

2015 IEEE Twelfth International Symposium on Autonomous Decentralized Systems

(ISADS 2015)

**Taichung, Taiwan
25-27 March 2015**



IEEE Catalog Number: CFP15099-POD
ISBN: 978-1-4799-8262-2

2015 IEEE Twelfth International Symposium on Autonomous Decentralized Systems

ISADS 2015

Table of Contents

Message from the General Chair.....	x
Message from the Steering Committee Chair.....	xi
Message from the ISADS Program Co-Chairs.....	xiii
ISADS 2015 Organizing Committees.....	xiv
ISADS 2015 Program Committee.....	xv
ADROIT Systems 2015 Committees.....	xvi
SADEI 2015 Committees.....	xvii
SASWIM 2015 Committees.....	xviii
SmartGridComNet 2015 Committees.....	xix
Keynote 1.....	xx
Keynote 2.....	xxi
The Third International Forum.....	xxii

ISADS 2015: The International Symposium on Autonomous Decentralized Systems

Section 1: Web and Cloud-Based Systems

VOBC Data Storage and Online Diagnosing System Based on Data Cloud	5
<i>Youqi Gu, Xiaoqing Zeng, Tuo Shen, and Weiyang Wang</i>	
Autonomous Decentralized Semantic Based URL Filtering System for Low Latency	9
<i>Hironao Takahashi, Khalid Mahmood, and Uzair Lakhani</i>	
Semantic Based Highly Accurate Autonomous Decentralized URL Classification System for Web Filtering	17
<i>Khalid Mahmood, Hironao Takahashi, Asif Raza, Asma Qaiser, and Aadil Farooqui</i>	
Workload Estimation for Improving Resource Management Decisions in the Cloud	25
<i>Jemishkumar Patel, Vasu Jindal, I-Ling Yen, Farokh Bastani, Jie Xu, and Peter Garraghan</i>	

Section 2: Dependability and Performance

Enhancing the Performance of Tree Algorithm Using Re-split Mechanism	35
<i>Warakorn Srichavengsup</i>	
Autonomous Decentralized Combinatorial Testing	40
<i>Wei-Tek Tsai, Guanqiu Qi, and Kai Hu</i>	
Web-Based Performance Monitor for Distributed Computing	48
<i>Kai Hua, Kai Wu, Yi Ding, and Wei-Tek Tsai</i>	
High Reliability Cloning Technology for Autonomous Decentralized Service-Oriented Architecture	56
<i>Raymundo García-Gómez, Juan Sebastián Guadalupe Godínez-Borja, Pedro Josué Hernández-Torres, and Carlos Pérez-Leguízamo</i>	

Section 3: Distributed and Network Systems

Physiological-Signal-Based Key Negotiation Protocols for Body Sensor Networks: A Survey	63
<i>Huawei Zhao, Ruzhi Xu, Minglei Shu, and Jiankun Hu</i>	
Trust-Based Task Assignment in Autonomous Service-Oriented Ad Hoc Networks	71
<i>Yating Wang, Ing-Ray Chen, and Jin-Hee Cho</i>	
Flexible Manufacturing System with CC-Link Network Decentralized	78
<i>Gabriel Hernández López and Alejandro García Ravizé Guízar</i>	
Bayesian Method of Slotted Aloha Based Anti-Collision Protocol for RFID Systems	87
<i>Robithoh Annur, Warakorn Srichavengsup, Suvit Nakpeerayuth, and Lunchakorn Wuttitsittikulki</i>	

Section 4: Industry Applications

Autonomous Push-Pull Coordination Technology to Achieve Reconciling Resource Utilization in Heterogeneous Communities Environment	93
<i>Titichaya Thanamitsomboon, Xiaodong Lu, and Kinji Mori</i>	
Implementation of an Agent-Based Manufacturing Grid	101
<i>Leo van Moergestel, Erik Puik, Daniël Telgen, and John-Jules Meyer</i>	
Autonomous Community Architecture and Construction Technology for City Petrol Supply Management System	109
<i>Fan Wei, Liumei Zhang, Tianshi Liu, Xiaodong Lu, and Kinji Mori</i>	

ADROIT Systems 2015: Workshop on Agile Decentralized Resilient Operation of Internet of Things Systems

Tourism Service Composition Based on Multi-objective Optimization	117
<i>Xuwei Zheng, Ruzhi Xu, Yun Peng, and Shuaiqiang Wang</i>	
Analysis of Industrial Control Systems Traffic Based on Time Series	123
<i>Lai Yingxu, Jiao Jiao, and Liu Jing</i>	
A Decentralized Negotiation Method for Stable Resource Allocation Based on Symbiotic-Autonomous Decentralized System Concept	130
<i>Koichiro Iijima, Yu Ikemoto, and Takashi Fukumoto</i>	

SADEI 2015: International Workshop on Systems and Algorithms for Distributed Embedded Intelligence

The Design and Implementation of an Automatic Burdening System Based on Proview	139
<i>Fenglong Yan, Chunlin Chen, Xuhui Yang, Qingguo Zhou, Changyan Di, Binling Jin, and Rui Zhou</i>	
A Foot-Mounted Sensor Based 3D Indoor Positioning Approach	145
<i>Lingxiang Zheng, Wencheng Zhou, Weiwei Tang, Xianchao Zheng, Hui Yang, Shuxiang Pu, Chenxiang Li, Biyu Tang, and Yinong Chen</i>	
A Hybrid Feature Based Mobile Forensics System	151
<i>Zhihua Wei and Rui Zhao</i>	
Robot as a Service in Computing Curriculum	156
<i>Yinong Chen and Zhizheng Zhou</i>	
Rehabilitation Training System for the Motor Deficit of Upper Extremity	162
<i>Deqiang Han, Zongxia Wang, Weicheng Xu, and Nian Wang</i>	

SASWIM 2015: The First International Workshop on Service Assurance in System Wide Information Management

Session 1: Architecture

The Research Synopsis about SWIM in China	171
<i>Milong Zhao, Xiling Luo, Ming Qi, and Feng Zeng</i>	
Real-Time Oriented System Wide Information Management for Service Assurance	175
<i>Xiaodong Lu and Tadashi Koga</i>	
QoS Implementation in System Wide Information Management (SWIM) Network Model	181
<i>Kiratipong Ongkasae, Hideori Nakazato, Tadashi Koga, and Xiaodong Lu</i>	

Session 2: Communication

The Sender Controlled Security Model for Message Service	187
<i>Lu Songtao and Qi Ming</i>	
SARPs Validation Using Aero MACS Prototype—Example of Future Aeronautical Mobile Airport Communication System for SWIM	192
<i>Yasuto Sumiya, Kazuyuki Morioka, Naoki Kanada, Naruto Yonemoto, Shunichi Futatsumori, and Akiko Kohmura</i>	
Discretization of Simulated Flight Parameters for Estimation of Situational Awareness Using Dynamic Bayesian Networks	196
<i>Carlos Morales and Serafin Moral</i>	

Session 3: SOA Technologies

An Approach to Selecting Cloud Services for Data Storage in Heterogeneous-Multicloud Environment with High Availability and Confidentiality	205
<i>Yuuki Kajiura, Shohei Ueno, Atsushi Kanai, Shigeaki Tanimoto, and Hiroyuki Sato</i>	
Autonomous Decentralized Tenant Access Control Model for Sub-tenancy Architecture in Software-as-a-Service (SaaS)	211
<i>Qiong Zuo, Meiyi Xie, and Wei-Tek Tsai</i>	
A Semantic Approach for Traceability Link Recovery in Aerospace Requirements Management System	217
<i>Khalid Mahmood, Hironao Takahashi, and Mazen Alobaidi</i>	

SmartGridComNet 2015: International Workshop on Smart Grid Communications and Networking

A Study of Emulator with Trema for Ad-hoc Networks	225
<i>Osamu Akizuki and Takurou Fujikawa</i>	
Signal Path Loss Simulation of Human Arm for Galvanic Coupling Intra-Body Communication Using Circuit and Finite Element Method Models	230
<i>Kenichi Ito and Yu Hotta</i>	
Preventing Attacks in Real-Time through the Use of a Dummy Server	236
<i>Ahmad Bazzi and Yoshikuni Onozato</i>	
Theoretical Analysis of Pure Waiting Time for Battery Charging While Doing Something	242
<i>Kazuyuki Miyakita, Keisuke Nakano, and Hiroshi Tamura</i>	
A Stackelberg Game Approach for Energy Management in Smart Distribution Systems with Multiple Microgrids	248
<i>Zhenyu Zhou, Jinfang Bai, and Sheng Zho</i>	

Cell Search Time Performance Using Same Frequency Spectrum for Heterogeneous Networks Including Indoor Small Cells	254
<i>Naoki Noguchi, Mamoru Sawahashi, and Satoshi Nagata</i>	
A Security Mechanism for Demand Response Using RBAC and Pub/sub	260
<i>Longhua Guo, Jianhua Li, Jun Wu, Zhengmin Xia, and Shengjun Zheng</i>	
Energy Efficiency Scheme with Cellular Partition Zooming for Massive MIMO Systems	266
<i>Di Zhang, Keping Yu, Zhenyu Zhou, and Takuro Sato</i>	
An Optimal Information Centric Networking Model for the Future Green Network	272
<i>Quang N. Nguyen, M. Arifuzzaman, T. Miyamoto, and Sato Takuro</i>	
Student Session 2015	
Study on Authentication Protocol of SDN Trusted Domain	281
<i>Ruikang Zhou, Yingxu Lai, Zenghui Liu, and Jing Liu</i>	
Lane Detection Method Based on Improved RANSAC Algorithm	285
<i>Jie Guo, Zhihua Wei, and Duoqian Miao</i>	
Affinity and Conflict-Aware Placement of Virtual Machines in Heterogeneous Data Centers	289
<i>Kui Su, Lei Xu, Cong Chen, Wenzhi Chen, and Zonghui Wang</i>	
Novel Social Innovation Concept Based on the Viewpoint of the Infrastructure User	295
<i>Masato Adachi, Gonzalo Aguirre Dominguez, Takafumi Sasaki, Ryosuke Tsumura, Tomoya Koshi, and Kinji Mori</i>	
A Full Symbolic Reachability Analysis Algorithm of Timed Automata Based on BDD	301
<i>Huiping Zhang, Junwei Du, Ling Cao, and Guixin Zhu</i>	
Author Index	305