

ITC 21: 21st International Teletraffic Congress Traffic and Performance Issues in Networks of the Future

<http://www.i-teletraffic.org/itc21/>

OBJECTIVES

As from 2009, the International Teletraffic Congress is becoming an annual event, which brings together researchers interested in understanding and improving the way traffic is handled in communication networks. ITC is a unique place to present up to date progress in traffic theory for telecommunication and computer networks, such as network planning, traffic monitoring, characterization and modelling, flow and congestion control, etc. as well as in related applied sciences (queuing theory, optimization, simulation, etc.).

The last decade was dominated by the advent of the Internet. Now, the networking community is facing a rapid evolution and diversification of networks. The proliferation of broadband applications, the emergence of new technologies, changes in usage, etc. require the continual reappraisal of traffic management procedures and mechanisms as well as the development of new tools for understanding and modelling traffic and associated functions. As a matter of fact, advances in optical and wireless technologies will open new possibilities for networks in the near future with new performance problems in terms of traffic management. Similarly, the massive emergence of video applications as well as the generalization of mobility will deeply modify the nature of traffic in the next few years. All these issues call for the design of new performance tools and models. In addition, there is currently considerable activity worldwide on the design of new architecture principles and concepts for future networks. It is therefore essential to understand how technological innovations and content-centric networking will impact our ability to control traffic. New architectural elements and business models are needed to finally meet user expectations for quality and security of their communications in a cost-effective way. Such traffic and performance issues related to current modifications today's traffic as well as to the networks of the future are the focus of ITC 21.

Additionally, the conference comes at the right time to honor the centenary of the publication of the Danish mathematician A.K. Erlang's famous article in 1909: "*The Theory of Probabilities and Telephone Conversations*". This article, considered to be the first publication on queuing theory, was doubtlessly one of the cornerstones in the creation of the International Teletraffic Congress.

A special workshop supported by ITC will thus be organised in Denmark.

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September 15-17, 2009
Paris (Les Cordeliers)

> Topics

- > **Network planning**
 - Capacity planning methods and tools
 - Planning for multi-carrier networks
 - Planning for robustness and reliability
 - Performance and reliability tradeoffs
 - Network design for real-time applications
 - Planning efficient content delivery
- > **Quality of service and associated performance issues**
 - Performance and reliability targets of new web-based applications, including WebTV
 - Performance over wireless and wireline transport technologies
 - VoIP QoS in WiFi and WiMax environments
 - Pricing and quality of service provisioning
 - Pricing and billing, game theory, business models for QoS
- > **Traffic management**
 - Intelligent, adaptive routing
 - Protection switching and restoration
 - Probabilistic, opportunistic routing
 - Overload and congestion control protocols and mechanisms
 - Admission control
 - Dynamic/adaptive bandwidth management
 - Mobility management
 - Application and content traffic management
 - Traffic management through MPLS
 - Traffic management in ad-hoc networks
 - Autonomic traffic management
- > **Traffic and performance monitoring, measurements and forecasting**
 - Traffic measurement
 - Traffic monitoring methods
 - Forecasting techniques
 - Measurement-based characterization of new application traffic (including video traffic)
 - Network tomography
 - Reports of measurement results from operational networks
- > **Analytical models and methods**
 - Source models of new web-based applications (e.g. multimedia, peer-to-peer)
 - Traffic models of voice, video and data applications
 - Queuing models for multi-media traffic
 - Resource allocation methods
 - Protocol performance models
 - Algorithms for self-optimization of resource allocation and traffic management
- > **Network technologies**
 - Optical networks
 - Mobile networks, models for mobility
 - IMS
 - UMTS, WiFi, WiMax, adhoc and sensor networks
 - IP/MPLS/Carrier Ethernet networks and future Internet
 - Application layer networks and overlays in general, including Virtualization
- > **Applications**
 - P2P and distributed lookup
 - Self-organized structures
 - Distributed & grid computing
 - Content delivery and storage area networks
 - IPTV
 - Web-services & service-oriented architectures
 - Internet of Things
 - Tele-medicine, -education, -metry, etc.
- > **Security**
 - Anomaly detection
 - Detection of DoS attacks
 - Attack mitigation methods
 - Worm and virus propagation
 - Epidemiological models
- > **Theory**
 - Control
 - Queueing
 - Scheduling
 - Data analysis
 - Optimization
 - Simulation methodology and tools

Contact

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