Editors: Nicu Gavriluta, Razvan Raducanu, Mihaiela Iliescu,
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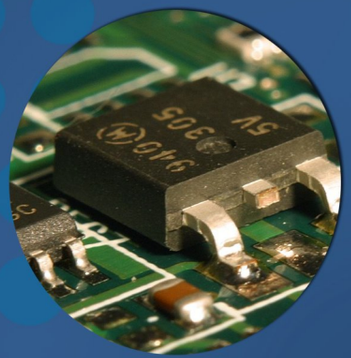
Computational Engineering in Systems Applications

Volume II

Proceedings of International Conference on Energy, Environment,
Economics, Devices, Systems, Communications, Computers



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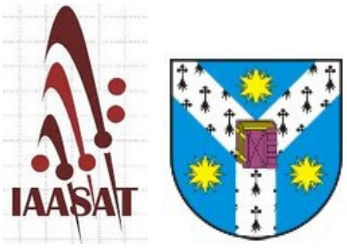

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Plenary Lecture 1

Further Trends in Fourth Generation Mobile Systems:Convergence, Quality of Service, Security and Applications

Professor Zoran Bojkovic
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Abstract: In fourth generation 4G system concept, the user has freedom and flexibility to select any desired service with reasonable quality of service QoS and affordable price, any time, anywhere.There are many attractive features for 4G which ensure a very high data rate, global roaming, incorporating the mobile world into the Internet Protocol IP-based core network, establishing an efficient billing system and perfect handoff mechanisms. Improvements over the third generation 3G include enhanced multimedia, smooth streaming video, universal access and portability across all types of devices. Migrating current systems to 4G presents enormous challenges. Current systems must be implemented with a view to facilitate a seamless integration into 4G infrastructure. Today 4G is a convergence platform providing clear advantages in terms of coverage bandwidth and power consumption. It offers a variety of new heterogeneous services. All these characteristics are supported by multimode/reconfigurable devices and implementation of interworking ones. 4G mobile communication networks are expected to provide all IP-based services for heterogeneous wireless access technologies, assisted by mobile IP to provide seamless Internet access for mobile users.Methodologies for QoS and security support in 4G networks integrate signaling with authentication, authorization and accounting AAA services to guarantee the user applications, QoS requirements and achieve efficient AAA. An integrated service and resource management approach is based on the cooperative association among QoS brakers,AAA, and charging systems. Seamless vertical handover VHO is an important function of beyond 3G systems. Concept transfer can help support seamless VHO, while maintaining the raquired security level. This presentation is organized as follows. After the introduction showing mobile system generation together with short history of mobile technologies,including various existing and emerging wireless technologies, the next section deals with converging of high speed Inernet and mobility as a major drivers of future wireless. Design objectives are also presented. The second part describes network selection with most appropriate selection criteria (service type, available resources, user content). Then, quality of service providing guarantees in 4G networks is emphasized. This is one of the most difficult problems that are to be solved, when it comes to IP mobility. Mobile IPv6 have been proposed to reduce the handover lattency and the number of lost packets. Several approaches are opened for consideration like: security, convergence of mobile communications and broadcasting , as well as convergence benefits. Reconfigurable technology together with applications including multiple operators and billing system conclude further trends in the area of 4G mobile systems.

Brief Biography of the Speaker: Prof. Dr. Zoran Bojkovic (http://www.zoranbojkovic.com) is a full professor of Electrical Engineering at the University of Belgrade,Serbia and a permanent visiting professor at the University of Texas at Arlington, TX, USA, EE Department, Multimedia System Lab. He was a visiting professor in more than 20 Universities worldwide and has taught a number of courses in Electrical Technology, Telecommunication Systems and Networks, Speach, Image and Video Processing, Multimedia Wire/Wireless Communication Systems, Computer Networks. Prof. Bojkovic is the co-author of 6 international books/monographies (Publishers: Prentice-Hall, Wiley, CRC Press, WSEAS) Also, some of these books have been published and translated in Canada, China, Singapore and India. He is co-editor in 62 International Books and Conference Proceedings. He has published more than 420 papers in peer-reviewed journals, conference proceedings and publications.He has conducted keynote/plenary lectures, workshops/tutorials as well as seminars , and participated in more than 70 scientific and industrial projects all over the world.He has been a consultant to industry research institutes and academia. His activities included serving as Editor- in- Chief in 2 International Journals and as Associate Editor in 3 International Journals. Prof. Zoran Bojkovic is an active researcher in wire/wireless multimedia communications. He is a Senior Member of IEEE and WSEAS, member of EURASIP, full member of Engineering Academy of Serbia as well as a member of Serbian Scientific Society.

Plenary Lecture 2

Computer Support for CLIL - Content and Language Integrated Learning

Suzana Carmen Cismas PhD,
Department of Modern Languages and Communication,
The Polytechnic University of Bucharest, Romania

Abstract: Computers are a basic tool required in Content&Language Integrated Learning (CLIL), which involves teaching a curricular subject through the medium of computers and a language other than the native tongue normally used. CLIL is taking place and has been found to be effective in all sectors of education at all ages, to adult and higher education. Its success has been growing over the past ten years and continues to do so. Professors working with CLIL are specialists in their own discipline rather than traditional language teachers. They are usually fluent speakers of the target language, bilingual or native speakers, working in partnership with other departments to offer the program in various subjects. Benefits of CLIL include, but are not limited to: building intercultural knowledge and understanding, developing intercultural communication skills along-side with multilingual interests&attitudes, improving language competence&oral communication skill, providing opportunities to study content through different perspectives, and diversifying methods and forms of classroom practice. It does not require extra teaching hours and comple-ments other subjects rather than competing with them. Hence it is a modern and effective approach, which increases learners' motivation and confidence in both language&subject taught.

Brief Biography of the Speaker: Suzana Carmen Cismas is Doctor of Philology and Doctor of Education Sciences and has been performing didactic activities for 24 years on research topics dealing with cultural studies, communication in foreign languages and English testing for engineering. She held the quality of Invited professor at Coventry University UK and at Universite Libre de Bruxelles. She is the author of nine books and 87 articles published in Romania and abroad. Proficient in English, Spanish, Italian, and French, she has benefited from numerous scholarships in London University libraries, free schools & didactic material centers in Denmark, at the Sorbonne, Francois Mitterand National Library, Centre Pompidou and Centre Henri Pierron, Universite Libre de Bruxelles, and the Royal Library Stockholm. She was granted cultural heritage post-doctoral research by the Italian Government in 1999. The study visit to Tokyo and Hiroshima for documentation purposes shed new light on eastern culture&civilization: patterns and bias in cultural studies, heritage preservation, promotion of the national culture worldwide, the status of the contemporary metropolis, translation issues and equivalation of cultural codes among European, American and Japanese communication styles. She has also been involved in numerous debates and workshops on issues regarding orientalism and occidentalism, and in many courses organized by the British Council and by the American Cultural Center. She has participated in grants and research projects with the Polytechnic University of Bucharest, the Romanian Ministry of Education and Research, the SOROS Foundation for an Open Society, Centre Education 2000+, and ANSIT (National Agency for Supporting Students' Initiatives), and is member of numerous professional and research associations in the field.