

## **JSAC CALL FOR PAPERS SPECIAL ISSUE ON MISSION CRITICAL NETWORKING**

Mission-Critical Networking (MCN) refers to networking for application domains where life or livelihood may be at risk. Typical application domains for MCN include critical infrastructure protection and operation, emergency and crisis intervention, healthcare services, and military operations. Such networking is essential for safety, security and economic vitality in our complex world characterized by uncertainty, heterogeneity, emergent behaviors, and the need for reliable and timely response. MCN should comprise networking technology, infrastructures and services that may alleviate the risk and directly enable and enhance connectivity for mission-critical information exchange among diverse, widely-dispersed, mobile users. A primary challenge to MCN is to deploy and dynamically configure and evolve communication networks that are dependable, autonomic, secure, adaptive, and rapidly deployable to support critical missions and their priorities. In order to operate effectively, the deployed networks should support services such as location determination of both authorized and unauthorized entities, quality-of-service aware audio and video communication, emergency calling and alerting, and in-situ and remote sensing and control in a secure and dependable manner. In addition, efficient operation of such networks that typically include numerous resource-constrained components may benefit from cross-layer optimization, cognition, resource engineering, on-demand federation, and service-oriented architecture. Also important is the integration of MCN with the Internet to reduce cost of deployment and maintenance and to enhance reachability and ubiquity. This special issue of the Journal on Selected Areas in Communications solicits high quality technical contributions in mission-critical networking including, but not limited to:

- Architecture and design of MCN and next-generation emergency calling and alerting
- Rapidly and dynamically deployable services and networks
- Evolving “elastic” networking with decentralized and peer-to-peer resource management and allocation
- Federation and policy management for heterogeneous networks and protocols
- Trust, security, dependability, privacy, QoS and performance awareness and management for MCN
- Sensor and actuator networks for critical information gathering, tracking and real-time control
- MCN traffic and mobility analysis
- Formal methodology for cognitive, autonomic, and context-aware protocols and network management
- Spectrum management and access
- Testbeds, benchmarks, performance and experimental studies

### **Paper Submission**

Manuscripts should describe original, previously unpublished work, not currently under review. Argument justifying contribution specific to the unique features of MCN must be provided. Prospective authors should follow the IEEE JSAC manuscript format described in the Information for Authors at <http://www.jsac.ucsd.edu/Guidelines/info.html>. Authors should submit a PDF version of their complete manuscript to [mcn-jsac@criticalnet.org](mailto:mcn-jsac@criticalnet.org) according to the following timetable:

Manuscript submission: April 1, 2009

Revised manuscript due: October 1, 2009

Final manuscript due: January 2, 2010

First review notification: August 1, 2009

Acceptance notification: November 1, 2009

Publication: June, 2010

### **Guest Editors**

- Mohamed Eltoweissy, Virginia Tech, USA
- Mohamed Gouda, University of Texas, USA
- Henning Schulzrinne, Columbia University, USA
- David Du, National Science Foundation and University of Minnesota, USA
- Silvia Giordano, SUPSI, Switzerland
- Moustafa Youssef, Nile University, Egypt
- Mario Gerla, UCLA, USA