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Special Issue on

Wideband, Multiband, Tunable, and Smart Antenna Systems for Mobile and UWB Wireless Applications 2016

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Due to exceptionally high data rates attainable with modern wireless communication systems and the app-based use paradigm, wireless connectivity through multiple air interfaces has become a common requirement in the RF architecture of mobile communication devices. Modern wireless handsets frequently incorporate five or more antennas to enable cellular voice, video and data, Wi-Fi, and GPS connectivity, across multiple bands. Multiple antenna systems are frequently designed to implement diversity or spatial multiplexing schemes, as in the case of WCDMA and LTE, to increase resiliency and capacity of wireless links and to operate multiple voice/data links simultaneously. Carrier aggregation is demanding that multiple cellular bands are served simultaneously.

Concurrently, ultrawideband (UWB) systems used in short range communications, remote sensing, and through-the-wall radar imaging have introduced a new paradigm in the antenna design where the mitigation of pulse distortion is of the essence, thus requiring a shift in antenna design approach and the introduction of novel compact radiating systems. Moreover, vehicular communication systems, in order to provide safety warnings and traffic information, employ dedicated short-range communications devices that are intended to be used in car-to-car and in car-to-roadside communications units, thereby making the use of cloud-based applications possible. As a consequence of these trends, the degree of complexity and difficulty in the design and implementation of wireless device antenna systems and associated RF front-ends has grown dramatically, requiring even more innovative solutions.

This special issue is intended to reflect current R&D trends and novel approaches in the analysis and synthesis of antenna systems and associated RF front-ends for the next generation of mobile communication devices, applicable to various device form factors such as smartphones, tablets, laptops, and wearable computers as well as for UWB communication systems and radars, including those to be adopted in the automotive industry. Prospective authors are invited to submit their original research and review papers dealing with advances in mobile antenna technologies, product integration, and performance optimization, as well as related measurements and simulation methods.

Potential topics include, but are not limited to:

- Numerical and analytical techniques for antenna modeling and design
- MIMO antenna systems and channel modeling for Wi-Fi and LTE
- Wideband and UWB antenna design and analysis
- Tunable antennas and corresponding enabling devices
- Reconfigurable and smart antennas
- Wearable/flexible antennas
- Substrates, special materials, and fabrication techniques
- Integration within the host platform
- Antenna performance measurement techniques
- Field propagation in complex environments (rooms, buildings, tunnels, etc.)
- Evaluation of the RF exposure to wireless communication devices and infrastructures

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/ijap/wmt16/.

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