

# **2012 IEEE 21st International Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises**

## **(WETICE 2012)**

**Toulouse, France  
25 – 27 June 2012**



IEEE Catalog Number: CFP12051-PRT  
ISBN: 978-1-4673-1888-4

# **2012 IEEE 21st International WETICE**

## **WETICE 2012**

### **Table of Contents**

<b>Message from the WETICE 2012 General</b>	
<b>Co-Chairs .....</b>	xiv
<b>Message from the WETICE 2012 Conference</b>	
<b>Co-Organizers .....</b>	xv
<b>WETICE 2012 Committees.....</b>	xvi
<b>Plenary Speaker Abstracts.....</b>	xviii
<b>ACEC Track Organizers.....</b>	xxiv
<b>AROSA Track Organizers.....</b>	xxv
<b>CAGing Track Organizers.....</b>	xxvi
<b>CDCGM Track Organizers.....</b>	xxvii
<b>CKDD Track Organizers.....</b>	xxviii
<b>CoMetS Track Organizers.....</b>	xxix
<b>COPECH Track Organizers.....</b>	xxx
<b>CPS Track Organizers.....</b>	xxxi
<b>CSP 2012 Track Organizers.....</b>	xxxii
<b>CT2CM Track Organizers.....</b>	xxxiii
<b>MADYNE Track Organizers.....</b>	xxxiv
<b>Web2Touch Track Organizers.....</b>	xxxv

---

## **ACEC: 10th Track on Adaptive Computing (and Agents) for Enhanced Collaboration**

<i>ACEC Track Report:</i> Adaptive Computing and Agent Approaches for Enhanced Collaboration .....	1
<i>Federico Bergenti, M. Brian Blake, Giacomo Cabri, and Usman Wajid</i>	
An Agent-Based Services Framework with Adaptive Monitoring in Cloud Environments .....	4
<i>Yi Wei and M. Brian Blake</i>	
Interactive Workflows with WADE .....	10
<i>Federico Bergenti, Giovanni Caire, and Danilo Gotta</i>	
A Context-Aware Agent-Based Approach for Deregulated Energy Market .....	16
<i>Nicola Capodieci, Emanuel Federico Alsina, and Giacomo Cabri</i>	
A Dynamic and Opportunistic Approach to Enhance Collaboration and Knowledge Dissemination Using Mobile Devices .....	22
<i>Diego da S. Souza, Pedro C. Silveira, Jonice Oliveira, and Jano M. de Souza</i>	

## **AROSA: 2nd Track on Adaptive and Reconfigurable Service-Oriented and Component-Based Applications and Architectures**

<i>AROSA Track Report:</i> Adaptive and Reconfigurable Service-Oriented and Component-Based Applications and Architectures .....	28
<i>Mohmaed Jmaiel and Slim Kallel</i>	
Towards a Novel Analysis Approach for Collaborative Ubiquitous Systems .....	30
<i>Nesrine Khabou and Ismael Bouassida Rodriguez</i>	
Data Mapping Web Services for Composite DaaS Mediation .....	36
<i>Mohamed Sellami, Walid Gaaloul, and Bruno Defude</i>	
A Formal Approach for the Validation of Web Service Orchestrations .....	42
<i>Hatem Hadj Kacem, Wael Sellami, and Ahmed Hadj Kacem</i>	
SOTA: Towards a General Model for Self-Adaptive Systems .....	48
<i>Dhaminda B. Abeywickrama, Nicola Bicocchi, and Franco Zambonelli</i>	
A Communication Middleware for Scalable Real-Time Mobile Collaboration .....	54
<i>Lincoln David, Rafael Vasconcelos, Lucas Alves, Rafael André, Gustavo Baptista, and Markus Endler</i>	
FRAMESELF: A Generic Context-Aware Autonomic Framework for Self-Management of Distributed Systems .....	60
<i>Mahdi Ben Alaya and Thierry Monteil</i>	

Safe Stopping of Running Component-Based Distributed Systems: Challenges and Research Gaps .....	66
<i>Mohammad Ghafari, Pooyan Jamshidi, Saeed Shahbazi, and Hassan Haghghi</i>	
AODA: An Autonomic and Ontology-Driven Architecture for Service-Oriented and Event-Driven Systems .....	72
<i>Ghada Gharbi, Mahdi Ben Alaya, Codé Diop, and Ernesto Exposito</i>	
An MDE-Based Approach for Reconfigurable DRE Systems .....	78
<i>Fatma Krichen, Amal Ghorbel, Brahim Hamid, and Bechir Zalila</i>	
Prediction of Cloud Environment Characteristics to Satisfy User Requirements in Service Compositions .....	84
<i>Youssef Ben Halima, Yassine Jamoussi, Henda Ben Ghezala, and Samir Tata</i>	
Towards Planning Policies for Self-Adaptive Orchestrated Web Services .....	92
<i>Soumaya Marzouk and Afef Jmal Maâlej</i>	
DRF4SOA: A Dynamic Reconfigurable Framework for Designing Autonomic Application Based on SOA .....	95
<i>Emna Mezghani and Riadh Ben Halima</i>	
Failure Prediction for Publish/Subscribe System on MANET .....	98
<i>Imene Lahyani, Wafa Makki, and Christophe Chassot</i>	
Coordination and Task Division in Robot Ensembles: Perimeter Sweep Case Study .....	101
<i>Nicola Capodieci and Giacomo Cabri</i>	
Ontology-Based Collaborative Framework for Disaster Recovery Scenarios .....	104
<i>Sakkaravarthi Ramanathan, Aymen Kamoun, and Christophe Chassot</i>	

## **CAGing: Track on Collaborative and Autonomic Green Computing**

<i>CAGing Track Report:</i> Collaborative and Autonomic Green Computing .....	107
<i>Jean-Marc Pierson and Thierry Monteil</i>	
A Workload Prediction Based Controller for Energy-Efficient Resource Allocation in Virtualized Data Centers .....	109
<i>Adrian Cosinschi, Cristian Botau, Tudor Cioara, Ionut Anghel, and Ioan Salomie</i>	
Optimal Energy Consumption and Throughput for Workflow Applications on Distributed Architectures .....	115
<i>Abdallah Ben Othman, Jean-Marc Nicod, Laurent Philippe, and Veronika Rehn-Sonigo</i>	

## **CDCGM: 2nd Track on Convergence of Distributed Clouds, Grids and Their Management—A Combined Track of the 4th CCC and the 9th ETNGRID**

<i>CDCGM Track Report: Convergence of Distributed Clouds, Grids and Their Management</i> .....	121
<i>Rao Mikkilineni and Giovanni Morana</i>	
Computing Models for Distributed Autonomic Clouds and Grids in the Context of the DIME Network Architecture .....	125
<i>Eugene Eberbach, Rao Mikkilineni, and Giovanni Morana</i>	
Implementing Managed Loosely-Coupled Distributed Business Processes: A New Approach Using DIME Networks .....	131
<i>Pankaj Goyal and Rao Mikkilineni</i>	
Cloud-Based Concurrent Simulation at Work: Fast Performance Prediction of Parallel Programs .....	137
<i>Massimiliano Rak, Antonio Cuomo, and Umberto Villano</i>	
Decentralised Resource Finding in Cloud/Grid Computing Environments: A Performance Evaluation .....	143
<i>Fabrizio Messina, Giuseppe Pappalardo, and Corrado Santoro</i>	
A Novel Approach to Effective Parallel Computing of t-Wise Covering Arrays .....	149
<i>Andrea Calvagna, Giuseppe Pappalardo, and Emiliano Tramontana</i>	
Mobile Service Micro-containers for Cloud Environments .....	154
<i>Aya Omezzine, Sami Yangu, Narjes Bellamine, and Samir Tata</i>	
Approximate Placement of Service-Based Applications in Hybrid Clouds .....	161
<i>Faouzi Ben Charrada, Nourhene Tebourski, Samir Tata, and Samir Moalla</i>	
AVU-GSR Gaia Mission: A Hybrid Solution for HPC and Grid-MPI Infrastructures .....	167
<i>M. Bandieramonte, U. Becciani, A. Vecchiato, M. Lattanzi, and B. Bucciarelli</i>	
File System As-a-Service: Providing Transient and Consistent Views of Files to Cooperating Applications in Clouds .....	173
<i>M. Di Sano, A. Di Stefano, G. Morana, and D. Zito</i>	
Augmenting a Web Server with QoS by Means of an Aspect-Oriented Architecture .....	179
<i>Rosario Giunta, Fabrizio Messina, Giuseppe Pappalardo, and Emiliano Tramontana</i>	
Incentivising Resource Sharing in Social Clouds .....	185
<i>Magdalena Punceva, Ivan Rodero, Manish Parashar, Omer F. Rana, and Ioan Petri</i>	
Personal Knowledge Advantage Machine: Pervasive Methods for Semantic Information Retrieval .....	191
<i>F. Desjardins, R. Moparthi, S. Vangala, L. Wang, R. Reddy, and S. Reddy</i>	

Galaxy Workflow Integration on Garuda Grid .....	194
<i>Karuna, Mangala N, Janaki Ch, Shashi S, and Subrata C</i>	

## **CKDD: 3rd Track on Cooperative Knowledge Discovery and Data Mining**

<i>CKDD Track Report:</i> Cooperative Knowledge Discovery and Data Mining .....	197
<i>M. Tahar Kechadi and Ilias K. Savvas</i>	
An Ontology for Workflow Organizational Model Mining .....	199
<i>Rami Sellami, Walid Gaaloul, and Samir Moalla</i>	
ARCMA: An Approach to Find Complex Matching between Conceptual Hierarchies .....	205
<i>Fatma Kaâbi and Faiez Gargouri</i>	

## **CoMetS: 3rd Track on Collaborative Modeling and Simulation**

<i>CoMetS Track Report:</i> 3rd Track on Collaborative Modeling and Simulation .....	211
<i>Daniele Gianni, Andrea D'Ambrogio, Joachim Fuchs, and Giuseppe Iazeolla</i>	
A Vision on Collaborative Computation of Things for Personalized Analyses .....	214
<i>Justyna Zander</i>	
Simulation-Assisted Elicitation and Validation of Behavioral Specifications for Multiple Stakeholders .....	220
<i>Gregor Gabrysiak, Regina Hebig, and Holger Giese</i>	
An Integrated Modeling Framework for Routing of Hazardous Materials .....	226
<i>Konstantinos Kokkinos, Eleftherios Papadopoulos, Nicholas Samaras, and Kostas Chaikalis</i>	
A Framework for Distributed Control and Building Performance Simulation .....	232
<i>Azzedine Yahiaoui and Abd-El-Kader Sahraoui</i>	
DDML: A Support for Communication in M&S .....	238
<i>Oumar Maïga, Ufuoma Bright Ighoroje, and Mamadou Kaba Traoré</i>	
Collaborative Development and Cataloging of Simulation and Calculation Models for Space Systems .....	244
<i>Daniel Lüdtke, Jean-Sébastien Ardaens, Meenakshi Deshmukh, Rosa Paris Lopez, Andy Braukhane, Ivanka Pelivan, Stephan Theil, and Andreas Gerndt</i>	
Modules for Reusable and Collaborative Modelling of Biological Mathematical Systems .....	250
<i>Mandeep Gill, Steve McKeever, and David Gavaghan</i>	
A Collaborative Environment for Urban Landscape Simulation .....	256
<i>Pedro Brandão Silva, António Coelho, and Rosaldo J.F. Rossetti</i>	

Advanced Validation of Overall Spacecraft Behaviour Concept Using a Collaborative Modelling and Simulation Approach .....	262
<i>Ana Rugina, Cristiano Leorato, and Elena Tremolizzo</i>	
Integrated Modeling and Simulation Framework for Wireless Sensor Networks .....	268
<i>Baobing Wang and John S. Baras</i>	
Collaborative Business Process Modeling Approaches: A Review .....	274
<i>Saiqa Aleem, Sanja Lazarova-Molnar, and Nader Mohamed</i>	
Collaborative Modelling and Co-simulation with DESTECS: A Pilot Study .....	280
<i>Ken Pierce, Carl Gamble, Yunyun Ni, and Jan F. Broenink</i>	
A Package System for Maintaining Large Model Distributions in VLE Software .....	286
<i>Gauthier Quesnel and Ronan Trépos</i>	
System Model Optimization through Functional Models Execution: Methodology and Application to System-Level Analysis .....	292
<i>Francesco Becherini, Michele Cencetti, and Mauro Pasquinelli</i>	

## **COPECH: 3rd Track on Collaboration Tools for Preservation of Environment and Cultural Heritage**

COPECH Track Report: Collaboration Tools for Preservation of Environment and Cultural Heritage .....	298
<i>Michele Angelaccio and Berta Buttarazzi</i>	
An Introduction to the Regional Italian Project ProSisMu Devoted to the Seismic Protection of Ancient Masonry Structures .....	300
<i>Michela Basili</i>	
Wireless Sensor Network for Automatic Diagnosis of Structural Damage .....	306
<i>Kenji Oguni and Hirotaka Ikeda</i>	
Smart and Mobile Access to Cultural Heritage Resources: A Case Study on Ancient Italian Renaissance Villas .....	310
<i>Michele Angelaccio, Alessandra Basili, Berta Buttarazzi, and Walter Liguori</i>	

## **CPS: 2nd Track on Cyber Physical Society with SOA, BPM and Sensor Networks**

CPS Track Report: 2nd Track on Cyber Physical Society with SOA, BPM and Sensor Networks .....	315
<i>Zhangbing Zhou, Walid Gaaloul, Wei Tan, and Daqiang Zhang</i>	
Managing Resources in Internet of Things with Semantic Hyper-Network Model .....	318
<i>Junsheng Zhang and Yunchuan Sun</i>	
An Efficient Lazy SMT Solver for Nonlinear Numerical Constraints .....	324
<i>Xiaohui Ji and Feifei Ma</i>	

Message Dissemination in Delay-Tolerant Networks with Probabilistic Encounters .....	330
<i>Jianwei Niu, Yazhi Liu, and Lei Shu</i>	
DC-Tree: Density-Based Clustering Index for Objects in Skewed Distribution .....	336
<i>Jine Tang, Dandan Li, Zhangbing Zhou, Lei Shu, Daqiang Zhang, and Qun Wang</i>	

## **CSP 2012: 1st Track on Collaborative Software Processes**

<i>CSP Track Report:</i> 1st Track on Collaborative Software Processes .....	342
<i>Redouane Lbath</i>	
Collaborative Requirements Elicitation with Visualization Techniques .....	343
<i>Diogo Duarte, Carla Farinha, Miguel Mira da Silva, and Alberto Rodrigues da Silva</i>	

## **CT2CM: 2nd Track on Collaborative Technology for Coordinating Crisis Management**

<i>CT2CM Track Report:</i> Introduction to Collaborative Technology for Coordinating Crisis Management .....	349
<i>Chihab Hanachi, Francois Charoy, and Serge Stinckwich</i>	

## **Session: Collaboration and Agility**

Collaborative Serious Games for Crisis Management: An Overview .....	352
<i>Ines Di Loreto, Simone Mora, and Monica Divitini</i>	
Agile Response and Collaborative Agile Workflows .....	358
<i>Lisa Wood, Monika Buscher, Bernard van Veelen, and Sander van Splunter</i>	
Representing Experience on Road Accident Management .....	364
<i>Nada Matta, Sophie Loriette, Mohamed Sediri, Jean Marc Nigro, Yann Barloy, Jean Pierre Cahier, and Alain Hugerot</i>	

## **Session: Scale**

Inferring Crowd Conditions from Pedestrians' Location Traces for Real-Time Crowd Monitoring during City-Scale Mass Gatherings .....	367
<i>Martin Wirz, Tobias Franke, Daniel Roggen, Eve Mitleton-Kelly, Paul Lukowicz, and Gerhard Tröster</i>	
Supporting Crisis Management via Sub-event Detection in Social Networks .....	373
<i>Daniela Pohl, Abdelhamid Bouchachia, and Hermann Hellwagner</i>	
Multi-layer Crisis Mapping: A Social Media-Based Approach .....	379
<i>Babiga Birregah, Tony Top, Charles Perez, Eric Châtelet, Nada Matta, Marc Lemercier, and Hichem Snoussi</i>	

## **Session: Technology**

Towards Self Healing Publish/Subscribe System on MANET .....	385
<i>Imene Lahyani, Ismael Bouassida Rodriguez, Mohamed Jmaiel,     and Christophe Chassot</i>	
Adaptive Communication Agent for Crisis Management System .....	391
<i>Sakkaravarthi Ramanathan, Christophe Chassot, Thierry Desprats,     Michelle Sibilla, and Jean-Paul Arcangeli</i>	
Optimizing the Placement of Evacuation Signs on Road Network with Time and Casualties in Case of a Tsunami .....	394
<i>Thi Ngoc Anh Nguyen, Yann Chevaleyre, and Jean Daniel Zucker</i>	
Towards Building an Emergency Management System-of-Systems .....	397
<i>Houda Benali, Narjès Bellamine Ben Saoud, and Mohamed Ben Ahmed</i>	
Statistical Methods for Industrial Processes Risk Assessment .....	400
<i>Ladislav Novak and Maria Luskova</i>	

## **MADYNE: 1st Track on Management of Dynamic Networked Enterprises**

<i>MADYNE Track Report: 1st Track on Management of Dynamic Networked Enterprises .....</i>	403
<i>Said Tazi and Nawal Guermouche</i>	
The Sender Released Pattern: An SOA Design Pattern for Inter-service Message Exchange .....	405
<i>Imen Tounsi, Mohamed Hadj Kacem, Ahmed Hadj Kacem, and Khalil Drira</i>	
A Comprehensive Survey on Intra and Inter Organizational Agreements .....	411
<i>Ikbel Guidara, Tarak Chaari, Kaouthar Fakhfakh, and Mohamed Jmaiel</i>	
QoS-Aware and Ontology-Driven Autonomic Service Bus .....	417
<i>Codé Diop, Ernesto Exposito, Christophe Chassot, and Dalel Jlidi</i>	
Position Paper: An Integration Approach of Service Composition Models: From Choreography to Orchestration .....	423
<i>Sirine Rebai, Hatem Hadj Kacem, and Ahmed Hadj Kacem</i>	
BpelVT: A Tool for Formal Validation of Web Service Orchestrations .....	426
<i>Wael Sellami, Hatem Hadj Kacem, and Ahmed Hadj Kacem</i>	

# **Web2Touch: 5th Track on Modeling the Collaborative Web Knowledge Conference**

<i>Web2Touch Track Report:</i> 5th Track on Modeling the Collaborative Web Knowledge .....	429
<i>Olga Nabuco, Rodrigo Bonacin, Mariagrazia Fugini, and Marcos Renato da Silveira</i>	
Clinical Eye: A Tool for Augmented Browsing in the Health Domain .....	432
<i>Taciana Cruz and Olga Nabuco</i>	
Fine-Grained Filtering of Data Providing Web Services with XACML .....	438
<i>Kevin P. Brown, Michael A. Hayes, David S. Allison, Miriam A.M. Capretz, and Rupinder Mann</i>	
An Ontological Model for Representing Pragmatic Aspects of Collaborative Problem Solving .....	444
<i>Rodrigo Bonacin, Julio Cesar Dos Reis, Heiko Hornung, and M. Cecília C. Baranauskas</i>	
An Ontology-Based Approach for Linguistic Web Service Description .....	450
<i>Nabil Baklouti, Bilel Gargouri, and Mohamed Jmaiel</i>	
Visual Distinctive Language: Using a Hypertopic-Based Iconic Tagging System for Knowledge Sharing .....	456
<i>Xiaoyue Ma and Jean-Pierre Cahier</i>	
Web 2.0 Technologies Empowering Spatial Decision Making .....	462
<i>Nicoletta Dessim, Gianfranco Garau, and Barbara Pes</i>	
Use of Twitter and Semantic Resource Recovery in the Educational Context .....	468
<i>Renan Rodrigues de Oliveira, Fábio Moreira Costa, Cedric Luiz de Carvalho, Ana Paula Ambrósio, and Evandro Carrijo Taquary</i>	
Methodology for Green Certificates of Service Applications .....	474
<i>Mariagrazia Fugini and José Antonio Parejo Maestre</i>	
Using the Semantic Web and Web Apps to Connect Radiologists and Oncologists .....	480
<i>Kleberson A. Serique, Alan Snyder, Debra Willrett, Daniel L. Rubin, and Dilvan A. Moreira</i>	
<b>Author Index .....</b>	<b>486</b>