

# Next Generation Networking and Internet Symposium

## Symposium Co-Chairs

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## Scope and Motivation

Over the past decade, advancements in communications and networking technologies have reached unprecedented heights. Particularly, wireless technology has provided pervasive network connectivity not only to the home and workplace, but also to remote areas where no wired infrastructure can reach. In addition, recent advances in optical networking has provided tremendous growth in the capacity of core and access telecommunication networks. As these advances are having very strong impact on our everyday lives, many new challenges and opportunities are emerging. Of particular importance to Next Generation Networks are emerging topics in the area of network heterogeneity, scalability, virtualization, services and applications, security, manageability, dependability, and performance predictability. Furthermore, many salient issues are affecting broadband next-generation wireless networks, such as, handover/mobility management, cross-layer activities, self-organization, and energy efficiency operations.

The *Next Generation Networking and Internet Symposium* at IEEE GLOBECOM 2012 aims to consolidate and disseminate the latest developments and advances in these emerging focus areas. This symposium invites 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 the latest snapshot of the ongoing research as well as to shed further light on future directions in this space. Authors are invited to submit papers presenting 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