2 Editorial: Serbian Publication InfoReview joins UPENET, the Network of CEPIS Societies Journals and Magazines
2 From the Chief Editor’s Desk
New Deputy Chief Editor of UPGRADE

Monograph: Identity and Privacy Management (published jointly with Novática*)
Guest Editors: Javier Lopez-Muñoz, Miguel Soriano-Ibáñez, and Fabio Martinelli

3 Presentation: Identify Yourself but Don’t Reveal Your Identity — Javier Lopez-Muñoz, Miguel Soriano-Ibáñez, and Fabio Martinelli
6 Digital Identity and Identity Management Technologies — Isaac Aguado-Ruiz
13 SWIFT — Advanced Services for Identity Management — Alejandro Pérez-Méndez, Elena-María Torrogllosa-García, Gabriel López-Millán, Antonio F. Gómez-Skarmeta, Joao Girao, and Mario Lischka
21 A Privacy Preserving Attribute Aggregation Model for Federated Identity Managements Systems — George Inman and David Chadwick
27 Anonymity in the Service of Attackers — Guillermo Suarez de Tangil-Rotaeche, Esther Palomar-González, Arturo Ribagorda-Garnacho, and Benjamin Ramos-Alvárez
32 The Importance of Context-Dependent Privacy Requirements and Perceptions to the Design of Privacy-Aware Systems — Aggeliki Tsohou, Costas Lambrinoudakis, Spyros Kokolakis, and Stefanos Gravalias
38 Privacy… Three Agents Protection — Gemma Déler-Castro
44 Enforcing Private Policy via Security-by-Contract — Gabriele Costa and Ilaria Matteucci
53 How Do we Measure Privacy? — David Rebollo-Monedero and Jordi Forné
59 Privacy and Anonymity Management in Electronic Voting — Jordi Puiggalí-Alpezz and Sandra Gausch-Castelló
66 Digital Identity and Privacy in Some New-Generation Information and Communication Technologies — Agustí Solanas, Josep Domingo-Ferrer, and Jordi Castellá-Roca
72 Authentication and Privacy in Vehicular Networks — José-Maria de Fuentes García-Romero de Tejada, Ana-Isabel González-Tablas Ferreres, and Arturo Ribagorda-Garnacho

UPENET (UPGRADE European NETwork)

79 From ITNOW (BCS, United Kingdom)
ICT in Education — Enthusing Students — Bella Daniels
81 From InfoReview (JISA, Serbia)
Information Society
“Knowledge Society” is a European Educational Imperative that Should not Circumvent Serbia — Marina Petrovic

CEPIS NEWS

84 Selected CEPIS News — Fiona Fanning
86 Privacy-Consistent Banking Acquisition — CEPIS Legal and Security Special Interest Network

* This monograph will be also published in Spanish (full version printed; summary, abstracts, and some articles online) by Novática, journal of the Spanish CEPIS society ATI (Asociación de Técnicos de Informática) at <http://www.ati.es/novatica/>.
Enthusing students about IT is not always the hardest of jobs, but maintaining that interest as students grow is the challenge.

Keywords: Computer Science, Enthusing Students, LSI Bot Master Challenge, School, Students, Technology.

Children are often naturally interested in gadgets and computers, as are most adults, yet this year the number of A-level students taking IT continued to fall with a drop of 2.7 per cent. Clearly something happens that breaks the excitement between the enjoyment of technology and wanting to study it formally, especially with girls. In 2009 only 454 girls studied A-level computing in the UK, compared with 4,256 boys.

One way of creatively teaching students is to bring the technology to life with real world examples that students can create and control. It is much easier for students to understand technology when they are actively involved in running a successful project themselves.

Students need to learn how to use computer software to function effectively in our modern computerised world. But more than this, computer science and engineering are of benefit not only to students who may want to go on to study, but also to everyone who must interact and manipulate technology as part of their everyday lives.

Schools are often challenged by a lack of expensive IT resources which can hinder effective practical lessons in the world of modern technology. LSI Europe decided to use its technical expertise to give something back to the local community as part of its philanthropy programme. Following consultation with a number of local schools, the decision was made to launch an educational programme to support learning through practical skills and supply resources in schools to promote IT in action.

Small Robots

In October 2008 LSI launched the LSI Bot Master Challenge in collaboration with nine primary and junior schools in the Bracknell Forest area. The programme consists of a six week rolling educational programme in which, during its initial year, 20 teachers worked with LSI Bot Master Engineers to master the control of a small robot, created by the engineers.

The programme was developed in response to the growing demand for greater practical skills and teaching resources in the areas of engineering, science and technology. The LSI Bot Master Challenge was designed to enable teachers to confidently teach science and technology and give pupils the opportunity to take a practical approach, enabling them to explore control and monitor techniques hands-on, using robotic models.

At the time of launching the programme, LSI provided 20 pre-built robot models made from Lego Mindstorm NXT kits, together with workbooks based on 2Simple software written by LSI Learning Consultant, Christine Ashfield. The workbooks provide real-life challenges for the pupils to work through. LSI also provided supporting teaching materials and a dedicated helpline for the teachers. The kits were rotated through the

Author

Bella Daniels is Events Manager and Marketing Programmes Manager at LSI, a multinational IT company with headquarters in California, US. <Bella.Daniels@lsi.com>
nine participating schools, reaching over 450 pupils during the first year of the scheme.

The programme was originally designed for pupils in Year 6 (in the 10-11 age bracket) and addresses control and monitoring learning outcomes, as part of the ICT national curriculum.

During their training with LSI engineers, teachers complete challenges with the robots that are then transferred to the classroom and repeated with the students. In addition an LSI engineer visits each school before and after the six week programme to discuss the real-life importance of IT and engineering, and teachers and children are given certificates of achievement for completing the tasks and learning materials. An ask the expert session is held to cement the lessons learnt by the students.

The programme has been developed to be completely hands-on, and teachers and students appreciate the chance to play with the equipment and give feedback on the lesson experience.

Professional Development

Helen Greehy, ICT Training Officer, Bracknell Forest and Penny Knight, Primary Consultant, Bracknell Forest commented: "We really appreciate the programme that LSI has developed for the schools in Bracknell. The LSI BOT Master Challenge is giving teachers a real opportunity for quality continuing professional development and is opening up opportunities for schools to develop control technology that would otherwise have been denied due to lack of equipment and teacher confidence".

The programme has been so successful that Bracknell Forest Educational Authority has purchased an additional 28 kits to extend the programme to all schools in the Bracknell Forest area as well as Year 5 pupils. Kits will continue to be loaned on a rotational basis while additional schools are incorporated. During the 2008/2009 school year the programme will reach over 2,000 Year 5 and Year 6 pupils.

Christine Ashfield commented: "We are really excited about this sustainable project that addresses a real resource issue. Teachers are often challenged by having to split classes or teach by theory due to limited equipment and the time needed to get familiar with the technology itself. This programme enables schools to carry out practical classes with pupils and grow their knowledge of control technology. It is also exciting to be providing students with a real insight into the world of engineering and to be given the opportunity to use technology in a practical way".

The BOT Master Challenge is one element of LSI’s corporate philanthropy programme through which employees have the opportunity to give something back to the local community. LSI supports programmes globally with a particular focus on promoting learning of science and technology for children between the ages of 4 and 18 years old.

Simple programmes such as these can bring a real sense of accomplishment and practical know-how to the lives of students and hopefully inspire them to stay with computing and make an important contribution to their future careers and abilities.

This is especially key with regards to equipping female students with the necessary skills for life and a potential interest in computing careers for their future.

Please visit: www.bcs.org/enthusingstudents
"Knowledge Society" is a European Educational Imperative that Should not Circumvent Serbia

Marina Petrovic

This paper reports on the professional development seminar for teachers of elementary and secondary schools called "ICT in Education" held on October 2009 at the Faculty of Sciences in Novi Sad, Serbia, where the participants were given lectures and demos about the last developments in hardware and software, and reviewed the situation of IT in the school system of the country, a key area for the progress of the Knowledge Society.

Keywords: Knowledge Society, Professional Development, Schools, Serbia,

Life-long learning has taken precedence when it comes to education, thus teachers, students and parents must understand that education does not stop when official education ends. Moment when the current elementary school pupils become capable of working will require fast and successful change of work which inevitably needs continuous learning and improving. Since entire knowledge quantum increases every day, it means that each inhabitant of the planet always has to change and learn. New concept of learning - electronic learning facilitates this process. The role of educational system is to monitor everyday scientific-technological development and train students to use information and communication technologies in their future personal and professional life in order to acquire new knowledge and its practical usage. ECDL, as a way of standardization of IT skills and knowledge in Europe and the world, sets a good framework for defining the performance level that one has reached. This alleviates more efficient use of employees' working hours, greater students and employees' mobility, as well as easier finding jobs in the country and abroad.

These issues precisely were topics of professional development seminar for teachers of elementary and secondary schools called "ICT in education" held on October 10 at the Faculty of Sciences in Novi Sad. The seminar was organized by the Agency for Education "Marina and John" from Novi Sad which about 60 participants attended. Attendees learnt useful profession-related information, as well as news from the world of software and hardware. The seminar was thematically intended for all teachers in elementary and secondary schools that use IC technologies in teaching, primarily for informatics, technology and electrogoup subject teachers. Marina Petrovic, owner and director of the agency, was seminar’s host.

Seminar began by reviewing the professional training of teachers on postgraduate studies that Prof. Dr. Milos Rackovic, deputy director of the Department of Mathematics and Informatics, Faculty of Sciences in Novi Sad, talked about.

Bojana Minic from ECDL office in Belgrade talked about digital literacy standardization and ECDL standard, requirements, introducing methods and regional experiences. Participants were especially interested in this topic. They particularly wanted to learn about opportunity for students who could pass ECDL exams while still studying and gain the world valid certificate that they would apply to universities in Europe and the world, as well as with finding a job in the country and abroad.

As just one day before, on October 9, 2009 ECDL Regional Conference took place in Belgrade, the participants could hear the latest information on experiences of our regional countries and conclusions of the conference. Comparing the results with the coun-
tries in the region, submitted by Bojana Minic, is unfortunately devastating for us. As an example, our country has only issued 17,000 certificates exclusively as individual investments (Telekom Serbia, Electric Power Industry of Serbia, Ministry of Defence, Jat, PTT, universities, etc lead), while in European countries the situation is completely different: Hungary already has 450,000 certified, Romania 350,000, Bulgaria 200,000 Greece 850,000, Italy 1,6 million... on this occasion, JISA assigned ECDL index and free taking of ECDL exams to Jasna Ristic, computer applying in electronics teacher, Electrical Engineering School, Nikola Tesla, Belgrade.

About research results on position of our school system in ICT applying informatics professor Goran Jovisic, President of Association of Serbian informatics professors spoke, who presented the research results "ICT in teaching in Serbian schools, state, and development perspectives". Here is only one paradox standing out in the conclusion of the research. Informatics is not a compulsory subject in primary schools. In vocational high schools, lesson is realized in all four grades as regular classes. In secondary schools, education is realized in the first grade as a compulsory subject, and in some schools, informatics is taught for two, three or four years depending on profile-direction that is educated. The largest number of secondary schools in Serbia is vocational secondary schools. If students do not have the electoral computer classes in elementary school, it is clear that they, during their entire education, only study IT in the first grade of secondary school. This fact is devastating for education system of a state. The examined sample included 4,918 teachers from 112 schools throughout Serbia (71 primary schools, 27 vocational secondary schools and 14 grammar schools).

Great support to the Ministry of Education and teachers in improving their potential is the company Microsoft that has repeatedly organized free seminars, training and competitions for our teachers within its project "Partners in Learning", starting from 2004 until today. Katarina Milanovic, manager of the project "Partners in Learning" from Microsoft office in Belgrade presented realized programs review to the attendees. Then she demonstrated free Microsoft Photosyn program for 3-D, a review composed from many photographs.

Realistic comparison to our neighbour Montenegro and ICT in their educational system was made by Vesna Bulatovic, IT supervisor in the Department of Education of Montenegro. She spoke about their ICT resources (e.g. in 2005, the student-computer ratio was 120:1, and in 2009, it was 15:1), about relationship of educational personnel and ICT, as well as about plans and programs for information subjects in primary, secondary vocational schools and grammar schools. After the interactive discussion, conclusion that our two countries still match in many ways was imposed.

The focus of the seminar was set to e-learning and the necessity of its introduction into the curriculum of secondary and even primary schools.

Slavica Gomilanovic, specialist in educational technology from Oreskovic, reminded about e-learning theory, its history and usage in teaching with a lecture on "e-learning as a new teaching concept". Director of EBC Test Center, Vladan Stevanovic, also talked about this describing possibilities of online learning on its own software system created specifically to support online candidates' prepare for taking ECDL exam through training and testing candidate’s knowledge. The system also allows users direct and online exams by ECDL program.

Marina Petrovic, informatics professor, master in eLearning, talked about possibilities of introducing ATutor e-learning tools and easy opening of e-classroom, in both secondary and primary schools. She pointed out that this free software is easily applied for both online and offline learning even when teacher does not have Internet connection in the classroom and that using this program, each classroom can be converted to e-classroom. School and teachers are required to follow new challenges of time and guide their students to new sources of knowledge and ways of learning. Introducing Open source (free, available) software solutions should be considered. Lecture on ways of managing the e-classroom by using the software package Net Support School followed. This multi-function program was presented by informatics professor Igor Lazarov from Vrsac. Numerous opportunities of managing computers in local network and activities of students sitting at those computers were presented, as well as creating, solving and statistic test processing for students.

Story of e-learning and distance learning supported was told by professor Dr. Danijela Milosevic from eLab’s from the Technical Faculty in Cacak who, by making the video connection with PMF in Novi Sad, presented a unique online studying program for graduated technology and informatics professors training. This program can be proud of a successful generation of students, masters in eLearning, the first in Serbia. Assistant Marjan Milosevic, who led the session in Novi Sad, presented free tools for video conference-Skype, DIM-DIM as well as free software Jing for creating teaching tutorials which caused great interest of participants. Such a way of communication is technically very demanding and needs improved infrastructure in schools and other institutions. Marjan Milosevic pointed out the advantages of this way of communication and the reduction of material costs and time savings.

Interesting and free tools, available to everybody for easy learning of object programming for elementary and secondary school students were presented by professor Dr. Djordje Herceg from PMF in Novi Sad. He also pointed out program called Alice programming that could attract "even girls in elementary school" to programming, which is one of the slogans of a manufacturer.

The lecture on robotics in elementary school of MSc Zeljko Stankovic from the Institute for the Advancement of Education presented cd Robby as a programmable teaching tool. Cd
Robbie, robotized platform with PLC, can be used for a wide range of teaching modules in the field of technical education, mechanics, electronics and information technology, of course. From hardware topics, we should point out lecture on iPod Touch that can facilitate everyday communication on both personal and professional level. This relatively new hardware "for the world in a pocket" was presented by informatics professor Pavle Pejak from Computer Gymnasium Smart from Novi Sad. He also explained the way to communicate with their students, talented for IT and computing, so it was another good example for applying e-learning. At the end of the seminar, the hardware wizard Damir Derdic from Novi Sad addressed the participants, who systematically presented all parts of computer hardware, possible problems and ways for their elimination with subject "PC tips and tricks - how to repair the most common failures".

Participants left the seminar very satisfied and ready to apply some of new knowledge in their classroom. More information about the seminar as well as photos can be seen on www.azomj.com.