

Preface

The three papers in this issue of the African Journal of Information and Communication Technology also cover three current hot areas of ICT, voice over Internet protocol (VoIP), ultra wideband systems and human computer interface. In the Issue we also present a list of reviewers who completed reviews of papers for the Journal for the last one year. The high standard of this journal is based on their expertise for which the editorial board is grateful. The Issue also presents three papers of major significance to current research in broadband communications and human-computer interface.

The first paper by Perera, Sirisena and Pawlikowski discussed optimal packetisation of voice over IP services. VoIP has emerged within the last few years as a major contender for analog voice communications. Its success relies heavily on the ability to reduce network and processing delays. This paper focuses on a different aspect of VoIP – that of optimal packetisation interval. Latency, jitter, bit error rate (packet loss rate), traffic rate and indeed bandwidth utilization and throughput are directly related to optimal packetisation of a VoIP service. One of the objectives of this paper is to reduce packet overhead which impacts upon bandwidth utilization and throughput. A key finding of the paper is that by careful selection of optimal packet intervals, the number of active VoIP users is increased and throughput is also enhanced. For those interested in establishing the performance of voice over IP networks, this paper provides a useful resource base.

The paper by Ghavami and Dilmaghani also deals with a current research topic in broadband communication and is related to the previous paper as it also deals with timing issues; this one is on synchronization (timing recovery) of ultra wideband systems which is required for efficient detection of the signal at the receiver. Two approaches based on maximum likelihood techniques are proposed. The authors have also proposed two non-coherent timing circuits, the first based on digital delay locked loop (DDLL) and the second on early-late technique.

The third paper by Matthias Rauterberg is an inter-disciplinary publication on the merits of usability and interfaces in current system design philosophy. Device interface designers often ignore the human elements in their design and as a result provide systems that are not only hard to use by most people but also complex in nature. This paper presents, discusses and recommends an approach for integrating the strengths of different research and design paradigms based on triangulation. The author argues for HCI as an engineering discipline. Human-Computer Interface may yet become very prominent in the emerging era of man-machine interaction and hence this paper provides a philosophical basis for consideration for those interested in the area.

Lastly, the Issue contains a call for papers on an emerging research area that targets the fourth generation (4G) networks – cross layer design. A Guest Editorship Issue is therefore planned for June 2007 on this hot topic of interest to the international ICT community in wireless Internet and next generation networks (NGN). We commend this Issue to you.

Editorial Board

Editorial Team (Issue 4)

Prof(Adj++) Johnson I Agbinya (Editor in Chief) University of Technology, Sydney, Australia; ++Department of Computer Science, University of the Western Cape, Bellville, South Africa.



Johnson I Agbinya received his PhD in Electronic Engineering at La Trobe University in 1994 and subsequently joined Australia's premier research institute, Commonwealth Scientific and Industrial Research Organisation (CSIRO) as a Senior Research Scientist where he undertook research in biometrics, pattern recognition and signal processing. At CSIRO he developed patented speech recognition and face recognition systems. He joined Vodafone Australia in 2000 as a Principal Engineer responsible for its industrial research administration on mobile and wireless communication where he served as its sole representative in several international standard bodies and the Australian Telecommunication CRC Executive Committee. He also contributed to Vodafone Australia's preliminary design of 3G radio access network in the Emerging Technologies Group. He also represented Vodafone Australia in the Vodafone Research Group from where he was spotted and appointed as Adjunct Professor in 2002 at the Department of Computer Science, University of the Western Cape (UWC). He is a key member of the Telkom / Cisco Centre of Excellence in Internet Computing at UWC. Prof. Agbinya is currently a Faculty member in Information and Communication Group at the University of Technology, Sydney. His research interests are in wireless communications, sensor networks, digital identity management systems, networks on mobile platforms and in uncovered areas.

Prof. H. Anthony Chan (Editor) Department of Electrical Engineering, University of Cape Town, Rondebosch, South Africa



H Anthony Chan received his PhD in physics at University of Maryland, College Park in 1982 and then continued post-doctoral research there in basic science. After joining the former AT&T Bell Labs in 1986, his work moved to industry-oriented research in areas of interconnection, electronic packaging, reliability, and assembly in manufacturing, and then moved again to network management, network architecture and standards for both wireless and wireline networks. He had designed the Wireless section of the year 2000 state-of-the-art Network Operation Center in AT&T. He was the AT&T delegate in several standards work groups under 3rd generation partnership program (3GPP). During 2001-2003, he was visiting Endowed Pinson Chair Professor in Networking at San Jose State University. In 2004, he joined University of Cape Town as professor in the Department of Electrical Engineering. Prof. Chan is Administrative Vice President of IEEE CPMT Society and had chaired or served numerous technical committees and conferences. He is distinguished speaker of IEEE CPMT Society and is in the speaker list of IEEE Reliability Society since 1997.

Prof. Donald Adjeroh (Editor) Lane Department of Computer Science and Electrical Engineering, West Virginia University, USA



Don Adjeroh received he Ph.D. degree in computer science from the Chinese University of Hong Kong in 1997. He is currently an Assistant Professor with the Lane Department of Computer Science and Electrical Engineering, West Virginia University (WVU), Morgantown, USA. Before joining WVU in November 2000, he was on the faculty list at the Department of Computer Science, University of Canterbury, New Zealand. His general research interests are in image and video processing, multimedia information systems, multimedia data compression, distributed multimedia systems, computational aspects of vision, and bioinformatics. He received the US DoE CAREER Award in 2002. Don Adjeroh is a member of the IEEE and the IEEE Computer Society.