Next-Generation Networking Symposium

Symposium Co-Chairs

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Scope and Motivation

The profound advancements of networking technologies in the last three decades have transformed our everyday lives. These evolutions have come about as a result of relentless research and development efforts across all layers of the network hierarchy. Continuing this trend, many new challenges and opportunities are emerging in the broader area of next-generation networking. In particular, some of the key focus areas include network heterogeneity, scalability, virtualization, services and applications, security, manageability, dependability, and performance predictability. Moreover, the next-generation wireless networks are introducing even more niche problems in mobility management, content distribution, and self-organization.

Along these lines, the planned Next-Generation Networking (NGN) Symposium at IEEE GLOBECOM 2011 will hope to provide a forum for many of these exciting new focus areas. This symposium will solicit participation from both academic and industry researchers working in the area of next-generation networking technologies, services, architectures, and protocols. The overall goal is to present a latest snapshot of the ongoing work as well as to shed further light on future directions in this space. The symposium will encourage the submission of novel technical studies as well as broader position and vision papers comprising hypothetical/speculative scenarios.

Main Topics of Interest

The planned symposium topics of interest include, but are not limited to, the following:

- Future Internet and next-generation networking architectures
- Heterogeneous multi-layer and multi-domain networks, wireless-wireline internetworking
- Overlay networks and peer-to-peer networking
- Network virtualization, virtual private networks (VPN), and services
- Provisioning, monitoring, and management of IP services: traffic engineering, mobility support,etc.
- Flow management: resource sharing, congestion control, etc.
- Routing: unicast, multicast, anycast, etc (wireless, wireline)
- Multihoming, network planning and optimization
- Addressing and naming, especially in the presence of mobility and portability
- Operational and research issues with IPv6
- VoIP protocols and services
- Self-protecting networking
- Switch and router architectures, performance, control, buffer management, packet scheduling
- Network management methodologies and control plane design

- Internet survivability and network resilience strategies
- Mechanisms for self-organisation and autonomous networking
- Traffic measurement, analysis, modelling, visualization, and engineering
- Anomaly, intrusion, and attack detection/prevention
- Policy based mechanisms and high-speed firewall technology
- Packet classification and forwarding mechanisms at ultra-high link rates (terabits)
- High speed and parallel processing architectures for next generation routers
- Connecting mobile/wireless devices to the Internet
- Converged networks and applications, including NGN telecom networks
- Content-based networking: caching, distribution, load balancing, resiliency
- Mobile/wireless content distribution
- Internet applications including interactive media, voice and video, games, immersive applications
- Internet signalling and service enabling protocols, including SIP, NSIS, HTTP, RTSP/RTP, etc
- Privacy and/or security issues and intrusion detection/prevention in the Internet
- Design methodologies for Internet services
- Internet economics, pricing models, accounting, Internet growth modelling
- IP multimedia subsystem: architecture and design
- Next-Generation access networking

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