Newsletter - *Calibrated for Creative Communications*

Vol. 8, no. 1, Spring 2010

Spring is in the Air

This issue focuses on ICT skills and is a fusion of national and international experience, as described by representatives of IT STAR, the CEN Workshop on ICT Skills and the European Commission.

On the backdrop of the European e-Skills Week, 1-5 March, presented by J. Murray, DIGITALEUROPE project director, there are contributions from:

- P. Schgör (CEN WS on ICT Skills) on *e-Skills Standards for the Future*
- F. Lau (CIGREF) and H. Delafon (CEN WS on ICT Skills) *on the French ICT Skills Scene*
- R. French (BCS) *on Green IT Skills*
- R. Bellini (AICA) on *EUCIP Services*

Furthermore, L. Telksnys (Lithuania) presents the RAIN project which, along with the development of a broadband e-infrastructure, aims to focus on knowledge infrastructure to promote skills transfer and capacity building, and M. Bogdanowicz (IPTS - EC) writes about a study on Embedded Systems and the importance of ICT skills for EU competitiveness.

On the cultural front, MultiCulti takes you on a trip to a World Heritage destination, to which Jason and the Argonauts meandered many centuries ago.

Take the Journey,

Plamen Nedkov

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Editor

P. Nedkov, Leesdorfer Hauptstr. 96
A-2500 Baden, Austria
e-mail: **editor@starbus.org**, web-site: **nl.starbus.org**

Letters to the Editor

Extracts from emails to the Editor with respect to the last issue ... comments and suggestions are always welcome – our coordinates are on page 1.

"Thank you very much for the two newsletters sent by post. They look nice and it seems that IT Star is really taking speed towards success."

Augusto Casaca, INESC-ID, **Portugal**

"Thank you very much for the information received. I am deeply involved in (Business) Informatics Education and am interested in IT STAR's activities and to participate and contribute to the next conference."

Stanislaw Wrycza, Chair of Department for Business Informatics, Gdansk University, **Poland**

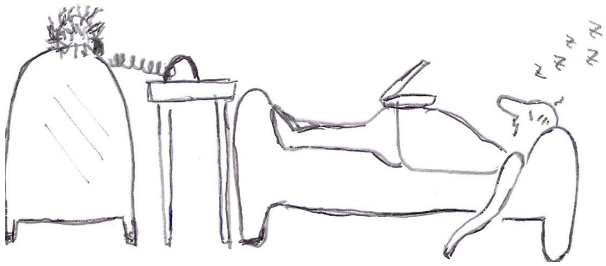
"Thank you for the new Newsletter, which I have forwarded to LIKS colleagues.

It was a surprise, pleasure and honor for me, that the shared photos were useful! It's good to feel being a part of our IT STAR community. The excerpt from the Opening Address by Prof. Lamborghini sounds in full unison with what Prof. Laimutis Telksnys (the 'father' of Lithuanian broadband for rural areas project RAIN www.rain.lt) is aiming to achieve; I've forwarded that to him.

The importance of the NL is without any doubt high. One more surprise was „Journey in Time" by Dorothy Hayden - as we say, small/short can be beautiful, too."

Saulius Maskeliunas, LIKS representative, **Lithuania** ■

Cartoon of the Issue



"Thanks for asking. He is beyond the eBusiness thing – got a netbook and now concentrates on eNapping."

The Delivery Co.,March'10

EDITORIAL POLICY

This Newsletter maintains a world-class standard in providing researched material on ICT and Information Society activities from the perspective of Central, Eastern and Southern Europe (CESE) within a global context. It facilitates the information and communication flow within the region and internationally by supporting a recognized platform and networking media and thus enhancing the visibility and activities of the IT STAR Association.

The stakeholders whose interests this newspaper is addressing are

- IT STAR member societies and members
- ICT professionals, practitioners and institutions across the broad range of activities related to ICTs in government, business, academia and the public sector in general
- International organizations.

Special arrangements for the production and circulation of the Newsletter could be negotiated.

The newsletter is circulated to leading CESE ICT societies and professionals, as well as to other societies and IT professionals internationally. Everyone interested in CESE developments and working in the ICT field is welcome to contribute with original material. Proposals for articles and material for the Newsletter should be sent two months before the publication date to editor@starbus.org.

■

e-Skills Week

e-Skilling: Working Smarter for Europe's Future

by Jonathan Murray

Jonathan is project director at DIGITALEUROPE responsible for the EU e-Skills Week campaign. His experience extends to campaign management, strategic planning, business development and process re-engineering.

The ICT industry will be the cornerstone of economic recovery and important for future jobs and growth in Europe. By 2015, digital industry has the capacity to create 400,000 new jobs, if we can develop or attract more skilled ICT practitioners.

Yet, while digital industry in Europe provides an excellent platform for future job creation, we are suffering from a critical shortage of digital skills in all sectors; most particularly in sectors such as software and computer industries.

In a world, which is increasingly driven by digital technology, there is a need for people in Europe to embrace a culture of innovation and the opportunities afforded through e-skilling. The European e-Skills Week is a landmark initiative funded by the European Commission, DG Enterprise and Industry, which will help stimulate interest in e-skills and innovation.

The official launch of the European e-Skills Week will take place at the world's largest digital industry tradeshow, CeBIT, Hannover, Germany, on 2 March 2010. The Opening Conference event marks the start of a week filled with more than 200 stimulating and informative events and activities such as conferences, webinars, CEO tours to schools and workshops.

Thanks to a coordinated effort by government, industry and education - European e-Skills Week will host an array of industry and education led workshops and events. The focus is to highlight the critical role innovation skills play in securing future economic competitiveness in Europe; together, digital industry, education and government are investing time, money and energy in bringing this goal to fruition.

The broad range of activities across 35 countries in Europe will encourage people to build basic ICT skills; highlight the sectors where skilled ICT professionals are required, and ways for people to develop technical skills. Literally hundreds of activities, training events and competitions will take place, all aimed at inspiring people to discover e-skills – youth to retirement.

Social and economic benefits to European society, and to individuals within society through e-skilling, are limitless. This unique pan-European platform provides the essential broad scope for demonstrating the advantage of the opportunities presented through e-skilling, and the benefits to be gained by European society and business.

DIGITALEUROPE have joined with European Schoolnet (a network of 31 Ministries of Education), 20 National Contact Points, hundreds of stakeholders, and digital industry partners to promote e-skills.

Young people, teachers, public authorities at European and national levels, national trade associations, SMEs, schools, students, NGOs, and people looking for a job or new career directions - are participating in this unique and historic campaign.

SMEs are invited to attend workshops, and other activities designed to build their digital business platforms and develop their future potential.

More than 400 people are expected to attend the European e-Skills Week Closing Event planned for 5 March in the Expo Grand Hall at the SQUARE in Brussels, which will include an Awards ceremony and post event party.

By highlighting the current lack of e-skills in Europe, and the impact on European competitiveness - this tri-lateral approach driven by government, industry and education - will identify not only the opportunities afforded through e-skilling, but also solutions to bridge the current skills gaps.

Digital literacy is the turn-key to future job opportunities. It is also a critical element in Europe's economic recovery. The role of digital in the economic recovery - due to its ubiquitous presence in products and services, across all markets – is a corner stone of Europe's future economic success.

More information on European e-Skills Week is available on the official website; please visit http://eskills-week.ec.europa.eu or visit Facebook - e-Skills Week's online social community - which is receiving hundreds of click-throughs a day. European e-Skills Week updates are also available through Twitter, and LinkedIn.

■

e-Skills Standards for the Future

by Paolo Schgör

Paolo is Chairman of the CEN Workshop on ICT Skills as well as ECDL and EUCIP Certification Manager at AICA

The European e-Skills Week provides an excellent opportunity to bring our attention to the complex issues related to managerial and technical education in a fast changing world.

Since its origin in the second half of the last century, the modern Information and Communication Technology has constantly increased its pace; moreover, a significant acceleration in the 1990's has made ICT so pervasive that it's now difficult to think of a human activity (either business-to-business, or business-to-consumer, or government-to-citizen, or even citizen-to-citizen) that has remained completely unchanged in spite of the digital technologies.

There's no doubt that this "digital revolution" has a number of positive effects, but on the other hand it creates some collateral damage, such as the digital divide and an increasing e-skills gap.

Both themes affect education policies, and in fact they have been in the agenda of the most advanced European countries for a decade, but only recently some awareness is maturing about the need to unite forces, so as to reduce the chaos resulting from thousands of different approaches and answers to the same issue.

The result of this new awareness can be summarized through two concepts:
i) the multi-stakeholder partnership approach, and
ii) standardization in the definition of ICT skills.

I'm not going to spend many words on the multi-stakeholder partnership approach: let me simply say it's a must in any country willing to have an effective e-Skills policy without imposing a dictatorship.

The only viable option is then to build consensus, or in other words, *to provide a platform for ICT skills stakeholders, to develop a common view, to enable them to contribute by promoting their views, to develop standards, and to seek means of collaboration with other relevant bodies*.
All words in italic are literally defining the mission and purposes of the CEN Workshop on ICT Skills.

Between 2003 and 2009, this CEN Workshop approved 7 major documents (the so-called CWAs): four of them refer to the European e-Competence Framework (e-CF), intended as a reference tool aiming at transparency and mobility in the EU labour market, and as a benchmark from the ICT business employers' perspective.

The most recent in this series is CWA16052, describing both the current picture on professional ICT skills standards, and the complex relations between education systems and ICT industry certification in several EU Member States.

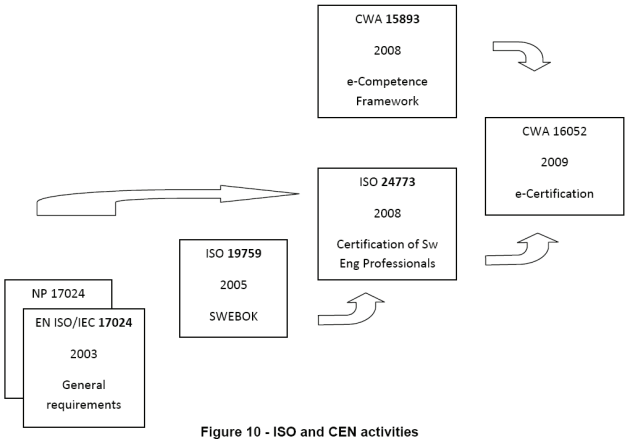


Figure 10 - ISO and CEN activities

The e-CF in its version 1.0 is however still the core product around which 2 projects are running and other 4 new are starting right now (March 2010).

The current projects on "End User e-Skills Framework" and "e-Competence Framework in Action" could intersect and provide together a comprehensive framework encompassing both user and practitioner skills.

Following the example given by ISO, this new and more comprehensive e-Competence Framework could even become a formal standard through a CEN Technical Committee.

In any case, innovation and e-business skills are yet to be explored and defined, and my personal vision is to consider this subject as our CEN Workshop's "new frontier".

Far beyond this frontier, the European e-Competence Framework could become practically available to organisations through a set of services built on top of it. According to previous work developed by Cedefop, skills definitions are useful, but they need to be completed by skills development and measurement methods, for instance through national qualifications frameworks, self-assessment tools, training & testing services, certification services. The European Commission is certainly not willing to override National Governments, nor to act as a market player offering such services!

On the other hand, some of the stakeholders are available to close the loop by supporting public and private organisations in getting the most from the e-CF through a complete range of such services.

In my country, Italy, the most important public and private institutions have already reached some good consensus around the EUCIP model for services on ICT professional skills and around ECDL for user skills certification. ■

Recent ICT-Skills Evolution on the French Scene

by Frédéric Lau and Hubert Delafon

Frédéric is Mission Director at CIGREF, the French Foundation with a mission to promote the use of information systems as a factor of value creation and a source of innovation for the company, and a team member of the "e-CF in Action" Project

Hubert is Vice-Chair of the CEN Workshop on ICT Skills

"It is not technologies that make effective Information Systems but the men who implement them."

In the 1980s the big companies understood that they have to reconsider their Information Systems. During a period of 10 years they hired many computer specialists and created a lot of new jobs, which were born from the evolution of technologies. In this period, the Information Systems were the domain of the "technicians", and became a powerful production tool.

In the years 1990-1995, new technologies allowed companies to understand how business could benefit from their application. But the companies had to organize first of all the employed computer specialists so that they were aligned with the new strategies of the company. This professionalization of computing jobs led to the transformation of Information Systems as a tool of management and steering of the company.

The technology boom was not slowing down. During the last 5 years of the twentieth century, a whole new profession appeared stemming from new technologies, from the security problems related to the bug of the Year 2000 and from the takeover of system information by the users. The job cartography was gradually completed.

After the year 2000, the progress made to clarify new job profiles allowed companies to cope with new big projects such as the Euro and Sarbannes Oxley.

After having completed most of the big projects regarding functional architecture, priority was given to a better understanding of business needs: it wasn't only a question of addressing these needs but also really associating the business entities in their resolution. As they had the budget control, business entities had to assume their role and the ICT Departments contributed actively to the rise of this maturity.

In 2005, all big companies had an ICT job profiles framework. But then the problematics developed further: it was less an issue of ICT jobs than of an ICT "skills" one.

The human resources policies of the big companies had to evolve to take into account phenomena such as the evolution of ICT budgets, ICT technologies, management of providers, the "papy boom" [baby boom] or the mobility in a company.

They had to face within their ICT departments ambitious plans of skills management. The new needs focused on the knowledge of the company, economic and financial management, safety and risk management, technology watching and knowledge and understanding of user expectations.

Today, the ICT department is recognized as a source of value creation, its attractiveness increases, but at the same time, it becomes a department as the others, contributing to the business of the company. This professionalization of ICT departments is based on changes in models and organizations, in particular the shift in the service mode, which influences strongly the organization of ICT jobs.

Until the beginning of the 2000s, the organization of ICT jobs reflected a vision of the Information System, which was essentially "technical":

- Advising in Information Systems
- User support
- Production and operation
- Integration, research and development
- Internal support and expertise
- Administration and Management of the ICT Department

The reality in companies has changed since then. ICT jobs were gradually reorganized from a standpoint based on silos which emphasized the technicality of jobs, into a vision of layers at which jobs are organized in comparison to the business processes of the company, consolidating the idea that the CIOs are, in a global vision, connecting the business and the strategy of the company, and that the role of the ICT Department is not any more just technical, but that it is also involved in the organization of the business process of the enterprise.

Nevertheless, this reality remains ambiguous: the ICT department gains a "structural" role by helping professionals in organizing their processes but it also assists "desintegration" as the technological innovations brought by the ICT department may break these business processes.

The ICT jobs articulate now on the following:

- Piloting, organization and management of the evolutions of the information system
- Project Management
- Life cycle of the applications
- Maintenance in operational condition of infrastructures

- User support and assistance
- Support method, quality and security
- Operational Management

This evolution pulls upwards the ICT jobs of the ICT department, giving them a lot of added value and attractiveness. This new classification groups together jobs with related skills, shows possible evolutions, which seem more natural, and reveals more and more important cross-competences.

Of course, companies always need high-level skills in ICT. The professions regarding support are important again. Further to new insourcing projects, the architects are more specialized (technical / application software / functional / enterprise), but developers have to cope with the MDA (Model Driven Architecture) and the culture of Open Source is rising in the enterprise (management of community, monitoring, ability to share...).

A closer link between the Information System and the ICT department with the business entities of the company required higher competences of Information System Management for ICT jobs: managers in charge of ICT governance are present almost everywhere, and project managers become real conductors. It is also necessary to have provider managers, contract and portfolio managers and the mission of Enterprise Architects is to organize the information system based on the needs and the processes of the company.

As we can see, during the last ten years, the ICT métier has strongly evolved within enterprises: as a result, in order to cope with this new situation and the necessary associated changes, the effort of adaptation is still a real challenge for numerous ICT practitioners, ICT managers and ICT training and certification bodies. ■

Enabling Green IT

By Richard French

Richard is the Product Manager for Green IT at BCS, The Chartered Institute for IT. Richard is responsible for delivering a structured programme of Green IT activities and initiatives, which enable the IT profession to reduce their carbon impact from their IT operations. He has a background in marketing and product development, which has in recent years been in the skills and professional development area.

To enable Green IT, the British Computer Society (BCS), the Chartered Institute for IT, is providing the profession with the knowledge and expertise to allow experts to significantly contribute to creating low carbon and energy efficient outputs, both as individual IT professionals and within their organisations. This will have the effect of developing best "green" practice beyond the Institutes membership and therefore ensuring that through its activity and initiatives the Institute is truly "enabling Green IT" for the profession.

Through "enabling Green IT" the Institute provides individuals and organisations with the knowledge and experience to make considered procurement and planning decisions.

It may be helpful to look for a definition for Green IT. I would like to suggest the following as it seems to highlight the point that it covers a wide spectrum in the use of IT.

"Green IT is the efficient use of energy to and from IT. An amalgamation of people, networks, hardware, disposal and…?

"Enabling Green IT" – How the Institute delivers this…

The Institute is providing thought leadership and develops opinion providing an authoritative voice for the IT profession. We also develop solutions based on the IT professions requirements to enable ***individuals*** and ***organisations*** to engage fully in the green IT procurement and planning process with confidence through knowledge gained from the Institute. We have enhanced the solutions with a comprehensive and structured set of member groups, which not only allow the Institute's members to share Green IT knowledge and opinion, but also to allow the Institute to fully participate in the wider Green IT debate, engaging with governments (UK/EU/US), both on legislation and opinion forming.

This forms part of my belief that within Europe we (the IT profession) need a robust Green IT Programme, which comprises of many components, such as:

- Standardised European green recommendations and guidelines
- Standardised European green metrics, tools and technology
- Standardised European green competencies and skills

The Institute, along with partners within the EU, has a significant role to play in "enabling Green IT" through the development of standards, which ultimately lead to procurement requirements. We should aim to achieve this through the Institute's and other organisations' member groups in order to stimulate debate and develop opinions that can be relayed to the standards bodies and the EU Commission.

The Institute helps ***individuals*** to play their part in "enabling Green IT" by providing a set of qualifications that are designed to allow IT professionals at all levels to participate in Green IT, allowing informed procurement and planning decisions to be made. From the BCS Foundation

Certificate in Green IT (www.bcs.org/green) through to the BCS Intermediate Certificate in the EU Code of Conduct for Data Centres and the up coming BCS Data Centre Energy Cost Management qualification. The Institute has developed these qualifications in order to equip individuals to understand the main elements of a green IT strategy. As part of that they will also learn about legislation, regulations and policies effecting the procurement of green IT products and services.

The Institute also helps ***organisations*** to play their part in "enabling Green IT" by developing tools to drive best practice in energy management and low carbon IT, along with other initiatives and solutions. The tools, solutions and initiatives for organisations are developed by subject matter experts and allow organisations to operate their IT activity through a green "lens". This vision from the Institute has facilitated the move for organisational IT activity into the green area. All the Institute's tools, solutions and initiatives have at their heart a key benefit to organisations covering, energy cost reduction, reputation enhancement or wider brand strengthening e.g. through enhanced Corporate Social Responsibility statement.

BCS, The Chartered Institute for IT "enabling Green IT" through individuals and organisations…

Qualifications

- BCS Foundation Certificate in Green IT www.bcs.org/greenit
- BCS Intermediate Certificate in EU Code of Conduct for Data Centres www.bcs.org/greenit
- BCS Practitioner Certificate in Data Centre Energy Cost Management – launching in early spring 2010

From these qualifications The Institute is able through individuals to develop knowledge and ***evidence of knowledge*** that significantly contributes to the Institute "enabling Green IT". This also allows individuals to understand the fast developing world of procurement of green IT products and services.

The Institutes Member Groups

- BCS Data Centre Specialist Group, now contains over 1000 members
- BCS Carbon Footprint Working Group – launched and delivering member opinion to governments in UK/EU/US
- BCS Green IT Specialist Group – launched in Feb 2009 and focusing on the end-user

Through these groups and subject matter experts the Institute's members have access to vast resources to allow knowledge and opinion to be enhanced and developed, coupled with influencing the wider IT profession through contribution to thought leadership activity both verbally and in print. These groups allow the Institute to contribute opinion and expertise to the legislation and regulation process within governments both in the UK and the European Union parliaments. This is a key area in which the Institute and its members can "enable Green IT" and be at the forefront of the latest developments, thereby allowing them to fully appreciate the procurement requirements in the rapidly changing green IT world. Producing a pan-EU Green IT Programme should be at the heart of the ambition as it will provide consistency across member countries.

For more information on the Institutes activity in Green IT please visit www.bcs.org/green ■

EUCIP Services for e-Skills Management and Optimization in Public and Private Organizations

By Roberto Bellini

Roberto is President of AICA's Milan Chapter and EUCIP Manager, Italy

To focalize the type of services which could be useful for various objectives in the application of the EUCIP Standard, AICA developed an analysis of problem areas which could be of interest to large and very large organizations; both of the private and the public sectors. The reasoning was that stakeholders interested in an accredited competence and profile standard will more easily choose and adopt operationally as a reference scheme, which also provides a series of useful services.

The problems considered are in particular those of development and management of the Specialist Human Resources that work in two kinds of organizations:

- ICT Demand-side organizations
- ICT Supply-side companies

In the first case, regarding non-ICT companies (and in particular manufacturing, services, finance and trade companies) and organizations of the Public Administration, the specialist resources represent approximately between 1% and 7-8% of the total employees and the most precious resources are those with a very technical specialization. Beside the request of even more specialized resources, the ICT Demand-side organizations more often apply to resources provided by companies of the second type, with a relevant and increasing rise of the outsourcing phenomenon. Some companies decided and managed to have up to a 100% of outsourced resources!

In the second type of companies, those of the Supply-side, including hardware, software and ICT service companies, the specialist resources are approximately 80% of the employees. These companies have in principle management

problems like those depicted for the Demand-side, but the emphasis concerns resources in direct relation with business customers, both in the phases of project acquisition and project delivery. The certification of resources offered on the market could be very important as a way to strengthen the value of the personnel offered to the most important customers, in particular the ones who work at multinational level.

Based on these considerations, AICA decided to realize and promote two types of EUCIP Services:

- Individual oriented services, dedicated to already working professionals and managers, to develop and update their competencies on a work life-long basis;
- Company/organizations oriented services, in which the subject of the analysis is still the single worker (of the organization or of a third party) but the analysis itself and the results are configured to provide useful indications to solve problems at organizational level (private or public), instead of an individual level.

Considering only services for organizations, AICA developed a service portfolio, based on the following criteria:

- The services portfolio is structured and supported by tools;
  - Services are structured following the indication of a model based on the EUCIP standard;
  - Services are supported by the specific tools of the ECCO EUCIP family, that allow for every profile to deploy online services like
    - competence assessment and gap analysis between owned competencies and competencies required by the framework,
    - design of training and certification paths and monitoring of training results
    - support resource recruitment and project work resources assignment
- The service portfolio includes glossaries, dictionaries, handbooks, informative documents and all that could help the customer organization in using the services themselves.

The EUCIP Service Model has been designed to support the solution of the following problems:

1. Analyze and understand the structure of the available competencies
2. Evaluate how much for every single profile considered by the EUCIP Standard, the target competencies are uncovered;
3. Recognize, on the basis of the competence's gap analysis, the type of interventions to carry out in order to cover that gap, by using one or more of the following options:
   a. Internal and/or external turn-over management
   b. Design of training paths focused on the reference standard and the sector benchmark
   c. Correctly assign roles to the personnel by using their pattern of competencies
4. Select and encourage towards the European certification the specialists and managers critical for the evolution of the IT infrastructure and application development plans and for the management of new digital based services;
5. Evaluate and optimize, by using the sector benchmark, the salary level of the professionals;
6. In case, and in particular for the Public Administration Information Systems, redefine the supply contracts of the IT specialists by using as reference not only the roles but also the competencies.

It is quite evident that the main service component is the competencies assessment, which is a fundamental knowledge function for all the other types of interventions for the improvement of the company's functions, because it gives an objective vision of the state-of-the-art of the competencies present in the organization.

The main entities involved in the deployment of the Service Portfolio in Italy are of 4 types:

- CEPIS, Council of European Professional Informatics Societies through its organizations guarantee the update of the EUCIP Standard Syllabus;
- AICA, Member of CEPIS, promotes the diffusion and application of the Services Model to the Business Clients
- A network of Accredited Competence Centers, that sell and support their clients' services deployment and results at the right price and time, with a significant margin to retain
- At the end of the chain is the **target** of the services: the IT Specialists who work in the different Business Units in the Supply-side companies or in the Information Systems Unit of the Demand-side organizations.

■

Forthcoming IT STAR Book in April

Proceedings of the 4th IT STAR Workshop on ICT Skills, Education and Certification: the Multi-stakeholder Partnership, 27-28 November 2009, Rome, Italy
Editors: Giulio Occhini & Plamen Nedkov
© IT STAR, ISBN 88-901620-5-8

This volume contains the revised and edited papers of the 4th IT STAR Workshop on ICT Skills, Education and Certification: the Multi-Stakeholder Partnership, held on 27-28 November 2009 in Rome, Italy.

It investigates the current state, problems and challenges with respect to ICT skills, professional education and certification, both on national and international levels, and identifies best practices and key issues of common interest and concern. The publication is intended to facilitate policymaking within the IT STAR region and the European Union.

The book highlights the findings of an exceptional multi-stakeholder forum of academic, business and government representatives and presents useful analyses and factual information to practitioners and decision-makes in the public sphere and industry, whose occupation is based on knowledge and sound choices related to eSkills. ■

MultiCulti

In Search of the Golden Fleece – Nesebar

by Dorothy Hayden

Some time ago I visited the Bulgarian Black Sea coast, in late September, a bit off-season but a great advantage. There were still some English, Germans, Scandinavians, as well as local and regional visitors, mainly in the big resorts – Albena, Golden Sands, Sunny Beach – spending the warm and lazy autumn days on the beach and partying at night, but nothing compared to the hordes of tourists that flock in summer. I travelled to Balchik, Varna, Kamchia, Pomorie and Sozopol, to mention a few sites, though **Nesebar** remains most vivid in my memories and I thought you might enjoy to read about it.

Nesebar is a small town on the boundary of the European Union but on Main Street of the European and World civilization.

Just imagine for a while the Argo with Jason and his mates sailing through the Hellespont and the Bosphorus into *Pontos Axeinos,* the *Inhospitable Sea,* in search of the Golden Fleece. After breaking their voyage here and there they must have realized that the eastern coast was not so inhospitable because there were many thriving Thracian communities, among them the settlement of Menebria as Nesebar was called then.

The town became a Greek colony at the beginning of the 6th century BC. It was fortified and minted coins since the 5th century BC. Remains from the Greek period of Nesebar include the acropolis, Apollo's temple and the Agora. The town became Roman in 71 BC and continued to enjoy its previous privileges. Later, from the 5th century AD onwards, it was a stronghold of the Byzantine empire, but was much contested and won consecutively by the newly established powerful neighbor – Bulgaria. It enjoyed particular prosperity during the rule of Bulgaria's tsar Ivan Alexander (1331-1371). In 1366, the Crusaders conquered it, and in 1453 it was taken by the Turks.

The city hosts many fine examples of 5th-6th, 10th-11th and 13th-14th century temples of worship, representing the rich architectural ancestry of the Eastern Orthodox world. Its rich history, numerous churches, archaeological sites and typical Black Sea architecture from the 19th century were

good reasons to have it included in 1983 by UNESCO in the list of World Heritage sites.

Today, Nesebar is a town-museum and a popular tourist destination in the Black Sea region. The ancient town is on a rocky peninsula some 37 km northeast of Burgas and 2 km south of Sunny Beach, the biggest summer resort on the Bulgarian Riviera. There are fantastic sand strips around and the warm climate, shallow sea, typical cuisine, local wines, music and folklore leave an unforgettable impression.

A word about music, one of the Argonauts was Orpheus, the son of a Thracian river god and Calliope, whose music was magical. Some say he continues to haunt the area … during calm, starry nights a lyre is sometimes heard across the water. ■

MS News

IT STAR Members Join the e-Skills Week Campaign

IT STAR is a Pan-European Stakeholder of the e-Skills Week and most of IT STAR's member societies responded enthusiastically by joining the campaign as National Stakeholders with their own activities and initiatives.

Croatia

CITS, the Croatian Information Technology Society, will hold a number of events this year to mark the 35th Anniversary of the Society which was established in 1975. As previously announced, CITS will host the 5th IT STAR Workshop, The preparations are in progress, the main topics will relate to eBusiness and the conference will be organized in late autumn 2010. A call for participation will be circulated soon.

Lithuania

Lithuanian Broadband for Rural Areas Inclusion

by Laimutis Telksnys

Laimutis TELKSNYS, professor, doctor habilitatis in informatics, doctor honoris causa of the Kaunas University of Technology, is the head of the Recognition Processes Department at the Institute of Mathematics and Informatics, Vilnius, Lithuania. He is the author of an original theory of detecting changes in random processes, investigator and developer of computerized systems for statistical analysis and recognition of random signals. His current research interests are in analysis and recognition of random processes and computer networking. He was a head of the project RAIN - Rural Area Information Technology Broadband Network.

RAIN – Rural Area Information Technology Broadband Network – is a phased broadband infrastructure development to bring broadband to Municipal offices, citizens, and enterprises in under-served rural areas.

Lithuania, 65 200 square kilometers in area, with 3.2 million population, the EU member state at the eastern Baltic Sea coast, has about 30 percent of its population living in rural areas. Their skills to live and work in market conditions are not sufficient; low living standard; high unemployment; old communications networks; a deep digital divide. The population density in rural areas is low; business has no interest in the development of broadband networks.

The RAIN project creates broadband infrastructure in white areas where this infrastructure is missing, but the potential for eliminating the digital divide between urban and rural areas is strong. The project aims to transform the life of individuals, increase social cohesion, and contribute to economic growth. Its initial phase entails laying fiber-optic channels to all local administrations in rural territories.

RAIN uses the most modern fiber-optic infrastructure with unlimited transmission capacity, and is targeted at creating the basic broadband infrastructure connecting rural townships. Technological neutrality and open access to this infrastructure for all existing and new operators is guaranteed. The infrastructure is operated by an independent non-profit public company that must provide it to all operators. The operator is not entitled to provide services to end-users –guaranteeing competition in all territories.

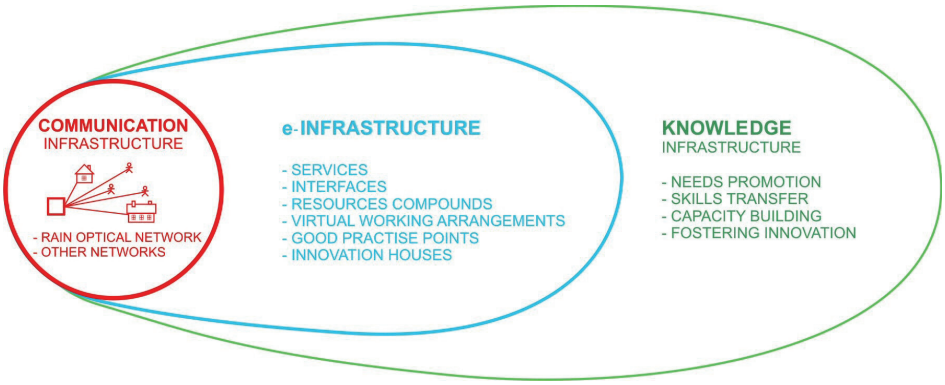
RAIN is expected to improve opportunities for rural inhabitants to use ICT for education, training, creativity, and

entrepreneurship. It is hoped that RAIN could become a model for Central and Eastern European countries for engaging rural communities in modernizing their activities.

The first phase of RAIN implementation has been completed in 2008. Development of 3200 kilometers of optical communication channels and combining them with existing broadband networks has opened up new opportunities for rural areas residents. All 467 rural local administrations and 260 rural schools are already connected to broadband. Now farmers, for example, successfully provide information about their activities, crops, using modern electronic means, the digital maps. Their work became more convenient, the presented information is more accurate and faster with less needed resources and time. Previously, in the absence of broadband networks, such work was almost impossible, because the electronic maps communication channels went a few hundred times slower. In additional, RAIN helps the development of local wireless networking.

The second development stage of the project Rural Area Information Technology Broadband Network (RAIN 2) has been launched in 2009. The project with about 4000 kilometers of additional fiber-optic lines will be completed in 2013. The broadband fiber-optic network will cover 98 percent of the territory of Lithuania. The proper use of the broadband network will become a significant platform for innovation activities and a powerful tool for further socio-economic development.

It must be stressed that the broadband optical communication network is the only communications infrastructure that enables to harness information technology opportunities for significant improvements in the practice. In order to use the communication infrastructure properly and to harness its inherent strength, the further steps are needed:



1. To form an e-infrastructure that facilitates a practical and efficient use of broadband communication infrastructure with the services, interface equipment, information resources, virtual work arrangements for broadband IT-based multi-purpose operations;

2. To create knowledge infrastructure to promote access to broadband e-infrastructure and to facilitate and help prepare people to master these options, knowledge infrastructure to ensure skills transfer, capacity building, and innovation fostering residents, state and local government officials, business people, so that they could pay and use the new instrumentation.

Special attention will be given to the implementation of these infrastructures. ■

Slovenia

A Brief History of Days of Slovenian Informatics

By Niko Schlamberger

President, Slovenian Society INFORMATIKA

National conference Days of Slovenian Informatics is an event that has been the first in the process of increasing the visibility, influence and importance of Slovenian Society INFORMATIKA[1]. It is generally recognized as the most important independent event in informatics in Slovenia and has some history, remarkable present and a prospective future. I believe that it is worth at least shortly to comment the first, to describe the second and to offer a view on the last.

SSI has been established in 1976 in the circle of informatics scientists in Institute Jožef Stefan in Ljubljana who understood that computer science is much more than just installing, maintaining and programming computers as has been general perception of the field at that time. To exchange ideas they did not need yet another organisation as most of them could have met easily if need be. Rather, they wanted to emphasize the importance and potential of computers for development of science, business and society in general. It has been obvious that some kind of public visibility is needed to fulfil this goal. The result was a scientific a dubbed *Informatica* that has been started soon after the Society has been established and has taken place in Bled. I am not sure of how many returns the event has had but due to lack of motivation, poor executive structure and possibly also finance the event has slowly faded. It has been resurrected some time after, under a different name and also under a different banner. The Society of Economists

[1] It is no mistake that capitals are used; in the statute when the society has been established its name has been so written and it has remained like this ever since.

has understood the importance of informatics and has started a conference in Portorož of which computing and informatics have been an important part of the contents. More or less incidentally it happened that SSI has been invited as the co-organizer of this conference towards the end of the conference life, which however provided for an insight of importance of such a meeting.

With the independence of the Republic of Slovenia in 1991 it has become a common understanding that the newborn country needs much more than the flag, coat of arms and national anthem. A country is systems and infrastructure and this has been understood in SSI. The result of this understanding has been a decision to organize a national conference on computing and informatics. It has been easier said than done as SSI did not have an operational structure and there was also some scepticism whether we really need one more conference. However, following the motto - Where is the will there is the way[2], the result was the conference Days of Slovenian informatics in 1993. Needless to say, one of the major problems was to choose it an appropriate name but this is another story which is beside the point of this article. Its structure was open enough to allow for various goals that SSI wanted to achieve: first and foremost to provide an overview of what has been going on in Slovenia in computing and informatics and to compare national development with advances in the world; then, to attract industry, academia, and administration; next, to establish a platform where users, providers and developers would meet, taking care at the same time that Slovenian scientists working abroad were invited to offer their findings, views and insights. Let me also mention its international importance: in 2001 during the Days of Slovenian Informatics Portorož was the birthplace of IT STAR. Over time the contents have changed not revolutionary but rather to reflect most recent ideas and accomplishments both nationally and worldwide. The structure has been steadier but has nevertheless developed into what it is today – a genuine multiconference where notable guest speakers are welcome to present their ideas and achievements. It would be unfair to mention just some and skip many others as all of them have contributed significantly. SSI is grateful to all of them and I am delighted to think that more than one reader coming from IT STAR community will recognize himself or herself implicitly mentioned here.

Days of Slovenian Informatics 2010 (14-16 April) is the seventeenth conference in a row which is proof in itself that the decision has been a right one. It enjoys high reputation in academia, industry and government. A special token of recognition is that HE President of the Republic of Slovenia Dr. Danilo Türk has accepted the invitation to be sponsor of honour of the conference. Each year a red line is chosen so as to reflect the emphasis of the conference; the slogan of DSI 2010 is *How to leverage investment, risk and development to succeed* which at the same time also responds to the actual economic situation in the world. There will be several tracks:

An innovation of last year will become a mandatory part of the conference, namely awarding the *iNagrada*, a recognition delivered by SSI to reward an important achievement in the field of informatics. Another award of the kind will be a recognition for a notable student project the intention of which is to emphasize the importance of professional excellence already during the study. The program is not yet complete at this time but the tentative content is already defined. The tracks will cover state-of-the-art in informatics and computing: Business Applications, Business Intelligence and Information Management, Business Process Management, Service Oriented Architectures and Cloud Computing, Security and Risk Management, Project Management and Sourcing, Enterprise Architecture, IT Governance, Information Society & IT in EU, Decision Support and Operations Research, and Informatics in Government. Round tables where actual dilemmas and issues will be discussed to provide an SSI position on the matter are planned, and also workshops to offer practical skills in specific areas will be organized. The event is interesting as a business opportunity and the social component of the event will also not be neglected. Apart from invited speakers and invited lecturers coming from University of Vienna, Gartner, Oracle, Microsoft, IBM and independent analysts, there have been submitted more than 120 papers, to be presented and published in the proceedings. No wonder then that more than 400 participants are expected – approximately the number of last year's conference.

What can be said of the future of the conference? I have mentioned the dilemma regarding the decision for its start; this year's anniversary is both a recognition and an obligation. It is my belief that such an event is badly needed, partly for SSI to demonstrate its ability to cope with the challenges of the time but even more for the reason to live up to its mission – to increase the awareness of importance of informatics for the future of the society at large and to disseminate the knowledge and information on important issues. Having said this I cannot help remembering of the dilemma of a notable world organisation – to WCC or not to WCC. To me there is no such dilemma as regardless of the progress in computing and communication, conferences are still the most productive means of exchanging and obtaining information. To paraphrase Whymper – Where is a need there is a conference. The history of Days of Slovenian Informatics proves us right in thinking so. Of course there will be development and evolution and adaptation of the contents, form and carrying out the event but I am confident that it has a prosperous future. ■

[2] Attributed to Edward ***Whymper,*** the first man to ascend the Matterhorn.

Institute for Prospective Technological Studies

Capturing the Real Economic Value of ICT in Our Economies

by Marc Bogdanowicz

Action Leader, The role of the ICT Industry in the evolving Knowledge Economy, IPTS Information Society Unit

Information and Communication Technologies (ICT) progressively penetrate all aspects of our everyday life and there is an indubitable and growing need to understand and quantify the economic impact of the phenomenon. In particular, ICTs are recognised as a factor of economic growth through their multi-channelled impact on productivity (as proxies for technological development) and their enabling capacities (both through easing new ways of business organisation and by facilitating innovation). Such literature reached the mainstream and offers many stabilised concepts, methodological frameworks and important results[3].

Nevertheless, it is estimated that about 98 percent of programmable digital devices are actually embedded in other products. Current and future trends point to a dramatic potential for further growth: the number of microprocessors is growing far more than the number of PCs , even with an accelerating trend, as their diffusion becomes even more significant and pervasive, due to both cost reduction and enhanced functionality.

From *Microprocessors* to *Embedded Systems*…

The acknowledgement of the role of ICT outside the confined universe of the general purpose computers (and associated services as software and telecommunications) arose with the rapid development and extended use of the microprocessors in the last decades of the 20th century. The concept of *Embedded Systems* became the archetypal image of pervasive ICT. In accordance with the majority of definitions available until today, an Embedded System is a computer-controlled system; at its core is a microprocessor, programmed to perform one or a few tasks. This contrasts with general-purpose computer systems like PCs which have general purpose hardware platform and externally loaded software.

[3] The OECD and Eurostat Information Society Statistics Working groups have been core to those developments. They allowed the academics to develop their analysis, while offering a necessary feed-back to the further development of the measurement frameworks.

A recent study of IPTS (European Commission) made a comprehensive review of available statistical data and measurement exercises in line with the above understanding. To the best of our knowledge, the existing estimations of Embedded Systems number and value are almost exclusively based on the number or value of microprocessors as proxies, while often using other arbitrary and untested assumptions and missing important elements, such as the embedded software, from the estimations. The formulation of policies for the Information Society cannot internalise the use of this scarce and partial data for Embedded Systems and has to rely on data, which therefore exclude an important share of ICT research, production and use.

The study reaches the conclusion that it is increasingly difficult and unsuitable to use a measurement methodology based on the Embedded System concept because it is no longer operational enough, and in fact is even increasingly less suitable as an intuitive proxy for the pervasiveness of ICT. We propose adopting the less restrictive approach of a direct measurement of ICT used in non-ICT products along the entire value chain.
From an economist's point of view, the conceptual and measurement problems that we increasingly face today when relying on a representation of Embedded Systems based on a microprocessor and dedicated functionality can be explained through the history of the technological development of embedded ICTs. The concept of Embedded Systems has been proposed in an era of a high hardware/chip dependency, with little or no embedded software provided from system integrators. The programmable devices were proprietary in nature and bought ready to be plugged in. Moreover the software coding was highly optimised for individual functions, offering little flexibility for system reconfiguration. It seemed natural to see the embedded ICT as a black box, with some components clustered around one microprocessor.

For the last decade we are nevertheless witnessing a shift from **high hardware reliance** to **high software reliance** of ICT applications. This means that increasingly, embedded hardware platforms not only provide multi-function capability, but also build sufficient flexibility into the design so that various functionalities might be implemented through flexible hardware-software architectures. This makes close to impossible isolating conceptually one or more Embedded Systems running on a single or a multi-core chip. Moreover, there is substantial evidence that the economic value added will concentrate in the software layers of networked, cross-systems and cross–equipment applications, for which the concept of Embedded Systems is particularly ill-defined. In the era of increasing software dependency, and of fast standardisation of both platforms and software application, we argue for the need to review and adjust the conceptual and measurement framework for the pervasive ICT. The example of the automotive industry is relevant in this respect.

…to *the Technological Intensity* of economic output

Consequently, the study in its conclusions advocates for abandoning the measurement of Embedded Systems as separate subject, and turn towards an integrated ICT-

oriented approach at (mainly) product level. We call this approach: **the measurement of ICT Intensity.** It basically proposes to single out the ICTs from the overall productive inputs (intermediate consumption, capital and labour force) along the value chain of different goods and services, with a methodology similar to standard growth accountancy.

The share of the cumulated value of these inputs along the value chain in the total value of the products or services will provide a measure of the **ICT intensity** of the final goods. It approximates the value of ICT that intervene in the production of the final good at different stages of the value chain (from the electronic components onwards). This approach is relaxing the difference between the embedded and non-embedded ICT (fading in reality anyway) and facilitates a different, more suitable treatment of software.

The methodology has the advantage of being reproducible without major difficulties, on the basis of acknowledged and generally collected official statistical data, and also has substantial potential for improvements, further additions and refinement. For the purpose of this research we implemented the approach with published German National Accounts data.

The ICT Intensity of German final economic output – an insight in results

The first application of this methodology on German data reveals some interesting preliminary conclusions:

- The diffusion of ICT in other products and services is clearly confirmed by the data – in this phase of the technological development, the main driver of ICT diffusion is the demand rising from the producers of final goods and services. Our sectoral studies reveal that mandates and regulations are powerful instruments in creating such stimulating demand;

- In Germany services sectors are the most intensive users of ICT, but their demand is not the main driver of core technology development; however, innovations in the services sectors call for R&D in manufacturing sectors, and this link should not be disregarded when policy instruments supporting ICT R&D are put in place;

- ICT skills are spread across the economy and produce as much as a quarter of the GDP and the R&D expenditures. The importance of ICT skills for EU competitiveness in general and for the EU R&D targets are acknowledged and discussed in many analyses and policy documents. Our research, with the limitations arising from the use of labour data only, shows that almost a third of the ICT R&D is performed outside the ICT sector, almost entirely in the other manufacturing sectors;

- Further analysis in the automotive sectors show that the ICT R&D in non-ICT sectors concerns either with establishing specifications for the product or service requested to upstream providers, or with core areas that the company retains in-house for competitive edge. Any policy support for ICT R&D outside the ICT sectors should remain focused towards the first type of R&D in order not to affect competition. In this respect, initiatives that promote R&D cooperation (both between competitors and between clients and suppliers) can successfully drive technological development in this area.

- However, according to the same sectoral study on automotive ICT, European ICT suppliers are not typically "captive suppliers" to any specific client, which made them more innovative and more resilient to the crisis. Projects that integrate various parts of the value chain should pay particular attention to not accidentally create such dependencies.

- Finally, within a project that does favour competition between the suppliers, other problem arises: the suppliers typically fail to retain the fair share of the innovation rent. Any support towards ICT R&D should be so designed as to have a minimum negative impact on this aspect.

Policy implications

This study shows that such a methodology, accounting for ICT intensity of various groups of products and the ICT R&D efforts of their producing companies, could provide valuable support to policy-makers in formulating -relevant policies related to the digital economy. In this way, the economic impact of ICT production and use can be much better appreciated, both at sector and national level. Going away from the usual appreciation of the share of the ICT industry value added in national GDP, or that of ICT investment on productivity, the **Technological Density** allows having some insights into the true ICT content of European goods and services.

The methodology requires in the first run a conceptual shift away from Embedded Systems to encompass the use of the technology in the everyday life that is compatible with the current technological development. Secondly the study makes a plea for an adaptation of the statistical measurement tools at the level of their collection and processing. The level of adaptation varies according to the statistical field of investigation, namely National accounts disaggregation, improved labour force skills data, and sector R&D data.

The full report, authored by Geomina Turlea, will be available from
http://ipts.jrc.ec.europa.eu/publications/index.cfm
in the coming months.
Please contact Alessandra.Pertot@ec.europe.eu for a quarterly update.

■

SNAPSHOT

REGIONAL ICT ASSOCIATION IN CENTRAL, EASTERN & SOUTHERN EUROPE

Type of organization

Regional non-governmental and non-profit professional association in the ICT field.

Date and place of establishment

18 April **2001**, Portoroz, Slovenia

Membership

Countries represented (*see next page for societies*), year of accession, representatives

- Austria (2001) V. Risak, G. Kotsis
- Bulgaria (2003) K. Boyanov
- Croatia (2002) M. Frkovic, M. Glasenhart
- Cyprus (2009) P. Masouras
- Czech Republic (2001) O. Stepankova, J. Stuller
- Greece (2003) S. Katsikas
- Hungary (2001) B. Domolki
- Italy (2001) G. Occhini
- Lithuania (2003) E. Telesius
- Macedonia (2003) P. Indovski
- Poland (2007) M. Holynski
- Romania (2003) V. Baltac
- Serbia (2003) G. Dukic
- Slovakia (2001) I. Privara, B. Rovan
- Slovenia (2001) N. Schlamberger

Statutes

IT STAR Charter http://www.starbus.org/download/charter.pdf adopted on 23 October 2004 by the IT STAR Business Meeting in Prague, the Czech Republic.

Mission

"To be the leading regional information and communication technology organization in Central, Eastern and Southern Europe which promotes, assists and increases the activities of its members and encourages and promotes regional and international cooperation for the benefit of its constituency, the region and the international ICT community."

Governance

IT STAR is governed according to the letter of its Charter by the **Business Meeting** of MS representatives:

2009 Rome, **Italy** (November)
2008 Godollo, **Hungary** (November)
2007 Genzano di Roma, **Italy** (May)
Timisoara, **Romania** (October)
2006 Ljubljana, **Slovenia** (May)
Bratislava, **Slovakia** (November)
2005 Herceg Novi, **Serbia & Montenegro** (June)
Vienna, **Austria** (November)
2004 Chioggia, **Italy** (May)
Prague, **the Czech Republic** (October)
2003 Opatija, **Croatia** (June)
Budapest, **Hungary** (October)
2002 Portoroz, **Slovenia** (April)
Bratislava, **Slovakia** (November)
2001 Portoroz, **Slovenia** (April)
Como, **Italy** (September)

Coordinators

2006 – Giulio Occhini
2003 – 2006 Niko Schlamberger
2001 – 2003 Plamen Nedkov
(currently Chief Executive)

Major Activities

- 4th IT STAR WS and publication on Skills Education and Certification - http://starbus.org/ws4/ws4.htm
- 3rd IT STAR WS and publication on National Information Society Experiences – NISE 08 http://www.starbus.org/ws3/ws3.htm
- 2nd IT STAR WS and publication on Universities and the ICT Industry http://www.starbus.org/r_d_ws2/r_d_ws2.htm
- 1st IT STAR WS and publication on R&D in ICT http://www.starbus.org/r_d_ws1/r_d_ws1.htm
- IT Professional Pool Database (in progress)
- Workshop and publication on National Experiences related to the EU's 5th and 6th FP http://www.starbus.org/download/supplement.pdf
- Joint IT STAR – FISTERA Workshop on ICT and the Eastern European Dimension http://fistera.jrc.es/pages/roadshows/prague%2004/FINAL%20REPORTrevised.pdf
- Support to Member Society initiatives and events

Periodicals

The IT STAR Newsletter (nl.starbus.org) published quarterly.

Web-site

www.itstar.eu ■

IT STAR Member Societies

Austrian Computer Society – OCG
Wollzeile 1-3,
A-1010 VIENNA, Austria
Tel. +43 1 512 0235 Fax +43 1 512 02359
e-mail: ocg@ocg.at
www.ocg.at

Bulgarian Academy of Sciences – BAS
Institute for Parallel Processing
Acad.G.Bonchev str.Bl.25A
SOFIA 1113, Bulgaria
Tel +359 2 8708494 Fax +359 2 8707273
e-mail: boyanov@acad.bg
www.bas.bg

Croatian Information Tech. Society – CITS
Ilica 191 E/II,
10000 ZAGREB, Croatia
Tel. +385 1 2222 722 Fax +385 1 2222 723
e-mail: hiz@hiz.hr
www.hiz.hr

The Cyprus Computer Society – CCS
P.O.Box 27038
1641 NICOSIA, Cyprus
Tel. +357 22460680 Fax +357 22767349
e-mail: info@ccs.org.cy
www.ccs.org.cy

Czech Society for Cybernetics and Informatics – CSKI
Pod vodarenskou vezi 2,
CZ-182 07 PRAGUE 8 – Liben
Czech Republic
Tel. +420 266 053 901 Fax +420 286 585 789
e-mail: cski@utia.cas.cz
www.cski.cz

Greek Computer Society – GCS
Thessaloniki & Chandri 1, Moshato
GR-18346 ATHENS, Greece
Tel. +30 210 480 2886 Fax +30 210 480 2889
e-mail: epy@epy.gr
www.epy.gr

John v. Neumann Computer Society – NJSZT
P.O. Box 210,
Bathori u. 16
H-1364 BUDAPEST, Hungary
Tel.+36 1 472 2730 Fax +36 1 472 2739
e-mail: titkarsag@njszt.hu
www.njszt.hu

Associazione Italiana per l' Informatica ed il Calcolo Automatico – AICA
Piazzale R. Morandi, 2
I-20121 MILAN, Italy
Tel. +39 02 760 14082 Fax +39 02 760 15717
e-mail: g.occhini@aicanet.it
www.aicanet.it

Lithuanian Computer Society – LIKS
Geležinio Vilko g. 12-113
LT-01112 VILNIUS, Lithuania
Tel. +370 2 62 05 36
e-mail: liks@liks.lt
www.liks.lt

Macedonian Association for Information Technology – MASIT
Dimitrie Cupovski 13
1000 SKOPJE, Macedonia
e-mail: indovski.p@gord.com.mk
www.masit.org.mk

Polish Information Processing Society
ul. Puławska 39/4
02-508 Warszawa
Tel./Fax +48 22 838 47 05
e-mail: marek.holynski@gmail.com
www.pti.org.pl

Asociatia pentru Tehnologia Informatiei si Comunicatii – ATIC
Calea Floreasca Nr. 167, Sectorul 1
72321 BUCAREST, Romania
Tel +402 1 233 1846 Fax +402 1 233 1877
e-mail: info@atic.org.ro
www.atic.org.ro

JISA Union of ICT Societies
Zmaj Jovina 4
11000 BELGRADE, Serbia
Tel.+ 381 11 2620374, 2632996
Fax + 381 11 2626576
e- mail: dukic@jisa.rs
www.jisa.rs

Slovak Society for Computer Science – SSCS
MFF UK, Mlynska dolina
SK-842 48 BRATISLAVA, Slovak Rep.
Tel. +421 2 65426635 Fax +421 2 65427041
e-mail: SSCS@dcs.fmph.uniba.sk
www.informatika.sk

Slovenian Society INFORMATIKA – SSI
Vozarski pot 12
SLO-1000 LJUBLJANA, Slovenia
Tel. +386 123 40836 Fax +386 123 40860
e-mail: info@drustvo-informatika.si
www.drustvo-informatika.si

IT STAR