Robert Meersman
Zahir Tari et al. (Eds.)

LNCS 3290

On the Move to Meaningful Internet Systems 2004: CoopIS, DOA, and ODBASE

OTM Confederated International Conferences
CoopIS, DOA, and ODBASE 2004
Agia Napa, Cyprus, October 2004
Proceedings, Part I

1 Part I

DOA

Springer

Robert Meersman Zahir Tari Wil van der Aalst
Christoph Bussler Avigdor Gal Vinny Cahill
Steve Vinoski Werner Vogels Tiziana Catarci
Katia Sycara (Eds.)

On the Move to Meaningful Internet Systems 2004: CoopIS, DOA, and ODBASE

OTM Confederated International Conferences
CoopIS, DOA, and ODBASE 2004
Agia Napa, Cyprus, October 25-29, 2004
Proceedings, Part I

Springer

Volume Editors

Robert Meersman
Vrije Universiteit Brussel, STAR Lab
Pleinlaan 2, Bldg. G/10, 1050 Brussels, Belgium
E-mail: meersman@vub.ac.be

Zahir Tari
RMIT University, School of Computer Science and IT
City Campus, GPO Box 2476 V, Melbourne, Victoria 3001, Australia
E-mail: zahirt@cs.rmit.edu.au

Library of Congress Control Number: 2004113801

CR Subject Classification (1998): H.2, H.3, H.4, C.2, H.5, I.2, D.2.12, K.4

ISSN 0302-9743
ISBN 3-540-23663-5 Springer Berlin Heidelberg New York

Springer is a part of Springer Science+Business Media

springeronline.com

Printed in Germany

Typesetting: Camera-ready by author, data conversion by PTP-Berlin, Protago-TeX-Production GmbH
Printed on acid-free paper SPIN: 11341079 06/3142 5 4 3 2 1 0

Volume Editors

Robert Meersman
Zahir Tari

CoopIS 2004

Wil van der Aalst
Christoph Bussler
Avigdor Gal

DOA 2004

Vinny Cahill
Steve Vinoski
Werner Vogels

ODBASE 2004

Tiziana Catarci
Katia Sycara

OTM 2004 General Co-chairs' Message

The General Chairs of OnTheMove 2004, Larnaca, Cyprus, are once more proud to observe that the conference series we started in Irvine, California in 2002, and continued in Catania, Sicily last year, has turned out to be a concept that attracts a representative selection of today's research in distributed, heterogeneous yet collaborative systems, of which the Internet and the WWW are its prime examples.

Indeed, as such large, complex and networked intelligent information systems become the focus and norm for computing, it is clear that one needs to address and discuss in a single forum the implied software and system issues as well as methodological, theoretical and application issues. This is why the OnTheMove (OTM) Federated Conferences series covers an increasingly wide yet closely knit range of topics such as data and Web semantics, distributed objects, Web services, databases, workflows, cooperation, ubiquity, interoperability, and mobility. OnTheMove wants to be a primary scientific forum where these aspects for the development of internet- and intranet-based systems in organizations and for e-business are addressed in a quality-controlled fundamental way. This third, 2004 edition of the OTM Federated Conferences event therefore again provided an opportunity for researchers and practitioners to understand and publish these developments within their respective as well as within their broader contexts.

OTM first of all co-locates three related, complementary and successful main conference series: DOA (Distributed Objects and Applications), covering the relevant infrastructure-enabling technologies, ODBASE (Ontologies, DataBases and Applications of SEmantics) covering Web semantics, XML databases and ontologies, and CoopIS (Cooperative Information Systems) covering the application of these technologies in an enterprise context through, for example, workflow systems and knowledge management. Each of these three conferences treats its specific topics within a framework of (a) theory, (b) conceptual design and development, and (c) applications, in particular case studies and industrial solutions.

Following and expanding the example set in 2003, we solicited and selected quality workshop proposals to complement the more "archival" nature of the main conferences, with research results in a number of selected and more "avant garde" areas related to the general topic of distributed computing. For instance, the so-called Semantic Web has given rise to several novel research areas combining linguistics, information systems technology, and artificial intelligence, such as the modeling of (legal) regulatory systems and the ubiquitous nature of their usage. We were glad to see that in 2004 several of the Catania workshops reemerged with a second edition (notably WoRM and JTRES), and that four other workshops could be hosted and successfully organized by their respective proposers: GADA, MOIS, WOSE, and INTEROP. We trust that their audiences mutually productively and happily mingled with those of the main conferences.

A special mention for 2004 is in order for the new Doctoral Symposium Workshop where three young postdoc researchers organized an original setup and formula to bring PhD students together and allow them to submit their research proposals for selection. A limited number of the submissions and their approaches were independently evaluated by a panel of senior experts at the conference, and presented by the students in front of a wider audience. These students also got free access to all other parts of the OTM program, and only paid a heavily discounted fee for the Doctoral Symposium itself. (In fact their attendance was largely sponsored by the other participants!) If evaluated as successful, it is the intention of the General Chairs to expand this model in future editions of the OTM conferences and so draw in an audience of young researchers to the OnTheMove forum.

All three main conferences and the associated workshops share the distributed aspects of modern computing systems, and the resulting application-pull created by the Internet and the so-called Semantic Web. For DOA 2004, the primary emphasis stayed on the distributed object infrastructure; for ODBASE 2004, it was the knowledge bases and methods required for enabling the use of formal semantics; and for CoopIS 2004 the main topic was the interaction of such technologies and methods with management issues, such as occurs in networked organizations. These subject areas naturally overlap and many submissions in fact also treat envisaged mutual impacts among them. As for the earlier editions, the organizers wanted to stimulate this cross-pollination with a shared program of famous keynote speakers: this year we got no less than Roberto Cencioni of the EC, Umesh Dayal of HP Labs, Hans Gellersen of Lancaster University, and Nicola Guarino of the Italian CNR! As before we encouraged multiple-event attendance by providing authors with free access to other conferences or workshops of their choice.

We received a total of 350 submissions for the three conferences and approximately 170 in total for the workshops. Not only can we therefore again claim success in attracting a representative volume of scientific papers, but such a harvest allowed the program committees of course to compose a high-quality cross-section of worldwide research in the areas covered. In spite of the large number of submissions, the Program Chairs of each of the three main conferences decided to accept only approximately the same number of papers for presentation and publication as in 2002 and 2003 (i.e., an average of 1 paper out of 4 submitted, not counting posters). For the workshops, the acceptance rate varied but was stricter than before, about 1 in 2, to 1 in 3 for GADA and WoRM. Also, for this reason, we decided to separate the proceedings into two books with their own titles, with the main proceedings in two volumes and the workshop proceedings in a separate, third volume, and we are grateful to Springer for their suggestions and collaboration in producing these books. The reviewing process by the respective program committees as usual was performed very professionally and each paper in the main conferences was reviewed by at least three referees. It may be worthwhile to emphasize that it is an explicit OnTheMove policy that all conference program committees and chairs make their selections completely

autonomously from the OTM organization. Continuing an equally nice (but admittedly costly) tradition, the OnTheMove Federated Event organizers decided again to make ALL (sizeable!) proceedings available to ALL participants of conferences and workshops, independent of their registrations.

The General Chairs really are especially grateful to all the many people who were directly or indirectly involved in the setup of these federated conferences and in doing so made them a success. Few people realize what a large number of people have to be involved, and what a huge amount of work, and, yes, risk organizing an event like OTM entails. In particular we therefore thank our eight main conference PC co-chairs (DOA 2004: Vinny Cahill, Steve Vinoski, and Werner Vogels; ODBASE 2004: Tiziana Catarci and Katia Sycara; CoopIS 2004: Wil van der Aalst, Christoph Bussler, and Avigdor Gal) and our 15 workshop PC co-chairs (Angelo Corsaro, Corrado Santoro, Mustafa Jarrar, Aldo Gangemi, Klaus Turowski, Antonia Albani [2x], Alexios Palinginis, Peter Spyns [2x], Erik Duval, Pilar Herrero, Maria S. Perez, Monica Scannapieco, Paola Velardi, Herve Panetto, Martin Zelm) who, together with their many PC members, did a superb and professional job in selecting the best papers from the large harvest of submissions. We also thank our Publicity Chair (Laura Bright) and Publication Chair (Kwong Yuen Lai), and of course our overall Workshops Chair (Angelo Corsaro).

We do hope that the results of this federated scientific event contribute to your research and your place in the scientific network. We look forward to seeing you at next year's edition!

August 2004 Robert Meersman, Vrije Universiteit Brussel, Belgium
Zahir Tari, RMIT University, Australia

Organization Committee

The OTM (On The Move) 2004 Federated Conferences, which involved CoopIS (Cooperative Information Systems), DOA (Distributed Objects and Applications) and ODBASE (Ontologies, Databases and Applications of Semantics), were proudly supported by RMIT University (School of Computer Science and Information Technology) and Vrije Universiteit Brussel (Department of Computer Science).

Executive Committee

OTM 2004 General Co-chairs	Robert Meersman (Vrije Universiteit Brussel, Belgium) and Zahir Tari (RMIT University, Australia)
CoopIS 2004 PC Co-chairs	Wil van der Aalst (Eindhoven University of Technology, The Netherlands), Christoph Bussler (Digital Enterprise Research Institute, National University of Ireland, Ireland) and Avigdor Gal (Technion – Israel Institute of Technology, Israel)
DOA 2004 PC Co-chairs	Vinny Cahill (Trinity College Dublin, Ireland), Steve Vinoski (IONA Technologies, USA) and Werner Vogels (Cornell University, Ithaca, NY, USA)
ODBASE 2004 PC Co-chairs	Tiziana Catarci (Università di Roma "La Sapienza", Italy) and Katia Sycara (Carnegie Mellon University, USA)
Publication Chair	Kwong Yuen Lai (RMIT University, Australia)
Organizing Chair	Skevos Evripidou (University of Cyprus, Cyprus)
Publicity Chair	Laura Bright (Oregon Graduate Institute, Oregon, USA)

CoopIS 2004 Program Committee

Dave Abel
Lefteris Angelis
Naveen Ashish
Alistair Barros
Boualem Benatallah
Salima Benbernou
Klemens Boehm
Athman Bouguettaya
Barbara Carminati
Fabio Casati
Barbara Catania
Tiziana Catarci
Bin Cui
Umesh Dayal

Alex Delis
Jorg Desel
Drew Devereux
Susanna Donatelli
Marie-Christine Fauvet
Elena Ferrari
Timothy Finin
Stephane Gancarski
Mohand-Said Hacid
Manfred Hauswirth
Geert-Jan Houben
Michael Huhns
Latifur Khan
Roger (Buzz) King
Akhil Kumar
Steven Laufmann
Qing Li
Fabien De Marchi
Maristella Matera
Massimo Mecella
Claudia Medeiros
Michael zur Muehlen
Andreas Oberweis
Beng Chin Ooi
Barbara Pernici
Jean-Marc Petit
Manfred Reichert
Tore Risch
Kai-Uwe Sattler
Monica Scannapieco
Ralf Schenkel
Cyrus Shahabi
Antonio Si
Peter Spyns
Nicolas Spyratos
Farouk Toumani
Susan Urban
Athena Vakali
Mathias Weske
Kyu-Young Whang
Mike Wooldridge
Jian Yang
Kokou Yetongnon
Ming Yung
Arkady Zaslavsky
Gang Zhao
Leon Zhao
Roger Zimmermann

ODBASE 2004 Program Committee

Karl Aberer
Sonia Bergamaschi
Alex Borgida
Chris Bussler
Mike Champion
Isabel Cruz
Mike Dean
Stefan Decker
Jerome Euzenat
Skevos Evripidou
Tim Finin
Avigdor Gal
Carole Goble
Nicola Guarino
Mohamed-Said Hacid
Ian Horrocks
Arantza Illaramendi
Vipul Kashyap
Michael Kifer
Roger (Buzz) King
Wolfgang Klas
Harumi Kuno
Yannis Labrou
Maurizio Lenzerini
Murali Mani
Leo Mark
David Martin
Michele Missikoff
Pavlos Moraitis
Maria Orlowska
Massimo Paolucci
Bijan Parsia

Adam Pease
Shazia Sadiq
Stefano Spaccapietra
Naveen Srinivasan
Steffen Staab
Rudi Studer
Sergio Tessaris
Paola Velardi
Guido Vetere
Kevin Wilkinson
Stuart Williams
Guizhen Yang

DOA 2004 Program Committee

Gul Agha
Matthias Anlauff
Egidio Astesiano
Ozalp Babaoglu
Sean Baker
Roberto Baldoni
Guruduth Banavar
Judith Bishop
Gordon Blair
Michel Chaudron
Shing-Chi Cheung
Geoff Coulson
Francisco Paco Curbera
Wolfgang Emmerich
Patrick Eugster
Pascal Felber
Mohand-Said Hacid
Doug Lea
Hong Va Leong
Peter Loehr
Joe Loyall
Frank Manola
Karim Mazouni
Keith Moore
Peter Pietzuch
Rajendra Raj
Andry Rakotonirainy
Timothy Roscoe
Douglas Schmidt
Heinz-W. Schmidt
Richard Soley
Jean-Bernard Stefani
Clemens Szyperski
Stefan Tai
Guatam Thaker
Nalini Venkatasubramanian
Norbert Voelker
Yi-Min Wang
Guijun Wang
Andrew Watson
Doug Wells
Albert Zomaya

Lecture Notes in Computer Science 3290

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

Lecture Notes in Computer Science

For information about Vols. 1–3192

please contact your bookseller or Springer

Vol. 3305: P.M.A. Sloot, B. Chopard, A.G. Hoekstra (Eds.), Cellular Automata. XV, 883 pages. 2004.

Vol. 3293: C.-H. Chi, M. van Steen, C. Wills (Eds.), Web Content Caching and Distribution. IX, 283 pages. 2004.

Vol. 3292: R. Meersman, Z. Tari, A. Corsaro et al. (Eds.), On the Move to Meaningful Internet Systems 2004: OTM 2004 Workshops. XXIII, 885 pages. 2004.

Vol. 3291: R. Meersman, Z. Tari et al. (Eds.), On the Move to Meaningful Internet Systems 2004: CoopIS, DOA, and ODBASE. Part II. XXV, 824 pages. 2004.

Vol. 3290: R. Meersman, Z. Tari et al. (Eds.), On the Move to Meaningful Internet Systems 2004: CoopIS, DOA, and ODBASE. Part I. XXV, 823 pages. 2004.

Vol. 3287: A. Sanfeliu, J.F.M. Trinidad, J.A. Carrasco Ochoa (Eds.), Progress in Pattern Recognition, Image Analysis and Applications. XVII, 703 pages. 2004.

Vol. 3286: G. Karsai, E. Visser (Eds.), Generative Programming and Component Engineering. XIII, 491 pages. 2004.

Vol. 3284: A. Karmouch, L. Korba, E.R.M. Madeira (Eds.), Mobility Aware Technologies and Applications. XII, 382 pages. 2004.

Vol. 3280: C. Aykanat, T. Dayar, İ. Körpeoğlu (Eds.), Computer and Information Sciences - ISCIS 2004. XVIII, 1009 pages. 2004.

Vol. 3274: R. Guerraoui (Ed.), Distributed Computing. XIII, 465 pages. 2004.

Vol. 3273: T. Baar, A. Strohmeier, A. Moreira, S.J. Mellor (Eds.), <<UML>> 2004 - The Unified Modelling Language. XIII, 454 pages. 2004.

Vol. 3271: J. Vicente, D. Hutchison (Eds.), Management of Multimedia Networks and Services. XIII, 335 pages. 2004.

Vol. 3270: M. Jeckle, R. Kowalczyk, P. Braun (Eds.), Grid Services Engineering and Management. X, 165 pages. 2004.

Vol. 3269: J. López, S. Qing, E. Okamoto (Eds.), Information and Communications Security. XI, 564 pages. 2004.

Vol. 3266: J. Solé-Pareta, M. Smirnov, P.V. Mieghem, J. Domingo-Pascual, E. Monteiro, P. Reichl, B. Stiller, R.J. Gibbens (Eds.), Quality of Service in the Emerging Networking Panorama. XVI, 390 pages. 2004.

Vol. 3265: R.E. Frederking, K.B. Taylor (Eds.), Machine Translation: From Real Users to Research. XI, 392 pages. 2004. (Subseries LNAI).

Vol. 3264: G. Paliouras, Y. Sakakibara (Eds.), Grammatical Inference: Algorithms and Applications. XI, 291 pages. 2004. (Subseries LNAI).

Vol. 3263: M. Weske, P. Liggesmeyer (Eds.), Object-Oriented and Internet-Based Technologies. XII, 239 pages. 2004.

Vol. 3262: M.M. Freire, P. Chemouil, P. Lorenz, A. Gravey (Eds.), Universal Multiservice Networks. XIII, 556 pages. 2004.

Vol. 3261: T. Yakhno (Ed.), Advances in Information Systems. XIV, 617 pages. 2004.

Vol. 3260: I.G.M.M. Niemegeers, S.H. de Groot (Eds.), Personal Wireless Communications. XIV, 478 pages. 2004.

Vol. 3258: M. Wallace (Ed.), Principles and Practice of Constraint Programming – CP 2004. XVII, 822 pages. 2004.

Vol. 3257: E. Motta, N.R. Shadbolt, A. Stutt, N. Gibbins (Eds.), Engineering Knowledge in the Age of the Semantic Web. XVII, 517 pages. 2004. (Subseries LNAI).

Vol. 3256: H. Ehrig, G. Engels, F. Parisi-Presicce, G. Rozenberg (Eds.), Graph Transformations. XII, 451 pages. 2004.

Vol. 3255: A. Benczúr, J. Demetrovics, G. Gottlob (Eds.), Advances in Databases and Information Systems. XI, 423 pages. 2004.

Vol. 3254: E. Macii, V. Paliouras, O. Koufopavlou (Eds.), Integrated Circuit and System Design. XVI, 910 pages. 2004.

Vol. 3253: Y. Lakhnech, S. Yovine (Eds.), Formal Techniques, Modelling and Analysis of Timed and Fault-Tolerant Systems. X, 397 pages. 2004.

Vol. 3252: H. Jin, Y. Pan, N. Xiao, J. Sun (Eds.), Grid and Cooperative Computing - GCC 2004 Workshops. XVIII, 785 pages. 2004.

Vol. 3251: H. Jin, Y. Pan, N. Xiao, J. Sun (Eds.), Grid and Cooperative Computing - GCC 2004. XXII, 1025 pages. 2004.

Vol. 3250: L.-J. (LJ) Zhang, M. Jeckle (Eds.), Web Services. X, 301 pages. 2004.

Vol. 3249: B. Buchberger, J.A. Campbell (Eds.), Artificial Intelligence and Symbolic Computation. X, 285 pages. 2004. (Subseries LNAI).

Vol. 3246: A. Apostolico, M. Melucci (Eds.), String Processing and Information Retrieval. XIV, 332 pages. 2004.

Vol. 3245: E. Suzuki, S. Arikawa (Eds.), Discovery Science. XIV, 430 pages. 2004. (Subseries LNAI).

Vol. 3244: S. Ben-David, J. Case, A. Maruoka (Eds.), Algorithmic Learning Theory. XIV, 505 pages. 2004. (Subseries LNAI).

Vol. 3243: S. Leonardi (Ed.), Algorithms and Models for the Web-Graph. VIII, 189 pages. 2004.

Vol. 3239: G. Nicosia, V. Cutello, P.J. Bentley, J. Timmis (Eds.), Artificial Immune Systems. XII, 444 pages. 2004.

Vol. 3238: S. Biundo, T. Frühwirth, G. Palm (Eds.), KI 2004: Advances in Artificial Intelligence. XI, 467 pages. 2004. (Subseries LNAI).

Vol. 3236: M. Núñez, Z. Maamar, F.L. Pelayo, K. Pousttchi, F. Rubio (Eds.), Applying Formal Methods: Testing, Performance, and M/E-Commerce. XI, 381 pages. 2004.

Vol. 3235: D. de Frutos-Escrig, M. Nunez (Eds.), Formal Techniques for Networked and Distributed Systems – FORTE 2004. X, 377 pages. 2004.

Vol. 3232: R. Heery, L. Lyon (Eds.), Research and Advanced Technology for Digital Libraries. XV, 528 pages. 2004.

Vol. 3231: H.-A. Jacobsen (Ed.), Middleware 2004. XV, 514 pages. 2004.

Vol. 3230: J.L. Vicedo, P. Martínez-Barco, R. Muñoz, M. Saiz Noeda (Eds.), Advances in Natural Language Processing. XII, 488 pages. 2004. (Subseries LNAI).

Vol. 3229: J.J. Alferes, J. Leite (Eds.), Logics in Artificial Intelligence. XIV, 744 pages. 2004. (Subseries LNAI).

Vol. 3226: M. Bouzeghoub, C. Goble, V. Kashyap, S. Spaccapietra (Eds.), Semantics for Grid Databases. XIII, 326 pages. 2004.

Vol. 3225: K. Zhang, Y. Zheng (Eds.), Information Security. XII, 442 pages. 2004.

Vol. 3224: E. Jonsson, A. Valdes, M. Almgren (Eds.), Recent Advances in Intrusion Detection. XII, 315 pages. 2004.

Vol. 3223: K. Slind, A. Bunker, G. Gopalakrishnan (Eds.), Theorem Proving in Higher Order Logics. VIII, 337 pages. 2004.

Vol. 3222: H. Jin, G.R. Gao, Z. Xu, H. Chen (Eds.), Network and Parallel Computing. XX, 694 pages. 2004.

Vol. 3221: S. Albers, T. Radzik (Eds.), Algorithms – ESA 2004. XVIII, 836 pages. 2004.

Vol. 3220: J.C. Lester, R.M. Vicari, F. Paraguaçu (Eds.), Intelligent Tutoring Systems. XXI, 920 pages. 2004.

Vol. 3219: M. Heisel, P. Liggesmeyer, S. Wittmann (Eds.), Computer Safety, Reliability, and Security. XI, 339 pages. 2004.

Vol. 3217: C. Barillot, D.R. Haynor, P. Hellier (Eds.), Medical Image Computing and Computer-Assisted Intervention – MICCAI 2004. XXXVIII, 1114 pages. 2004.

Vol. 3216: C. Barillot, D.R. Haynor, P. Hellier (Eds.), Medical Image Computing and Computer-Assisted Intervention – MICCAI 2004. XXXVIII, 930 pages. 2004.

Vol. 3215: M.G.. Negoita, R.J. Howlett, L.C. Jain (Eds.), Knowledge-Based Intelligent Information and Engineering Systems. LVII, 906 pages. 2004. (Subseries LNAI).

Vol. 3214: M.G.. Negoita, R.J. Howlett, L.C. Jain (Eds.), Knowledge-Based Intelligent Information and Engineering Systems. LVIII, 1302 pages. 2004. (Subseries LNAI).

Vol. 3213: M.G.. Negoita, R.J. Howlett, L.C. Jain (Eds.), Knowledge-Based Intelligent Information and Engineering Systems. LVIII, 1280 pages. 2004. (Subseries LNAI).

Vol. 3212: A. Campilho, M. Kamel (Eds.), Image Analysis and Recognition. XXIX, 862 pages. 2004.

Vol. 3211: A. Campilho, M. Kamel (Eds.), Image Analysis and Recognition. XXIX, 880 pages. 2004.

Vol. 3210: J. Marcinkowski, A. Tarlecki (Eds.), Computer Science Logic. XI, 520 pages. 2004.

Vol. 3209: B. Berendt, A. Hotho, D. Mladenic, M. van Someren, M. Spiliopoulou, G. Stumme (Eds.), Web Mining: From Web to Semantic Web. IX, 201 pages. 2004. (Subseries LNAI).

Vol. 3208: H.J. Ohlbach, S. Schaffert (Eds.), Principles and Practice of Semantic Web Reasoning. VII, 165 pages. 2004.

Vol. 3207: L.T. Yang, M. Guo, G.R. Gao, N.K. Jha (Eds.), Embedded and Ubiquitous Computing. XX, 1116 pages. 2004.

Vol. 3206: P. Sojka, I. Kopecek, K. Pala (Eds.), Text, Speech and Dialogue. XIII, 667 pages. 2004. (Subseries LNAI).

Vol. 3205: N. Davies, E. Mynatt, I. Siio (Eds.), UbiComp 2004: Ubiquitous Computing. XVI, 452 pages. 2004.

Vol. 3204: C.A. Peña Reyes, Coevolutionary Fuzzy Modeling. XIII, 129 pages. 2004.

Vol. 3203: J. Becker, M. Platzner, S. Vernalde (Eds.), Field Programmable Logic and Application. XXX, 1198 pages. 2004.

Vol. 3202: J.-F. Boulicaut, F. Esposito, F. Giannotti, D. Pedreschi (Eds.), Knowledge Discovery in Databases: PKDD 2004. XIX, 560 pages. 2004. (Subseries LNAI).

Vol. 3201: J.-F. Boulicaut, F. Esposito, F. Giannotti, D. Pedreschi (Eds.), Machine Learning: ECML 2004. XVIII, 580 pages. 2004. (Subseries LNAI).

Vol. 3199: H. Schepers (Ed.), Software and Compilers for Embedded Systems. X, 259 pages. 2004.

Vol. 3198: G.-J. de Vreede, L.A. Guerrero, G. Marín Raventós (Eds.), Groupware: Design, Implementation and Use. XI, 378 pages. 2004.

Vol. 3196: C. Stary, C. Stephanidis (Eds.), User-Centered Interaction Paradigms for Universal Access in the Information Society. XII, 488 pages. 2004.

Vol. 3195: C.G. Puntonet, A. Prieto (Eds.), Independent Component Analysis and Blind Signal Separation. XXIII, 1266 pages. 2004.

Vol. 3194: R. Camacho, R. King, A. Srinivasan (Eds.), Inductive Logic Programming. XI, 361 pages. 2004. (Subseries LNAI).

Vol. 3193: P. Samarati, P. Ryan, D. Gollmann, R. Molva (Eds.), Computer Security – ESORICS 2004. X, 457 pages. 2004.

Vol. 3192: C. Bussler, D. Fensel (Eds.), Artificial Intelligence: Methodology, Systems, and Applications. XIII, 522 pages. 2004. (Subseries LNAI).

Vol. 3191: M. Klusch, S. Ossowski, V. Kashyap, R. Unland (Eds.), Cooperative Information Agents VIII. XI, 303 pages. 2004. (Subseries LNAI).

Vol. 3190: Y. Luo (Ed.), Cooperative Design, Visualization, and Engineering. IX, 248 pages. 2004.

Vol. 3189: P.-C. Yew, J. Xue (Eds.), Advances in Computer Systems Architecture. XVII, 598 pages. 2004.

Table of Contents, Part I

Part I

Cooperative Information Systems (CoopIS) 2004 International Conference

Keynote

Workflow/Process/Web Services, I

Workflow/Process/Web Services, II

Workflow/Process/Web Services, III

Database Management/Transaction

Schema Integration/Agents

Events

P2P/Collaboration

Applications, I

Applications, II

Trust/Security/Contracts

Potpourri

Ontologies, Databases, and Applications of Semantics (ODBASE) 2004 International Conference

Keynote

Knowledge Extraction