

**Telecommunication Systems****Special Issue on Cross Layer Design for Cognitive Networks**

Cognitive wireless access networks interact and respond to requests of a specific user by dynamically altering their topologies and/or operational parameters to enforce regulatory policies and optimize overall network performance. A cognitive infrastructure consists of intelligent management and reconfigurable elements that can progressively evolve the policies based on their past actions. A new paradigm is then needed for designing protocols in such environments and can be characterized by cross-layer designs and adaptation approaches. This special issue will focus on a range of Cross Layer related topics including QoS, mobility, security, business models, wireless link adaptation and novel services and applications deployed over Cognitive Networks. In addition, the role played by the IP Multimedia Sub-layer (IMS) in Cognitive Networks should also be carefully examined and studied. It will cover the following topical areas but are not limited to:

- Architectures and methodologies for cross layer design in Cognitive Networks
- Scheduling Algorithms and Link Adaptation for Cognitive Networks
- Interactions among PHY/MAC/RLC and transport layer protocol (e.g., TCP/UDP) for Cognitive Networks
- Interactions between routing/mobility management and congestion control for Cognitive Networks
- Cross-layer design of MAC, RLC, and routing protocols in wireless ad hoc networks
- Cross-layer adaptation for energy minimization in Cognitive Networks
- Cross-layer strategies for wireless multimedia for Cognitive Networks
- Application layer adaptation based on cross-layer strategies for Cognitive Networks.
- Dynamic resource allocation and Quality of Service for Cognitive Networks
- Cross-layer strategies and end-to-end security for Cognitive Networks
- Cross-layer design framework for real-time multimedia streaming for Cognitive Networks
- Cross-layer signaling approaches for Cognitive Networks
- Cross-layer content delivery architecture for Cognitive Networks
- Cross-layer strategies in wireless sensor and actuator networks
- Complexity and scalability issues in cross-layer design for Cognitive Networks
- Signaling for cross-layer protocol interaction for Cognitive Networks
- Design, implementation and test-bed results for Cognitive Networks
- Cross-layer strategies for IPv6 based core networks

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**Submission Details**

Instructions for authors can be accessed through <http://www.springerlink.com/content/101753/>. Manuscripts should be emailed as pdf, ps, or word format to the corresponding editor.

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