

2009 International Symposium on Collaborative Technologies and Systems

(CTS)

**Baltimore, Maryland, USA
18 – 22 May 2009**



IEEE Catalog Number: CFP0916A-PRT
ISBN: 978-1-4244-4584-4

Table of Contents

CTS 2009 TECHNICAL PAPERS

A Decision Support Ontology for Collaborative Decision making in Engineering Design	1
<i>J. Rockwell, I.R. Grosse, S. Krishnamurty, and J.C. Wileden</i> (University of Massachusetts - Amherst, Massachusetts, USA)	
Ontology based Dependency Analysis: Understanding the Impacts of Decisions in a Collaborative Environment	10
<i>Brian Drabble, Tim Black, Chris Kinzig, and Gary Whitted</i> (On Target Technologies, Inc., OR, and Ball Aerospace, Ohio, USA)	
A Goal Oriented Feature Selection for Collaborative GIS	18
<i>Claudia Diamantini, Alberto Gemelli, Domenico Potena</i> (Università Politecnica delle Marche, Ancona, Italy)	
InCOA: Human-Machine-Human Collaboration in Sketch-Based Mission Planning	26
<i>Matthew Greenberg, Alden Roberts, Gary Edwards, Paul Barros, and Steven Fierro</i> (Lockheed Martin Advanced Technology Laboratories, California, USA)	
Web Feature Service (WFS) and Sensor Observation Service (SOS) Comparison to Publish Time Series Data	36
<i>Luis Bermudez, Tony Cook, David Forest, Philip Bogden, Charlton Galvarino, John Graybeal, Eric Bridger, and Gerry Creager</i> (Southeastern Universities Research Association, Texas A&M University, Virginia Institute of Marine Science, Gulf of Maine Ocean Observing System, Second Creek Consulting, LLC, and Monterey Bay Aquarium Research Institute, USA)	
SemSOS: Semantic Sensor Observation Service	44
<i>Cory A. Henson, Josh K. Pschorr, Amit P. Sheth, and Krishnaprasad Thirunarayan</i> (Kno.e.sis Center, Wright State University, Ohio, USA)	
A New Framework for On-Demand Virtualization, Repurposing and Fusion of Heterogeneous Sensors	54
<i>Yong Liu, David Hill, Alejandro Rodriguez, Luigi Marini, Rob Kooper, James Myers, Xiaowen Wu, and Barbara Minsker</i> (National Center for Supercomputing Applications and Department of Civil and Environmental Engineering, University of Illinois at Urbana Champaign (UIUC), Illinois, USA)	
PULSENet™: An Implementation of Sensor Web Standards	64
<i>Scott M. Fairgrieve, John A. Makuch, and Stefan R. Falke</i> (Northrop Grumman, USA)	
Improved Decision Support System (IDSS) Transforming the Smart Network-Edge	76
<i>Yogesh Kalley</i> (CACI Federal Inc., USA)	

The SmartLab: Experimental and Environmental Control and Monitoring of the Chemistry Laboratory	85
<i>Stephen Wilson and Jeremy Frey</i> (School of Chemistry, University of Southampton, U.K.)	
The Importance of Trust in a Layered Sensing Construct (Workshop Keynote)	91
<i>Michael Nowak</i> (Air Force Research Laboratory, WPAFB, Ohio, USA)	
Trust Metrics	93
<i>John Erickson</i> (Air Force Research Laboratory, WPAFB, Ohio, USA)	
Trusted Query in Spatial and Temporal Correlated Wireless Sensor Networks	98
<i>Giovani Rimon Abulaitah and Bin Wang</i> (Wright State University, Ohio, USA)	
On Application of Game Theory for Understanding Trust in Networks	106
<i>Sang H. Chin</i> (Johns Hopkins University Applied Physics Laboratories, Maryland, USA)	
Situation Awareness via Abductive Reasoning from Semantic Sensor Data: A Preliminary Report	111
<i>Krishnaprasad Thirunarayan, Cory A. Henson, and Amit P. Sheth</i> (Kno.e.sis Center, Wright State University, Ohio, USA)	
A Zero Knowledge Alternative for Bootstrapping Trust	119
<i>Anish Arora and Lifeng Sang</i> (The Ohio State University, Ohio, USA)	
Interaction Patterns among Global Software Development Learning Teams	123
<i>Fatma Cemile Serce, Kathleen Swigger, Ferda Nur Alpaslan, Robert Brazile, George Dafoulas, and Victor Lopez</i> (Atlim University, Turkey, University of North Texas, USA, Middle East Technical University, Turkey, Middlesex University, U.K., Universidad Tecnológica de Panamá, Panamá)	
A Policy-Based Coordination Model for Team Collaboration	131
<i>Jae W. Hwang and Shmuel Rotenstreich</i> (The George Washington University, Washington D.C., USA)	
Agile Semantic Conflict Detection in Real-Time Collaborative Systems	139
<i>Yang Zheng, Haifeng Shen, and Chengzheng Sun</i> (School of Computer Engineering, Nanyang Technological University, Singapore)	
Contribution based Priority Assessment in a Web-Based Intelligent Argumentation Network for Collaborative Software Development	147
<i>Xiaoqing (Frank) Liu, Maithili Satyavolu, and Ming C. Leu</i> (Missouri University of Science and Technology - Rolla, Missouri, USA)	
A Variety of Automated Turing Tests for Network Security: Using AI-Hard Problems in Perception and Cognition to Ensure Secure Collaborations	155
<i>John P. McIntire, Lindsey K. McIntire, and Paul R. Havig</i> (Air Force Research Laboratory, Ohio, USA)	

Collaborative Network Governance: Understanding Social Capital Dimensions	163
<i>Janaina Macke, Rolando Vargas Vallejos, and João Alberto Rubim Sarate</i>	
(Universidade de Caxias do Sul (UCS), Faculdade de Tecnologia TECBrasil (Ftec), Centro de Ensino Superior Cenequista de Farroupilha (CESF), Brazil)	
Keystroke Dynamics Authentication for Collaborative Systems	172
<i>Romain Giot, Mohamad El-Abed, and Christophe Rosenberger</i>	
(GREYC Laboratory, ENSICAEN – Université de CAEN – CNRS, France)	
Designing BOTs with BDI Agents	180
<i>Purvag Patel and Henry Hexmoor</i>	
(Southern Illinois University – Carbondale, Illinois, USA)	
Collaboration of SSL Smart Cards within the WEB2 Landscape	187
<i>Pascal Urien</i>	
(Telecom ParisTech, Paris, France)	
Mandatory Access Control Implantation against Potential NFS Vulnerabilities	195
<i>Mathieu Blanc, Kevin Guérin, Jean-François Lalande, and Vincent Le Port</i>	
(CEA, DAM, DIF, LIFO/ENSI de Bourges – Université d’Orléans, France)	
Authorisation Session Management in On-Demand Resource Provisioning in Collaborative Applications	201
<i>Yuri Demchenko, Cees de Laat, Thierry Denys, and Christian Toinard</i>	
(University of Amsterdam, The Netherlands and ENSI de Bourges, France)	
Toward a Real MLS/SELinux System for End Users: An Empirical Study	209
<i>Mathieu Blanc, Patrice Clemente, and Steve-William Kissi</i>	
(CEA, DAM, DIF, ENSI de Bourges, France)	
Laocoonte: An Agent based Intrusion Detection System	217
<i>Rafael Páez and Miguel Torres</i>	
(Pontificia Universidad Javeriana, Bogotá, Colombia)	
tinyDSM: A Highly Reliable Cooperative Data Storage for Wireless Sensor Networks	225
<i>Krzysztof Piotrowski, Peter Langendoerfer, and Steffen Peter</i>	
(IHP, Frankfurt (Oder), Germany)	
Cluster based Routing Protocol for Mobile Nodes in Wireless Sensor Network	233
<i>Samer A.B. Awwad, Chee K. Ng, Nor K. Noordin, and Mohd. Fadlee A. Rashid</i>	
(Universiti Putra Malaysia, Serdang, Malaysia)	
QoS Supported Efficient Clustered Query Processing in Large Collaboration of Heterogeneous Sensor Networks	242
<i>Debraj De and Lifeng Sang</i>	
(The Ohio State University, Ohio, USA)	
SKEW: An Efficient Self Key Establishment Protocol for Wireless Sensor Networks	250
<i>Mohsen Sharifi, Saeid Pourroostaei Ardakani, and Saeed Sedighian Kashi</i>	
(Iran University of Science and Technology, Tehran, Iran)	
LAP: A Lightweight Authentication Protocol for Smart Dust Wireless Sensor Networks	258
<i>Mohsen Sharifi, Saeed Sedighian Kashi, and Saeed Pourroostaei Ardanaki</i>	
(Iran University of Science and Technology, Tehran, Iran)	

Coordinating Collaborative Work with RECOLLVE	266
<i>Jose Valentim dos Santos Filho, Roberta Lima Gomes, Rodrigo Moreira Bacurau, Aloysio de Castro Pinto Pedroza, and Jean-Pierre Courtiat</i> (CECOMP/UNIVASF, Juazeiro/BA; DINF/UFES, Vitoria, ES; GTA/COPPE-Poli/UFRJ, Rio de Janeiro, RJ, Brazil, and LAAS/CNRS, Toulouse, France)	
SPRUCE: A Web Portal for the Collaborative Engineering of Software Intensive Systems Producibility Challenge Problems and Solutions	276
<i>Patrick Lardieri, Rick Buskens, Sriniv Srinivasan, William McKeever, and Steven Drager</i> (Lockheed Martin Advanced Technology Laboratories; Air Force Research Laboratory, USA)	
JGroupSpace: Combining Shared Spaces and Groups	284
<i>Jorge Filipe Custódio and José C. Cunha</i> (CITI - Departamento de Informática, Universidade Nova de Lisboa, Portugal)	
A Front-End for Collaborative Task Planning on the Grid	292
<i>Hoang M. Phung, Doan B. Hoang, and Elaine Lawrence</i> (University of Technology, Sydney, Australia)	
Two Degrees to SensorWeb	300
<i>Pat G. Cappelaere, Stuart W. Frye, and Daniel Mandl</i> (Vightel Corporation, SGT Inc., and NASA Goddard Space Flight Center, Maryland, USA)	
Modeling Collaborative Robots for Detecting Intrusions	306
<i>Xiannuan Liang and Yang Xiao</i> (The University of Alabama at Tuscaloosa, Alabama, USA)	
A Technical Comparison of the Existing Approaches to Support Collaboration in Non-Collaborative Applications	314
<i>Mauro C. Pichiliani and Celso M. Hirata</i> (Instituto Tecnológico de Aeronáutica, São José dos Campos, Brazil)	
Universal View and Open Policy: Paradigms for Collaboration in Data Grids	322
<i>Arcot Rajasekar, Reagan Moore, Michael Wan, and Wayne Schroeder</i> (University of North Carolina at Chapel Hill, North Carolina, and University of California at San Diego, California, USA)	
Design and Modeling of Collaboration Architecture for Security	330
<i>Rainer Bye, Seyit A. Camtepe, and Sahin Albayrak</i> (Technische Universität Berlin - DAI-Labor, Germany)	
Workspace Requirements for Complex Adaptive Systems	342
<i>Igor Hawryszkiewicz</i> (University of Technology, Sydney, Australia)	
SmartWarf – A Portable Automated Warfarin Dosing Tool	348
<i>Zhongming Zhao, Shivi Kansal, and Bonny L. Bukaveckas</i> (Virginia Commonwealth University, Virginia, USA)	
Ambulatory Data Aggregation and Reduction for Transmission Over Limited Bandwidth Network	356
<i>Junaid A. Zubairi and Syed Misbahuddin</i> (SUNY at Fredonia, New York, USA and University of Ha'il, Saudi Arabia)	

A New Security Scheme for E-Health System	361
<i>Wei Li and Doan Hoang</i> (University of Technology, Sydney, Australia)	
Human Agent Collaboration in a Simulated Combat Medical Scenario	367
<i>Wei Chen, Edmund Durfee, and Melanie Dumas</i> (Intelligent Automation, Inc., Maryland; University of Michigan at Ann Arbor, Michigan; and DARPA/IPTO, Washington D.C., USA)	
Improving the Performance of VNC for High-Resolution Display Walls	376
<i>Yong Liu and Otto J. Anshus</i> (University of Tromsø, Tromsø, Norway)	
Collaboration Portal for Petascale Simulations	384
<i>Roselyne Barreto, Scott Klasky, Norbert Podhorszki, Pierre Mouallem, and Mladen Vouk</i> (Oak Ridge National Laboratory and North Carolina State University, USA)	
Scalable Ultrapeer-Based DHT Protocol for File Sharing	394
<i>Chayoung Kim and Jinho Ahn</i> (Kyonggi University, Suwon-si Gyeonggi-do, Korea)	
Document-Centric Collaborative Spaces for Increased Traceability in Knowledge-Intensive Processes .	400
<i>Greg Horvath, Joe Bolinger, Jay Ramanathan, and Rajiv Ramnath</i> (The Ohio State University, Columbus, Ohio, USA)	
Making Agent Roles Perceivable through Proxy Bytecode Manipulation	408
<i>Luca Ferrari and Haibin Zhu</i> (Independent Researcher, Modena, Italy, and Nipissing University, Ontario, Canada)	
Integration of the Dynamic, Mutual Evaluating and Role-Based Iterated Revision	
Belief into Collaborative Conceptual Modeling	417
<i>Lili Jia, Huiping Zhou, Haifang Zhou, Chengzheng Sun, and Zhiying Wang</i> (National University of Defense Technology, Changsha, Hunan Province, China and Nanyang Technological University, Singapore)	
Role-Based Consistency Verification for Privacy-Aware Web Services	423
<i>Linyuan Liu, Zhiqiu Huang, and Haibin Zhu</i> (Nanjing University of Aeronautics and Astronautics, Nanjing, China; Nipissing University, Ontario, Canada)	
Group Role Assignment	431
<i>Haibin Zhu and Rob Alkins</i> (Nipissing University, North Bay, Ontario, Canada)	
A Distributed Framework for the Collaborative Annotation of Streams	440
<i>Tao Huang, Shrideep Pallickara, and Geoffrey Fox</i> (Community Grids Lab, Indiana University - Bloomington, Indiana, USA)	
Sensorpedia: Information Sharing Across Incompatible Sensor Systems	448
<i>B.L. Gorman, D.R. Resseguie, and C. Tomkins-Tinch</i> (Oak Ridge National Laboratory and Rochester Institute of Technology, USA)	
AVATS: Audio-Video and Textual Synchronization	455
<i>Siddharth Maini, Joshua Rosen, Marlon E. Pierce, and Geoffrey C. Fox</i> (Community Grids Laboratory, Indiana University - Bloomington, Indiana, USA)	

Measured Characteristics of Distributed Cloud Computing Infrastructure for Message-Based Collaboration Applications	465
<i>Geoffrey C. Fox, Alex Ho, Eddy Chan, William Wang</i>	
(Community Grids Laboratory, Indiana University – Bloomington, Indiana; Anabas, Inc., California, USA)	
Generalized GSR Model of Fair Exchange in E-Contracting	468
<i>Debajyoti Konar, and Chandan Mazumdar</i>	
(West Bengal University of Technology, and Jadavpur University, Kolkata, India)	
Enabling Collaboration between Heterogeneous Circles of Trust through Innovative Identity Solutions	476
<i>Jean-Baptiste Lézoray and Marc Pasquet</i>	
(Laboratoire GREYC : ENSICAEN - Université de Caen, CNRS, France)	
A Proposal for an Experimental Platform on Collaborative Information Retrieval	485
<i>Sergio Cleger-Tamayo, Juan M. Fernández-Luna, Juan F. Huete, Ramiro Pérez-Vázquez, and Julio C. Rodríguez-Cano</i>	
(Universidad de Holguín, Cuba, Universidad de Granada, Spain, and Universidad Central de las Villas, Cuba)	
A User Centered Approach to Collaborative Information Retrieval	494
<i>Victor Odumuyiwa and Amos David</i>	
(Equipe SITE-LORIA, Université Nancy 2, France)	
Toward Executable Architectures to Support Evaluation	502
<i>Lee W. Wagenhals, Stewart W. Liles, and Alexander H. Levis</i>	
(George Mason University and U.S. Army Knowledge Management Office I Corps, USA)	
Modeling and Representation of Manufacturing Process with Uncertainties Using Parametric Modular Design and xPNML	512
<i>Hyunsoo Lee and Amarnath Banerjee</i>	
(Texas A&M University, Texas, USA)	
Collaboration Support for Executable Enterprise Architectures	520
<i>Ronald Fernandes, Biyan Li, Perakath Benjamin, and Richard Mayer</i>	
Knowledge Based Systems, Inc., Texas, USA)	
A Nomadic Wiki for Mobile Ad Hoc Networks	528
<i>Hoa Ha Duong and Isabelle Demeure</i>	
(Institut TELECOM - TELECOM Paristech – LTCI - CNRS, Paris, France)	
Mobile Client for Immediate Feedback and Assessment in Collaborative Sessions	536
<i>Chia Y. Han and Ryan Anderson</i>	
(University of Cincinnati, Ohio, USA)	
A Distributed Wireless Channel Assignment Algorithm with Collision Reduction	543
<i>Ju Wang, Hongsik Choi, and Changyong Jung</i>	
(Virginia Commonwealth University, Virginia, USA)	

CTS 2009 POSTER PAPERS

Abstract User Interface for a Collaborative Environment	552
<i>Youssef Roummieh and Parisa Ghodous</i> (LIRIS, – UMR 5205 CNRS – UCBL, Villeurbanne, France)	
Multimedia Collaborative Adaptation Middleware for Personalization E-Learning	558
<i>Svetlana Kim and Yongik Yoon</i> (Sookmyung Women’s University, Seoul, Korea)	
A Dynamic Clustering Construction for Wireless Sensor Networks	565
<i>Eugene Pamba Capo-Chichi, David Martins, Hervé Guyennet, and Violeta Felea</i> (University of Franche-Comté, France)	
Universal Monitoring Platform for Interactive Real-Time Expansive Networks (UMPIRE)	571
<i>David Bridges and Shervin Mostashfi</i> (Peerless Technologies, Inc., Ohio, USA)	

Author Index