

*Commenced Publication in 1973*

Founding and Former Series Editors:

Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

## Editorial Board

David Hutchison

*Lancaster University, UK*

Takeo Kanade

*Carnegie Mellon University, Pittsburgh, PA, USA*

Josef Kittler

*University of Surrey, Guildford, UK*

Jon M. Kleinberg

*Cornell University, Ithaca, NY, USA*

Friedemann Mattern

*ETH Zurich, Switzerland*

John C. Mitchell

*Stanford University, CA, USA*

Moni Naor

*Weizmann Institute of Science, Rehovot, Israel*

Oscar Nierstrasz

*University of Bern, Switzerland*

C. Pandu Rangan

*Indian Institute of Technology, Madras, India*

Bernhard Steffen

*University of Dortmund, Germany*

Madhu Sudan

*Massachusetts Institute of Technology, MA, USA*

Demetri Terzopoulos

*University of California, Los Angeles, CA, USA*

Doug Tygar

*University of California, Berkeley, CA, USA*

Moshe Y. Vardi

*Rice University, Houston, TX, USA*

Gerhard Weikum

*Max-Planck Institute of Computer Science, Saarbruecken, Germany*

Robert Meersman Zahir Tari (Eds.)

# On the Move to Meaningful Internet Systems 2007: CoopIS, DOA, ODBASE, GADA, and IS

OTM Confederated International Conferences  
CoopIS, DOA, ODBASE, GADA, and IS 2007  
Vilamoura, Portugal, November 25-30, 2007  
Proceedings, Part I

## Volume Editors

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

Zahir Tari  
RMIT University, School of Computer Science and Information Technology  
Bld 10.10, 376-392 Swanston Street, VIC 3001, Melbourne, Australia  
E-mail: zahir.tari@rmit.edu.au

Library of Congress Control Number: 2007939491

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

LNCS Sublibrary: SL 3 – Information Systems and Application, incl. Internet/Web and HCI

ISSN	0302-9743
ISBN-10	3-540-76846-7 Springer Berlin Heidelberg New York
ISBN-13	978-3-540-76846-3 Springer Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is a part of Springer Science+Business Media

[springer.com](http://springer.com)

© Springer-Verlag Berlin Heidelberg 2007  
Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India  
Printed on acid-free paper SPIN: 12192205 06/3180 5 4 3 2 1 0

## **Volume Editors**

Robert Meersman  
Zahir Tari

## **CoopIS**

Francisco Curbera  
Frank Leymann  
Mathias Weske

## **DOA**

Pascal Felber  
Aad van Moorsel  
Calton Pu

## **ODBASE**

Tharam Dillon  
Michele Missikoff  
Steffen Staab

## **GADA**

Pilar Herrero  
Daniel S. Katz  
María S. Pérez  
Domenico Talia

## **IS**

Mário Freire  
Simão Melo de Sousa  
Vitor Santos  
Jong Hyuk Park

# OTM 2007 General Co-chairs' Message

OnTheMove 2007 held in Vilamoura, Portugal, November 25–30 further consolidated the growth of the conference series that was started in Irvine, California in 2002, and then held in Catania, Sicily in 2003, in Cyprus in 2004 and 2005, and in Montpellier last year. It continues to attract a diversifying and representative selection of today's worldwide research on the scientific concepts underlying new computing paradigms that of necessity must be distributed, heterogeneous and autonomous yet meaningfully collaborative.

Indeed, as such large, complex and networked intelligent information systems become the focus and norm for computing, it is clear that there is an acute and increasing need to address and discuss in an integrated forum the implied software and system issues as well as methodological, semantical, theoretical and application issues. As we all know, e-mail, the Internet, and even video conferences are not sufficient for effective and efficient scientific exchange. This is why the OnTheMove (OTM) Federated Conferences series has been created to cover the increasingly wide yet closely connected range of fundamental technologies such as data and Web semantics, distributed objects, Web services, databases, information systems, workflow, cooperation, ubiquity, interoperability, mobility, grid and high-performance systems. OnTheMove aspires to be a primary scientific meeting place where all aspects of the development of Internet- and Intranet-based systems in organizations and for e-business are discussed in a scientifically motivated way. This sixth 2007 edition of the OTM Federated Conferences event, therefore, again provided, an opportunity for researchers and practitioners to understand and publish these developments within their individual as well as within their broader contexts.

Originally the federative structure of OTM was formed by the co-location of three related, complementary and successful main conference series: DOA (Distributed Objects and Applications, since 1999), covering the relevant infrastructure-enabling technologies, ODBASE (Ontologies, DataBases and Applications of SEmantics, since 2002) covering Web semantics, XML databases and ontologies, CoopIS (Cooperative Information Systems, since 1993) covering the application of these technologies in an enterprise context through, e.g., workflow systems and knowledge management. In 2006 a fourth conference, GADA (Grid computing, high-performAnce and Distributed Applications), was added as a main symposium, and this year the same happened with IS (Information Security). Both started off as successful workshops at OTM, the first covering the large-scale integration of heterogeneous computing systems and data resources with the aim of providing a global computing space, the second covering the issues of security in complex Internet-based information systems. Each of these five conferences encourages researchers to treat their respective topics within a

framework that incorporates jointly (a) theory , (b) conceptual design and development, and (c) applications, in particular case studies and industrial solutions.

Following and expanding the model created in 2003, we again 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 no less than eight of our earlier successful workshops (notably AweSOMe, CAMS, SWWS, ORM, OnToContent, MONET, PerSys, RDDS) re-appeared in 2007 with a second or third edition, and that four brand-new workshops emerged to be selected and hosted, and were successfully organized by their respective proposers: NDKM, PIPE, PPN, and SSWS. We know that as before, workshop audiences will productively mingle with another and with those of the main conferences, as is already visible from the overlap in authors! The OTM organizers are especially grateful for the leadership and competence of Pilar Herrero in managing this complex process into a success for the fourth year in a row.

A special mention for 2007 is to be made of the third and enlarged edition of the OnTheMove Academy (formerly called Doctoral Consortium Workshop), our “vision for the future” in research in the areas covered by OTM. Its 2007 organizers, Antonia Albani, Torben Hansen and Johannes Maria Zaha, three young and active researchers, guaranteed once more the unique interactive formula to bring PhD students together: research proposals are submitted for evaluation; selected submissions and their approaches are presented by the students in front of a wider audience at the conference, and are independently and extensively analyzed and discussed in public by a panel of senior professors. This year these were once more Johann Eder and Maria Orlowska, under the guidance of Jan Dietz, the incumbent Dean of the OnTheMove Academy. The successful students only pay a minimal fee for the Doctoral Symposium itself and also are awarded free access to all other parts of the OTM program (in fact their attendance is largely sponsored by the other participants!).

All five 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 2007, the primary emphasis stayed on the distributed object infrastructure; for ODBASE 2007, it became the knowledge bases and methods required for enabling the use of formal semantics; for CoopIS 2007, the topic as usual was the interaction of such technologies and methods with management issues, such as occur in networked organizations; for GADA 2007, the topic was the scalable integration of heterogeneous computing systems and data resources with the aim of providing a global computing space; and last but not least in the relative newcomer IS 2007 the emphasis was on information security in the networked society. These subject areas overlap naturally and many submissions in fact also treated an envisaged

mutual impact among them. As for the earlier editions, the organizers wanted to stimulate this cross-pollination by a shared program of famous keynote speakers: this year we were proud to announce Mark Little of Red Hat, York Sure of SAP Research, Donald Ferguson of Microsoft, and Dennis Gannon of Indiana University. As always, we also encouraged multiple event attendance by providing all authors, also those of workshop papers, with free access or discounts to one other conference or workshop of their choice.

We received a total of 362 submissions for the five main conferences and 241 for the workshops. Not only may we indeed again claim success in attracting an increasingly representative volume of scientific papers, but such a harvest of course allows the Program Committees to compose a higher-quality cross-section of current research in the areas covered by OTM. In fact, in spite of the larger 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 2004 and 2005 (i.e., average one paper out of every three to four submitted, not counting posters). For the workshops, the acceptance rate varied but was much stricter than before, consistently about one accepted paper for every two to three submitted. Also for this reason, we separate the proceedings into four books with their own titles, two for main conferences and two for workshops, and we are grateful to Springer for their suggestions and collaboration in producing these books and CD-Roms. The reviewing process by the respective Program Committees was again performed very professionally and each paper in the main conferences was reviewed by at least three referees, with arbitrated e-mail discussions in the case of strongly diverging evaluations. 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 itself. Continuing a costly but nice tradition, the OnTheMove Federated Event organizers decided again to make all proceedings available to all participants of conferences and workshops, independently of one's registration to a specific conference or workshop. Each participant also received a CD-Rom with the full combined proceedings (conferences + workshops).

The General Chairs are once more especially grateful to all the many people directly or indirectly involved in the set-up of these federated conferences, who contributed to making them a success. Few people realize what a large number of individuals have to be involved, and what a huge amount of work, and sometimes risk, the organization of an event like OTM entails. Apart from the persons mentioned above, we therefore in particular wish to thank our 12 main conference PC Co-chairs (GADA 2007: Pilar Herrero, Daniel Katz, María S. Pérez, Domenico Talia; DOA 2007: Pascal Felber, Aad van Moorsel, Calton Pu; ODBASE 2007: Tharam Dillon, Michele Missikoff, Steffen Staab; CoopIS 2007: Francisco Curbera, Frank Leymann, Mathias Weske; IS 2007: Mário Freire, Simão Melo de Sousa, Vitor Santos, Jong Hyuk Park) and our 36 workshop PC Co-chairs (Antonia Albani, Susana Alcalde, Adezzine Boukerche, George Buchanan, Roy Campbell, Werner Ceusters, Elizabeth Chang, Antonio

Coronato, Simon Courtenage, Ernesto Damiani, Skevos Evripidou, Pascal Felber, Fernando Ferri, Achille Fokoue, Mario Freire, Daniel Grosu, Michael Gurstein, Pilar Herrero, Terry Halpin, Annika Hinze, Jong Hyuk Park, Mustafa Jarrar, Jiankun Hu, Cornel Klein, David Lewis, Arek Kasprzyk, Thorsten Liebig, Gonzalo Méndez, Jelena Mitic, John Mylopoulos, Farid Nad-Abdessalam, Sjir Nijssen, the late Claude Ostyn, Bijan Parsia, Maurizio Rafanelli, Marta Sabou, Andreas Schmidt, Simão Melo de Sousa, York Sure, Katia Sycara, Thanassis Tiropanis, Arianna D'Ulizia, Rainer Unland, Eiko Yoneki, Yuanbo Guo).

All 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 must heartily thank Jos Valente de Oliveira for the efforts in arranging facilities at the venue and coordinating the substantial and varied local activities needed for a multi-conference event such as ours. And we must all be grateful also to Ana Cecilia Martinez-Barbosa for researching and securing the sponsoring arrangements, to our extremely competent and experienced Conference Secretariat and technical support staff in Antwerp, Daniel Meersman, Ana-Cecilia, and Jan Demey, and last but not least to our energetic Publications Chair and loyal collaborator of many years in Melbourne, Kwong Yuen Lai, this year vigorously assisted by Vidura Gamini Abhaya and Peter Dimopoulos.

The General Chairs gratefully acknowledge the academic freedom, logistic support and facilities they enjoy from their respective institutions, Vrije Universiteit Brussel (VUB) and RMIT University, Melbourne, without which such an enterprise would not be feasible.

We do hope that the results of this federated scientific enterprise contribute to your research and your place in the scientific network.

August 2007

Robert Meersman  
Zahir Tari



# Organizing Committee

The OTM (On The Move) 2007 Federated Conferences, which involve CoopIS (Cooperative Information Systems), DOA (distributed Objects and Applications), GADA (Grid computing, high-performAnce and Distributed Applications), IS (Information Security) and ODBASE (Ontologies, Databases and Applications of Semantics) are proudly **supported** by RMIT University (School of Computer Science and Information Technology) and Vrije Universiteit Brussel (Department of Computer Science).

## Executive Committee

OTM 2007 General Co-chairs	Robert Meersman (Vrije Universiteit Brussel, Belgium) and Zahir Tari (RMIT University, Australia)
GADA 2007 PC Co-chairs	Pilar Herrero (Universidad Politécnica de Madrid, Spain), Daniel Katz (Louisiana State University, USA), María S. Pérez (Universidad Politécnica de Madrid, Spain), and Domenico Talia (Università della Calabria, Italy)
CoopIS 2007 PC Co-chairs	Francisco Curbera (IBM, USA), Frank Leymann (University of Stuttgart, Germany), and Mathias Weske (University of Potsdam, Germany)
DOA 2007 PC Co-chairs	Pascal Felber (Université de Neuchâtel, Switzerland), Aad van Moorsel (Newcastle University, UK), and Calton Pu (Georgia Tech, USA)
IS 2007 PC Co-chairs	Mário M. Freire (University of Beira Interior, Portugal), Simão Melo de Sousa (University of Beira Interior, Portugal), Vitor Santos (Microsoft, Portugal), and Jong Hyuk Park (Kyungnam University, Korea)
ODBASE 2007 PC Co-chairs	Tharam Dillon (University of Technology Sydney, Australia), Michele Missikoff (CNR, Italy), and Steffen Staab (University of Koblenz-Landau, Germany)
Publication Co-chairs	Kwong Yuen Lai (RMIT University, Australia) and Vidura Gamini Abhaya (RMIT University, Australia)
Local Organizing Chair	José Valente de Oliveira (University of Algarve, Portugal)

Conferences Publicity Chair	Jean-Marc Petit (INSA, Lyon, France)
Workshops Publicity Chair	Gonzalo Mendez (Universidad Complutense de Madrid, Spain)
Secretariat	Ana-Cecilia Martinez Barbosa, Jan Demey, and Daniel Meersman

## CoopIS 2007 Program Committee

Marco Aiello	Dominik Kuroпка
Bernd Amann	Tiziana Margaria
Alistair Barros	Maristella Matera
Zohra Bellahsene	Massimo Mecella
Boualem Benatallah	Ingo Melzer
Salima Benbernou	Jörg Müller
Djamal Benslimane	Wolfgang Nejdl
Klemens Böhm	Werner Nutt
Laura Bright	Andreas Oberweis
Christoph Bussler	Mike Papazoglou
Malu Castellanos	Cesare Pautasso
Vincenzo D'Andrea	Barbara Pernici
Umesh Dayal	Frank Puhlmann
Susanna Donatelli	Manfred Reichert
Marlon Dumas	Stefanie Rinderle
Schahram Dustdar	Rainer Ruggaber
ohannesson Eder	Kai-Uwe Sattler
Rik Eshuis	Ralf Schenkel
Opher Etzion	Timos Sellis
Klaus Fischer	Brigitte Trousse
Avigdor Gal	Susan Urban
Paul Grefen	Willem-Jan Van den Heuvel
Mohand-Said Hacid	Wil Van der Aalst
Geert-Jan Houben	Maria Esther Vidal
Michael Huhns	Jian Yang
Paul Johannesson	Kyu-Young Whang
Dimka Karastoyanova	Leon Zhao
Rania Khalaf	Michael zur Muehlen
Bernd Krämer	
Akhil Kumar	

## DOA 2007 Program Committee

Marco Aiello	Zohra Bellahsene
Bernd Amann	Boualem Benatallah
Alistair Barros,	Salima Benbernou

Djamal Benslimane  
 Klemens Böhm  
 Laura Bright  
 Christoph Bussler  
 Malu Castellanos  
 Vincenzo D'Andrea  
 Umesh Dayal  
 Susanna Donatelli  
 Marlon Dumas  
 Shahram Dustdar  
 Johannesson Eder  
 Rik Eshuis  
 Opher Etzion  
 Klaus Fischer  
 Avigdor Gal  
 Paul Grefen  
 Mohand-Said Hacid  
 Geert-Jan Houben  
 Michael Huhns  
 Paul Johannesson  
 Dimka Karastoyanova  
 Rania Khalaf  
 Bernd Krämer  
 Akhil Kumar  
 Dominik Kropka  
 Tiziana Margaria  
 Maristella Matera

Massimo Mecella  
 Ingo Melzer  
 Jörg Müller  
 Wolfgang Nejdl  
 Werner Nutt  
 Andreas Oberweis  
 Mike Papazoglou  
 Cesare Pautasso  
 Barbara Pernici  
 Frank Puhlmann  
 Manfred Reichert  
 Stefanie Rinderle  
 Rainer Ruggaber  
 Kai-Uwe Sattler  
 Ralf Schenkel  
 Timos Sellis  
 Brigitte Trousse  
 Susan Urban  
 Willem-Jan Van den Heuvel,  
 Wil Van der Aalst  
 Maria Esther Vidal  
 Jian Yang  
 Kyu-Young Whang  
 Leon Zhao  
 Michael zur Muehlen

## **GADA 2007 Program Committee**

Jemal Abawajy  
 Akshai Aggarwal  
 Sattar B. Sadkhan Almaliky  
 Artur Andrzejak  
 Amy Apon  
 Oscar Ardaiz  
 Costin Badica  
 Rosa M. Badia  
 Mark Baker  
 Angelos Bilas  
 Jose L. Bosque  
 Juan A. Bota Blaya  
 Pascal Bouvry  
 Rajkumar Buyya  
 Santi Caball Llobet

Mario Cannataro  
 Jesús Carretero  
 Charlie Catlett  
 Pablo Chacin  
 Isaac Chao  
 Jinjun Chen  
 Félix J. García Clemente  
 Carmela Comito  
 Toni Cortes  
 Geoff Coulson  
 Jose Cunha  
 Ewa Deelman  
 Marios Dikaiakos  
 Beniamino Di Martino  
 Jack Dongarra

Markus Endler  
Alvaro A.A. Fernandes  
Maria Ganzha  
Felix García  
Angel Lucas Gonzalez  
Alastair Hampshire  
Jose Cunha  
Neil P Chue Hong  
Eduardo Huedo  
Jan Humble  
Liviu Joita  
Kostas Karasavvas  
Chung-Ta King  
Kamil Kuliberda  
Laurent Lefevre  
Ignacio M. Llorente  
Francisco Luna  
Edgar Magana  
Gregorio Martinez  
Ruben S. Montero  
Reagan Moore  
Mirela Notare  
Hong Ong  
Mohamed Ould-Khaoua  
Marcin Paprzycki  
Manish Parashar

Jose M. Peña  
Dana Petcu  
Beth A. Plale  
José Luis Vázquez Poletti  
María Eugenia de Pool  
Bhanu Prasad  
Thierry Priol  
Víctor Robles  
Rizos Sakellariou, Univ. of Manchester  
Manuel Salvadores  
Alberto Sanchez  
Hamid Sarbazi-Azad  
Franciszek Seredynski  
Francisco José da Silva e Silva  
Antonio F. Gómez Skarmeta  
Enrique Soler  
Heinz Stockinger  
Alan Sussman  
Elghazali Talbi  
Jordi Torres  
Cho-Li Wang  
Adam Wierzbicki  
Laurence T. Yang  
Albert Zomaya

## IS 2007 Program Committee

J.H. Abbawajy  
André Adelsbach  
Emmanuelle Anceaume  
José Carlos Bacelar  
Manuel Bernardo Barbosa  
João Barros  
Carlo Blundo  
Phillip G. Bradford  
Thierry Brouard  
Han-Chieh Chao  
Hsiao-Hwa Chen  
Ilyoung Chong  
Stelvio Cimato  
Nathan Clarke  
Miguel P. Correia

Cas Cremers  
Gwenaël Doërr  
Paul Dowland  
Mahmoud T. El-Hadidi  
Huirong Fu  
Steven Furnell  
Michael Gertz  
Swapna S. Gokhale  
Vesna Hassler  
Lech J. Janczewski  
Wipul Jayawickrama  
Vasilis Katos  
Hyun-Kook Kahng  
Hiroaki Kikuchi  
Paris Kitsos

Kwok-Yan Lam  
 Deok-Gyu Lee  
 Sérgio Tenreiro de Magalhães  
 Henrique S. Mamede  
 Evangelos Markatos  
 Arnaldo Martins  
 Paulo Mateus  
 Sjouke Mauw  
 Natalie Miloslavskaya  
 Edmundo Monteiro  
 Yi Mu  
 José Luís Oliveira  
 Nuno Ferreira Neves  
 Maria Papadaki  
 Manuela Pereira  
 Hartmut Pohl  
 Christian Rechberger  
 Carlos Ribeiro  
 Vincent Rijmen  
 José Ruela

Henrique Santos  
 Biplab K. Sarker  
 Ryoichi Sasaki  
 Jörg Schwenk  
 Paulo Simões  
 Filipe de Sá Soares  
 Basie von Solms  
 Stephanie Teufel  
 Luis Javier Garcia Villalba  
 Umberto Villano  
 Jozef Vyskoc  
 Carlos Becker Westphall  
 Liudong Xing  
 Chao-Tung Yang  
 Jeong Hyun Yi  
 Wang Yufeng  
 Deqing Zou  
 André Zúquete

## ODBASE 2007 Program Committee

Andreas Abecker  
 Harith Alani  
 Jürgen Angele  
 Franz Baader  
 Sonia Bergamaschi  
 Alex Borgida  
 Mohand Boughanem  
 Paolo Bouquet  
 Jean-Pierre Bourey  
 Christoph Bussler  
 Silvana Castano  
 Paolo Ceravolo  
 Vassilis Christophides  
 Philipp Cimiano  
 Oscar Corcho  
 Ernesto Damiani  
 Ling Feng  
 Asuncion Gómez-Pérez  
 Benjamin Habegger  
 Mounira Harzallah  
 Andreas Hotho

Farookh Hussain  
 Dimitris Karagiannis  
 Manolis Koubarakis  
 Georg Lausen  
 Maurizio Lenzerini  
 Alexander Löser  
 Gregoris Metzas  
 Riichiro Mizoguchi  
 Boris Motik  
 John Mylopoulos  
 Wolfgang Nejdl  
 Eric Neuhold  
 Yves Pigneur  
 Axel Polleres  
 Li Qing  
 Wenny Rahayu  
 Rajagan Rajagopalapillai  
 Rainer Ruggaber  
 Heiko Scholdt  
 Eva Soderstrom  
 Wolf Siberski

Sergej Sizov  
Chantal Soule-Dupuy  
Umberto Straccia  
Heiner Stuckenschmidt  
VS Subrahmanian  
York Sure

Francesco Taglino  
Robert Tolksdorf  
Guido Vetere  
Roberto Zicari

## OTM Conferences 2007 Additional Reviewers

Baptiste Alcalde  
Soeren Auer  
Abdul Babar  
Luis Manuel Vilches Blázquez  
Ralph Bobrik  
Ngoc (Betty) Bao Bui  
David Buján Carballal  
Nuno Carvalho  
Gabriella Castelli  
Carlos Viegas Damasio  
Jörg Domaschka  
Viktor S. W. Eide  
Michael Erdmann  
Abdelkarim Erradi  
Peter Fankhauser  
Alfio Ferrara  
Fernando Castor Filho  
Ganna Frankova  
Peng Han  
Alexander Hornung  
Hugo Jonker  
Rüdiger Kapitz  
Alexander Lazovik  
Thortsen Liebig  
João Leitão

Baochuan Lu  
Giuliano Mega  
Paolo Merialdo  
Patrick S. Merten  
Maja Milicic  
Dominic Müller  
Linh Ngo  
José Manuel  
    Gómez Pérez  
Sasa Radomirovic  
Hans P. Reiser  
Thomas Risse  
Kurt Rohloff  
Romain Rouvoy  
Bernhard Schiemann  
Jan Schlüter  
Martin Steinert  
Patrick Stiefel  
Boris Villazón Terrazas  
Hagen Voelzer  
Jochem Vonk  
Franklin Webber  
Wei Xing  
Christian Zimmer

# Table of Contents – Part I

## CoopIS 2007 International Conference (International Conference on Cooperative Information Systems)

CoopIS 2007 PC Co-chairs' Message .....	3
---	---

### Keynote

The Internet Service Bus .....	5
<i>Donald F. Ferguson</i>	

### Process Analysis and Semantics

Soundness Verification of Business Processes Specified in the Pi-Calculus .....	6
<i>Frank Puhlmann</i>	
Extending BPMN for Modeling Complex Choreographies .....	24
<i>Gero Decker and Frank Puhlmann</i>	
Semantics of Standard Process Models with OR-Joins .....	41
<i>Marlon Dumas, Alexander Grosskopf, Thomas Hettel, and Moe Wynn</i>	
Pattern-Based Design and Validation of Business Process Compliance .....	59
<i>Kioumars Namiri and Nenad Stojanovic</i>	

### Process Modeling

Constraint-Based Workflow Models: Change Made Easy .....	77
<i>M. Pesic, M.H. Schonenberg, N. Sidorova, and W.M.P. van der Aalst</i>	
Dynamic, Extensible and Context-Aware Exception Handling for Workflows .....	95
<i>Michael Adams, Arthur H.M. ter Hofstede, Wil M.P. van der Aalst, and David Edmond</i>	
Understanding the Occurrence of Errors in Process Models Based on Metrics .....	113
<i>Jan Mendling, Gustaf Neumann, and Wil van der Aalst</i>	
Data-Driven Modeling and Coordination of Large Process Structures ...	131
<i>Dominic Müller, Manfred Reichert, and Joachim Herbst</i>	

Supporting Ad-Hoc Changes in Distributed Workflow Management Systems .....	150
<i>Manfred Reichert and Thomas Bauer</i>	

## P2P

Acquaintance Based Consistency in an Instance-Mapped P2P Data Sharing System During Transaction Processing .....	169
<i>Md Mehedi Masud and Iluju Kiringa</i>	
Enabling Selective Flooding to Reduce P2P Traffic .....	188
<i>Francesco Buccafurri and Gianluca Lax</i>	
Improving the Dependability of Prefix-Based Routing in DHTs .....	206
<i>Sabina Serbu, Peter Kropf, and Pascal Felber</i>	

## Collaboration

Social Topology Analyzed .....	226
<i>Njål T. Borch, Anders Andersen, and Lars K. Vognild</i>	
Conflict Resolution of Boolean Operations by Integration in Real-Time Collaborative CAD Systems .....	238
<i>Yang Zheng, Haifeng Shen, Steven Xia, and Chengzheng Sun</i>	
Trust Extension Device: Providing Mobility and Portability of Trust in Cooperative Information Systems .....	253
<i>Surya Nepal, John Zic, Hon Hwang, and David Moreland</i>	
Organizing Meaning Evolution Supporting Systems Using Semantic Decision Tables .....	272
<i>Yan Tang and Robert Meersman</i>	

## Business Transactions

Extending Online Travel Agency with Adaptive Reservations .....	285
<i>Yu Zhang, Wenfei Fan, Huajun Chen, Hao Sheng, and Zhaohui Wu</i>	
A Multi-level Model for Activity Commitments in E-contracts .....	300
<i>K. Vidyasankar, P. Radha Krishna, and Kamalakara Karlapalem</i>	
Decentralised Commitment for Optimistic Semantic Replication .....	318
<i>Pierre Sutra, João Barreto, and Marc Shapiro</i>	
Coordinate BPEL Scopes and Processes by Extending the WS-Business Activity Framework .....	336
<i>Stefan Pottinger, Ralph Mietzner, and Frank Leymann</i>	



Verifying Composite Service Transactional Behavior Using Event Calculus .....	353
<i>Walid Gaaloul, Mohsen Rouached, Claude Godart, and Manfred Hauswirth</i>	

## Short Papers

Matching Cognitive Characteristics of Actors and Tasks .....	371
<i>S.J. Overbeek, P. van Bommel, H.A. (Erik) Proper, and D.B.B. Rijsenbrij</i>	
The OpenKnowledge System: An Interaction-Centered Approach to Knowledge Sharing .....	381
<i>Ronny Siebes, Dave Dupplaw, Spyros Kotoulas, Adrian Perreau de Pinninck, Frank van Harmelen, and David Robertson</i>	
Ontology Enrichment in Multi Agent Systems Through Semantic Negotiation .....	391
<i>Salvatore Garruzzo and Domenico Rosaci</i>	
A Relaxed But Not Necessarily Constrained Way from the Top to the Sky .....	399
<i>Katja Hose, Christian Lemke, Kai-Uwe Sattler, and Daniel Zinn</i>	
Collaborative Filtering Based on Opportunistic Information Sharing in Mobile Ad-Hoc Networks .....	408
<i>Alexandre de Spindler, Moira C. Norrie, and Michael Grossniklaus</i>	
Policy-Based Service Registration and Discovery .....	417
<i>Tan Phan, Jun Han, Jean-Guy Schneider, Tim Ebringer, and Tony Rogers</i>	
Business Process Quality Metrics: Log-Based Complexity of Workflow Patterns .....	427
<i>Jorge Cardoso</i>	

## Distributed Objects and Applications (DOA) 2007 International Conference

DOA 2007 PC Co-chairs' Message .....	437
--------------------------------------	-----

## Keynote

WS-CAF: Contexts, Coordination and Transactions for Web Services ...	439
<i>Mark Little</i>	

## Dependability and Security

Resilient Security for False Event Detection Without Loss of Legitimate Events in Wireless Sensor Networks . . . . .	454
<i>Yuichi Sei and Shinichi Honiden</i>	
Formal Verification of a Group Membership Protocol Using Model Checking . . . . .	471
<i>Valério Rosset, Pedro F. Souto, and Francisco Vasques</i>	
Revisiting Certification-Based Replicated Database Recovery . . . . .	489
<i>M.I. Ruiz-Fuertes, J. Pla-Civera, J.E. Armendáriz-Iñigo, J.R. González de Mendivil, and F.D. Muñoz-Escoté</i>	
A Survey of Fault Tolerant CORBA Systems . . . . .	505
<i>Muhammad Fahad, Aamer Nadeem, and Michael R. Lyu</i>	

## Middleware and Web Services

Flexible Reuse of Middleware Infrastructures in Heterogeneous IT Environments . . . . .	522
<i>Ralf Wagner and Bernhard Mitschang</i>	
Self-optimization of Clustered Message-Oriented Middleware . . . . .	540
<i>Christophe Taton, Noël De Palma, Daniel Hagimont, Sara Bouchenak, and Jérémy Philippe</i>	
Minimal Traffic-Constrained Similarity-Based SOAP Multicast Routing Protocol . . . . .	558
<i>Khoi Anh Phan, Peter Bertok, Andrew Fry, and Caspar Ryan</i>	
Implementing a State-Based Application Using Web Objects in XML . . . . .	577
<i>Carlos R. Jaimez González and Simon M. Lucas</i>	

## Aspects and Development Tools

Experience with Dynamic Crosscutting in Cougaar . . . . .	595
<i>John Zinky, Richard Shapiro, Sarah Siracuse, and Todd Wright</i>	
Property-Preserving Evolution of Components Using VPA-Based Aspects . . . . .	613
<i>Dong Ha Nguyen and Mario Südholt</i>	
Multi-Stage Aspect-Oriented Composition of Component-Based Applications . . . . .	630
<i>Bert Lagaisse, Eddy Truyen, and Wouter Joosen</i>	
An Eclipse-Based Tool for Symbolic Debugging of Distributed Object Systems . . . . .	648
<i>Giuliano Mega and Fabio Kon</i>	

## Mobility and Distributed Algorithms

A Bluetooth-Based JXME Infrastructure .....	667
<i>Carlo Blundo and Emiliano De Cristofaro</i>	
Agreements and Policies in Cooperative Mobile Agents: Formalization and Implementation .....	683
<i>Fuyuki Ishikawa, Nobukazu Yoshioka, and Shinichi Honiden</i>	
An Adaptive Coupling-Based Algorithm for Internal Clock Synchronization of Large Scale Dynamic Systems .....	701
<i>Roberto Baldoni, Angelo Corsaro, Leonardo Querzoni, Sirio Scipioni, and Sara Tucci-Piergiovanni</i>	
Reviewing Amnesia Support in Database Recovery Protocols .....	717
<i>Rubén de Juan-Marín, Luis H. García-Muñoz, J. Enrique Armendáriz-Íñigo, and Francesc D. Muñoz-Escóí</i>	

## Frameworks, Patterns, and Testbeds

The Conceptualization of a Configurable Multi-party Multi-message Request-Reply Conversation .....	735
<i>Nataliya Mulyar, Lachlan Aldred, and Wil M.P. van der Aalst</i>	
Building Adaptive Systems with Service Composition Frameworks .....	754
<i>Liliana Rosa, Luís Rodrigues, and Antónia Lopes</i>	
Invasive Patterns for Distributed Programs .....	772
<i>Luis Daniel Benavides Navarro, Mario Südholt, Rémi Douence, and Jean-Marc Menaud</i>	
NSLoadGen – A Testbed for Notification Services .....	790
<i>Diego Palmisano and Mariano Cilia</i>	

## Ontologies, Databases and Applications of Semantics (ODBASE) 2007 International Conference

ODBASE 2007 PC Co-chairs' Message .....	811
---	-----

## Keynote

Towards Next Generation Value Networks .....	813
<i>York Sure</i>	

## Ontology Mapping

Combining the Semantic Web with the Web as Background Knowledge for Ontology Mapping .....	814
<i>Ruben Vazquez and Nik Swoboda</i>	

Discovering Executable Semantic Mappings Between Ontologies . . . . .	832
<i>Han Qin, Dejing Dou, and Paea LePendu</i>	

Interoperability of XML Schema Applications with OWL Domain Knowledge and Semantic Web Tools . . . . .	850
<i>Chrisa Tsinarakis and Stavros Christodoulakis</i>	

## Semantic Querying

Query Expansion and Interpretation to Go Beyond Semantic P2P Interoperability . . . . .	870
<i>Anthony Ventresque, Sylvie Cazalens, Philippe Lamarre, and Patrick Valduries</i>	

SPARQL++ for Mapping Between RDF Vocabularies . . . . .	878
<i>Axel Polleres, François Scharffe, and Roman Schindlauer</i>	

OntoPath: A Language for Retrieving Ontology Fragments . . . . .	897
<i>E. Jiménez-Ruiz, R. Berlanga, V. Nebot, and I. Sanz</i>	

## Ontology Development

Taxonomy Construction Using Compound Similarity Measure . . . . .	915
<i>Mahmood Neshati and Leila Sharif Hassanabadi</i>	

$r^3$ – A Foundational Ontology for Reactive Rules . . . . .	933
<i>José Júlio Alferes and Ricardo Amador</i>	

Heuristics for Constructing Bayesian Network Based Geospatial Ontologies . . . . .	953
<i>Sumit Sen and Antonio Krüger</i>	

OntoCase - A Pattern-Based Ontology Construction Approach . . . . .	971
<i>Eva Blomqvist</i>	

Towards Community-Based Evolution of Knowledge-Intensive Systems . . . . .	989
<i>Pieter De Leenheer and Robert Meersman</i>	

ImageNotion: Methodology, Tool Support and Evaluation . . . . .	1007
<i>Andreas Walter and Gábor Nagypál</i>	

## Learning and Text Mining

Optimal Learning of Ontology Mappings from Human Interactions . . . . .	1025
<i>Sumit Sen, Dolfy Fernandes, and N.L. Sarda</i>	

Automatic Feeding of an Innovation Knowledge Base Using a Semantic Representation of Field Knowledge . . . . .	1034
<i>Issam Al Haj Hasan, Michel Schneider, and Grigore Gogu</i>	
Ontology Learning for Search Applications . . . . .	1050
<i>Jon Atle Gulla, Hans Olaf Borch, and Jon Espen Ingvaldsen</i>	

## Annotation and Metadata Management

MultiBeeBrowse – Accessible Browsing on Unstructured Metadata . . . . .	1063
<i>Sebastian Ryszard Kruk, Adam Gzella, Filip Czaja, Władysław Bultrowicz, and Ewelina Kruk</i>	
Matching of Ontologies with XML Schemas Using a Generic Metamodel . . . . .	1081
<i>Christoph Quix, David Kensche, and Xiang Li</i>	
Labeling Data Extracted from the Web . . . . .	1099
<i>Altigran S. da Silva, Denilson Barbosa, João M.B. Cavalcanti, and Marco A.S. Sevalho</i>	

## Ontology Applications

Data Quality Enhancement of Databases Using Ontologies and Inductive Reasoning . . . . .	1117
<i>Olivier Curé and Robert Jeansoulin</i>	
A Web Services-Based Annotation Application for Semantic Annotation of Highly Specialised Documents About the Field of Marketing . . . . .	1135
<i>Mercedes Argüello Casteleiro, Mukhtar Abusa, Maria Jesus Fernandez Prieto, Veronica Brookes, and Fonbeyin Henry Abanda</i>	
Ontology Based Categorization in eGovernment Application . . . . .	1153
<i>Claude Moulin, Fathia Bettahar, Jean-Paul Barthès, and Marco Luca Sbodio</i>	
Semantic Matching Based on Enterprise Ontologies . . . . .	1161
<i>Andreas Billig, Eva Blomqvist, and Feiyu Lin</i>	

<b>Author Index . . . . .</b>	<b>1169</b>
-------------------------------	-------------