

Proceedings

**Seventh IEEE International Workshop
on Policies for Distributed Systems
and Networks
(*Policy 2006*)**

5–7 June 2006

London, Ontario, Canada

Sponsored by

Office of the Dean of the Faculty of Science,
The University of Western Ontario

Office of the Vice President of Research and International Relations,
The University of Western Ontario

Centre for Advanced Studies, IBM Toronto Laboratory



Los Alamitos, California
Washington • Tokyo

Copyright © 2006 by The Institute of Electrical and Electronics Engineers, Inc.
All rights reserved.

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries may photocopy beyond the limits of US copyright law, for private use of patrons, those articles in this volume that carry a code at the bottom of the first page, provided that the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

Other copying, reprint, or republication requests should be addressed to: IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, P.O. Box 133, Piscataway, NJ 08855-1331.

The papers in this book comprise the proceedings of the meeting mentioned on the cover and title page. They reflect the authors' opinions and, in the interests of timely dissemination, are published as presented and without change. Their inclusion in this publication does not necessarily constitute endorsement by the editors, the IEEE Computer Society, or the Institute of Electrical and Electronics Engineers, Inc.

IEEE Computer Society Order Number P2598
ISBN-13: 978-0-7695-2598-3
ISBN-10: 0-7695-2598-9
Library of Congress Control Number 2006924254

Additional copies may be ordered from:

IEEE Computer Society
Customer Service Center
10662 Los Vaqueros Circle
P.O. Box 3014
Los Alamitos, CA 90720-1314
Tel: + 1 800 272 6657
Fax: + 1 714 821 4641
<http://computer.org/cspress>
csbooks@computer.org

IEEE Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: + 1 732 981 0060
Fax: + 1 732 981 9667
[http://shop.ieee.org/store/
customer-service@ieee.org](http://shop.ieee.org/store/customer-service@ieee.org)

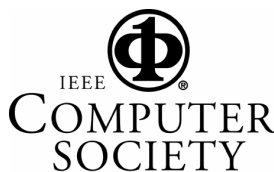
IEEE Computer Society
Asia/Pacific Office
Watanabe Bldg., 1-4-2
Minami-Aoyama
Minato-ku, Tokyo 107-0062
JAPAN
Tel: + 81 3 3408 3118
Fax: + 81 3 3408 3553
tokyo.ofc@computer.org

Individual paper REPRINTS may be ordered at: reprints@computer.org

Editorial production by Randall S. Bilof

Cover art production by Joe Daigle/Studio Productions

Printed in the United States of America by Applied Digital Imaging



IEEE Computer Society
Conference Publishing Services
<http://www.computer.org/proceedings/>

Contents

Seventh IEEE International Workshop on Policies for Distributed Systems and Networks

Policy 2006

Preface	viii
Organizing Committee	ix
Program Committee	x
Referees	xii

Session 1: Internet and Database Policies

Bio-Inspired Policy-Based Management (bioPBM) for Autonomic Communication Systems.....	3
<i>Sasitharan Balasubramaniam, Keara Barrett, William Donnelly, Sven van der Meer, and John Strassner</i>	
Workload Class Importance Policy in Autonomic Database Management Systems	13
<i>Harley Boughton, Pat Martin, Wendy Powley, and Randy Horman</i>	
A Context-Aware, Policy-Based Framework for the Management of MANETs	23
<i>Antonis M. Hadjiantonis, Apostolos Malatras, and George Pavlou</i>	

Session 2: Access Control Policies

Access Control Inference and Feedback for Policy Managers: A Fine-Grained Analysis	35
<i>Ranga R. Vatsavai, Sharma Chakravarthy, and Mukesh Mohania</i>	
Toward Information Sharing: Benefit and Risk Access Control (BARAC)	45
<i>Lei Zhang, Alexander Brodsky, and Sushil Jajodia</i>	
Policy Languages for Digital Identity Management in Federation Systems	54
<i>Elisa Bertino, Abhilasha Bhargav-Spantzel, and Anna Cinzia Squicciarini</i>	

Short Paper Session 1

End-to-End Model Driven Policy Based Network Management.....	67
<i>Dave Raymer, John Strassner, Elyes Lehtihet, and Sven van der Meer</i>	
An N-State Driven Policy-Based Network Management to Control End-End Network Behaviors	71
<i>Sitaram Kowtha and Xi Jiang</i>	
PBMAN: A Policy-Based Management Framework for Ambient Networks	76
<i>Carlos Kamienski, Joseane Fidalgo, Djamel Sadok, Jennifer Lima, Leonardo Pereira, and Börje Ohlman</i>	
Self-Configuration for Radio Access Networks	80
<i>Javier Baliosian, Huw Oliver, Ann Devitt, Françoise Sailhan, Epifanio Salamanca, Boris Danev, and Gerard Parr</i>	

Session 3: Policy Management

A Quantitative Approach to IT Investment Allocation to Improve Business Results.....	87
<i>Antão Moura, Jacques Sauv�, Jo�o Jornada, and Eduardo Radziuk</i>	
A Policy-Based Management System with Automatic Policy Selection and Creation Capabilities by Using a Singular Value Decomposition Technique	96
<i>Hoi Chan and Thomas Kwok</i>	
A Scalable History-Based Policy Engine.....	100
<i>Pedro Gama, Carlos Riberio, and Paulo Ferreira</i>	

Session 4: Tools, Rules, and Goals

Cauldron: A Policy-Based Design Tool	113
<i>Lyle Ramshaw, Akhil Sahai, Jim Saxe, and Sharad Singhal</i>	
A Distributed Tabling Algorithm for Rule Based Policy Systems	123
<i>Miguel Alves, Carlos Viegas Dam�sio, Wolfgang Nejdl, and Daniel Olmedilla</i>	
A Functional Solution for Goal-Oriented Policy Refinement	133
<i>Javier Rubio-Loyola, Joan Serrat, Marinos Charalambides, Paris Flegkas, and George Pavlou</i>	

Short Paper Session 2

Trust Meta-Policies for Flexible and Dynamic Policy Based Trust Management	145
<i>Karl Quinn, David Lewis, Declan O’Sullivan, and Vincent P. Wade</i>	
Domain-Independent, Composable Web Services Policy Assertions.....	149
<i>Anne H. Anderson</i>	
Distributed Control Enabling Consistent MAC Policies and IDS Based on a Meta-Policy Approach	153
<i>Mathieu Blanc, J�r�my Briffaut, Jean-Fran�ois Lalonde, and Christian Toinard</i>	
Specifying Data Sharing Agreements	157
<i>Vipin Swarup, Len Seligman, and Arnon Rosenthal</i>	

Session 5: Coordination

Coordination between Distributed PDPs	163
<i>David W. Chadwick, Linying Su, Oleksandr Otenko, and Romain Laborde</i>	
A Compositional Event and Time-Based Policy Model	173
<i>Helge Janicke, Antonio Cau, Fran�ois Siewe, Hussein Zedan, and Kevin Jones</i>	
A Basis for Comparing Characteristics of Policy Systems.....	183
<i>Seraphin Calo and Jorge Lobo</i>	

Session 6: Access Control and Evaluation

Substituting COPS-PR: An Evaluation of NETCONF and SOAP for Policy Provisioning	195
<i>Theo Ferreira Franco, Weldson Queiroz Lima, Giancarlo Silvestrin, Rafael Corezola Pereira, Maria Janilce Bosquiroli Almeida, Liane Margarida Rockenbach Tarouco, Lisandro Zambenedetti Granville, Andr� Beller, Edgard Jamhour, and Mauro Fonseca</i>	
Self-Describing Delegation Networks for the Web	205
<i>Lalana Kagal, Tim Berners-Lee, Dan Connolly, and Daniel Weitzner</i>	

Regulated Delegation in Distributed Systems.....	215
<i>Xuhui Ao and Naftaly H. Minsky</i>	

Short Paper Session 3

Enforceability vs. Accountability in Electronic Policies	227
<i>Travis D. Breaux, Annie I. Antón, Clare-Marie Karat, and John Karat</i>	

Policy Management of Enterprise Systems: A Requirements Study	231
<i>Pranam Kolari, Tim Finin, Yelena Yesha, Kelly Lyons, Jen Hawkins, and Stephen Perelgut</i>	

Inferring Access-Control Policy Properties via Machine Learning	235
<i>Evan Martin and Tao Xie</i>	

Using a Policy Language to Control Tuple-Space Synchronization in a Mobile Environment	239
<i>Vorapol Jittamas and Peter F. Linington</i>	

Author Index	243
---------------------------	-----