

Editorial

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Biographical notes: Sudip Misra is an Assistant Professor in the School of Information Technology at IIT Kharagpur, India and he is an Adjunct Professor at Ryerson University, Toronto, Canada. He received his PhD degree in Computer Science from Carleton University, in Ottawa, Canada and his Masters and Bachelors degrees respectively from the University of New Brunswick, in Fredericton, Canada and the Indian Institute of Technology, in Kharagpur, India. His current research interests include algorithm design and engineering for telecommunication networks, software engineering for telecommunication applications, and computational intelligence and soft computing applications in telecommunications.

The *International Journal of Communication Networks and Distributed Systems (IJCND)* was launched to provide a medium for researchers working in related areas to publish state-of-the-art findings and results. The intention was to enable the international research community to help learn the research advancements in this area from each other's work.

Following the launch of the first three issues, we are pleased to launch this issue as the final issue of the first volume of the journal. This completes a year of publication of this journal! In this issue, there are seven papers.

The first of these papers is entitled 'A topology control based self-organisation in wireless mesh networks', and is authored by Prodan et al. In this paper, the authors have proposed a generic self-organisation algorithm that assigns channels intelligently in multi-radio wireless mesh networks with the goal of reducing the interference and increasing the aggregate capacity of the network. The authors have evaluated the performance of their algorithm for realistic network scenarios.

In the second paper, titled, 'Password-based authenticated key establishment for wireless group communications in an ad hoc mode', the authors, Wu and Zhu proposed a password-based authenticated key establishment protocol for use in ad hoc networks. The protocol supports users to securely join and leave a group of nodes forming an ad hoc network. The members of a group can use single-shared or pairwise-shared passwords among them. The authors show that their proposed protocol is superior compared to some of the similar protocols in the literature.

In the third paper, titled, 'Strategies for fast scanning, ranging and handovers in WiMAX/802.16', the authors, Boone et al. present efficient algorithms for scanning, ranging and handovers while establishing network connectivity or performing handover between base stations in WiMAX/802.16 type of networks. The authors have established the superiority of their proposed solution through simulations.

The fourth paper in this issue is titled 'Employing cross-layer assisted TCP algorithms to improve TCP performance with vertical handoffs', and is authored by Daniel and Kojo. This paper deals with the study of the TCP performance in vertical handoff situations in access networks having varying characteristics of links. The authors use cross-layer concepts to enhance the performance of regular TCP in vertical handoff situations in access networks. The authors conducted performance studies and have established that such an approach, indeed, improves the performance.

The fifth paper in this series is titled, 'Arch-AdSenNets: an architecture for inter-working MANET with wireless sensor and actor networks', and is authored by Trung and Kotsis. In this paper, the authors propose Arch-AdSenNets, a new architecture to enable the interworking between mobile ad hoc networks and the wireless sensor and actor networks. The authors have used different optimisation schemes to handle different parts of the solution. The authors have established the effectiveness of their solution.

In the sixth paper, titled, 'A reliability-based framework for multi-path routing analysis in mobile ad-hoc networks', by Caleffi et al., the authors has addressed the problem of multipath routing in mobile ad-hoc networks. The authors make use of results from graph theory to offer an analytical framework for evaluating the routing failures in multipath route discovery processes. The authors evaluate performance bounds to estimate the performance of their solution compared to the traditional approaches.

In the last paper of this issue titled, 'Energy balancing cooperative diversity for wireless sensor networks', the authors, Hegyi and Levendovszky, discuss the problem in wireless sensor networks of developing cooperative diversity schemes with energy balancing in an environment characterised by Raleigh fading. The primary goal of their work is to increase the lifespan of a bottleneck node, while balancing out the crucial energy between such bottleneck node and the remaining less energy constrained nodes in the network. The authors have established their work through theoretical analysis and simulations.

We hope that readers will enjoy reading these papers and find them valuable. The readers are encouraged to contact the authors, if they need any further clarification regarding their presented works.

Finally, we take this opportunity to express a few words of our thankfulness. First, we would like to thank all the authors for considering *IJCND*S as a medium for publishing their work. We are also very much thankful to the members of the Editorial Board for their support in planning the journal and reviewing several papers. Last, but not the least, we would like to thank the staff at Inderscience, including but not limited to, Dr. Mohammed Dorgham and Mr. Jim Corlett, for the continuous support and assistance they have provided us in the pre-publication process.