Newsletter - *Calibrated for Creative Communications*

Vol. 10, no. 1, Spring 2012

Chirps of Spring

In finalizing the manuscript of the Spring Issue, Yordan Yovkov's story "Along the Wire" came to mind. It is about sympathy and hope in a desperate situation: somewhere in the 20s of last century in rural Bulgaria a father, down-to-earth secular character, is searching for a white swallow, which, if spotted according to local belief, could cure the inexplicable deadly ailment of his daughter. If it were for him, the hero would disregard the superstition, yet for his daughter and family he embraces this last chance of hope.

Europe is exiting a winter of gloomy news and forecasts -- the Euro-drama, the weak economy, the need of belt-tightening and restrictions. We hope the chirps of spring will signal the return of the swallows that will usher brighter days.

The Spring Issue revisits the recent IPTS - IT STAR international conference on ICT R&D Challenges in Eastern Europe and takes a look at the economics of the Media and Content Industries. It contains an article on the preparations of IOI'12 in Lombardy and unveils details of the organization and program of the forthcoming 6th IT STAR WS on Digital Security in Bratislava and two projects, which will be presented there. There is also a congratulatory article on the occasion of the 80th Anniversary of a member of our Advisory Board.

Take the Journey,

Plamen Nedkov

Contents

Editor

P. Nedkov, Halsriegelstraße 55
A-2500 Baden, Austria
e-mail: **editor@starbus.org**, web-site: **nl.starbus.org**

Change of Postal Address

We have relocated to:

Halsriegelstr. 55
A-2500 Baden
Austria

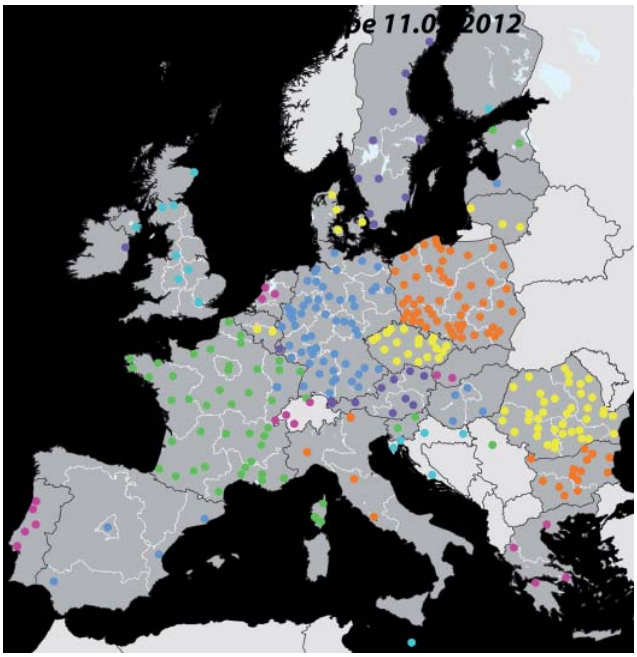
All other coordinates remain the same.

IT STAR Newsletter

The ACTA File

Anti-Counterfeiting Trade Agreement

Remember, Remember …



Anti-ACTA protests in Europe on 11 Feb. (Source Wikipedia)

"I signed ACTA out of civic carelessness, because I did not pay enough attention. Quite simply, I did not clearly connect the agreement I had been instructed to sign with the agreement that, according to my own civic conviction, limits and withholds the freedom of engagement on the largest and most significant network in human history, and thus limits particularly the future of our children."

Helena Drnovšek Zorko
Slovenian Ambassador to Japan
[Full text at http://metinalista.si/why-i-signed-acta/]

■

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 info@starbus.org.

People

80th Anniversary of a Computer Pioneer

Academician Blagovest Sendov, member of our Advisory Board, celebrated on 8 February at the prestigious Central Military Club in Sofia his 80th Anniversary in the company of leading personalities of Bulgaria's political, academic and cultural scene, and with friends, colleagues and family. Many congratulatory addresses were delivered and Acad. Boyanov (Bulgarian representative to IT STAR) talked about Blagovest's professional accomplishment as an academic (Rector of Sofia University, President of the Bulgarian Academy of Sciences), statesman (Chairman of the Bulgarian Parliament) and diplomat (Bulgarian Ambassador to Japan).

Fm. left: K. Boyanov, Bl.Sendov & P. Nedkov during 80th Jubilee

Sendov's activity as pioneer and facilitator of international cooperation is a spectacular string of achievements and heights – President of the International Association of Universities, Extraordinary Vice-President of the International Council of Scientific Unions, Board member of the International Foundation for Survival and Development of Humanity, Vice President of the Intergovernmental Informatics Program of UNESCO, President of the International Federation for Information Processing, Initiator of the International Olympiad in Informatics, …

It is in his international role that many of our readers know Academician Sendov and will join us in wishing him Many Happy Years To Come!

IT STAR Newsletter

Institute for Prospective Technological Studies (IPTS)

Understanding Digital Media

Jean Paul Simon

Jean Paul is Senior Researcher at the Information Society Unit of IPTS.

Media and Content Industries (MCI) carry out an array of heterogeneous economic activities, which encompass publishing (including music), sound, motion picture and video/TV production, programming, distribution and broadcasting industries, as well as diverse information services.

The common thread in these activities is that they are all conducted by establishments primarily engaged in the creation and dissemination of information and cultural products. Also, the last decade witnessed a progressive intertwining of these activities amongst themselves and with the ICT sector, which increasingly provides the means for disseminating MCI products. At the same time, there was rapid change in the way these establishments worked and their business models (production and distribution processes, key players, organisation, etc.).

While understanding and mastering the descriptive quantitative tools that we have to hand is important, it is even more essential to grasp the current dynamics in the various industries in the Media and Content sector, possibly in relation with those in the ICT sector, in order to better grasp the current and emerging transformations of these sectors.

Therefore in 2009, IPTS launched a research project on the "Statistical, ecosystems and competitiveness analysis of the Media and Content Industries". This research initially included the preparation of a statistical report, a historical report and three sub-sector case studies, each supported by a dataset and technical annex. In 2010, IPTS decided to complement the initial case studies (cinema, music and newspaper) with two additional sub-sectors (book publishing and broadcasting) in order to provide a comprehensive view of the sector. In 2010, IPTS had already released a case study of the video games industry,[1] a fast growing segment of the sector.
The reports aim to offer a reliable set of data and analysis, and also to contribute significantly to the debate about the economic health and development conditions that will support the future competitiveness of the European Media and Content Industries. They consider the interplay between:

1 The report was reviewed in IT STAR NL – Vol.8, no 3, Autumn 2010. De Prato, G., Feijóo, C., Nepelski, D., Bogdanowicz, M., Simon, J.P (2010) "*Born digital/ Grown digital. Assessing the future competitiveness of the EU video games software industry*", JRC Scientific and Technical Report, 24555 EN. Available online at http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=3759

- Technological change and innovation, especially ICT and digitisation, as a major driver of industrial and economic change;
- Market developments;
- Industrial structural change, including analyses of concentration and consolidation, integration, diversification and new entries;
- The competitive position of European industry players in a European and global context;
- Impact of digitisation in different parts of the value network (production, aggregation, distribution, consumption of content), new business models, new positions in the value chain, piracy and the role of users;
- The main policy issues and trends as important contextual factors.

Main trends identified

Ubiquity and rise of the Internet are turning upside down the legacy media logic; media and telecommunication networks were hierarchical and had centralized architectures. The traditional, oligopolistic and vertically integrated market structure of the media industry is being challenged, as the industry is moving towards a complex value chain with many participants. The traditional value chain was dominated by the publisher/ aggregator segment with most often integrated firms (production/ publishing/ distribution-retail), some aggregators even owned the technical segments of the industry (printers in the case of newspapers and book publishers, technical industries in the cinema).

Digitization has had various effects in the production chain. The costs are being re-allocated, altering the cost structure. Some costs disappear: manufacturing of the physical good, physical transportation, storage. Some costs remain unaffected (creation/development, editorial process, marketing and sales) while others are shifted, such as promotion with the coming of blogs and other tools. New costs are appearing mostly on the software side of the equation (security, right management…) but at the same time a growing segment of enabling technology providers (web hosting, content delivery networks, billing) is created.

Not only the production process but also distribution and consumption processes have changed profoundly. Digitization brings along broad gains through flexible pricing, low delivery costs and virtually unlimited capacity, as well as a higher efficiency. More content became accessible at low costs for large consumer markets. Due to low cost digital technology, it has been possible to reap benefits in geographically dispersed and small niche markets.

Value added rose slightly in the publishing, printing and reproduction of recorded media. To a lesser extent, the same happened in employment. However, revenues are falling (or flattening) especially newspapers and music, revenues from the Internet or from the newest segment of the media, video games, do not compensate so far the decline. It has become harder to monetise the increased consumer surplus. In other words, a lot of content is reaching the consumers for a low price or for free. Business models are still not stable, and the complexity is increasing. The players are looking for new pay models fitted to the digital age; and some are appearing (like "freemium"), a number of streams of revenues are now being added to the physical flows, with the sales of virtual items, services and new forms of advertising.

EU competitiveness and the single market

In 1994, the European audiovisual industry still had the largest global market share. By 2008, however, the US had the largest share. US productions have a large market share on the European market because, unlike European productions, they benefit from the internal European market.

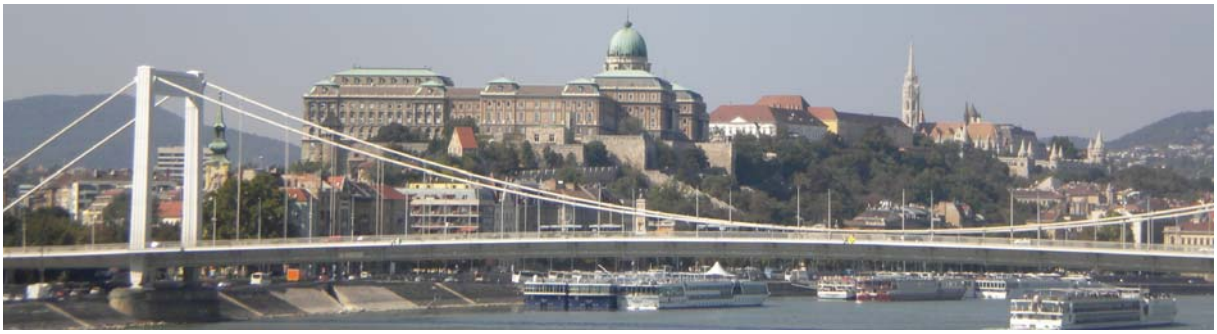
In the music industry, the US also had the largest global market share, followed by Europe. Five major record labels (BMG which became part of Sony Music in 2008, EMI, Sony, Universal and Warner) dominated the industry in 2004/2005 and had a combined market share of almost 66% in Europe in 2006.

The position of European companies is stronger in the publishing industry (newspapers, books and magazines/ periodicals). In most cases, the import and export of books, newspapers, periodicals and other materials is twice that of the USA, and European exports are higher than the imports. The European publishing industry is represented by a small number of very large players, of which some are world leaders in publishing. Within the publishing industry, the newspaper and magazine market is quite concentrated and dominated by large organisations, while the book market is characterised by many small, specialised publishers.

■

IPTS – IT STAR International Conference

ICT Research and Innovation Challenges in Eastern European Member States (EEMS)



11 November 2011, Budapest - *Danubius Hotel Flamenco*

http://eems.starbus.org

R&D in ICT Reloaded

In the previous issue (Vol 9 no.4, Winter 2011/12) of this Journal we published an article with a synthesis of the debate during the IPTS-IT STAR International Conference on Research and Innovation Challenges in Eastern European Member States, held on 11 November 2011 in Budapest.

This NL issue takes you one step deeper into the proceedings with the summaries of the 2 sessions prepared by the Rapporteurs and an overview of the Polish R&D scene by the Director of the Computer Science Institute in Warsaw.

The Editor

Morning Session Summary

Niko Schlamberger

Niko Schlamberger is President of the Slovenian Society INFORMATIKA. Niko has served the international ICT community in various functions including as IT STAR coordinator, IFIP Vice-President and CEPIS President.

During the Opening ceremony, *Messrs Plamen Nedkov (Conference Organizer), Mark Bogdanowicz (IPTS)* and *Igor Privara (IT STAR)* delivered the introductory remarks. They emphasized the importance of the Eastern European Region for its contribution to science and technology but that its visibility is not commensurate to its achievements. The aim of the Conference was to raise the Eastern European Member States (EEMS) profile, to explore what are the dynamics of information technologies in the region and what factors influence the process. IT STAR was proud to lead the course of raising the profile of CEE Countries and their respective leading informatics societies.

Keynote speaker *Norbert Kroo* put the R&D in IT in historic perspective. Technologies that were propulsive in the 1950s and 1970s are common commodities of today. Leading edge research directions now are bio-, nano- and information technologies where knowledge is of utmost importance. Challenges are speed, size, and intelligence. The content was set in the European scene, with an emphasis on the European Union Research Council, on importance of open access to scientific information, and on R&D spending which is not an expense.

Juraj Stancik focused on the R&D and ICT expenditure in the EU perspective. Figures are astonishing and provide a not very nice picture of EE Countries: EU value added in ICT amounts to 574 Bn € but the contribution of EEMS is rather low also due to little corporate investment in R&D. The patents issue was seen as one matter still not resolved to common satisfaction.
Bruno Lamborghini presented findings of the European Information Technology Observatory, an extremely important EU mechanism, and supplied novel views on IT in Europe - it is the second largest market to which C and EE countries contribute only 4% (of which Russia 2%). Important are services and mobile computing, cloud computing, social webs and IT as a generator of new professions. The main drive in future is a push towards mobile – mobile economy, new mobile devices and cloud computing.

Zoltan Horvath presented the activities of the Budapest ICT Lab as associate node of the European Institute of Inno-

vation and Technology and the network of knowledge and innovation communities (KICS) that interact within this format.

Laszlo Palkovics made an overview of the global tendencies in the automotive industry, the R&D investment factors, the structural changes in the Hungarian automotive industry. He convinced the audience of its importance for Hungary in the past as well as for the future and argued that Eastern Europe has good opportunities in the sector, which need to be better used.

Saulius Maskeliunas and Imants Freibergs provided a view on ICT in Baltic countries. This innovative "three-in-one" presentation, giving a comparative insight in the Latvian, Lithuanian and Estonian situation, showed respective similarities and differences. Obviously the system of financing R&D is rather complicated. The R&D audit that has been recently carried out is commendable. A notable feature of the presentation is the contained series of recommendations at various levels.

Diana Simic presented the eSEE Initiative (to be followed by eSEE Plus) in which Western Balkan countries are active. She provided some convincing statistics about leading European countries in IT. A novel approach was a proposal to measure the progress in IT R&D by using data of the ACM Digital Library. A handicap for the Western Balkans' participation in EU IT R&D research is a rather difficult access to EU funds. An important factor in the process is collaboration of all players - government, public and private companies. ■

Afternoon Session Summary

Balint Domolki

Dr. Domolki is mathematician by education and has spent all his active life in the Hungarian software industry. He has participated in various policy-making activities about the information society development in Hungary, including as leader of the technology assessment project Perspectives of Information Society Technologies (IT3).

Having listened to the interesting presentation of *Roberto Bellini* during lunch (showing that EUCIP is much more than just another education scheme), I was preparing myself for the afternoon session with some bad feelings: in the program the title of most afternoon talks started with "ICT R&D Perspectives from…", so I imagined a series of very similar talks full of the same statistical figures and financing complaints, resulting in a rather boring afternoon.

I am very glad to report, that I have been utterly wrong! All the speakers with that identical title did talk about something interesting, a different aspect of their country situation (usually with conclusions valid for other countries as well).

Renata Jaksa introduced us to the conclusions of an interesting audit performed for DG INFSO about ICT capabilities and Framework Program participation of CEE countries. (A detailed account about the audit can be found in the recent Autumn 2011 issue of the IT STAR Newsletter!)

Barnabas Malnay did present some novel organizational forms of supporting innovation, popular mostly among the younger generation: meet-ups, FabLabs, startup competitions, etc., along with the more traditional forms of incubation.

Kiril Boyanov explained the details of different network connections within and between our countries, making possible all cooperation activities.

Niko Schlamberger convinced us about the importance of education as one of the main driving forces of competitiveness, presenting the main ideas of a new higher education strategy.

Branislav Rovan gave a detailed analysis of problems hindering innovation in (not only) his country, making (not very favorable) comparisons between the "distant past", "recent past" and "present" situation.

Marek Holynski performed a mental experiment about transferring the Silicon Valley to somewhere in Europe. The expected negative result can be explained by the rather complex "climate" factors (not only physical but mostly social and human) having made possible the emergence of the Silicon Valley phenomenon in the USA.

Finally, after the country presentations we learned from *Carlos Jose Oliveira* about some details of the novel solutions INFSO plans to realize in the forthcoming HORIZON 2020 system (formerly called Common Strategic Framework)

From the sometimes rather pessimistic country presentations one can conclude that the ICT R&D problems in any country cannot be solved on their own, without the solution of many other social and economic problems of the given country. On the other hand, it might be appropriate to refer to the quote from Albert Einstein, mentioned in Norbert Kroo's keynote presentation this morning:

"THE PROBLEMS WE ARE FACING TODAY CANNOT BE SOLVED WITH THE SAME WAY OF THINKING BY WHICH WE CREATED THEM".

So, there might be the case of a generation problem here: younger people might be able to apply a different "way of thinking" to tackle the problems created by previous generation(s). A glimpse to such a new approach can be seen in the new elements of the innovation ecosystem described in *Malnay's* presentation mentioned above. ■

ICT Research and Innovation Challenges in Poland

Marek Holynski

Marek Hołynski is Director of the Computer Science Institute in Warsaw. He was President of the Polish Information Processing Society until June 2011 and is currently its Vice-President and representative to IT STAR.

The research and development structure, which Poland inherited after the communist system was characterized by high fragmentation (organizational and thematic), subdivided between industrial R&D centers, institutes of the Polish Academy of Sciences and universities. It concentrated predominantly on cognitive research with little attention to practical results. Activities were mainly financed from the state budget through grants of the Ministry of Science and Higher Education and participation of private companies was minimal.

The new challenges of globalization, Polish membership in the European Union and changes in the hierarchy of objectives related to functioning of science led to a need for a series of changes in this system. The responsibility for managing projects was transferred to two newly established institutions: The National Science Center and the National Center for Research and Development.

The National Science Center (Narodowe Centrum Nauki – NCN) on periodical basis announces calls for proposals in basic research. The Center offers grants for the funding of research projects, including financing the purchase or construction of research equipment needed to carry out these projects. There is also significant money allocation for pre-doctoral and fresh PhD holders' grants for the funding of research projects carried out by researchers starting a scientific career, or the appointment of new scientific teams.

The main task of the **National Center for Research and Development** (Narodowe Centrum Badan i Rozwoju – NCBiR) is to manage and implement strategic scientific research and development programs, that translate directly into innovation development. It includes support for commercialization and other forms of transfer of the scientific research results to the economy, ensuring solid conditions for scientists' development, particularly the participation of young scientists in research programs and implementation of the international scientists mobility agenda.

Although by definition both centers are supposed to cover a broad range of disciplines, ICT topics are one of their main priorities. This preference was recommended by the Council of Ministers as it adopted the National ICT Development Plan for 2007-2013, considering information and communication technologies to be essential for the growth of the country's economy.

Cooperation within the European Union has had a very strong impact on the advancement of ICT in Poland. The long-term **Framework Programs for Research and Technological Development** has been the EU's main financial instrument for supporting research and developing activities in Europe. Since 1999 Poland has been an active participant of these programs. For more than 10 years Polish scientific institutions, enterprises, organizations and individual researchers have been making efforts to prepare applications, participate in calls, negotiate, and finally implement accepted projects.

In the 5th Framework Program (1999–2002) Polish institutions participated in 1043 research projects and grants, 192 of which were coordinated by Poles. Overall 1324 research institutions, enterprises and fellows gained experience from participating in this program. In the 6th Framework Program (2002–2006) the number of projects with Polish participants increased to 1387 and the number of Polish scientific teams working on these projects amounted to 1878. Polish organizations coordinated 195 projects. The implementation of all these projects supported Polish research with a total amount of more than 216 M EUR, among which the Information Society Technologies took c.a. 40 M EUR and new production processes and devices c.a. 26 M EUR.

Currently, the 7th Framework Program (2007 – 2013) is being realized and Polish teams are taking part or coordinating a number of important projects, such as the Self Powered Wireless Sensor Network, Sharing Physical Resources - Mechanisms and Implementations for Wireless Networks, Carrier grade mesh networks, and others. Polish institutions have been also very active in creating the pan-European GÉANT network and services, which enable research communities across Europe and transform the way they collaborate on groundbreaking research. Now in its third term, the GÉANT project is responsible for the network and seeks to develop all aspects of European research and education networking.

In building GÉANT, Polish teams used experience from the PIONIER project. PIONIER is a nationwide broadband optical network, which forms a base for research and development in the area of information technology and telecommunications, computing sciences (grids, etc.), applications, and services for the Information Society. Built during the last two decades with entirely domestic funds, it currently connects 21 Academic Network Centers of Metropolitan Area Networks (MAN) and 5 HPC (High Performance Computing) Centers. PIONIER was Europe's first national academic network with total length of over 4,000 km that utilized its own dark fiber optics and DWDM 10GE transmission.

Even though Polish participation in FP projects may seem objectively substantial, there are still inner opinions claiming it is still too low based on the national R&D potential (however, the number of researchers per 1,000 economically active persons in Poland is 4.4, much less than the

average EU-25 5.8). There are also numerous complaints related to difficulties in joining international teams dominated by researchers from "old" EU countries, overwhelming paperwork required for a proposal to be accepted and bureaucracy, which slows down completion of projects. It should be noted that the average cost of a Polish project is approximately half (50.1%) the average EU-25. The reason for this are significantly lower wages in Poland in the area of R&D.

The biggest boost to research and development in ICT came from the **Operational Program - Innovative Economy** (Program Operacyjny – Innowacyjna Gospodarka, 2007-2013). It is one of six national programs under the National Strategic Reference Framework of the National Cohesion Strategy, which are co-financed from EU resources. This program is directed mostly to all entrepreneurs who want to implement innovative projects connected with research and development, modern technologies, investments of high importance for the national economy or implementation and use of information and communication technologies.

This program is managed by the Polish Agency for Enterprise Development (Polska Agencja Rozwoju Przedziebiorczosci), which is responsible for the budget of 4 Billion EUR. The Agency reports to the Ministry of Regional Development and cedes implementation of projects in particular areas to the Ministry of Economy, Ministry of Science and Higher Education and the Ministry of Interior and Administration, which serve as so-called Intermediate Bodies.

ICT topics are essential parts of the Innovative Economy program and are present in all of eight priories into which it is subdivided. They are evidently dominating in:

Priority I: Research and development of modern technologies (enhancing the significance of the education sector in the economy by means of realization B+R assignments)

Priority III: Capital for innovation (increasing the number of new, innovative companies, which have just been launched and enhancing access to the external financing sources of their operation)

Priority IV: Investment in innovative enterprises (upgrading the innovation level of the company by means of introducing modern solutions)

Priority V: Diffusion of innovations (providing the companies with high quality services intended to explore their innovative potential, creating advantageous conditions of cooperation between the companies, the research and development sector and business background institutions.)

Priority VIII: Information Society.

Supported projects range from multimillion ICT systems to providing pocket money for small enterprises, like "Voucher for Innovation" initiative, that offered three thousand EUR to companies, which are willing to include some ICT procedures into their daily business. Enormous popularity gained measure VIII.2 (Support for implementation of electronic business – B2B), which attracted thousands of Internet start-up companies. ■

24th International Olympiad in Informatics

IOI 2012 is on Track

Daniela Rovina

Daniela is Communications and PR Manager of AICA – Associazione Italiana per l'Informatica ed il Calcolo Automatico.

IOI is widely recognized as a leading international competition of algorithmic nature, in which the contestants and the national teams composed of some of the brightest young computer scientists in the world show such basic IT skills as problem analysis, design of algorithms and data structures, programming and testing. Its origins are rooted in UNESCO - the 24th Session of UNESCO's General Conference in 1987 accepted the proposal, initiated by Prof. Blagovest Sendov and submitted by Bulgaria. IOI-2012 will be held 25 years after UNESCO's endorsement of the original proposal and this is an excellent occasion to underline UNESCO's role and activities in this field.

The 24th International Olympiad in Informatics (IOI) will be organized from 23 to 30 September 2012 in Lombardy, Italy by the Italian Ministry of Education and AICA – the leading Italian ICT Association, in cooperation with the regional authorities of Lombardy. The competition will take place in Montichiari (Brescia) while the national teams will be accommodated in Sirmione on lake Garda.

The preparations are proceeding according to schedule and the website - http://www.ioi2012.org/ - is updated regularly to provide the latest news and information. At the present moment efforts are focused on the design of the IOI competition tasks for efficient algorithms.

To give an idea of the scale of the competition, here are

some key-figures related to participation, which are taken into account for the planning process:

Expectations

- National teams from some **80** countries;
- **320** contestants – students in the age bracket 17 -20 years of age;
- **160** Leaders and Deputy Leaders (mostly from academia);
- **150** Guests and observers;
- **200** Italian persons involved in the organization of the event as guides and other support staff, out of which 150 are high school students.

In conjunction with IOI-2012, the organizers plan an International conference on Young Talent in Informatics on 26 September in Milan. This event is organized in cooperation with IT STAR – the regional ICT Association in Central, Eastern and Southern Europe, whose members are leading national informatics societies, actively involved in the preparations of the national teams for IOI competitions.

In view of the 25th Anniversary since the establishment of the competition we look forward to receive UNESCO's patronage for IOI-2012 and to having Mrs. Irina Bokova, UNESCO Director General as speaker at the conference. The list of dignitaries includes the initiator of the IOI competitions, the Assolombarda President, the Mayor of Milan, the IOI-2012 Chair, AICA's President, IOI Champions and other personalities.

As a contribution to the conference, AICA has initiated a survey with the objective to examine and promote the experience of countries in Central, Eastern and Southern Europe whose IOI teams have shown remarkable results in IOI competitions. The synthesized findings, based on consultations and interviews, will be reported at the conference by the project coordinator. ■

Survey: Talent in Informatics

Plamen Nedkov

Plamen is Chief Executive of IT STAR and project coordinator of the survey

A Survey on Talent in Informatics was recently launched by AICA, the Italian member of IT STAR. Its objective is to take a closer look at the successful experience of countries in Central, Eastern and Southern Europe whose IOI teams have shown excellent results in competitions of the International Olympiad in Informatics.

The survey is based on a questionnaire related to the selection, preparation and participation of national IOI teams of several selected countries with an extraordinary achievement. Chairpersons/leaders of national bodies involved in the IOI were invited to complete the questionnaire and comment on such issues as the national team selection, coaching, communication and promotion, motivation and background for success. A section of the questionnaire is on informatics curricula in schools. In addition to the questionnaire plans are to organize personal interviews in order to go into further depth.

- How is it possible that countries of the region with small economies and tight budgets for education show consistently within the IOI format significantly higher results than the larger and richer countries of Western Europe?
- What are the driving forces of this achievement?
- What are the motivation factors?

A deeper understanding of the successful organization and experience of these countries and the issues involved could have wider implications in education and beyond.

The findings will be reported during the conference on 26 September in Milan.

■

6th IT STAR Workshop on Digital Security

30 March 2012 Bratislava, Slovakia

Content

- Mission and Topics
- Presentations and Publication
- Program
- Speakers

Program

6th IT STAR WS on Digital Security

Friday, 30 March 2012
Hotel Sorea Regia
Bratislava, Slovakia

Tentative Program

09.00 – 09.30 Conference Opening
09.30 – 10.00 Keynote

10.00 – 10.30 Coffee
10.30 – 12.30 Topic I. Strategies of Information Security
Issues: Information security problems, cyber-crime, national strategies, information protection, legislation, international cooperation and other.
Speakers
Giuseppe Mastronardi, Politecnico di Bari, Italy
IS Strategy in Italy
Jan Hochmann, Slovak Ministry of Finance, Information Society Department
IS Strategy in Slovakia
Horia Gligor & Florin Frejoiu, ATIC – Romania
Cyber Security in Romania
Speaker (t.b.c.)

12.30 – 13.30 Lunch

13.30 – 14.00 The European Network and Information Security Agency (ENISA)
An overview of the Digital Security Agenda in the EU
Demosthenes Ikonomou, ENISA
14.00 – 15.30 Topic II. Research and Education in Information Security
Issues: Knowledge and skills, security experts and their training, awareness, curricula issues, key research topics and other
Speakers
Daniel Olejar, Comenius University, Faculty of Mathematics, Physics and Informatics
Research and Education in Digital Security
Roberto Bellini, AICA – Italy
EUCIP services related to Information Security
Renata Danieliene & Eugenijus Telesius, Information Technologies Institute – Lithuania
Development and Certification of Skills for European Educators Focused on Safe ICT and Cyber Threat Prevention
Open slot (t.b.c.)

15.30 – 16.00 Coffee
16.00 – 17.30 Topic III. Miscellaneous aspects of Information Security
Issues: Best practices, standardization, major projects, EU information security directives, electronic signatures and other.
Speakers
Michal Danilak, Lynx – Slovakia
e-Health Project Security
Open slot (t.b.c.)

17.30 –18.00 Wrap-up, Adoption of a Conference Statement and Closing

19.00 Conference Dinner

Organizer

- IT STAR
- Contact

Venue

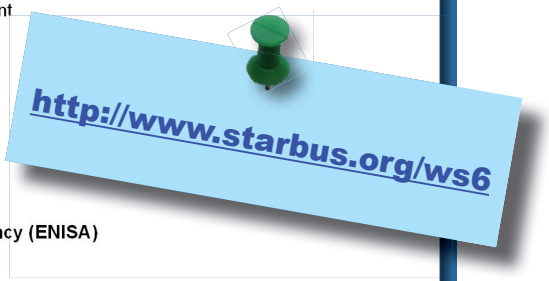
- Hotel Sorea Regia

Host

- Slovak Society for Computer Science (SSCS)

Member Societies

- IT STAR Member Societies



e-GUARDIAN
Let's be safe on the Internet!

Education and Culture DG
Lifelong Learning Programme

DEVELOPMENT AND CERTIFICATION OF SKILLS FOR EUROPEAN EDUCATORS FOCUSED ON SAFE ICT AND CYBER THREAT PREVENTION

e-GUARDIAN

Regardless of age, each computer user must be aware of the Internet opportunities and threats. To prevent distress, computer safety at home should be addressed by the parents, whereas IT professionals should tackle computer safety at work or at educational institution. That is the intended purpose of the ECDL Foundation Endorsed Partner Programme e-Guardian (www.ecdl.lt/eguardian-v1-en).

e-Guardian v.1 is a higher-level programme designed for those who want to protect children against potential Internet dangers and to safeguard their own computers from unwanted access. This programme is recommended for parents and IT administrators at primary or higher schools.

Teachers, in particular, should know about the potential threats on the Internet and the consequences that may arise out of unsafe Internet use. They should know how to manage digital data in a safe manner and how to recover lost data. They should focus on the safe use of the Internet resources, learn about safety and privacy on the Internet and they should be able to use e-services safely.

It was appropriate to take action, because there is lack of knowledge on Internet safety and there are no relevant Internet safety training standards nor syllabuses in national education systems.

The Transfer of Innovation project e-GUARDIAN is funded with the support from the European Commission by Leonardo da Vinci programme, which is a part of the Lifelong Learning Programme.

Project No. : LLP–LdV–TOI–2010–LT–0071.
Project started on 01.11.2010 and its duration is 18 months.
Project site: www.langasiateiti.lt/eguardian

The project goal is to develop a complex training product for educators, focused on safe ICT and cyber threat prevention.

e-GUARDIAN project partners:

- Association Langas į ateitį (Lithuania), www.langasiateiti.lt
- Public Institution Information Technologies Institute (Lithuania), www.ecdl.lt
- The Latvian Information and Communications Technology Association (Latvia), www.likta.lv
- Bremen University (Germany), www.uni-bremen.de
- Association APTES (Switzerland), www.zen3.net/aptes

e-GUARDIAN Syllabus includes five themes:

1. Basic knowledge on e-safety
2. Privacy and data management
3. Security tools and network security
4. Minors and newcomers on the net
5. Social networks and safe usage of the Internet

e-GUARDIAN project results:

- Syllabus
- Methodology guide
- Training programme
- E-course
- Student's guide
- Pre-tests and certification tests

All the training and testing material was translated into e-GUARDIAN partners' languages – Latvian, German, French, Lithuanian and English. This programme is expected to be endorsed by ECDL Foundation and implemented in the partner countries.

This project has been funded with the support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

References

1. http://ec.europa.eu/information_society/eeurope/i2010/
2. www.langasiateiti.lt/eguardian
3. www.ecdl.lt

IT Security and eHealth – Challenges and Approaches

Michal Danilak

RNDr. Michal Danilák is Executive Director of Lynx, s.r.o. Košice, Slovakia (Security and eHealth) and Director of the Institute for Health Informatics, Medical Faculty, Univ. of P.J.Shafarik, Košice. He was Head consultant for eHealth – Ministry of Healthcare, Slovakia (2008-2010) and is on the National eHealth development team.

eHealth is one of the most challenging fields for IT Security. Personal data protection is today the main issue and stopper for eHealth in many EU countries. The general problem is that ICT security in healthcare is not only a part of the ICT world and cannot be solved only in the ICT world. Let's see one example:

Challenge: Who can have access to clinical data?

Access to clinical data is based on the patient's consent. By consent he is approving who can see his health records. The question is, where is the right level of consent. Let's see two extremes:

- One extreme: no consent (nonsense?) It is very useful in emergencies (no time for getting approval).
- Second extreme: patient approves every access to his clinical data. But suppose your child is in the hospital and the approval from you is required all the time.

So what is the optimal level of consent? The right answer is that a decision needs to be based on political consensus and is fixed in the legislation.

Lessons learned from eHealth Programs

If IT Security is the basis for security decisions in eHealth (typically dealing with health data privacy) **then** stakeholders' consensus and legislation support will be necessary (citizens, doctors, nurses, insurance companies, parliament), **else** it will fail and the eHealth project is stopped by one or more stakeholders.

Security in every domain (IT, environment, health, business, military, nuclear, …) is dealing with:

- Assets and their value
- Threats and their probability and impact
- Vulnerabilities and their levels
- Risks and their risk levels
- Countermeasures and their price and efficiency

Assets in Healthcare

For providing efficient and secure eHealth, we need to understand in detail assets in healthcare. In general, there are four groups of assets:

1. Patient related assets (field of Patient's Safety)
   - ✓ life / health / level of disease burden
   - ✓ time
   - ✓ well-being, ...
2. Healthcare providers resources
   - ✓ medical equipment , drugs , doctors and nurses time, ...
   - ✓ healthcare support infrastructure (buildings, beds, …)
3. Money of / for:
   - ✓ health insurance company, healthcare provider,
   - ✓ patient, patients social network
4. ICT:
   - ✓ patient's personal data,
   - ✓ HW, SW, network,
   - ✓ IT staff, …

Risks

In Healthcare, risks are as variable as assets:

- ✓ **Clinical risks** (dealing with mortality, morbidity, disease burden)
- ✓ **Financial risks** (who will pay the bill, frauds, duplicity tests, lawsuits)
- ✓ **IT Security** (IT risks – loss of confidentiality, integrity, accessibility)
- ✓ **Other risks** (medical devices, doctors and nurses)

Contradictions in Assets Protection

There are some contradictions dealing with assets protection in healthcare. A patients life and health are the most valuable assets. From an IT point of view the most common contradiction in eHealth is: ***IT security risks vs. clinical risks.*** This means that from a clinical point of view availability and integrity of clinical data (for saving life and health) is much more important than their confidentiality. But from the view of personal data protection it is confidentiality as a more required security attribute. Why are people afraid? Some clinical data can be very sensitive (data from genetic scans) and there is a lot of published hack, a lot of tabloids hypes.

Other Challenges in eHealth Security

- ✓ Level of clinical data centralization in national eHealth (from nothing to all)
- ✓ Consent management (form and granularity)
- ✓ Different level of confidentiality for personal data
- ✓ Availability of genetic data – new level of risks
- ✓ Disaster recovery planning, when doctors are really dependent on IT
- ✓ Depersonalized data from EHR for statistics and research
- ✓ Who will pay strong IT SEC?
- ✓ EU interoperability (security token for patients and health professionals – EU eID, eEHIC cards, HPRO cards)
- ✓ IT SEC, eHealth and cloud computing

Approach to IT SEC in Slovak eHealth

The Slovak national eHealth program has 4 priorities: Health Portal, ePrescription, medical health records and electronic bookings in healthcare. It is planned until y. 2018.

IT Security in the Slovak national eHealth program is based on security requirements set out in the preliminary study "*The architectural framework for eHealth"* and also on approved security project developed in accordance with the requirements of the national Personal Data Protection Act.

The multi-level security monitoring will be implemented – from network devices to servers and disk arrays, operating systems, database and monitoring the application level.

Smart monitoring will include a correlation analysis between the different sources of logs, responses to new attacks (zero day attacks), recognition of patterns of non-standard traffic, advanced identity protection including recognition of stolen identities based on changes in user's behavior patterns. User's behavior (health professionals) patterns will be part of his complex profile.

National eHealth according to the level of sophistication of the services and possible interactions has higher demand for security, which is reflected in requirements for the effective security architecture, flexible and rapid responses to changing threats, early detection and elimination of zero-day vulnerabilities. Therefore it is important, besides the existence of sophisticated security mechanisms, to have their automation and mutual cooperation.

The mechanisms can be classified to areas according to different aspects of security. Each of these areas can be applied to multiple layers of a security architecture model in order to use every technical component on support for maximum possible number of areas:

[1]) Network security – includes protection mechanisms based on network design environment and on security mechanisms that control and enforce defined security policy in terms of network flows. For the purpose of the implementation of smart eHealth it is necessary to focus on:
   a) Design of the network environment that must allow maximum prevention and effective response to threats, such as possibility to isolate the subsystem under attack or the suspect entity, and enables transparent and automated activation of backup subsystems and power sources.
   b) The elements of the network environment must allow implementing design options and keeping the maximum possible degree of automation. They must also cooperate with other security mechanisms to provide automatic feedback.
   c) Application of maximum of components, which are represented by dedicated stand-alone security mechanisms to implement an in-depth inspection of application flows, since these components are hardware-isolated independent enforcement points.

2) Security monitoring and incident response – includes security components and operation components, which generate reports and respond to incidents. The central point is the Security Operation Center (SOC) operating in the context of defined processes of monitoring and responses that use a SIM tool for the complex monitoring and the tools of the central administration of security mechanisms for the reaction implementation.
   A very important aspect is the maintaining of situational awareness that includes a context for evaluating the security situation. Besides the information provided by reports of events in the monitored environment also the information on current threats and vulnerabilities is taken into account during the evaluation.

   For the purpose of early detection of new attacks the security monitoring must allow long-term analysis of the behavior of entities within the monitored environment and detection of deviations, which would significantly increase the chance of early detection of new attacks and also detection of insider threat.

3.) Data leakage prevention – part of the security focuses on detection and prevention of unauthorized use and transmission of confidential data. In the context of smart eHealth requirements it is necessary to implement mechanisms that will allow prevention and automated detection followed by immediate reaction if the information occurs outside of defined points, in a different form.

4) Security and stability of environment – includes mechanisms represented by the technical components and processes that ensure enforcement of integrity of the protected environment through the independent automated mechanisms in order to prevent unauthorized configuration changes and to implement a credible life cycle (e.g. enforcement of implementation of the component which has passed verification testing and has not been modified between phases of the life cycle).

   Another important role of the mechanisms in order to ensure stability and security of environment is to provide continuous automatic control of implemented mechanisms and their compliance with defined configuration standards.

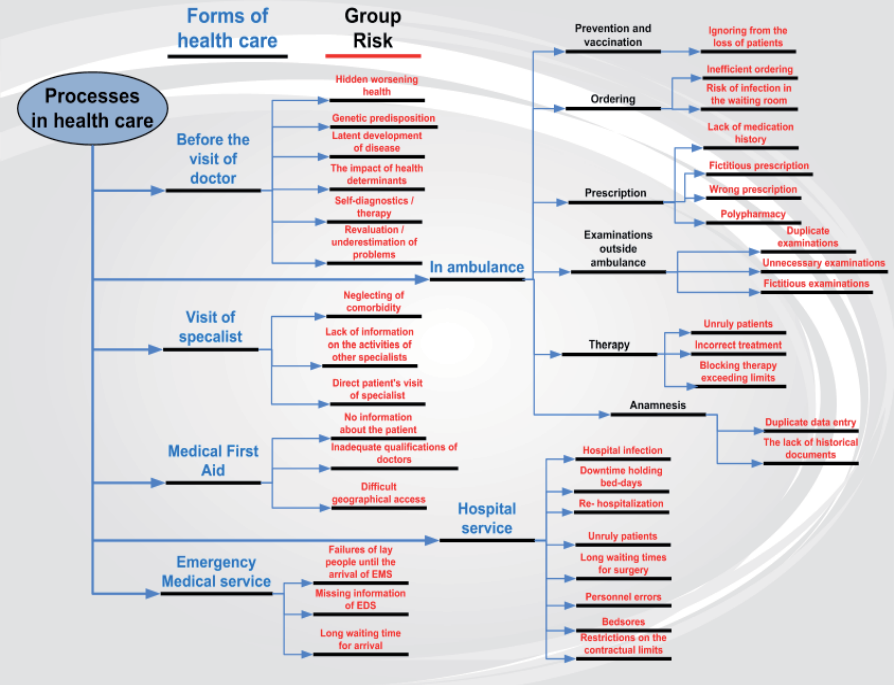
5) Enhanced protection of the operating system and applications – includes mechanisms applied directly to the IS elements which enhance the resistance of component (e.g. AV system protection, HIPS, configuration hardening). In the context of smart eHealth requirements it is necessary to have a high level of automated cooperation between these mechanisms and with other security mechanisms.

6) Application security – includes mechanisms applied directly in the design of IS architecture and its elements. This part of security is applied in early stages of IS and maintained throughout the whole life cycle of IS by:
   a) defining and following Secure Development Life-

cycle methodology that ensures besides proper IS architecture (from the point of view of security) also the credibility of developed components as well as implementation and verification of required security mechanisms in the code,

b) preparing a model which allows simulating and evaluating threats to the solution (this model is also used as a part of situational awareness). ■

Example: Classification of Clinical Risks



Events

Member Society Events

Italy

24th International Olympiad in Informatics
23 - 30 September 2012, Sirmione and Montichiari, Lombardy

Further information www.ioi2012.org

International Conference on Talent in Informatics
26 September, Milan

Slovenia

13th Bled Forum on Europe Foresight Conference
Europe Beyond Smart – Inclusive - Sustainable throughout Cloud Computing Decade
29-30 March 2012, Bled

The main topics of the 13th Bled Forum on Europe Foresight Conference are:

a) Europe beyond Smart, Inclusive and Sustainable through the Cloud Computing Decade
b) Enabling Prosperity for the Balkans
c) Contribution of Turkey to the Future of Europe
d) Danube Region Development

Further information http://www.cegd.eu

Forthcoming IT STAR Events

6th IT STAR Workshop on Digital Security
www.starbus.org/ws6
30 March 2012, Bratislava, Slovakia

Annual IT STAR Business Meeting
31 March 2012, Bratislava, Slovakia

7th IT STAR WS on eBusiness II
2013, Italy
(venue and date to be announced soon)

Other Events

e-Skills Week 2012

As a closure of the European e-Skills Week campaign 2012, the European Commission, DIGITALEUROPE, European Schoolnet and DI ITEK are organizing the conference **"Future Jobs and e-Skills in Europe"** on 30 March 2012 in Copenhagen, Denmark.

The conference sets out the challenges and the responses needed through coordinated efforts to deliver jobs and how to develop an e-Skilled work force.

Participation is free of charge but registration on-line by Thursday 22 March 2012 is recommended. For the program and to register please visit http://eskills-week.ec.europa.eu/web/guest/closing ■

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, E. Mühlvenzl
- Bulgaria (2003) K. Boyanov
- Croatia (2002) M. Frkovic
- 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 communi-cation technology organization in Central, Eastern and Southern Europe which promotes, assists and increases the activities of its members and encourages and pro-motes regional and international cooperation for the benefit of its constituency, the region and the interna-tional ICT community."

Governance

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

2011 Portoroz, **Slovenia** (April)
2010 Zagreb, **Croatia** (November)
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

2010 – Igor Privara
2006 – 2010 Giulio Occhini
2003 – 2006 Niko Schlamberger
2001 – 2003 Plamen Nedkov
(currently Chief Executive)

Major Activities

- IPTS - IT STAR Conference on R&D in EEMS - http://eems.starbus.org
- 5th IT STAR WS and publication on Electronic Business - http://starbus.org/ws5/ws5.htm
- 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%20REPOR-Trevised.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
Dampfschiffstrasse 4, 8. – 9. floor,
A-1030 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 IT Association– CITA
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, Poland
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
014459 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, 2632996Fax + 381 11 2626576
e- mail: dukic@jisa.rs
www.jisa.rs

Slovak Society for Computer Science – SSCS
KI FMFI UK, Mlynská dolina
SK-842 48 BRATISLAVA, Slovak Rep.
Tel. +421 2 6542 6635 Fax +421 2 6542 7041
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