004). *Web Services*. Springer.
- Andrews, Tony, Curbera, Francisco, Dholakia, Hitesh, Golland, Yaron, Leymann, Johannes Klein Frank, Liu, Kevin, Roller, Dieter, Smith, Doug, Thatte, Satish, Trickovic, Ivana, and Weerawarana, Sanjiva (2005). Business Process Execution Language for Web Services Version 1.1. Specification. <http://www-128.ibm.com/developerworks/library/specification/ws-bpel/>.
- Ankolekar, Anupriya, Herbsleb, James, and Sycara, Katia (2003). Addressing Challenges to Open Source Collaboration With the Semantic Web. In Feller, Joseph, Fitzgerald, Brian, Hissam, Scott, and Lakhani, Karim, editors, *Proceedings of Taking Stock of the Bazaar: The 3rd Workshop on Open Source Software Engineering, the 25th International Conference on Software Engineering (ICSE)*, Washington, D.C. IEEE Computer Society.

- Ankolekar, Anupriya, Huch, Frank, and Sycara, Katia (2002). Concurrent Execution Semantics for DAML-S with Subtypes. In Horrocks, Ian and Hendler, James A., editors, *1st International Semantic Web Conference (ISWC), Proceedings*, volume 2342 of LNCS. Springer.
- Aristotle (350 B.C.). *Metaphysics Book IV Part 2*. <http://classics.mit.edu/Aristotle/>. Translated by W.D. Ross.
- Arkin, Assaf, Askary, Sid, Fordin, Scott, Jekeli, Wolfgang, Kawaguchi, Kohsuke, Orchard, David, Pogliani, Stefano, Riemer, Karsten, Struble, Susan, Takacs-Nagy, Pal, Trickovic, Ivana, and Zimek, Sinisa (2002). Web Service Choreography Interface (WSCI). W3C Note. <http://www.w3.org/TR/wsci>.
- Atkinson, Bob, Della-Libera, Giovanni, Hada, Satoshi, Hondo, Maryann, Hallam-Baker, Phillip, Klein, Johannes, LaMacchia, Brian, Leach, Paul, Manferdelli, John, Maruyama, Hiroshi, Nadalin, Anthony, Prafullchandra, Nataraj Nagaratnam Hemma, Shewchuk, John, and Simon, Dan (2002). Web Services Security (WS-Security). Specification. <http://www-106.ibm.com/developerworks/web services/library/ws-secure/>.
- Baader, Franz, Horrocks, Ian, and Sattler, Ulrike (2003). *Description Logics*, volume Handbook on Ontologies in Information Systems of *International Handbooks on Information Systems*, chapter I: Ontology Representation and Reasoning, pages 3–31. Steffen Staab and Rudi Studer, Eds., Springer.
- Baida, Ziv, Gordijn, Jaap, Omelayenko, Borys, and Akkermans, Hans (2004). A Shared Terminology for Online Service Provisioning. In *Proceedings of the Sixth International Conference on Electronic Commerce (ICEC04), Delft, The Netherlands*.
- Bajaj, Siddharth, Box, Don, Chappell, Dave, Curbera, Francisco, Daniels, Glen, Hallam-Baker, Phillip, Hondo, Maryann, Kaler, Chris, Langworthy, Dave, Malhotra, Ashok, Nadalin, Anthony, Nagaratnam, Nataraj, Nottingham, Mark, Prafullchandra, Hemma, von Riegen, Claus, Schlimmer, Jeffrey, Sharp, Chris, and Shewchuk, John (2004). Web Services Policy Framework (WS-Policy). Specification. <http://www-128.ibm.com/developerworks/library/specification/ws-polfram>.
- Banerjee, Jay, Kim, Won, Kim, Hyoung-Joo, and Korth, Henry F. (1987). Semantics and Implementation of Schema Evolution in Object-oriented Databases. In *SIGMOD '87: Proceedings of the 1987 ACM SIGMOD international conference on Management of data*, pages 311–322, New York, NY, USA. ACM Press.
- Banerji, Arindam, Bartolini, Claudio, Beringer, Dorothea, Chopella, Venkatesh, Govindarajan, Kannan, Karp, Alan, Kuno, Harumi, Lemon, Mike, Pogossians, Gregory, Sharma, Shamik, and Williams, Scott (2002). Web Services Conversation Language (WSCL). W3C Note. <http://www.w3.org/TR/wsc110/>.
- BEA Systems, Computer Associates International, IBM Corporation, Layer 7 Technologies, Microsoft Corporation, Netegrity, Oblix, OpenNetwork Technologies, Ping Identity Corporation, Reactivity, RSA Security, VeriSign, and Westbridge Technology (2004). Web Services Trust Language (WS-Trust). Specification. <http://www-106.ibm.com/developerworks/library/specification/ws-trust/>.
- Bechhofer, S., Horrocks, I., Goble, C., and Stevens, R. (2001). OilEd: A reason-able ontology editor for the Semantic Web. In *Proceedings of the Joint German Austrian Conference on Artificial Intelligence*, volume 2174 of *Lecture Notes In Artificial Intelligence*, pages 396–408. Springer.
- Beeri, Catriel and Ramakrishnan, Raghu (1987). On the Power of Magic. In *Proceedings of the Sixth ACM SIGACT—SIGMOD—SIGART Symposium on Principles of Database Systems, March 23-25, 1987, San Diego, California*, pages 269–283. ACM.
- Bennett, Brandon, Dixon, Clare, Fisher, Michael, Hustadt, Ullrich, Franconi, Enrico, Horrocks, Ian, and de Rijke, Maarten (2002). Combinations of Modal Logics. *Artificial Intelligence Review*, 17(1):1–20.

- Berners-Lee, Tim (1998). Semantic Web Roadmap. <http://www.w3.org/DesignIssues/Semantic.html>.
- Berners-Lee, Tim (2000). Semantic Web — XML 2000. <http://www.w3.org/2000/Talks/1206-xml2k-tbl/Overview.html>.
- Bernstein, Philip A. (1996). Middleware: A Model for Distributed System Services. *Communications of the ACM*, 39(2):86–98.
- Biron, Paul V. and Malhotra, Ashok (2001). XML Schema part 2: Datatypes. W3C Recommendation. <http://www.w3.org/TR/xmlschema-2/>.
- Birrell, Andrew D. and Nelson, Bruce Jay (1984). Implementing Remote Procedure Calls. *ACM Transactions on Computer Systems*, 2(1):39–59.
- Booch, Grady, Jacobson, Ivar, and Rumbaugh, James (1998). *The Unified Modeling Language User Guide*, volume 1. Addison-Wesley.
- Booth, David, Haas, Hugo, McCabe, Francis, Newcomer, Eric, Champion, Michael, Ferris, Chris, and Orchard, David (2004). Web Services Architecture. <http://www.w3.org/TR/ws-arch/>.
- Borgida, Alex and Devanbu, Premkumar (1999). Adding more "DL" to IDL: Towards more Knowledgeable Component Inter-operability. In *Proceedings of the 21st International Conference on Software engineering*, pages 378–387. IEEE Computer Society Press.
- Borgida, Alexander and Serafini, Luciano (2002). Distributed Description Logics: Directed Domain Correspondences in Federated Information Sources. In Meersman, Robert and Tari, Zahir, editors, *On the Move to Meaningful Internet Systems, 2002 - DOA/CoopIS/ODBASE 2002 Confederated International Conferences DOA, CoopIS and ODBASE 2002 Irvine, California, USA, October 30 - November 1, 2002, Proceedings*, volume 2519 of *Lecture Notes in Computer Science*, pages 36–53. Springer.
- Borgo, Stefano, Gangemi, Aldo, Guarino, Nicola, Masolo, Claudio, and Oltramari, Alessandro (2002). Ontology RoadMap. WonderWeb Deliverable D15. <http://wonderweb.semanticweb.org>.
- Borgo, Stefano, Guarino, Nicola, and Masolo, Claudio (1996). A Pointless Theory of Space Based on Strong Connection and Congruence. In *Proceedings of the Fifth International Conference on Principles of Knowledge Representation and Reasoning (KR'96), Cambridge, Massachusetts, USA, November 5-8, 1996*, pages 220–229. Morgan Kaufmann.
- Bozsak, E., Ehrig, Marc, Handschuh, Siegfried, Hotho, Andreas, Maedche, Alexander, Motik, Boris, Oberle, Daniel, Schmitz, Christoph, Staab, Steffen, Stojanovic, Ljiljana, Stojanovic, Nenad, Studer, Rudi, Stumme, Gerd, Sure, York, Tane, Julien, Volz, Raphael, and Zacharias, Valentin (2002). KAON - Towards a large scale Semantic Web. In Bauknecht, Kurt, Tjoa, A. Min, and Quirchmayr, Gerald, editors, *E-Commerce and Web Technologies, Third International Conference, EC-Web 2002, Aix-en-Provence, France, September 2-6, 2002, Proceedings*, volume 2455 of *Lecture Notes in Computer Science*, pages 304–313. Springer.
- Brambilla, Marco, Ceri, Stefano, Fraternali, Piero, Acerbis, Roberto, and Bongio, Aldo (2005). Model-driven Design of Service-enabled Web Applications. In *Proceedings of the ACM SIGMOD/PODS 2005 Conference, Baltimore, Maryland*. ACM Press.
- Buschmann, Frank, Meunier, Regine, Rohnert, Hans, Sommerlad, Peter, and Stal, Michael (1996). *Pattern-Oriented Software Architecture, Volume 1: A System of Patterns*, volume 1. John Wiley and Son Ltd.
- Cabrera, Felipe, Copeland, George, Cox, Bill, Klein, Tom Freund Johannes, Storey, Tony, and Thatte, Satish (2004). Web Services Transaction (WS-Transaction). Specification. <http://www-128.ibm.com/developerworks/library/specification/ws-tx/>.
- Cabrera, Luis Felipe, Copeland, George, Cox, William, Feingold, Max, Freund, Tom, Johnson, Jim, Kaler, Chris, Klein, Johannes, Langworthy, David, Nadalin, Anthony, Orchard, David, Robinson, Ian, Shewchuk, John, and Storey, Tony (2003). Web Services Coordi-

- nation (WS-Coordination). Specification. <http://www-106.ibm.com/developerworks/library/ws-coor/>.
- Campbell, A., Coulson, G., and Kounavis, M. (1999). Managing Complexity: Middleware Explained. *IT Professional, IEEE Computer Society*, 1(5):22–28.
- Cardoso, J., Sheth, Amit P., Miller, John A., Arnold, Jonathan, and Kochut, Krys J. (2004). Modeling Quality of Service for Workflows and Web Service Processes. *Journal of Web Semantics*, 1(3):281–308.
- Casati, Roberto and Varzi, Achille C. (1995). *Holes and other Superficialities*. MIT Press.
- Chen, Peter Pin-Shan (1976). The Entity-Relationship Model — Toward a Unified View of Data. *ACM Transactions on Database Systems*, 1(1):9–36.
- Cho, Young-Hyun and Ejiri, Masayoshi, editors (2004). *Managing Next Generation Convergence Networks and Services: Proceedings of the 2004 IEEE/IFIP Network Operations and Management Symposium (NOMS), 2004, IEEE/IFIP, Seoul, Korea, April, 2004*. IEEE.
- Christensen, Erik, Curbera, Francisco, Meredith, Greg, and Weerawarana, Sanjiva (2001). Web Services Description Language (WSDL). W3C Note. <http://www.w3.org/TR/wsdl>.
- Curry, Edward (2004a). Adaptive and Reflective Middleware. In [Mahmoud, 2004], chapter 2, pages 29–52.
- Curry, Edward (2004b). Message-Oriented Middleware. In [Mahmoud, 2004], chapter 1, pages 1–28.
- Daho, Z.B., Simoni, N., Chevanne, M., and Betge-Brezetz, S. (2004). An Information model for Service and Network Management Integration: From Needs Towards Solutions. In [Cho and Ejiri, 2004], pages 527–540.
- Das, Subrata Kumar (1992). *Deductive Databases and Logic Programming*. Addison Wesley.
- de Bruijn, Jos, Lausen, Holger, Krummenacher, Reto, Polleres, Axel, Predoiu, Livia, Kifer, Michael, and Fensel, Dieter (2005). Web Service Modeling Language (WSML). WSML Final Draft D16.1v0.2, SDK WSML working group.
- Debusmann, M., Kroger, R., and Geihls, K. (2004). Unifying Service Level Management Using an MDA-based Approach. In [Cho and Ejiri, 2004], pages 801–814.
- Decker, Stefan, Erdmann, Michael, Fensel, Dieter, and Studer, Rudi (1998). Ontobroker: Ontology Based Access to Distributed and Semi-Structured Information. In *Database Semantics - Semantic Issues in Multimedia Systems*, volume 138 of *IFIP Conference Proceedings*, pages 351–369. Kluwer.
- Diaz, Ruben Prieto (1991). Implementing Faceted Classification for Software Reuse. *Communications of the ACM*, 34(5):88–97.
- Dumbill, Edd (2001). Building the Semantic Web. <http://www.xml.com/pub/a/2001/03/07/buildingsw.html>. Knowledge Technologies Conference 2001, March 4-7, Austin Convention Center, Austin, TX, USA, Keynote presentation.
- Eberhart, Andreas (2004). Ad-hoc Invocation of Semantic Web Services. In *Proceedings of the IEEE International Conference on Web Services (ICWS'04), June 6-9, 2004, San Diego, California, USA*, pages 116–123. IEEE Computer Society.
- Ehrig, Marc and Staab, Steffen (2004). QOM - Quick Ontology Mapping. In McIlraith, Sheila A., Plexousakis, Dimitris, and van Harmelen, Frank, editors, *Proceedings of the Third International Semantic Web Conference*, volume 3298 of *LNCS*, pages 683–697, Hiroshima, Japan. Springer.
- Elrads, Tzilla, Filman, Robert E., and Bader, Atef (2001). Aspect-oriented Programming: Introduction. *Communications of the ACM*, 44(10):29–32.
- Euzenat, Jérôme (2004). An API for Ontology Alignment. In McIlraith, Sheila A., Plexousakis, Dimitris, and van Harmelen, Frank, editors, *The Semantic Web - ISWC 2004: Third International Semantic Web Conference, Hiroshima, Japan, November 7-11, 2004. Proceedings*, volume 3298 of *Lecture Notes in Computer Science*, pages 698–712. Springer.

- Fensel, Dieter, Benjamins, Richard, Motta, Enrico, and Wielinga, Bob J. (1999). UPML: A Framework for Knowledge System Reuse. In Dean, Thomas, editor, *Proceedings of the Sixteenth International Joint Conference on Artificial Intelligence, IJCAI 99, Stockholm, Sweden, July 31 - August 6, 1999, 2 Volumes, 1450 pages*, pages 16–23. Morgan Kaufmann.
- Fensel, Dieter and Bussler, Christoph (2002). The Web Service Modeling Framework WSMF. *Electronic Commerce: Research and Applications*, 1:113–137.
- Gabel, Thomas, Sure, York, and Völker, Johanna (2004). KAON — An Overview. Technical report, University of Karlsruhe, Institute AIFB & FZI — Research Center for Information Technologies, Karlsruhe, Germany. <http://kaon.semanticweb.org>.
- Gangemi, A., Catenacci, C., and Battaglia, M. (2004a). Inflammation Ontology Design Pattern: an Exercise in Building a Core Biomedical Ontology with Descriptions and Situations. In Pisanelli, D.M., editor, *Ontologies in Medicine*, pages 64–80. IOS Press.
- Gangemi, Aldo, Borgo, Stefano, Catenacci, Carola, and Lehmann, Jos (2004b). Task Taxonomies for Knowledge Content. Metokis Deliverable D07.
- Gangemi, Aldo, Fisseha, Frehiwot, Keizer, Johannes, Lauser, Boris, Lehmann, Jos, Liang, Anita, Pettman, Ian, Sim, Margherita, and Taconet, Mac (2002). An Overview of the FOS Project: Towards a Fishery Semantic Web. Internal project report, ISTC-CNR, Laboratory for Applied Ontology, Rome, Italy.
- Gangemi, Aldo, Guarino, Nicola, Masolo, Claudio, and Oltramari, Alessandro (2003a). Sweetening WordNet with DOLCE. *AI Magazine*, 24(3):13–24.
- Gangemi, Aldo and Mika, Peter (2003). Understanding the Semantic Web through Descriptions and Situations. In *DOA/CoopIS/ODBASE 2003 Confederated International Conferences DOA, CoopIS and ODBASE, Proceedings*, LNCS. Springer.
- Gangemi, Aldo, Mika, Peter, Sabou, Marta, and Oberle, Daniel (2003b). An Ontology of Services and Service Descriptions. Technical report, Laboratory for Applied Ontology (ISTC-CNR), Viale Marx, 15, 00137 Roma.
- Gangemi, Aldo, Sagri, Maria-Teresa, and Tiscornia, Daniela (2004c). A Constructive Framework for Legal Ontologies. Internal project report, EU 6FP METOKIS Project, Deliverable. <http://metokis.salzburgresearch.at>.
- Genesereth, M. R. and Fikes, R. E. (1992). Knowledge Interchange Format Version 3.0 Reference Manual. Report Logic 92-1, Logic Group, Stanford University, California, USA.
- Genesereth, Michael R. and Nilsson, N. J. (1987). *Logical Foundations of Artificial Intelligence*. Morgan Kaufmann, Los Altos, California, USA.
- Georgakopoulos, Dimitrios, Hornick, Mark F., and Sheth, Amit P. (1995). An Overview of Workflow Management: From Process Modeling to Workflow Automation Infrastructure. *Distributed and Parallel Databases*, 3(2):119–153.
- Gokhale, Aniruddha, Schmidt, Douglas C., Natarajan, Balachandran, Gray, Jeff, and Wang, Nanbor (2004). Model Driven Middleware. In [Mahmoud, 2004], chapter 7, pages 163–187.
- Gray, Jim and Reuter, Andreas (1993). *Transaction Processing: Concepts and Techniques*. Morgan Kaufmann.
- Grosz, B., Horrocks, I., Volz, R., and Decker, S. (2003). Description Logic Programs: Combining Logic Programs with Description Logic. In *Proceedings of the Twelfth International World Wide Web Conference, WWW2003, Budapest, Hungary, 20-24 May 2003*, pages 48–57. ACM.
- Grosse-Rhode, Martin (2004). *Semantic Integration of Heterogeneous Software Specifications*. Monographs in Theoretical Computer Science. Springer.
- Gruber, Thomas R. (1995). Toward Principles for the Design of Ontologies Used for Knowledge Sharing. *International Journal of Human Computer Studies*, 43(5-6):907–928.
- Grüninger, Michael and Menzel, Christopher (2003). The Process Specification Language (PSL) Theory and Applications. *AI Magazine*, 24(3):63–74.

- Guarino, N. (1998). Formal Ontology in Information Systems. In Guarino, N., editor, *Formal Ontology in Information Systems. Proceedings of FOIS'98, Trento, Italy, June 6-8, 1998*, pages 3–15, Amsterdam. IOS Press.
- Guarino, N., Carrara, M., and Giaretta, P. (1994). Formalizing Ontological Commitment. In *Proceedings of National Conference on Artificial Intelligence (AAAI-94)*, pages 560–567, Seattle. Morgan Kaufmann.
- Guarino, N. and Giaretta, P. (1995). Ontologies and Knowledge Bases: Towards a Terminological Clarification. In Mars, N., editor, *Towards Very Large Knowledge Bases: Knowledge Building and Knowledge Sharing*, pages 25–32, Amsterdam. IOS Press.
- Guarino, Nicola and Welty, Christopher A. (2002). Evaluating Ontological Decisions with OntoClean. *Communications of the ACM*, 45(2):61–65.
- Gudgin, Martin, Hadley, Marc, Mendelsohn, Noah, Moreau, Jean-Jacques, and Nielsen, Henrik Frystyk (2003). SOAP Version 1.2 Part 1: Messaging Framework. <http://www.w3.org/TR/soap12-part1/>. W3C Recommendation.
- Guha, R. V. and Lenat, D.B. (1990). Cyc: A Mid-term Report. *AI Magazine*, 11(3):32–59.
- Haarslev, V. and Moeller, R. (2001). RACER System Description. In *Proceedings of Automated Reasoning, First International Joint Conference, IJCAR*, volume 2083 of *Lecture Notes in Computer Science*, pages 701–706. Springer.
- Haase, Peter, Broekstra, Jeen, Ehrig, Marc, Menken, Maarten, Mika, Peter, Plechawski, Michal, Pyszlak, Pawel, Schnizler, Björn, Siebes, Ronny, Staab, Steffen, and Tempich, Christoph (2004). Bibster - A Semantics-Based Bibliographic Peer-to-Peer System. In McIlraith, Sheila A., Plexousakis, Dimitris, and van Harmelen, Frank, editors, *Proceedings of the Third International Semantic Web Conference, Hiroshima, Japan, 2004*, volume 3298 of *LNCS*, pages 122–136. Springer.
- Handsuh, Siegfried, Staab, Steffen, and Volz, Raphael (2003). On Deep Annotation. In *Proceedings of the Twelfth International World Wide Web Conference, WWW2003, Budapest, Hungary, 20-24 May 2003*, pages 431–438. ACM.
- Hart, Lewis, Emery, Patrick, Colomb, Robert, Raymond, Kerry, Chang, Dan, Ye, Yiming, Kendall, Elisa, and Dutra, Mark (2004). Usage Scenarios and Goals for Ontology Definition Metamodel. In Zhou, Xiaofang, Su, Stanley, and Papazoglou, Mike P., editors, *Proceedings of the Third International Semantic Web Conference*, volume 3306 of *LNCS*, pages 596–607. Springer.
- Hartmann, Jens and Sure, York (2004). An Infrastructure for Scalable, Reliable Semantic Portals. *IEEE Intelligent Systems*, 19(3):58–65.
- Hess, Andreas and Kushmerick, Nicholas (2003). Automatically Attaching Semantic Metadata to Web Services. In Kambhampati, Subbarao and Knoblock, Craig A., editors, *Proceedings of IJCAI-03 Workshop on Information Integration on the Web (IIWeb-03), August 9-10, 2003, Acapulco, Mexico*, pages 111–116.
- Horrocks, I. (1998). The FaCT system. In de Swart, Harrie C. M., editor, *Automated Reasoning with Analytic Tableaux and Related Methods, International Conference, TABLEAUX '98, Oisterwijk, The Netherlands, May 5-8, 1998, Proceedings*, volume 1397 of *Lecture Notes in Computer Science*. Springer.
- Horrocks, Ian and Patel-Schneider, Peter F. (2001). The Generation of DAML+OIL. In Goble, Carole A., McGuinness, Deborah L., Möller, Ralf, and Patel-Schneider, Peter F., editors, *Working Notes of the 2001 International Description Logics Workshop (DL-2001), Stanford, CA, USA, August 1-3, 2001*, volume 49 of *CEUR Workshop Proceedings*.
- Horrocks, Ian and Patel-Schneider, Peter F. (2004). Reducing OWL Entailment to Description Logic Satisfiability. *Journal of Web Semantics*, 1(4):345–357.
- Houston, P. J. (1996). Introduction to DCE and Encina. Whitepaper, Transarc Corp.

- Howard, Randy and Kerschberg, Larry (2004). A Framework for Dynamic Semantic Web Services Management. *International Journal of Cooperative Information Systems*, 13(4):441–485.
- IBM developerWorks (2004a). New to SOA and Web services. <http://www-106.ibm.com/developerworks/webservices/newto/>.
- IBM developerWorks (2004b). SOA and Web services — Standards. <http://www-106.ibm.com/developerworks/views/webservices/standards.jsp>.
- Junginger, Markus Oliver and Lee, Yugyung (2004). Peer-to-Peer Middleware. In [Mahmoud, 2004], chapter 4, pages 81–107.
- Kagal, Lalana, Finin, Timothy W., and Joshi, Anupam (2003). A Policy Based Approach to Security for the Semantic Web. In Fensel, Dieter, Sycara, Katia P., and Mylopoulos, John, editors, *The Semantic Web - ISWC 2003, Second International Semantic Web Conference, Sanibel Island, FL, USA, October 20-23, 2003, Proceedings*, volume 2870 of *Lecture Notes in Computer Science*, pages 402–418. Springer.
- Kalbfleisch, C., Krupczak, C., Presuhn, R., and Saperia, J. (1999). RFC 2564: Application Management MIB. <http://www.ietf.org/rfc2564.txt>.
- Kifer, Michael, Lausen, Georg, and Wu, James (1995). Logical Foundations of Object-Oriented and Frame-Based Languages. *Journal of the ACM*, 42(1):741–843.
- Lamparter, Steffen, Oberle, Daniel, and Eberhart, Andreas (2005). Approximating Service Utility from Policies and Value Function Patterns. In *6th IEEE International Workshop on Policies for Distributed Systems and Networks (POLICY 2005), 6-8 June 2005, Stockholm, Sweden*, pages 159–168. IEEE Computer Society.
- Li, Lei and Horrocks, Ian (2003). A Software Framework for Matchmaking Based on Semantic Web Technology. In *Proceedings of the Twelfth International World Wide Web Conference, WWW2003, Budapest, Hungary, 20-24 May 2003*, pages 331–339. ACM.
- Lindfors, Juha and Fleury, Marc (2002). *JMX — Managing J2EE with Java Management Extensions*. Sams. The JBoss Group.
- Lord, Phillip W., Bechhofer, Sean, Wilkinson, Mark D., Schiltz, Gary, Gessler, Damian, Hull, Duncan, Goble, Carole A., and Stein, Lincoln (2004). Applying Semantic Web Services to Bioinformatics: Experiences Gained, Lessons Learnt. In McIlraith, Sheila A., Plexousakis, Dimitris, and van Harmelen, Frank, editors, *The Semantic Web - ISWC 2004: Third International Semantic Web Conference, Hiroshima, Japan, November 7-11, 2004. Proceedings*, volume 3298 of *Lecture Notes in Computer Science*, pages 350–364. Springer.
- Maedche, Alexander, Motik, Boris, and Stojanovic, Ljiljana (2003). Managing Multiple and Distributed Ontologies in the Semantic Web. *VLDB Journal*, 12(4):286–302.
- Mahmoud, Q.H., editor (2004). *Middleware for Communications*. Wiley.
- Mandell, Daniel J. and McIlraith, Sheila (2003). Adapting BPEL4WS for the Semantic Web: The Bottom-Up Approach to Web Service Interoperation. In Fensel, Dieter, Sycara, Katia P., and Mylopoulos, John, editors, *The Semantic Web - ISWC 2003, Second International Semantic Web Conference, Sanibel Island, FL, USA, October 20-23, 2003, Proceedings*, volume 2870 of *Lecture Notes in Computer Science*, pages 227–247. Springer.
- Manola, Frank and Miller, Eric (2004). RDF Primer. W3C Recommendation. <http://www.w3.org/TR/rdf-primer/>.
- Martin, David, Burstein, Mark, Hobbs, Jerry, Lassila, Ora, McDermott, Drew, McIlraith, Sheila, Narayanan, Srini, Paolucci, Massimo, Parsia, Bijan, Payne, Terry, Sirin, Evren, Srinivasan, Naveen, and Sycara, Katia (2004). OWL-S: Semantic Markup for Web Services. <http://www.daml.org/services/owl-s/1.1/>.
- Masolo, Claudio, Borgo, Stefano, Gangemi, Aldo, Guarino, Nicola, and Oltramari, Alessandro (2003). Ontology Library (final). WonderWeb Deliverable D18. <http://wonderweb.semanticweb.org>.

- Masolo, Claudio, Borgo, Stefano, Gangemi, Aldo, Guarino, Nicola, Oltramari, Alessandro, and Schneider, Luc (2002). The WonderWeb Library of Foundational Ontologies. WonderWeb Deliverable D17. <http://wonderweb.semanticweb.org>.
- Massonet, P. and van Lamsweerde, A. (1997). Analogical Reuse of Requirements Frameworks. In *3rd IEEE International Symposium on Requirements Engineering (RE'97)*, January 5-8, 1997, Annapolis, MD, USA, pages 26–39. IEEE Computer Society.
- McGuinness, Deborah L. and van Harmelen, Frank (2004). Web Ontology Language (OWL) Overview. <http://www.w3.org/TR/owl-features/>. W3C Recommendation.
- McIlraith, Sheila A., Son, Tran Cao, and Zeng, Honglei (2001). Semantic Web Services. *IEEE Intelligent Systems*, 16(2):46–53.
- Mellor, Stephen J., Scott, Kendall, Uhl, Axel, and Weise, Dirk (2004). *MDA Distilled*. Addison-Wesley Professional.
- Mika, Peter, Oberle, Daniel, Gangemi, Aldo, and Sabou, Marta (2004a). Foundations for Service Ontologies: Aligning OWL-S to DOLCE. In *The Thirteenth International World Wide Web Conference Proceedings*, pages 563–572. ACM.
- Mika, Peter, Sabou, Marta, Gangemi, Aldo, and Oberle, Daniel (2004b). Foundations for OWL-S: Aligning OWL-S to DOLCE. In Payne, Terry, editor, *Papers from 2004 AAAI Spring Symposium - Semantic Web Services*, pages 52–60. AAAI Press. SS-04-06.
- Miller, George A., Beckwith, Richard, Fellbaum, Christiane, Gross, Derek, and Miller, Katherine A. (1990). Introduction to WordNet: An On-line Lexical Database. *International Journal of Lexicography*, 3(4):235–244.
- Motik, Boris, Oberle, Daniel, Staab, Steffen, Studer, Rudi, and Volz, Raphael (2002). KAON SERVER Architecture. WonderWeb Deliverable D5. <http://wonderweb.semanticweb.org>.
- Motta, Enrico, Domingue, John, Cabraland, Liliana, and Gaspari, Mauro (2003). IRS-II: A Framework and Infrastructure for Semantic Web Services. In *The SemanticWeb - ISWC 2003*, volume 2870 of *LNCS*, pages 306 – 318. Springer.
- Narayanan, Sridhar and McIlraith, Sheila (2003). Analysis and Simulation of Web Services. *Computer Networks*, 42(5):675–693.
- Niles, I. and Pease, A. (2001). Origins of the IEEE Standard Upper Ontology. In *Working Notes of the IJCAI-2001 Workshop on the IEEE Standard Upper Ontology*, Seattle, Washington, August 6, 2001.
- Noia, T. Di, Sciascio, E. Di, Donini, F. M., and Mongiello, M. (2003). Abductive Matchmaking Using Description Logics. In *Proceedings of the 18th International Joint Conference on Artificial Intelligence (IJCAI 2003)*, pages 337–342, Los Altos. Morgan Kaufmann.
- Noy, N. F. and Klein, M. (2002). Ontology Evolution: Not the Same as Schema Evolution. Technical Report SMI-2002-0926, Stanford University.
- Noy, Natalya Fridman and Musen, Mark A. (2000). PROMPT: Algorithm and Tool for Automated Ontology Merging and Alignment. In *Proceedings of the Seventeenth National Conference on Artificial Intelligence and Twelfth Conference on Innovative Applications of Artificial Intelligence, July 30 - August 3, 2000, Austin, Texas, USA*, AAAI-2000 Technical Papers, pages 450–455. AAAI Press / The MIT Press.
- Oberle, Daniel (2004). Semantic Management of Middleware. In *Proceedings of the 1st International Doctoral Symposium on Middleware, Toronto, Ontario, Canada*, ACM International Conference Proceeding Series, pages 299 – 303. ACM Press.
- Oberle, Daniel, Berendt, Bettina, Hotho, Andreas, and Gonzalez, Jorge (2003a). Conceptual User Tracking. In Ruiz, Ernestina Menasalvas, Segovia, Javier, and Szczepaniak, Piotr S., editors, *Advances in Web Intelligence, First International Atlantic Web Intelligence Conference, AWIC 2003, Madrid, Spain, May 5-6, 2003, Proceedings*, volume 2663 of *Lecture Notes in Artificial Intelligence*, pages 142–154. Springer.

- Oberle, Daniel, Eberhart, Andreas, Staab, Steffen, and Volz, Raphael (2004a). Developing and Managing Software Components in an Ontology-based Application Server. In Jacobsen, Hans-Arno, editor, *Middleware 2004, ACM/IFIP/USENIX 5th International Middleware Conference, Toronto, Ontario, Canada*, volume 3231 of *LNCS*, pages 459–478. Springer.
- Oberle, Daniel, Hitzler, Pascal, Staab, Steffen, Eberhart, Andreas, Cimiano, Philipp, and Studer, Rudi (2004b). The SmartWeb Foundational Ontology. SmartWeb Project Report.
- Oberle, Daniel, Lamparter, Steffen, Eberhart, Andreas, and Staab, Steffen (2005a). Semantic Management of Web Services. Technical report, University of Karlsruhe.
- Oberle, Daniel, Lamparter, Steffen, Eberhart, Andreas, Staab, Steffen, Grimm, Stephan, Hitzler, Pascal, Agarwal, Sudhir, and Studer, Rudi (2005b). Semantic Management of Web Services using the Core Ontology of Services. Position Paper. W3C Workshop on Frameworks for Semantics in Web Services.
- Oberle, Daniel, Sabou, Marta, Richards, D., and Volz, Raphael (2003b). An Ontology for Semantic Middleware: Extending DAML-S Beyond Web Services. In *On The Move to Meaningful Internet Systems 2003: OTM 2003 Workshops*, volume 2889 of *Lecture Notes in Computer Science*, pages 28–29. Springer.
- Oberle, Daniel, Sabou, Marta, and Richards, Debbie (2003c). An Ontology for Semantic Middleware: Extending DAML-S Beyond Web Services. Technical Report 426, University of Karlsruhe, Institute AIFB, 76128 Karlsruhe, Germany.
- Oberle, Daniel and Spyns, Peter (2004). The Knowledge Portal OntoWeb. In Staab, Steffen and Studer, Rudi, editors, *Handbook on Ontologies*, International Handbooks on Information Systems, chapter IV, pages 499–517. Springer.
- Oberle, Daniel, Staab, Steffen, and Eberhart, Andreas (2005c). Towards Semantic Middleware for Web Application Development. *IEEE Distributed Systems Online*. <http://dsonline.computer.org>.
- Oberle, Daniel, Staab, Steffen, Studer, Rudi, and Volz, Raphael (2003d). KAON SERVER Demonstrator. WonderWeb Deliverable D7. <http://wonderweb.semanticweb.org>.
- Oberle, Daniel, Staab, Steffen, Studer, Rudi, and Volz, Raphael (2005d). Supporting Application Development in the Semantic Web. *ACM Transactions on Internet Technology (TOIT)*, 5(2):359–389.
- Oberle, Daniel, Staab, Steffen, and Volz, Raphael (2004c). An Application Server for the Semantic Web. In *The Thirteenth International World Wide Web Conference Alternate Track Papers & Posters*, pages 220–221. ACM.
- Oberle, Daniel, Staab, Steffen, and Volz, Raphael (2005e). Three Dimensions of Knowledge Representation in WonderWeb. *Künstliche Intelligenz*, 1:31–35.
- Oberle, Daniel, Volz, Raphael, Motik, Boris, and Staab, Steffen (2003e). KAON SERVER Prototype. WonderWeb Deliverable D6. <http://wonderweb.semanticweb.org>.
- Oberle, Daniel, Volz, Raphael, Motik, Boris, and Staab, Steffen (2004d). An Extensible Ontology Software Environment. In Staab, Steffen and Studer, Rudi, editors, *Handbook on Ontologies*, International Handbooks on Information Systems, chapter III, pages 311–333. Springer.
- Object Modelling Group (2002). IDL / Language Mapping Specification - Java to IDL. 1.2.
- Paolucci, Massimo, Kawamura, Takahiro, Payne, Terry R., and Sycara, Katia P. (2002a). Importing the Semantic Web in UDDI. In Bussler, Christoph, Hull, Richard, McIlraith, Sheila A., Orłowska, Maria E., Pernici, Barbara, and Yang, Jian, editors, *Web Services, E-Business, and the Semantic Web, CAiSE 2002 International Workshop, WES 2002, Toronto, Canada, May 27-28, 2002, Revised Papers*, volume 2512 of *Lecture Notes in Computer Science*, pages 225–236. Springer.
- Paolucci, Massimo, Kawamura, Takahiro, Payne, Terry R., and Sycara, Katia P. (2002b). Semantic Matching of Web Services Capabilities. In Horrocks, Ian and Hendler, James A., editors, *The Semantic Web - ISWC 2002, First International Semantic Web Conference, Sardinia,*

- Italy, June 9-12, 2002, *Proceedings*, volume 2342 of *Lecture Notes in Computer Science*, pages 333–347. Springer.
- Patil, A., Oundhakar, S., Sheth, A., and Verma, K. (2004). METEOR-S Web Service Annotation Framework. In *The 13th International World Wide Web Conference Proceedings*, pages 553–563. ACM Press.
- Pease, A., Niles, I., and Li, J. (2002). Origins of the IEEE Standard Upper Ontology. In *Working Notes of the AAAI-2002 Workshop on Ontologies and the Semantic Web, Edmonton, Canada, July 28-August 1, 2002*.
- Pease, Adam (1998). Core Plan Representation. Object Model Focus Group.
- Pepper, Steve and Schwab, Sylvia (2003). Curing the Web's Identity Crisis. Technical report, Ontopia (<http://www.ontopia.net>).
- Peters, Randel J. and Oezsu, M. Tamer (1997). An Axiomatic Model of Dynamic Schema Evolution in Objectbase Systems. *ACM Transactions on Database Systems*, 22(1):75–114.
- Roman, Dumitru, Lausen, Holger, Keller, Uwe, de Bruijn, Jos, Bussler, Christoph, Domingue, John, Fensel, Dieter, Kifer, Michael, Kopecky, Jacek, Lara, Ruben, Oren, Eyal, Polleres, Axel, and Stollberg, Michael (2005). Web Service Modeling Ontology (WSMO). WSMO Final Draft D2v1.1, SDK WSMO working group.
- Russell, Stuart J. and Norvig, Peter (1995). *Artificial Intelligence: a Modern Approach*. Prentice Hall, Pacific Grove, CA, USA.
- Sabou, Marta, Oberle, Daniel, and Richards, Debbie (2004). Enhancing Application Servers with Semantics. In Krishnaswamy, Shonali, Loke, Seng W., and Yang, Jian, editors, *1st Australian Workshop on Engineering Service-Oriented Systems (AWESOS 2004) Wednesday, 14 April 2004, Melbourne, Australia. In conjunction with the Australian Software Engineering Conference (ASWEC)*, pages 7–15. Monash University, Australia.
- Schmitt, P. H. (2001). Nichtklassische Logiken. Skriptum.
- Schneider, Luc (2003). How to Build a Foundational Ontology: The Object-Centered High-level Reference Ontology OCHRE. In Günter, Andreas, Kruse, Rudolf, and Neumann, Bernd, editors, *KI 2003: Advances in Artificial Intelligence, 26th Annual German Conference on AI, KI 2003, Hamburg, Germany, September 15-18, 2003, Proceedings*, volume 2821 of *Lecture Notes in Computer Science*, pages 120–134. Springer.
- Schöning, Uwe (2000). *Logik für Informatiker*. Spektrum.
- Sheth, Amit and Ramakrishnan, Cartic (2003). Semantic (Web) Technology In Action: Ontology Driven Information Systems for Search, Integration and Analysis. *IEEE Data Engineering Bulletin, Special issue on Making the Semantic Web Real*, 26(4):40–48.
- Sivashanmugam, K., Miller, J., Sheth, A., and Verma, K. (2004). Framework for Semantic Web Process Composition. *International Journal of Electronic Commerce (IJEC)*. Special Issue.
- Smith, Barry (1996). Mereotopology: A Theory of Parts and Boundaries. *Data & Knowledge Engineering*, 20(3):287–303.
- Smith, Barry (2004). Beyond Concepts: Ontology as Reality Representation. In [Varzi and Vieu, 2004], pages 73–85.
- Sowa, John. F. (2000). *Knowledge Representation: Logical, Philosophical, and Computational Foundations*. Brooks Cole Publishing Co., Pacific Grove, CA, USA.
- Spyns, Peter, Oberle, Daniel, Volz, Raphael, Zheng, Jijuan, Jarrar, Mustafa, Sure, York, Studer, Rudi, and Meersman, Robert (2002). OntoWeb - A Semantic Web Community Portal. In Karagiannis, Dimitris and Reimer, Ulrich, editors, *Practical Aspects of Knowledge Management, 4th International Conference, PAKM 2002, Vienna, Austria, December 2-3, 2002, Proceedings*, volume 2569 of *Lecture Notes in Computer Science*, pages 189–200. Springer.
- Stell, John G. and West, Matthew (2004). A Four-Dimensionalist Mereotopology. In [Varzi and Vieu, 2004], pages 261–273.

- Stojanovic, L., Maedche, A., Motik, B., and Stojanovic, N. (2002a). User-driven Ontology Evolution Management. In Meersman, Robert and Tari, Zahir, editors, *On the Move to Meaningful Internet Systems, 2002 - DOA/CoopIS/ODBASE 2002 Confederated International Conferences DOA, CoopIS and ODBASE 2002 Irvine, California, USA, October 30 - November 1, 2002, Proceedings*, volume 2519 of *Lecture Notes in Computer Science*. Springer.
- Stojanovic, Ljiljana (2004). *Methods and Tools for Ontology Evolution*. PhD thesis, Universität Karlsruhe, Institut für Angewandte Informatik und Formale Beschreibungsverfahren, Germany.
- Stojanovic, Nenad, Volz, Raphael, and Stojanovic, Ljiljana (2002b). A Reverse Engineering Approach for Migrating Data-intensive Web Sites to the Semantic Web. In Musen, Mark A., Neumann, Bernd, and Studer, Rudi, editors, *Intelligent Information Processing, IFIP 17th World Computer Congress - TC12 Stream on Intelligent Information Processing, August 25-30, 2002, Montréal, Québec, Canada*, volume 221 of *IFIP Conference Proceedings*. Kluwer.
- Stuckenschmidt, Heiner and Klein, Michel C. A. (2004). Structure-Based Partitioning of Large Concept Hierarchies. In *The Semantic Web - ISWC 2004: Third International Semantic Web Conference, Hiroshima, Japan, November 7-11, 2004. Proceedings*, volume 3298 of *Lecture Notes in Computer Science*, pages 289–303. Springer.
- Sturm, Rick and Bumpus, Winston (1998). *Foundations of Application Management*. Wiley.
- Sure, Y., Erdmann, M., Angele, J., Staab, S., Studer, R., and Wenke, D. (2002). OntoEdit: Collaborative ontology development for the Semantic Web. In Horrocks, Ian and Hendler, James A., editors, *The Semantic Web - ISWC 2002, First International Semantic Web Conference, Sardinia, Italy, June 9-12, 2002, Proceedings*, volume 2342 of *Lecture Notes in Computer Science*. Springer.
- Tai, Stefan (2004). Transaction Middleware. In [Mahmoud, 2004], chapter 3, pages 53–80.
- Tai, Stefan, Khalaf, Rania, and Mikalsen, Thomas A. (2004a). Composition of Coordinated Web Services. In Jacobsen, Hans-Arno, editor, *Middleware 2004, ACM/IFIP/USENIX International Middleware Conference, Toronto, Canada, October 18-20, 2004, Proceedings*, volume 3231 of *Lecture Notes in Computer Science*, pages 294–310. Springer.
- Tai, Stefan, Mikalsen, Thomas A., Wohlstadter, Eric, Desai, Nirmitt, and Rouvellou, Isabelle (2004b). Transaction Policies for Service-oriented Computing. *Data & Knowledge Engineering*, 51(1):59–79.
- Tetlow, Phil, Pan, Jeff, Oberle, Daniel, Wallace, Evan, Uschold, Mike, and Kendall, Elisa (2005). Ontology Driven Architectures and Potential Uses of the Semantic Web in Software Engineering. W3C Working Draft.
- Tonti, Gianluca, Bradshaw, Jeffrey M., Jeffers, Renia, Montanari, Rebecca, Suri, Niranjana, and Uszok, Andrzej (2003). Semantic Web Languages for Policy Representation and Reasoning: A Comparison of KAoS, Rei, and Ponder. In Fensel, Dieter, Sycara, Katia P., and Mylopoulos, John, editors, *The Semantic Web - ISWC 2003, Second International Semantic Web Conference, Sanibel Island, FL, USA, October 20-23, 2003, Proceedings*, volume 2870 of *Lecture Notes in Computer Science*, pages 419–437. Springer.
- Tosic, V., Ma, W., Pagurek, B., and Esfandiari, B. (2004). Web Service Offerings Infrastructure (WSOI) — A Management Infrastructure for XML Web Services. In [Cho and Ejiri, 2004], pages 817–830.
- Trezzo, Jim and Mihic, Matt (2004). Web Services Metadata for the Java Platform. JSR 181, Java Community Process. Early Review Draft Specification.
- UDDI Coalition (2000). UDDI Technical White Paper. <http://uddi.org>.
- Ullman, Jeffrey D. (1988). *Principles of Database and Knowledge-base systems*, volume 14 of *Principles of Computer Science Series*. Computer Science Press.
- Uszok, Andrzej, Bradshaw, Jeffrey M., Jeffers, Renia, Tate, Austin, and Dalton, Jeff (2004). Applying KAoS Services to Ensure Policy Compliance for Semantic Web Services Work-

- flow Composition and Enactment. In McIlraith, Sheila A., Plexousakis, Dimitris, and van Harmelen, Frank, editors, *The Semantic Web - ISWC 2004: Third International Semantic Web Conference, Hiroshima, Japan, November 7-11, 2004. Proceedings*, volume 3298 of *Lecture Notes in Computer Science*, pages 425–440. Springer.
- van der Aalst, Wil and van Hee, Kees (2002). *Workflow Management*. MIT Press, 1st edition.
- van Heijst, Gertjan (1995). *The Role of Ontologies in Knowledge Engineering*. PhD thesis, Universiteit van Amsterdam.
- Varzi, Achille C. and Vieu, Laure, editors (2004). *Formal Ontology in Information Systems — Proceedings of the Third International Conference (FOIS 2004)*. IOS Press.
- Verma, K., Sivashanmugam, K., Sheth, A., Patil, A., Oundhakar, S., and Miller, J. (2005). ME-THEOR-S WSDI: A Scalable P2P Infrastructure of Registries for Semantic Publication and Discovery of Web Services. *Journal of Information Technology and Management*, 6(1):17–39.
- Volz, Raphael, Oberle, Daniel, and Maedche, Alexander (2002). Towards a Modularized Semantic Web. In *Proceedings of the ECAI-02 Workshop on Ontologies and Semantic Interoperability Lyon, July 22, 2002*, volume 64 of *CEUR Workshop Proceedings*.
- Volz, Raphael, Oberle, Daniel, Staab, Steffen, and Motik, Boris (2003a). KAON SERVER - A Semantic Web Management System. In *Alternate Track Proceedings of the Twelfth International World Wide Web Conference, WWW2003, Budapest, Hungary, 20-24 May 2003*. ACM.
- Volz, Raphael, Oberle, Daniel, Staab, Steffen, and Studer, Rudi (2003b). OntoBroker and On-toEdit Adaptation. WonderWeb Deliverable D9. <http://wonderweb.semanticweb.org>.
- Volz, Raphael, Oberle, Daniel, Staab, Steffen, and Studer, Rudi (2003c). OntoLiFT Prototype. WonderWeb Deliverable D11. <http://wonderweb.semanticweb.org>.
- Volz, Raphael, Oberle, Daniel, Staab, Steffen, and Studer, Rudi (2003d). Triple Client. WonderWeb Deliverable D8. <http://wonderweb.semanticweb.org>.
- Volz, Raphael, Oberle, Daniel, and Studer, Rudi (2003e). Implementing Views for Light-Weight Web Ontologies. In *Proceedings of the Seventh International Database Engineering and Applications Symposium (IDEAS'03), July 16 - 18, 2003, Hong Kong, SAR*, pages 160–170. IEEE Computer Society.
- Voskob, Max (2004). UDDI Spec TC V4 Requirement - Taxonomy Support for Semantics. OASIS. <http://www.oasis-open.org>.
- Walls, Craig and Richards, Norman (2003). *XDoclet in Action*. Manning Publications Co.
- Welty, Christopher (1995). *An Integrated Representation for Software Development and Discovery*. PhD thesis, Rensselaer Polytechnic Institute Computer Science Department.
- Wolff, Frank, Oberle, Daniel, Lamparter, Steffen, and Staab, Steffen (2005). Economical Reflections on Different Options for the Management of Web Services. Technical report, University of Duisburg-Essen, ICB Information Systems and Enterprise Modelling, Germany.
- Zaremski, Amy Moormann and Wing, Jeannette M. (1997). Specification Matching of Software Components. *ACM Transactions on Software Engineering and Methodology*, 6(4):333–369.

Index

- Actualism, 51
- Application management schemas, 224
- Application ontology, 45
- Application server, 18, 149
- Application Server for the Semantic Web, 62, 183
- Architecture, 164
- Association, 35

- B2B application integration, 18
- BFO, 98

- Cardinal question, 5, 211
- Classification according to expressiveness, 45
- Classification according to purpose, 45
- Classification according to specificity, 46
- Classification of ontologies, 43
- Component, 18, 129
 - Connector, 163
 - Functional component, 162, 165, 182, 194
 - Proxy component, 162, 195
 - System component, 162, 195
- Computational activity, 116
- Computational object, 116
- Concept, 35
- Conceptual ambiguity, 87, 141
- Conceptualization, 36
- Connector, 163
- Conventional middleware, 13
- Core ontology, 46
- Core Ontology of Software Components, 127, 245
- Core Ontology of Web Services, 136, 245
- Core Software Ontology, 114, 245

- Data, 118
- Deployment, 161
- Deployment descriptors, 21, 153
- Descriptions & Situations, 110, 245
- Descriptive ontology, 50

- DOLCE, 99, 109, 245
- Domain ontology, 46

- EAI, 16
- Endurantism, 52
- Enterprise application integration, 16
- Enterprise application management, 222
- Extrinsic properties, 52

- Foundational ontology, 48, 95
- Framework, 19
- Functional component, 162, 165, 182, 191, 194

- Generic ontology, 46

- Heavyweight ontology, 46

- Inference engine, 150, 154, 162, 179
- Initial ontology of software components, 83
- Intended models, 39
- Interceptor, 165, 182

- J2EE, 20
- JBoss, 172
- JBossMX, 174
- JMX, 21, 172

- KAON, 174, 200
 - API, 175
 - KAON SERVER, 177, 191
 - OI-Modeller, 174, 183
 - Query, 177
- KAON SERVER, 177, 191, 245
- Kernel, 161, 163, 178

- Lightweight ontology, 46
- Loose design, 89, 143

- Main questions, 5

- Management of middleware, 4
- Management ontology, 79, 108, 191
- MBean, 172, 193
- MDA, 226
- Message brokers, 17
- Message-oriented middleware, 15
- METEOR-S, 230
- Microkernel, 161, 163, 178
- Middleware, 11, 12
- Modal logic, 42
- Model-driven architecture, 226
- Model-driven deployment, 155
- Modelling requirements, 66, 139
- MOM, 15
- Multiplicative ontology, 51

- Narrow scope, 91, 144

- Object brokers, 14
- Object monitors, 15
- Obtaining semantic descriptions, 153
- OCHRE, 101
- OI-Modeller, 174, 183
- Ontological choices, 50
- Ontology, 34, 35, 39
 - Actualism, 51
 - Application ontology, 45
 - Choices, 50
 - Classification, 43
 - Core, 46
 - Descriptive, 50
 - Domain, 46
 - Endurantism, 52
 - Extrinsic properties, 52
 - Foundational, 48, 95
 - Generic, 46
 - Heavyweight, 46
 - Lightweight, 46
 - Management, 79, 108, 191
 - Multiplicative, 51
 - Perdurantism, 52
 - Possibilism, 51
 - Reductionist, 51
 - Revisionary, 50
 - Top-level, 46
 - Upper-level, 46
- Ontology of Information Objects, 113, 245
- Ontology of Plans, 112, 245
- Ontology quality, 40
- Ontology run time, 156
- Ontology-based application server, 149

- OpenCyc,Cyc, 103
- OWL, 60
- OWL-S, 81, 229

- Perdurantism, 52
- Poor axiomatization, 88, 142
- Possibilism, 51
- Proxy component, 195

- Quantified modal logic, 42
- Questions, 5

- RDF, 59
- RDFS, 59
- Reasoner, 150
- Reductionist ontology, 51
- Reference Ontology, 45
- Remote procedure call, 14
- Research questions, 5
- Reverse engineering, 154
- Revisionary ontology, 50
- RPC, 14

- Semantic Web, 58
- Semantic Web Services, 228
- Server core, 163
- Service, 25
- Service-oriented architectures, 25
- SmartWeb, 62
- SOA, 25
- Software, 117
- Software building blocks, 13
- Software component, 18, 129
- SUO,SUMO, 104
- Surrogate, 163
- System component, 162, 195

- Taxonomy, 35
- TP monitors, 14
- Transaction processing monitors, 14

- Use cases, 65
 - Application server, 66
 - Web services, 70

- Web service, 26, 137, 227
- Web service management, 223
- WfMS, 17
- Workflow management systems, 17
- WS*, 28