



CONFERENCE & WORKSHOPS PROGRAM

2010 INTERNATIONAL CONFERENCE ON NETWORK AND SERVICE MANAGEMENT

CNSM 2010

& CO-LOCATED WORKSHOPS

NEMA, MACE, SVM

OCTOBER 25-29, 2010
NIAGRA FALLS, CANADA

Sponsors



Patrons and Supporters

Gold



Sliver



Bronze



MESSAGE FROM GENERAL CHAIR

It is our great pleasure to welcome you to the 2010 edition of CNSM, the International Conference on Network and Service Management. This is a special edition in many aspects. On one hand it is the continuation of a long tradition of network management events taking place annually in the Fall and on the other hand it is a new incarnation of these events with a new name and structure.

In 1990 the network management community through its technical committees, namely the IFIP working group 6.6 on Network and Distributed Systems Management and the IEEE Communications Society Committee on Network Operations and Management, initiated the DSOM workshop to take place yearly in the fall for discussing work in progress in the area of Distributed Systems Operations and Management. In addition DSOM allowed active members of the community to justify their travel to attend the IM/NOMS TPC meeting and participate in the selection of the IM/NOMS technical program to take place in the Spring of the following year (IM held in odd years and NOMS in even years, since 1988). DSOM continued successfully until last year celebrating its 20th edition in 2009. In 1997, MMNS was launched as a forum bringing together networking researchers working on the control plane and those working on the management plane to share their complementary views on the Management of Multimedia Networks and Services. Around the same time, the IPOM workshop was launched to focus on the management of IP networks Operations and Management. Both MMNS and IPOM continued successfully until last year holding their 12th and 9th editions respectively.

Until 2005, DSOM, MMNS and IPOM took place every year in the fall at different times and different locations, which led to the dispersion of our constituents. Therefore, MANWEEK, the International Week on the Management of Networks and Services, was established in 2005 as an umbrella event where the DSOM, MMNS and IPOM workshops were co-located. MANWEEK was successfully organized in Barcelona (Spain) in 2005, Dublin (Ireland) in 2006, San Jose (USA) in 2007, Samos (Greece) in 2008 and Venice (Italy) in 2009 and over the years gave birth to a set of new smaller workshops such as MACE and EVGNM. MANWEEK also continued the DSOM tradition of hosting the IM/NOMS TPC meeting. Together, the workshops and the IM/NOMS TPC meeting lasted for an entire week hence the name "Management Week".

After several years of co-locating the workshops, some taking place in sequence and others in parallel, the time came for merging them into a single conference. CNSM was created with this perspective. Our goal was to establish a highly selective single-track conference fostering in-depth technical discussions among the participants. In response to some concerns about the acronym "MANWEEK", which may be misleading, we decided to use a different name and selected CNSM, for International Conference on Network and Service Management, in reference to TNSM, the IEEE Transactions on Network and Service Management.

CNSM 2010 would have not been possible without the tireless efforts of the organizing and technical committees and the contribution of the authors and the reviewers. We are most grateful to them and to our patrons, sponsors and supporters. The organizing committee put together an outstanding technical program. We hope that you will enjoy it along with the social program in Niagara Falls.

Raouf Boutaba
CNSM 2010 General Chair

MESSAGE FROM PROGRAM CO-CHAIRS

It is our pleasure to welcome you to the 2010 International Conference on Network and Service Management (CNSM) at Niagara Fall, Canada. It has been our privilege as Program Co-Chairs to organize this event.

This year, we had 176 submissions from all over the world – Africa, Asia, Europe, North America and South America. The papers were reviewed by an excellent program committee with members drawn from industry and academia as well as over 100 additional reviewers. All submitted papers underwent a rigorous review process with an average of 3.6 reviews per paper and a minimum of three reviews for every paper. After paper rebuttals were submitted, TPC discussions took place on-line through the JEMS conference management system. This was followed by two TPC Tele-conference meetings on July 29-30. Out of 176 paper submissions 27 were accepted as regular papers. This makes for a very competitive acceptance rate of 15%. This was followed by 14 submissions accepted for the mini-conference program for an acceptance rate of 8%. Regrettably, we were unable to include many fine papers due to time limitations. We have 59 good short papers that will be presented in 6 poster sessions making for an acceptance rate of 33.5%. The topics include energy management, cloud management, IT Service management, risk and security management, policy management, enterprise management, fault and intrusion detection management, virtualization, sensors and IP management.

The program features two engaging keynote talks. Dr. Maheswaran Surendra, Director of services management from IBM, opens the conference with a keynote on synergy of cross-layer management, and Professor Alberto Leon-Garcia, noted Canadian network expert from the University of Toronto, discusses designing the future network. A tutorial on mathematical models for management is also being offered.

CNSM is co-located with three workshops: The 1st International Workshop on Network Embedded Management and Applications, the 5th International Workshop on Modeling Autonomic Communication Environments, and the 4th International DMTF Academic Alliance Workshop on Systems and Virtualization Management: Standards and the Cloud.

As program co-chairs, we cannot put a high quality program without the efforts of many people. First, and most importantly, we thank all of the authors for their creative and compelling research. We thank the technical program committee and external reviewers for their hard work. We thank the organizing committee that included Karthick Ramachandran (Web Maintainer), Jin Xiao (Finance Chair), Deep Medhi (Publications Chair), Carlos Westphall (Publicity Chair) and Noura Limam (Workshop Chair). We also thank Chockalingam Eswaramurthy for putting together this final program booklet. The tremendous amount of work they put in makes this conference a success.

We hope that you find the program interesting and stimulating. Enjoy CNSM 2010 and Niagara Falls.

Yixin Diao and Hanan Lutfiyya
CNSM 2010 Program Co-Chairs

COMMITTEES

General Chair

Raouf Boutaba *University of Waterloo, Canada*

Program Chairs

Hanan Lutfiyya *University of Western Ontario, Canada*

Yixin Diao *IBM T.J. Watson Research Center, USA*

Program Vice-Chairs

Network Management

Alex Clemm *Cisco Systems, USA*

Rolf Stadler *KTH, Sweden*

Service and Business Management

Lisandro Granville *UFRGS, Brazil*

John Strassner *POSTECH, Korea*

Management Methods and Technologies

Alex Keller *IBM, USA*

Joan Serrat *UPC, Spain*

Publications Chair

Deep Medhi *University of Missouri-Kansas City, USA*

Publicity Chair

Carlos Westphall *UFSC, Brazil*

Workshops Chair

Noura Limam *POSTECH, Korea*

Finance Chair

Jin Xiao *POSTECH, Korea*

Webmaster

Karthick Ramachandran *University of Western Ontario, Canada*

Steering Committee

Raouf Boutaba *University of Waterloo, Canada*

Marcus Brunner *NEC Europe, Germany*

James Hong *POSTECH, Korea*

Deep Medhi *University of Missouri-Kansas City, USA*

Aiko Pras *University of Twente, The Netherlands*

Doug Zuckerman *Telcordia Technologies, USA*

Technical Program Committee Members

Adarsh Sethi *University of Delaware, USA*

Aiko Pras *University of Twente, The Netherlands*

Alberto Gonzalez *KTH Royal Institute of Technology, Sweden*

Aldri dos Santos *Universidade Federal do Paraná, Brazil*

Alva Couch *Tufts University, USA*

Antonio Liotta *Eindhoven University of Technology, The Netherlands*

Arno Jacobsen *University of Toronto, Canada*

Arosha Bandara *The Open University, UK*

Artur Andzejak *Infocomm Research (I2R), Singapore*

Bradley Simmons *York University, Canada*

Brendan Jennings *TSSG, Waterford Institute of Technology, Ireland*

Burkhard Stiller *University of Zurich and ETH Zurich, Switzerland*

Carlos Westphall *Federal University of Santa Catarina, Brazil*

Choong Seon Hong *Kyung Hee University, Korea*

Christopher Ward *IBM, USA*

Claudio Bartolini *HP Laboratories, USA*

Daniel Mossé *University of Pittsburgh, USA*

Danny Raz *Technion, Israel*

David Hutchison *Lancaster University, UK*

David Trastour *SAP Research, UK*

Declan O'Sullivan *Trinity College Dublin, Ireland*

Deep Medhi *University of Missouri-Kansas City, USA*

Edmundo Madeira *UNICAMP, Brazil*

Edmundo Monteiro *University of Coimbra, Brazil*

Ehab Al-Shaer *University of North Carolina at Charlotte, USA*

Emil Lupu *Imperial College, UK*

Filip De Turck
 Gabi Dreo Rodosek
 Gabriel-Miro Muntean
 George Pavlou
 Gerard Parr
 Go Hasegawa
 Guy Pujolle
 Heiko Ludwig
 Issam Aib
 James Hong
 Javier Baliosian
 Jeffrey Kephart
 Jerry Rolia
 Jordi Torre
 Jorge Cardoso
 Jorge López de Vergara
 Jose-Marcos Nogueira,
 Juergen Schoenwaelder
 Kurt Geihs
 Luciano Paschoal Gaspary
 Lucy Cherkasova
 Marco Aiello
 Marcus Brunner
 Marin Litoiu
 Mauro Tortonesi
 Metin Feridun
 Michael Bauer
 Michele Nogueira Lima
 Michiaki Hayashi
 Morris Sloman
 Myung-Sup Kim
 Nazim Agoulmine
 Olivier Festor
 Omer Rana
 Onn Shehory
 Paolo Bellavista
 Paul Ward
 Radu State
 Raouf Boutaba
 Ritu Chadha
 Rocky K. C. Chang
 Roger Zimmermann
 S. Felix Wu
 Sandeep Uttamchandani,
 Santosh Shrivastava
 Sasitharan Balasubramaniam
 Serge Mankovskii
 Shingo Ata
 Spyros Denazis
 Sven van der Meer
 Theodore Willke
 Thomas Magedanz
 Tom Pfeifer
 Victor Villagrà
 Vincent Wade
 Vladimir Tosic
 Volker Sander
 Wolf Zimmermann
 Xavier Masip-Bruin
 Xiaoyun Zhu
 Yacine Ghamri-Doudane
 Yan Ma
 Young-Tak Kim
 Yoshiaki Kiriha

Ghent University – IBBT, Belgium
 University of Federal Armed Forces, Germany
 Dublin City University, Ireland
 University College of London, UK
 University of Ulster, Ireland
 Osaka University, Japan
 Université Pierre et Marie Curie – Paris 6, France
 IBM T.J. Watson Research Center, USA
 University of Waterloo, Canada
 POSTECH, Korea
 University of the Republic of Uruguay, Uruguay
 IBM, USA
 HP Laboratories, USA
 University of Catalonia (UPC), Spain
 Universidade da Madeira, Portugal
 Universidad Autónoma de Madrid, Spain
 Universidade Federal de Minas Gerais, Brazil
 Jacobs University Bremen, Germany
 Universität Kassel, Germany
 UFRGS, Brazil
 Hewlett Packard Labs, USA
 University of Groningen, The Netherlands
 NEC Europe Ltd., Germany
 IBM CAS Toronto, Canada
 University of Ferrara, Italy
 IBM Research, Switzerland
 University of Western Ontario, Canada
 Universidade Federal do Paraná, Brazil
 KDDI R&D Laboratories Inc., Japan
 Imperial College London, UK
 Korea University, Korea
 University of Evry, France
 INRIA Nancy – Grand Est, France
 Cardiff University, UK
 IBM Haifa Research Labs and Bar Ilan U., Israel
 University of Bologna, Italy
 University of Waterloo, Canada
 LORIA – INRIA Lorraine, France
 University of Waterloo, Canada
 Telcordia, USA
 Polytechnic University, Hong Kong
 National University of Singapore, Singapore
 University of California at Davis, USA
 IBM Almaden Research, USA
 University of Newcastle, UK
 Waterford IT, Ireland
 CA Labs, Canada
 Osaka City University, Japan
 Hitachi Europe & University of Patras, Greece
 Waterford Institute of Technology, Ireland
 Intel Corporation, USA
 Fraunhofer Institut FOKUS, Germany
 Waterford Institute of Technology, TSSG, Ireland
 Universidad Politécnica de Madrid, Spain
 Trinity College Dublin, Ireland
 NICTA, Australia
 FH Aachen University of Applied Sciences, Germany
 Martin Luther University Halle-Wittenberg, Germany
 UPC, Spain
 VMware Inc., USA
 LRSN – ENSIIE, France
 Beijing Univ. of Posts and Telecomm., China
 Yeungnam University, Korea
 NICT, Japan

CNSM MAIN CONFERENCE

MONDAY, OCTOBER 25, 2010

8:45-9:00 [Salon BC] Introduction & Opening

9:00-10:00 [Salon BC] Keynote Speaker: Maheswaran Surendra, IBM

Title: IT Service Management and Delivery for an Enterprise

10:00-11:00 [Salon A] Poster Session 1 and Break

11:00-12:30 [Salon BC] Technical Session 1: Cloud Management, Chair: Xiaoyun Zhu

- Gossip-based Resource Management for Cloud Environments, *Fetahi Wuhib, Rolf Stadler, Michael Spreitzer*
- PRESS: PRedictive Elastic ReSource Scaling for Cloud Systems, *Zhenhuan Gong, Xiaohui Gu, John Wilke*
- Renovating Legacy Distributed Systems using Virtual Appliance with Dependency Graph, *Fumio Machida, Masahiro Kawato, Yoshiharu Maeno*

12:30-13:45 Lunch [The Keg, Level-9]

13:45-15:15 [Salon BC] Technical Session 2: IT Service Management, Chair: Morris Sloman

- Similarity Metric for Risk Assessment in IT Change Plans, *Luis Armando Bianchin, Juliano Araújo Wickboldt, Lisandro Granville, Luciano Gaspary, Claudio Bartolini, Maher Rahmouni*
- Facing the Unpredictable: Automated Adaption of IT Change Plans for Unpredictable Management Domains, *Sebastian Hagen, Alfons Kemper*
- Where Have All Tickets Gone?, *Claudio Bartolini, Philip Day*

15:15-16:15 [Salon A] Poster Session 2 and Break

16:15-17:45 [Salon BC] Technical Session 3: Risk & Security Management, Chair: Jose-

Marcos Nogueira

- Risk Management in VoIP Infrastructures using Support Vector Machines, *Mohamed Nassar, Oussema Dabbebi, Remi Badonnel, Olivier Festor*
- RiskRank: Security Risk Ranking for IP Flow Records, *Shaonan Wang, Radu State, Mohamed Ourdane, Thomas Engel*
- Automated and Secure IPv6 Configuration in Enterprise Networks, *Frederic Beck, Isabelle Chrisment, Ralph Droms, Olivier Festor*

TUESDAY, OCTOBER 26, 2010

9:00-10:00 [Salon BC] Keynote Speaker: Alberto Leon-Garcia, Univ. of Toronto, Canada

Title: Designing the future network

10:00-11:00 [Salon A] Poster Session 3 and Break

11:00-12:30 [Salon BC] Technical Session 4: Policy Management, Chair: Lucy Cherkasova

- Decomposition Techniques for Policy Refinement, *Robert Craven, Jorge Lobo, Emil Lupu, Morris Sloman, Alessandra Russo*
- Teleo-Reactive Policies for Managing Human-centric Pervasive Services, *Srdjan Marinovic, Kevin Twidle, Naranker Dulay, Morris Sloman*
- A Deployment Framework for Self-contained Policies, *Marwan Cheaito, Romain Laborde, François Barrere, Abdelmalek Benzekri*

12:30-13:45 Lunch [The Keg, Level-9]

13:45-15:15 [Salon BC] Technical Session 5: Energy Management, Chair: Olivier Festor

- Capacity Planning and Power Management to Exploit Sustainable Energy *Daniel, Gmach, Jerry Rolia, Cullen Bash, Yuan Chen, Tom Christian, Amip Shah, R. Sharma, Zhikui Wang*

- ECO-friendly Distributed Routing Protocol for Reducing Network Energy Consumption, *Daisuke Arai, Kiyohito Yoshihara*
- A Cluster-based Negotiation Model for Task Allocation in Wireless Sensor Network, *Yukun Li, Zhipeng Gao, Yang Yang, Zhili Guan, Xingyu Chen, Xuesong Qiu*

15:15-16:15 [Salon A] Poster Session 4 and Break

16:15-17:45 [Salon BC] Technical Session 6: Enterprise Management, Chair: Marcus Brunner

- DP+IP = Design of Efficient Backup Scheduling, *Lucy Cherkasova, Alex Zhang, X. Li*
- Declarative Application Deployment and Change Management, *Sebastian Herden, Philip Robinson, Andre Zwanziger*
- Dependency-aware Fault Diagnosis with Metric-Correlation Models in Enterprise Software Systems, *Mohammad Munawar, Thomas Reidemeister, Paul Ward*

18:00-21:00 Social Event [Peller Estates, Niagara-on-the-Lake]

WEDNESDAY, OCTOBER 27, 2010

8:30-10:00 [Salon BC] Technical Session 7: Fault & Intrusion Detection Management, Chair: Michele Nogueira

- An Extensible Framework for Repair-Driven Monitoring, *Thomas Reidemeister, Paul A.S. Ward, Miao Jiang*
- Application of Time Series Analysis to Fault Management in MANETs, *Christopher Sapello, Adarsh Sethi, Marian Nodine, Ritu Chadha*
- Effective Acquaintance Management for Collaborative Intrusion Detection Networks, *Carol Fung, Jie Zhang, Raouf Boutaba*

10:00-11:00 [Salon A] Poster Session 5 and Break

11:00-12:30 [Salon BC] Technical Session 8: Energy & Desktop Solutions, Chair: F. De Turck

- On Energy-Awareness for Peer-assisted Streaming with Set-Top Boxes, *Konstantin Pussep, Sebastian Kaune, Osama Abboud, Christian Huff, Ralf Steinmetz*
- Integration of a Power/Workload Control System into IT Management Architecture, *Sven Graupner, Daniel Gmach*
- Integration of PXE-based Desktop Solutions into Broadband Access Networks, *Tiago Cruz, Paulo Simoes, Fernando Bastos, Edmundo Monteiro*

12:30-1:45 Lunch [The Keg, Level-9]

13:45-15:15 [Salon BC] Technical Session 9: Intradomain Management, Chair: Rolf Stadler

- Federation Computing: A Pragmatic Approach for the Future Internet, *Christos Tranoris, Spyridon Denazis*
- Joint Analysis of Network Incidents and Intradomain Routing Changes, *Amelie Medem, Renata Teixeira, Nick Feamster, Mickael Meulle*
- An Architecture for P2P Locality in Managed Networks Using Hierarchical Trackers, *Charles Miers, Marcos Simplicio, Walter Goya, Tereza Carvalho, Victor Souza*

15:15-16:00 [Salon A] Poster Session 6 and Break

16:00-17:30 [Salon BC] Panel: Cloud computing management: where next?

- Moderators: *Thierry Coupaye & Prosper Chemouil*
Panel Members: Marcus Brunner, Jonathan Bryce, Michelle Sibilla, Vanish Talwar

17:30-17:45 [Salon BC] Closing Ceremony

Committee Meetings at CNSM 2010

* CNSM Steering Committee Meeting (Keg):	Monday, October 25	12:45 - 13:30
* CNOM / IFIP WG6.6 Meeting (Salon BC):	Monday, October 25	17:45 - 18:30
* TNSM Editorial Board Meeting (Salon BC):	Tuesday, October 26	17:15 - 18:15
* NISC Steering Committee Meeting (Keg):	Wednesday, October 27	12:45 - 13:30
* IM 2011 TPC Meeting (Fallsview):	Wednesday, October 27	14:00 - 18:00
	Thursday, October 28	9:00 - 18:00
* IM 2011 OC Meeting (Fallsview):	Thursday, October 28	18:00 - 20:00

PROGRAM-AT-A-GLANCE

Sunday, 24 October 2010			
18:00 — 20:00	Reception [Fallsview, Level-9]		
Monday, 25 October 2010			
08:45 — 09:00	Introduction [Salon BC]		
09:00 — 10:00	Keynote [Salon BC]		
10:00 — 11:00	Poster S-1 and Break [Salon A]		
11:00 — 12:30	Technical S-1: Cloud Management [Salon BC]		
12:30 — 13:45	Lunch [The Keg, Level-9]		
13:45 — 15:15	Technical S-2: IT Service Management [Salon BC]		
15:15 — 16:15	Poster S-2 and Break [Salon A]		
16:15 — 17:45	Technical S-3: Risk and Security Management [Salon BC]		
Tuesday, 26 October 2010			
09:00 — 10:00	Keynote [Salon BC]		
10:00 — 11:00	Poster S-3 and Break [Salon A]		
11:00 — 12:30	Technical S-4: Policy Management [Salon BC]		
12:30 — 13:45	Lunch [The Keg, Level-9]		
13:45 — 15:15	Technical S-5: Energy Management [Salon BC]		
15:15 — 16:15	Poster S-4 and Break [Salon A]		
16:15 — 17:45	Technical S-6: Enterprise Management [Salon BC]		
18:00 — 21:00	Social Event [Peller Estates, Niagara-on-the-Lake]		
Wednesday, 27 October 2010			
08:30 — 10:00	Technical S-7: Fault and Intrusion Detection Management [Salon BC]		
10:00 — 11:00	Poster S-5 and Break [Salon A]		
11:00 — 12:30	Technical S-8: Energy and Desktop Solutions [Salon BC]		
12:30 — 13:45	Lunch [The Keg, Level-9]		
13:45 — 15:15	Technical S-9: Intra-domain Management [Salon BC]		
15:15 — 16:00	Poster S-6 and Break [Salon A]		
16:00 — 17:30	Panel: Cloud Computing Management: Where Next? [Salon BC]		
17:30 — 17:45	Closing Ceremony [Salon BC]		
Thursday, 28 October 2010			
09:00 — 10:30	Mini-Conference S-1 [Salon C]	NEMA: S-1 [Salon B]	MACE: S-1 [Salon A]
11:00 — 12:30	Mini-Conference S-2 [Salon C]	NEMA: S-2 [Salon B]	MACE: S-2 [Salon A]
12:30 — 14:00	Lunch [The Keg, Level-9]		
14:00 — 15:30	Mini-Conference S-3 [Salon C]	NEMA: S-3 [Salon B]	MACE: S-3 [Salon A]
16:00 — 17:30	Mini-Conference S-4 [Salon C]	NEMA: S-4 [Salon B]	MACE: S-4 [Salon A]
Friday, 29 October 2010			
09:00 — 10:30	Tutorial: S-1 [Salon B]	SVM: S-1 [Salon A]	
11:00 — 12:30	Tutorial: S-2 [Salon B]	SVM: S-2 [Salon A]	
12:30 — 14:00	Lunch [The Keg, Level-9]		
14:00 — 15:30	Tutorial: S-3 [Salon B]	SVM: S-3 [Salon A]	
16:00 — 17:30	Tutorial: S-4 [Salon B]	SVM: S-4 [Salon A]	

KEYNOTE - 1, October 25, 9:00 – 10:00

Title: IT Service Management and Delivery for an Enterprise

Speaker: Maheswaran Surendra, IBM



Abstract: In this talk we present an overview of IT from the Service Delivery perspective. While this includes the typical considerations of systems management, it does introduce new considerations especially from an IT Service Provider perspective, including how to manage service transition and steady-state, with a focus on continual improvement for productivity and quality. We discuss factory based approaches to standardize delivery processes, supporting metrics and the appropriate introduction of automation. Challenges for a service provider range from having a diverse client base with varying degrees of architectural control and expectations. Implications of the latter are important from the quality domain, where client anticipation of quality is different from the provider.

Bio: Maheswaran Surendra is the director of services management for IBM Research at the IBM TJ Watson Research Center, where he has responsibility for research and innovation initiatives in IT Services Management and Delivery. He has been with IBM Research since 1991, and been involved in a wide range of technology domains, including semiconductor manufacturing, IT systems management software and most recently, services management. Prior to joining IBM, he was at UC Berkeley, where he received a PhD in Chemical Engineering.

KEYNOTE - 2, October 26, 9:00 – 10:00

Title: Designing the Future Network

Speaker: Alberto Leon-Garcia, The University of Toronto, Canada



Abstract: In this talk, we present an overview of our research to design networks where new applications can be readily deployed on a converged pool of computing, communications, and storage resources that are managed by autonomic management systems. First we introduce the VANI (Virtualized Application Networking Infrastructure) platform for experimenting with networked systems and distributed applications. VANI enables the deployment of new network architectures by providing virtualized resources using service-oriented methods. In addition to computing, communications and storage resources, VANI also provides reprogrammable hardware resources that enable experimenting with hardware-based or hardware-accelerated networking algorithms and protocols. Next we discuss our efforts to develop an analytic framework, using our network criticality metric, for synthesizing autonomic resource management algorithms. We are also interested in the allocation of capacities to links in a network, the design of network topologies, and the dynamic control of virtual and physical network topologies to achieve communication goals, such as optimizing robustness. We will introduce the notion of network criticality, point out intriguing relationships to optimizations that occur in nature, and provide examples of design and control algorithms in a variety of network scenarios.

Bio: Alberto Leon-Garcia is a Fellow of the IEEE. In 2006, he received the Thomas Eadie Medal from the Royal Society of Canada and in 2010 he received the IEEE A. G. T. McNaughton Gold Medal. He holds a Canada Research Chair in Autonomic Service Architecture. From 1999 to 2002, he was founder and CTO of AcceLight Networks in Ottawa which developed an all-optical fabric multi-terabit, multiservice core switch. He holds several patents and has published research extensively in the areas of switch architecture and traffic management. Professor Leon-Garcia's current research interests are focused on application-oriented networking and autonomic resources management with a focus on enabling pervasive smart infrastructure. He is author of the leading textbooks: *Probability and Random Processes for Electrical Engineering*, and *Communication Networks: Fundamental Concepts and Key Architecture*.

CNSM POSTER SESSIONS

MONDAY, OCTOBER 25, 2010

10:00-11:00 Poster Session 1

[Salon A]

- Optimal Policy for Joint Call Admission Control in Next Generation Wireless Networks, *Rodolfo W. L. Coutinho, Vitor L. Coelho, Joao C. W. A. Costa, Glaucio H. S. Carvalho*
- Probability-based Fault Detection in Wireless Sensor Networks, *Ri-mao Huang, Xuesong Qiu, Lin-li Ye*
- Policy Exchange Information Model in Support of Cross-Domain Management, *Andrew J. Mayer, Xi Jiang, Stephen(Chris) McCarran, Hsin-Ping Chang*
- A Trust Model for Capability Delegation in Federated Policy Systems, *Kevin Feeney, Rob Brennan, Simon Foley*
- User-Controlled Automated Identity Delegation, *Thorsten Hoellrigl, Holger Kühner, Jochen Dinger, Hannes Hartenstein*
- Leveraging ESM Platforms For Continuous Mission-Oriented Assessment Of Information Assurance, *Amelia Fedyk, Michael Atighetchi, Partha Pal*
- Toward Business-driven Risk Management for Cloud Computing, *J. Oriol Fitó, Mario Macías, Jordi Guitart*
- The Improved method of query shared source for Multi-sink queries in wireless sensor networks, *Seyyed Yahya Nabavi, Karim Faez*
- User Identification in Encrypted Network Communications, *Robert Koch, Gabi Dreo Rodosek*
- A Framework for Context-Driven End-to-End QoS Control in Converged Networks, *S. Y. Yerima, G. P. Parr, C. Peoples, S. McClean, P. J. Morrow*
- Automated Management of Network Experiments and User Behavior Emulation on Large Scale Testbed Facilities, *Steven Latré, Wim Van de Meerssche, Stijn Melis, Dimitri Papadimitriou, Filip De Turck, Piet Demeester*

15:15-16:15 Poster Session 2

[Salon A]

- Using policies to drive autonomic management of virtual systems, *Michael Bauer, Delei Weng*
- Trust Management for Web Services, *Scott Stoller*
- Quality-Assured Provisioning of IPTV Services in Ethernet-Based Broadband Networks, *Ya-Shian Wang, Kuan-Hsiung Liang, Hey-Chyi Young, Shou-Yi Cheng, Mei-Chun Chen, Ya-Ping Huang*
- Sharing information about security alerts using Semantic Web Technologies, *Pilar Holgado, Jorge López de Vergara, Victor Villagrà, Iván Sanz, Antonio Amaya, Iván Sanz*
- IP Fast Reroute Control using Centralized Control Plane Architecture, *Shohei Kamamura, Takashi Miyamura, Kohei Shiimoto*
- An Iterative Information-Theoretic Approach to Estimate Traffic Matrix, *Ke Liu, Xuesong Qiu, Zhipeng Gao, Xingyu Chen, Shuying Chang, Yuan Pang*
- Policy-based Resource Management in Virtual Network Environment, *Takashi Miyamura, Shohei Kamamura, Kohei Shiimoto*
- An Efficient Data Circulation and Discovery Scheme in VANETs Using Public Transportation Systems, *Chyi-Ren Dow, Pa Hsuan, Yu-Hong Lee, Yi-Tung Lee, Ching-Yin Huang*
- MANET Network Management and Performance Monitoring for NHDP and OLSRv2, *Ulrich Herberg, Thomas Clausen, Robert Cole*

TUESDAY, OCTOBER 26, 2010

10:00-11:00 Poster Session 3

[Salon A]

- Approaches to Nodes Choosing Protocol Model for Collaborative MIMO Cellular Networks, *Xiaoxing Yu, Jing Feng*
- An Efficient Active Probing Approach Based On The Combination Of Online And Offline Strategies, *Likun Yu, Lu Cheng, Yan Qiao, Yiguo Yuan, Xingyu Chen*
- A Flow-based Anomaly Detection Method using Sketch and Combinations of Traffic Features, *Shuying Chang, Xuesong Qiu, Zhipeng Gao, Ke Liu, Feng Qi*
- Performance-aware Design and Optimization of Enterprise Applications, *Jan Schaefer, Markus Schmid, Marcus Thoss, Andreas Textor, Reinhold Kroeger, Andreas Roth*
- An Investigation on the Identification of VoIP traffic: Case Study on Gtalk and Skype, *Riyad Alshammari, A. Nur Zincir-Heywood*
- Towards a validation framework for dynamic reconfiguration, *Ludi Akue, Emmanuel Lavinal, Michelle Sibilla*
- Adaptive Admission Control of Distributed Cloud Services, *Nikolaos Leontiou, Dimitrios Dechouniotis, Spyros Denazis*
- CRAC: Confidentiality Risk Assessment and IT-Infrastructure Comparison, *Ayse Morali, Emmanuele Zambon, Sandro Etalle, Roel Wieringa*
- Pinpointing Patch Impact Test Targets Using Kernel Tracing, *K. Hori, K. Yoshihara*
- Towards large-scale programmable networks: lessons learned through the operation and the management of a wide-area OpenFlow-based network, *Yoshihiko Kanaumi, Shuichi Saito, Eiji Kawai*
- A Framework for Fuzzy based Web Service Discovery, *Mohammad Sadeghzadeh Hemayati, Mehran Mohsenzadeh, Mir Ali Seyyedi, Amin Yousefipour*
- Dynamic Policy Conflict Analysis for Collaborative Web Services, *Z. Wu, Yuanyao Liu*
- User-Preference-Based Service Selection Using Fuzzy Logic, *Zhengping Wu, Mu Yuan*

15:15-16:15 Poster Session 4

[Salon A]

- Cautious weight tuning for link-state routing, *Anders Gunnar, Mikael Johansson*
- Virtual Platform Support for QoS Management in IMS based Multiple Provider Networks, *Muhammad Shoaib Siddiqui, Choong Seon Hong, Young-Cheol Bang*
- Rule-based SLA Management for Revenue Maximisation in Cloud Computing Markets, *Mario Macias, Jordi Guitart, J. Oriol Fitó*
- Intrinsic Monitoring within an IPv6 Network: Mapping Node Specific information to Network Paths, *Lei Shi, Alan Davy, David Muldowney, Steven Davy, Edzard Hoefig*
- Real Time Distributed Monitoring of Services over IP, *Cormac Lullaly, Brian Lee, David Czesak*
- Difficulties of identifying application type in backbone traffic, *Kensuke Fukuda*
- Personalised Handoff Decision for Seamless Roaming in Next Generation of Wireless Networks, *Lekometsa Mokhesi, Antoine Bagula*
- Adopting Software Engineering practices to Network Processor, *Evangelos Haleplidis, Christos Tranoris, Spyridon Denazis, Odysseas Koufopavlou*

WEDNESDAY, OCTOBER 27, 2010

10:00-11:00 Poster Session 5

[Salon A]

- Towards Automatic and Independent Internet Services Configuration, *Miguel Lopes, Bruno Dias, Antonio Costa*
- Identity-Bound Accounting, *Seppo Heikkinen, Santeri Siltala*
- Performance evaluation of an architecture for localized IP mobility management, *Javier Carmona-Murillo, José Luis González-Sánchez, Francisco-Javier Rodríguez-Perz*

- Botnet Master Detection Using a Mashup-based Approach, *Carlos Raniery P. dos Santos, Rafael Santos Bezerra, Joao Marcelo Ceron, Lisandro Zambenedetti Granville, Liane M. R. Tarouco*
- Scheduling Service Workflows for Cost Optimization in Hybrid Clouds, *Luiz F. Bittencourt, Carlos R. Senna, Edmundo R.M. Madeira*
- A Service Oriented Architecture for achieving QoS-aware Workflow Management in Virtualized Environments, *Spyridon V. Gogouvis, Kleopatra Konstanteli, George Kousiouris, Gregory Katsaros, Dimosthenis Kyriazis, Theodora Varvarigou*
- Dispatch Tooling for Global Service Delivery, *David Loewenstern, Melissa Buco, Yixin Diao, Heiko Ludwig, Christopher Ward*
- Towards Non-expert Users Monitoring Networks and Services through Semantically Enhanced Visualizations, *Owen Conlan, John Keeney, Cormac Hampson, F. P. Williams*
- Moving Core Services to the Edge in NGNs for Reducing Managed Infrastructure Size, *Roberto Baldoni, Roberto Beraldi, Giorgia Lodi, Marco Platania, Leonardo Querzoni*

15:15-16:00 Poster Session 6

[Salon A]

- Domain-wide Scheduling of OSPF Graceful Restarts for Maintenance Purposes, *Samir Ghamri-Doudane, Laurent Ciavaglia*
- Aligning Infrastructure and Business Processes using Watermarks, *Heiko Ludwig, Kamal Bhattacharya, Rick Sheftic, Mike Nidd, Michael Moser, Andreas Kind*
- Adaptive Context Monitoring in Heterogeneous Environments, *Dineshbalu Balakrishnan, Amiya Nayak*
- Evaluating Impact of Manageability Features on Device Performance, *Jacob Leverich, Vanish Talwar, Partha Ranganathan, Christos Kozyrakis*
- Machine Learning based Call Admission Control Approaches: A Comparative Study, *Abul Bashar, Gerard Parr, Sally McClean, Bryan Scotney*
- Semantic Scheduling of Active Measurements for meeting Network Monitoring Objectives, *Prasad Calyam, Lakshmi Kumarasamy, Fusun Ozguner*
- A Distributed Relay Selection Algorithm for Cognitive Ad-Hoc Networks, *Ali Daneshmand, Li Yun, Ruifeng Zhang, Xiaohu You, Chonggang Wang*
- An Automated Roll-Back Plan to IT Change Management Tool, *Denilson Oliveira, Raimir Holanda Filho*
- A Network Service Platform Providing Stable QoS Based on Dynamic Allocation of Distributed Components, *Kazuhiko Kinoshita, Naosuke Yokoe, Yusuke Hirota, Hideki Tode, Koso Murakami*

CNSM MINI-CONFERENCE 2010

THURSDAY, OCTOBER 28, 2010

[Salon C]

9:00-10:30 MC Session 1: Intrusion & Security Management, Chair: Lisandro Granville

- Network IDS Alert Classification with Frequent Itemset Mining and Data Clustering, *Risto Vaarandi, Karlis Podins*
- A Framework for Self-Configuration on WMNs Aware of Performance and Security Issues, *Helber da Silva, Raimir Holanda, Aldri dos Santos, Michele Nogueira*
- Game-Theory driven monitoring of spatial-aggregated IP-Flow records, *Cynthia Wagner, Gerard Wagener, Radu State, Alexandre Dulaunoy*
- A Performance view on DNSSEC migration, *Daniel Migault, Cedric Girard, M. Laurent*

10:30-11:00 Break

11:00-12:30 MC Session 2: Services and Fault Management, Chair: Yoshiaki Kiriha

- Cross-Domain Service Management for Enabling Domain Autonomy in a Federated SOA, *Ignacio Silva-Lepe, Isabelle Rouvellou, Rahul Akolkar, Arun Iyengar*
- An Aggregation Scheme for the Optimisation of Service Search in Peer-to-Peer Overlays, *Adriano Fiorese, Paulo Simoes, Fernando Boavida*
- A Service Composition Approach for Inter-Domain Provisioning, *Fernando Matos, Alexandre Matos, Paulo Simoes, Edmundo Monteiro*
- Multi-domain fault management architecture based on a shared ontology-based knowledge plane, *Alfonso Castro, Lozano José, Beatriz Fuente, Begoña Costales, Victor Villagra*

12:30-14:00 Lunch (The Keg, Level-9)

14:00-15:30 MC Session 3: IP Operations, Multimedia Management and Sensor Networks, Chair: Victor Villagra

- A Neutral Layered Mapping System with Two-Stage Cache for a Scalable Internet, *Letong Sun, Xia Yin, Zhiliang Wang, Yang Xiang, Jianping Wu*
- Fast Failure Recovery for Reliable Multicast-based Content Delivery, *Ning Wang, Binbin Dong*
- Distortion Optimization in Enriched Video Traces for End-to-End Video Quality Enhancement, *Araz Jahaniaval, Dalia Fayek, Ryan Brown*
- Information-Based Sensor Tasking Wireless Body Sensor Networks in Healthcare Systems, *Hui Wang, Hyek-soo Choi, Nazim Agoulmine, M. Jamal Deen, James Hong*

15:30-16:00 Break

16:00-17:00 MC Session 4: Management of Grids, Chair: Brad Simmons

- MobiGrid: A Middleware for Integrating Mobile Phone and Grid Computing, *Muthoni Masinde, Antoine Bagula, Victor Ndegwa*
- Optimal Demand-Side Energy Management Under Real-time Demand-Response Pricing, *Jin Xiao, Jae Yoon Chung, Jian Li, Raouf Boutaba, James Hong*

MACE 2010 WORKSHOP

THURSDAY, OCTOBER 28, 2010

[Salon A]

8:45-9:00 MACE opening: Rob Brennan, Joel Fleck II, Sven van der Meer, TPC Co-Chairs

9:00-10:30 Technical Session-1: Autonomics in Home Area Networks and Multimedia

- Design of a HAN Autonomic Control Loop, *Jesse Kielthy, Kevin Quinn, Raquel Toribio, Pablo Arozarena, Sidath Handurukande, Marc Garcia Mateos, Martin Zach*
- Towards Automated Analysis and Optimization of Multimedia Streaming Services Using Clustering and Semantic Techniques, *Liam Fallon, Yangcheng Huang, Declan O'Sullivan*
- The Design of a Quality of Experience Model for Providing High Quality Multimedia Services, *Arum Kwon, Joon-Myung Kang, Sin-seok Seo, Sung-Su Kim, Jae Yoon Chung, John Strassner, James Won-Ki Hong*

10:30-11:00 Break

11:00-12:30 Technical Session-2: Ontologies, Experience, Adaptive Systems and Federation

- An Ontology-Driven Semantic Bus for Autonomic Communication Elements, *Jeroen Famaey, Steven Latré, John Strassner, Filip De Turck*

- Towards a Service Delivery based on Customer eXperience Ontology: Shift from Service to eXperience, *Khalil ur Rehman Laghari, Imen Grida Ben Yahya, Noel Crespi*
- An Architecture for Affective Management of Systems of Adaptive Systems, *Kevin Feeney, John Keeney, Rob Brennan, Declan O'Sullivan*
- A Policy Authoring Process and DEN-ng Model Extension for Federation Governance, *Jason Barron, Steven Davy, Brendan Jennings, John Strassner*

12:30-14:00 Lunch (The Keg, Level-9)

14:00-15:30 The interrupted session: Inter-domain and federated Modelling

Chair: Joel Fleck II

15:30-16:00 Break

16:00-17:30 Technical Session-3: Modelling for Virtualised Infrastructure

- An introduction to network stack design using software design patterns, *Patrick Phelan, Zohra Boudjemil, Miguel Ponce de Leon, Sven van der Meer*
- Towards a Context-Aware Information Model for Provisioning & Managing Virtual Resources and Services, *Yeongrak Choi, Jian Li, Yoonseon Han, John Strassner, James Won-Ki Hong*
- A framework for automated fault recovery planning in large-scale virtualized infrastructures, *Feng Liu, Vitalian A. Danciu, Pavlo Kerestey*
- MACE Closing: Rob Brennan, Joel Fleck II, Sven van der Meer, MACE 2010 TPC Co-Chairs

NEMA 2010 WORKSHOP

THURSDAY, OCTOBER 28, 2010

[Salon B]

9:00-10:30 Welcome & Keynote: Pradeep Katheil

CTO, Network Software and Solutions Technology Group, Cisco

10:30-11:00 Break

11:00-12:30 Technical Session-1: NEMA Enablers

- Challenges and Experiences in Transitioning Management Instrumentation from Command-Oriented to Model-Driven, *Sean McGuinness, Jung Tjong, Prakash Bettadapur*
- A Low Power, Programmable Network Platform and Development environment, *Pál Varga, István Moldován, Dániel Horváth, Sándor Plósz*
- Application Framework for Programmable Network Control, *Rudolf Strijkers, Mihai Cristea, Cees de Laat, Robert Meijer*

12:30-14:00 Lunch (The Keg, Level-9)

14:00-15:30 Technical Session-2: NEMA Applications

- Facilitating Adaptive Placement of Management and Control Functions in Converged ICT Systems, *Dominique Dudkowski, Marcus Brunner*
- Wire-Speed Hardware-Assisted Traffic Filtering with Mainstream Network Adapters, *Luca Deri, Joseph Gasparakis, Peter Waskiewicz Jr, Francesco Fusco*
- Embedded Rule-based Management for Content-based DTNs, *Jorge Visca, Guillermo Apollonia, Matias Richart, Javier Baliosian, Eduardo Grampin*

15:30-16:00 Break

16:00-17:30 Panel: Modelling for Virtualised Infrastructure Programmable Networking Platforms: Jacks of All Trades or Master of None?

- Panel Moderator: *Ralf Wolter*
- Panelists: *Marcus Brunner, Lisandro Granville, Bruno Klauser, Burkhard Stiller*

Closing remarks

SVM 2010 WORKSHOP

FRIDAY, OCTOBER 29, 2010

[Salon A]

9:00-9:15 Opening Remarks

9:15-10:00 Keynote Speaker: Winston Bumpus, VMware, Inc.

Title: DMTF Standards – Building Blocks for Cloud Management Interoperability

10:00-10:30 Technical Session-1

- Open source integrated remote systems and network management with OpenRSM, *Michalis Kalochristianakis and Manos Varvarigso*

10:30-11:00 Break

11:00-12:30 Technical Session-2

- Managing polling adaptability in a CIM/WBEM infrastructure, *Audrey Moui, Thierry Desprats, Emmanuel Lavinal, Michelle Sibilla*
- A Model-Based Proxy for Unified IaaS Management, *Shixing Yan, Bu Sung Lee, Sharad Singhal*
- Towards end-to-end management of network QoS in virtualized infrastructures, *Martin G. Metzker, Vitalian A. Danciu*

12:30-14:00 Lunch

14:00-15:30 Technical Session-3

- High-performance aspects in virtualized infrastructures, *Vitalian A. Danciu, Nils gentschen Felde, Dieter Kranzlmüller, Tobias Lindinger*
- Managing Dynamic Memory Allocations in a Cloud through Golondrina, *Alexander Pokluda, Gaston Keller, Hanan Lutfiyya*
- VMM-Level Distributed Transparency Provisioning Using Cloud Infrastructure Technology, *Mahsa Najafzadeh, Hadi Salimi, Mohsen Sharifi, Ali Hamidi*

15:30-16:00 Break

16:00-16:30 Technical Session-4

- Security Management interoperability challenges for Collaborative Clouds, *Michael Kretzschmar and Sebastian Hanigk*

16:30-17:30 Closing panel

CNSM TUTORIAL

FRIDAY, OCTOBER 29, 2010

[Salon B]

9:00-10:30 Control Theory

The focus is on techniques that can be used to develop models for changing tuning parameters and how these models are used in management controllers.

Speaker: Xiaoyun Zhu, VMware Inc., USA

11:30-12:30 Optimization Models

The focus is on the formulation of an optimization model for network and cloud management problems, and tools that can be used to solve these problems.

Speaker: Asser N. Tantawi, IBM T.J. Watson Research Center, USA

14:00-15:30 Machine Learning

The focus is on machine learning techniques useful in making effective decisions based on previous behaviour of the system.

Speaker: Paul Ward, University of Waterloo, Canada

16:00-17:30 Performance Models

The focus is on how to develop performance models for flow-based architectures.

Speaker: Ravi Mazumdar, University of Waterloo, Canada



7th International Conference on Network and Service Management

Join us in Paris next Autumn!

Born from the highly successful MANWEEK series of events, CNSM is the premier annual conference in the general area of network and services management. It provides a forum for presenting and discussing the latest innovations, results and developments in managing networks, pervasive systems, enterprise and cloud environments. It is a single track, highly-selective conference attended by foremost experts in this area from academia, industry and government. In addition to the main conference, the programme also comprises several workshops for more focussed discussions. Network and service management is a broad area ranging from management of body area networks and sensor systems to large scale enterprise and cloud environments and addressing issues that range from fault management and resilience to performance optimisation, self-management, visualization

and multi-media. Topics of interest include, but are not limited to:

Management Concerns

- Monitoring, correlation and diagnosis
- Fault management and reconfiguration
- Resource allocation and optimisation
- Configuration and Accounting
- Security Management, Trust and Privacy
- Power Management and Efficiency
- Smart Grids
- QoS Management
- Business Impact Analysis

Network Management

- IP Operations and Management
- Broadband Access Networks
- Overlay and Virtual Networks
- Wireless and Mobile Networks
- Next-Generation Networks

Management and adaptation in:

- Management of Cyber-Physical Systems
- Sensor networks, opportunistic and mobile ad-hoc networks



- Pervasive systems including Body Area Networks, Vehicular and Home Networks
- Cloud computing and Grid Environments
- Enterprise Systems and Federations


Management Techniques and New Paradigms

- Self-Management and adaptation
- Economic models for management
- Virtualisation
- Control theory and optimisation
- Biologically inspired algorithms
- Stochastic and non-deterministic models

Important Dates

Paper Registration	28 March
Paper Submission	4 April
Notification of Acceptance	8 July
Camera Ready Papers	5 August



General Chairs: Prosper Chemoui, Orange Labs
Ahmed Mehaoua, Université Paris Descartes

Program Co-chairs: Emil Lupu, Imperial College London
Olivier Festor, INRIA Nancy - Grand Est

Submission Instructions: Authors are invited to submit original contributions (written in English) in PDF format through the CNSM 2011 web site. Only original papers, not published or submitted for publication elsewhere can be submitted. Submissions will be limited to 8 pages (full papers) or 4 pages (short papers) in IEEE 2-column style. Papers exceeding these limits, multiple submissions, and self-plagiarized papers will be rejected without further review.

*application pending