Editorial

Vincent Guyot

ESIEA Research,
9 rue Vesale,
75005 Paris, France
E-mail: vincent.guyot@ieee.org

Biographical notes: Vincent Guyot received his MS in Computer Science from the Ecole Superieure d'Informatique Electronique et Automatique (ESIEA), Paris, France, in 2000, and the PhD degree in Networking and Security from the University Pierre and Marie Curie (UPMC), Paris, France, in 2005. From 2001 to 2006, he was an Assistant Professor in Electrical Engineering at the University of Creteil, France. He is currently an Associate Professor at ESIEA and is in charge of the international Specialised Master in Networking and Information Security. He is also a Research Associate with the University Pierre and Marie Curie, Paris, France, and collaborates with Telecom Paris Tech, Paris, France. He gives lectures at the University of Creteil, France, and the University of Bordeaux, France. He co-authored two books and two other books will be published soon. His research interests include the areas of networking mobility and security, smart card and RFID.

There is a growing interest for wireless access to the internet and for the evolution of third and fourth generation wireless and cellular systems, including ITU IMT/UMTS. At the same time, more and more digital devices run inside homes. This creates a need for research about ultra wide band (UWB), spectrum efficiency and low power consumption, as well as low cost and secure wireless personal access.

Optical communications networks are becoming more important as the demand for high capacity links is increasing. Dense wavelength division multiplexing (DWDM) is widely deployed at the core networks to accommodate high capacity transport systems. Optical components, such as optical amplifiers, tunable filters, transceivers, termination devices and add-drop multiplexers are becoming more affordable and reliable. Access and metropolitan area networks are increasingly built with optical technologies to overcome the electronic bottleneck at network edges. New components and subsystems for high-speed optical networks offer new design options.

This *International Journal of Communication Networks and Distributed Systems* (IJCNDS) issue is devoted to publishing extended versions of selected papers from the fourth *IEEE and IFIP International Conference on Wireless and Optical Communications Networks* (WOCN 2007). The conference invited high-quality recent research results in the areas of mobile/wireless and optical communications, bringing together scientists and engineers who work in these fields in different geographical locations. WOCN 2007 was held in Singapore, from July 2nd through July 4th, 2007.

The call for papers for WOCN 2007 attracted more than 200 submissions worldwide. The reviewers carefully evaluated the submissions. Eventually, seven papers have been selected for publication. The first three papers are related to optical communications. The last four papers are dealing with wireless and mobile communications.

The first paper, 'Single-hop all-to-all broadcast in optical star networks with breakdown or power-off transceivers', by Liu et al. investigates single-hop scheduling algorithms to find the optimal solution in both terms of arbitrary number of wavelengths and value of tuning latency.

The second paper, 'Periodically scheduled burst flows in optical burst switching networks', by Lei and Sampalli, proposes a promising QoS model for burst level QoS control within all-optical networks, using MPLS signaling protocols.

The third paper, 'A light-weight performance model for optical buffers', by Rogiest et al. investigates a new optical buffer model and provides formulas for the waiting times and the loss performance. This new model facilitates optical burst switching which requires optical buffering implementation.

The fourth paper, 'Ultra-wideband (UWB) CMOS power amplifier design and implementation', by Wong et al. presents the design and implementation of three power amplifiers for UWB communication system in CMOS technology, covering the three channels of the UWB mandatory Mode 1.

The fifth paper, 'A cross-layering based autonomic approach for QoS support in heterogeneous wireless networks', by Yahiya et al. proposes to combine concepts of autonomic computing in order to use intelligence to provide flexibility, accessibility and transparency to the mobile users.

The sixth paper, 'Design and analysis of surface emitting distributed feedback laser for radio over fiber (ROF)', by Witjaksono and Saraswati, presents an alternative laser for radio over fiber (ROF) application. It is developed and demonstrated how a surface emitting distributed feedback (SEDFB) laser can be optimised for such an application.

Finally, the last paper, 'Applying OOK modulation in OFDM to reduce the ICI due to CFO and IQ imbalance', by Ma et al. proposes to apply on-off-keying modulation in OFDM to reduce the ICI caused by the carrier frequency offset (CFO) and in-phase and quadrature (IQ) imbalance.