Newsletter - *Calibrated for Creative Communications*

Vol. 7, no. 4, Winter 2009/2010

White is the Color of Your Dreams …

This Winter issue is the crescendo of our 2009 activities, of news and articles, seen and reflected on ICT policies, Skills, R&D, regional and international projects, computer history and many other topics of interest to the ICT community in the IT STAR Region, Europe and the World.

The Actors on our scene this year were many -- ICT professionals, IT STAR member societies, specialized units of the EC, national and international organizations.

This particular issue highlights the results of the recent 4th IT STAR Workshop on ICT Skills, Education and Certification: the Multi-stakeholder Partnership in Rome, the conference Declaration, and further articles on related topics.

The Cyprus Computer Society was welcomed in Rome as IT STAR's 15th member society and we publish a short note on its activities. The issue further contains a new article in the series of research activities, carried out by the EC Institute for Prospective Technological Studies in Seville, and more.

We are grateful to our readers for your patience and support. Thank you for the wonderful contacts this Newsletter established with many of you in 2009 and we look forward to the future.

Season's Greetings and all the best for 2010,

Plamen Nedkov

Contents

Editor

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Letters to the Editor

Immediately after the 4th IT STAR WS on ICT Skills, Education and Certification: the Multi-stakeholder Partnership, 27-28 November 2009 in Rome, Italy, many letters of appreciation were received from the conference participants. Here are extracts from the first 5 e-mails that reached us:

"Congratulations for the very successful workshop in Rome."
Bruno Lamborghini, EITO and AICA (**IT**)

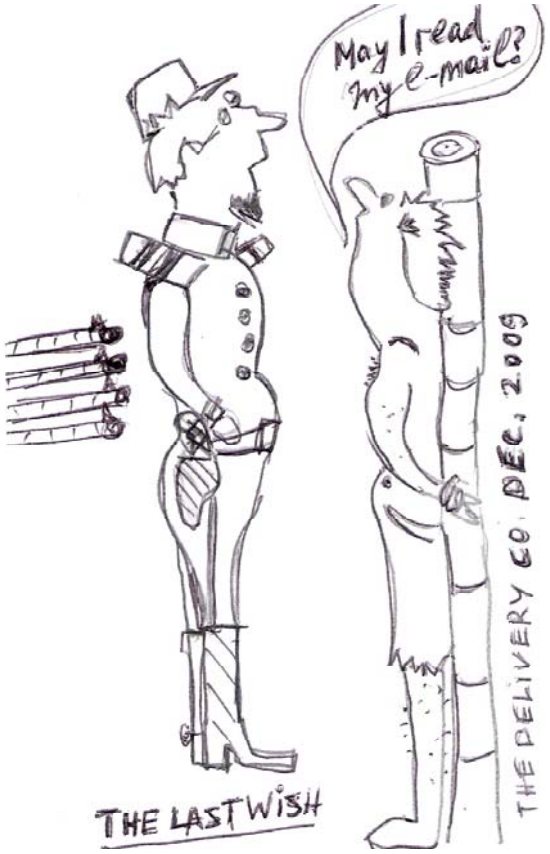
"Congratulations on a very enjoyable and interesting conference."
Denise Leahy, ECDL-Ireland (**IE**)

"Thank you for the valuable event!"
Saulius Maskeliunas, IMI (**LT**)

"It has been a great honor and pleasure to attend this event and to meet some old and many new friends - thank you!"
Jenny Sendova, BAS (**BG**)

"Congratulations for the fruitful conference: I have learnt a lot and will try to use the information in our work in Hungary."
Peter Dobay, University of Pecs **(HU)** ■

Cartoon of the Issue



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. ■

Skills, Education and Certification

4th IT STAR WS on ICT Skills, Education and Certification: the Multi-stakeholder Partnership, 27–28 November 2009, Rome

Participants from Albania, Bulgaria, Croatia, Cyprus, Czech Rep., Hungary, Ireland, Italy, Lithuania, Poland, Romania, Serbia, Slovakia, Slovenia and Switzerland, as well as representatives of the Holy See, the European Commission, EITO, EMF, CEPIS, CEN-WS on ICT Skills, ECDL-F, ILB, IT STAR and other organizations met in Rome on 27 and 28 November to debate the issues of ICT Skills, Education and Certification. These were representatives of academia, government, industry and international organizations who attended the conference with the mission to review the current state, problems and challenges in the field and to identify best practices and key areas of common interest so as to facilitate policy-making within the IT STAR Region and the European Union.

The conference offered an exceptional multi-stakeholder forum to all professionals in the field. A total of 24 presentations were delivered, among them the Opening Address by Prof. Bruno Lamborghini (AICA President, EITO Chairman, Olivetti Senior VP), and 3 Keynotes – by Msgr. Paul Tighe (Secretary of the Pontifical Council for Social Communications), Mr. Niko Schlamberger (President of SSI "Informatika", immediate Past President of CEPIS and IFIP VP) and Mr. André Richier (Principal Administrator, EC-DG Enterprise and Industry). The presentations were grouped in 3 major areas – National and International Programs and Experiences (including National Reports), Industry Experiences, and activities and projects of the CEN WS on ICT Skills.

As customary for IT STAR events, a Declaration based on the presentations and the debate was adopted by the conference participants [*see p.4*]. The post-conference proceedings will be published in early 2010.

Prof. Lamborghini's Assessment
(*Excerpts from the Opening Address*)

"An effective re-launch of the mission of the European Community, avoiding national egotism, represents a fundamental issue, especially for new EU members, which are most heavily suffering from the present economic scenario. This could be feasible by launching large European projects for speeding up common diffusion of wide digital applications in education, healthcare, transport, justice, public administrations in all member countries on a Trans-European approach, through European financial funds based on the launch of European bonds.

The major concern for the future of Europe is, on one side, how to invest in research and innovation in ICT and its applications, and on the other, in my view, the most critical target is how to increase investment in new skills, new competences, new forms of education.

We see how education in ICT skills is strongly considered in growing areas like China or India where hundreds of thousands of ICT engineers are created every year. Take India where the number of new ICT engineers every year exceeds the number of all ICT engineers living in Italy. So, the main source of concern and risk of a dangerous gap is related to the scarcity of skills required in this new scenario. E-skills represent the real strategic asset for strengthening Europe as a real Knowledge Society.

The target of this workshop is perfectly focused on this issue: we need to investigate problems and challenges of the ICT-related high education and the interplay between universities and the ICT industry and utilization in Central, Eastern and Southern Europe. There is a strong need to give policy-makers in Europe the right requests to speed up the change in education, to increase investment of the universities for preparing the right skills. We need to prepare every year hundreds of thousands of engineers, in physics, mathematics, informatics, nanotech, biotech, starting from secondary schools. …There is an urgent need to invest in Europe for the right e-skills with special reference to the university and close cooperation between public and private organizations and universities and to clearly certify the skill competences on a European basis.

We talk a lot in Europe about the need to invest in broadband infrastructures reaching all areas, but we don't talk enough about the need to invest more in skills, and brains. As a slogan I say, Broadband yes but in parallel also Brainband. Otherwise we will have broadband highways up to a Gigabyte but very few digital vehicles on them.

I thank very much the IT STAR organizers of this workshop for having proposed such a strategic theme on ICT skills and certifications." ■

4th IT STAR WS on ICT Skills, Education and Certification: the Multi-stakeholder Partnership
27 – 28 November 2009, Rome, Italy

***We**, the participants 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,*

***Appreciating** IT STAR's role in providing a forum for an open exchange of views and partnership and thanking AICA for the provided organizational support,*

***Identifying** with the mission of specialized bodies of the EU, national authorities, and a large number of stakeholders from academia and industry, professional non-governmental organizations and social partners in promoting ICT literacy and professionalism,*

***Recognizing** that the EU programs and initiatives in the ICT field are of primary importance to the countries of Central, Eastern and Southern Europe, and indeed to all EU member states,*

***Have agreed to the following**:*

1. ICT concepts, tools and methodologies are similar across all sectors and all over the world, and the ICT domain is mature to provide its definition of competence standards.
2. There is a need to ensure that the e-competence, knowledge, skills and creative thinking of managers, ICT practitioners and users meet high standards, as these are crucial for Europe's competitiveness, productivity and innovation and directly relate to professionalism and employability of the workforce.
3. Many useful EU initiatives have been launched such as the "e-Skills for the 21st Century" strategy and agenda. The e-Skills Industry Leadership Board was established and an e-Skills Careers Portal launched. The CEN WS on ICT Skills, supported by DG Enterprise and Industry, CEDEFOP and CEPIS, was instrumental in organizing several successful projects, including the currently running "End User e-Skills Framework Requirements" and the "European e-Competence Framework in Action (e-CF)".
4. The e-CF is a neutral reference framework for ICT professional competences that are aligned with the European Qualifications Framework (EQF). It can become a major asset for universities, industry, government and social partners in recognizing ICT competences as needed and applied at the workplace and sustaining a long-term multi-stakeholder partnership, thus assisting transparency and mobility in the EU labor market.
5. The EUCIP model offered by CEPIS for ICT professional knowledge & skills management is already used in Ireland, Italy, Norway, Poland, Romania and Spain, and of interest to other countries; a further alignment between EUCIP and the e-CF would facilitate the identification of common professional profiles and the convergence of e-competence supply (by university courses and other less formal learning paths) and demand (by multinational and local organizations).
6. The ECDL, a vendor independent activity managed by the ECDL-Foundation, is committed to improving digital skills proficiency within society by the development, promotion and delivery of quality certification programs, with remarkable success in the IT STAR region, notably in Italy, Greece, Austria, Hungary, Romania, Poland, Croatia, Lithuania and Cyprus.
7. The "new" EU-member states have some significant achievements in ICT education and the promotion of e-skills but much more remains to be done. These countries need to continue increasing the Internet penetration and content in national languages, to work on digital literacy and the use of uniform competence standards and a common European qualification system on all computer literacy levels. In these efforts a stronger participation in European and international programs is recommended.
8. The **IT STAR Declaration** from **Genzano di Roma (2007**) highlights the importance of a multi-stakeholder University-ICT Industry partnership and the need of internationally recognized certification programs and we reiterate our support to the conclusions of this document.

*We invite **IT STAR member societies and other European professional organizations** to support this Declaration by providing further visibility within their constituencies and countries.*

The European e-Competence Framework (e-CF): an Ally of the European Qualifications Framework (EQF)

by Clementina Marinoni

***Clementina Marinoni** is head of HR Project Department at Fondazione Politecnico di Milano. She was a project team expert (methodological leader) for the e-CF-v 1.0 and continues as such in the follow-up project "e-CF in Action"*

Abstract

The new e-CF represents industry's point of view and is an initial basis to build a common understanding and a reference for multi-stakeholder partnerships. Its structure is in line with the EQF learning outcome approach, hence it can be an input to recognise competences at work and develop qualifications contents according to the EQF. This strong connection between the e-CF and the EQF open up to new opportunities for employability, mobility and career developments. Furthermore, if common standards are used, interoperability of e-career services can increase; semantic WEB approaches can even be fostered to monitor and detect bottom-up innovation through what is exchanged in ICT virtual communities. However, consensus building and bottom up approaches remain the key factor to develop frameworks and enable their correspondence.

Levels and descriptions

In the e-CF, competences, skills and knowledge are expressed in terms of operational descriptions and the e-CF level approach is in line with the EQF. Thus, it is easy to establish correspondence between them [1, p 8. user guidelines].

In particular, e-CF can become an input to update or develop new vocational qualifications for the ICT sector, as it expresses companies' views. The e-CF language is the same as in the EQF and this makes the definition of learning outcome from e-CF easier.

Concerning levels, in the e-CF user guidelines it is quoted that *"The European e-Competence Framework relates to competences as needed and applied at the workplace". It has 5 e- Competence levels defined. These competence proficiency levels e-1 to e-5 are related to the EQF qualification levels 3 to 8; EQF level 1 and 2 are in this context not relevant. The EQF and e-CF levels are not identical as the perspectives are different. While the EQF reflects a qualifications perspective, the e-CF adopts a workplace competence perspective.[…] To illustrate the difference between the two types of levels we can use an example of a person with a PhD, this would be EQF level 8. However, he or she is not automatically able to apply knowledge, skills and attitudes in a working situation at e-Competence level 5. The competence for a particular job implies more than having achieved a qualification. It also requires experience and proven level of ability to act in complex situations"*

*[*1 - User guidelines, p.14].

This statement is still true. The e-CF represents companies' competence needs while *up to now* the EQF has been used to define school system qualifications. But according to new EQF trends, EQF is moving towards broader lines. Its structure allows to address learning at work or even learning along one's own life in the widest sense. Being this a further way to understand the EQF, its distance from the e-CF can rapidly decrease.

In the e-CF, a correspondence table between the EQF and the e-CF was elaborated [1, user guidelines, Annex]. In line with the latest EQF trends, the e-CF approach "distilled" three main EQF elements characterising levels. They are listed in Table 1

Table 1: EQF – e-CF level components

- → **Autonomy**, ranging between "Responding to instructions" and "Making personal choices"
- → **Context complexity**, ranging between "Structured – Predictable" situations and "Unpredictable – Unstructured" situations
- → **Behaviour**, here representing an observable outcome of attitude and ranging between "the ability to apply" and "the ability to conceive".

[1 p. 9, user guidelines]

In particular, the last component, "behaviour" has been further translated into "action verbs" according to the newest thoughts [2]. Just as an example, we can cluster knowledge, skills and competences into categories in accordance with the general descriptions given by the EQF and position them on the different EQF and e-CF levels. For example, concerning skills, we can say that those related to the category "execution performances" are at EQF level 3 / e-CF level 1 and those related to the category "decision making" are at EQF level 6 / e-CF level 3. On the whole, each level can be characterised by a set of verbs that can be inherited by the higher levels. Learning outcomes / e-Competences, positioned at a certain level have to include at least one of the verbs characterising that level. Levels are also defined by autonomy and context complexity, hence learning outcomes / e-Competences have to include them, too.

This approach clearly connects e-CF to the EQF and makes the former a sectoral development of the latter.

Enabling interoperability and bottom up innovation

This approach is also the basis to develop interoperable services which link, e.g. competence assessment results to qualification paths or job search to companies' recruitment [2].

Accordingly, the e-CF and the EQF as well as the EUROPASS CV and portfolio [5], have the potential to become reference standards locally and Europe-wide for improving e-career service interoperability.

Furthermore, in a near future, e-CF as a taxonomy with levels, can even foster semantic interoperability allowing for intelligent data mining. In fact, ICT communities of practice and ICT virtual communities [4] can become a

reference point to monitor competence trends and innovation. Expressions of social learning [3] -- in some ways, virtual communities become aware of their know-how and make it explicit; their ideas become traceable and analysable. If well monitored, this "bottom up" innovation could be strong enough to be able to influence "top down" changes and evolutions, for examples providing guidance to improve competence – job profile standards and official frameworks.

Hence the e-CF would become the basis to enable these analyses and comparisons. Intelligent data mining, in turn, could improve e-CF itself. This could lead to the creation of bottom up – top down virtuous circles towards mutual growth, progression and innovation.

Recognising competences at work

Reference standards are the *conditio sine qua non* for competence validation; if the EQF can provide the rational basis, the e-CF can become an operative tool for the recognition of ICT competences acquired in non formal-informal learning environments.

The adoption of operational description criteria and levels, fully in line with the EQF, makes the e-CF a suitable tool to assess evidence, i.e. the critical component of the competence recognition process [6].
In other words, if people can demonstrate their competences through pieces of evidence made available for the assessment, the e-CF can become the reference to identify and organise them.

In fact, for each e-Competence level (Dimension 3), a set of pieces of evidence can be associated, also providing information related to "autonomy" and "context complexity", in accordance with the level definition described in the previous paragraph.

The operational descriptions at each levels are the indicators/standard of measurement, while the evidence is its value/reading.

References

1 CEN/ISSS Workshop ICT-Skills CWA (2008) "The European e-Competence Framework v.01" and "user guidelines" – www.ecompetences.eu
2 CEN/ISSS Workshop ICT-Skills Interim Report (2008) "Interoperability of European e-Career Services"
3 Duvekot and Konrad (2007), Towards a Transnational Concept of Valuing Lifelong Learning: Some Practical Reflections on Developing Theory, http://www.leeds.ac.uk/educol/documents/166725.htm
4 Smith, M. K. (2003, 2009) 'Communities of practice', *the encyclopaedia of informal education*, www.infed.org/biblio/communities_of_practice.htm
5 http://www.europass.ie/europass/
6 VALEW Project, LLP - DG Education and culture, IN PROGRESS http://www.valew.eu/ ■

e-CF online survey

The European e-Competence Framework (e-CF) version 1.0 [see www.ecompetences.eu] was published in November 2008 by the European Committee for Standardization (CEN). It provides a pan-European neutral reference for ICT professional competences across all industry sectors. The e-CF development was part of the European Commission's e-skills strategy for the 21st century.

ICT stakeholder feedback regarding the practical use of the e-CF demonstrates that the framework has the potential to become a major European asset. Continuous improve-ment is essential for the e-CF maturity and relevance and the next e-CF version 2.0 is planned for publication in autumn 2010. In this regard, an e-CF stakeholder questionnaire is now online at **http://survey.ecompetences.eu** and our readers are kindly invited to contribute with their experience.

The survey will close on 7 February 2010.

Requirements for an End User e-Skills Framework

by Neil Farren

***Neil Farren** is Programme Development Executive for the ECDL Foundation. He is closely involved in the technical development of ECDL Foundation certification programmes and is project leader of the CEN/ISSS End User e-Skills Framework Requirements project.*

1. Introduction

The End User e-Skills Framework Requirements project[1] has been commissioned by the CEN/ISSS Workshop on ICT Skills to identify the requirements for an e-Skills framework for use by industry, certifying organisations, regulatory authorities and individuals. The project aims to assist in having an effective understanding of end user e-Skills and to make proposals for developing such a reference framework, as well as outlining associated tools that could benefit framework users.

Initial research was undertaken which involved the examination of e-skills frameworks already in place in European countries. This has been completed and will inform the survey which is currently being carried out with individuals and organisations representing the four identified target groups of the framework.

1 http://www.ecompetences.eu/site/objects/download/5101_EndUsereSkillsFrameworkRequirementsOverview.pdf

The groups are:

- Human resource and training functions
- Training and/or certification organisations
- Individuals
- Government and regulatory authorities

2. Surveying different implementations of end user e-Skills frameworks

Introduction

The purpose of the initial activity of the project was to gather information on the existence and type of end user e-Skills frameworks in European countries. The activity was primarily desk based research with input from individuals and organisations who are involved in the end user e-Skills domain in the selected countries. The output gives a snapshot of the current activity and the existing solutions being used across Europe.

Summary of existing end user e-skills frameworks

A summary of the existing end user e-skills frameworks can be seen in Figure 1.

Existing End User e-Skills Frameworks	
Country	Framework Details
France	1) CIGREF (IT Professionals) 2) Ministry of Higher Education and Research - Job Profiles Portal for IT Professions (contains some end user e-skills)
Greece	Common Ministers Decision (Labour & Education) - known in Greece as "KYA-A'/25081/2005" - Minimum Syllabus Requirements[2]
Romania	The National Education Pact, named "Education and Research for a Knowledge Society" Strategy[3], includes digital competences.
United Kingdom	The ITQ[4] framework, aligned to the National Qualifications Framework (NQF) which will soon be transferring to the Qualifications Credit Framework (QCF).
Norway	Framework for Basic Skills for Adults, developed by Vox (www.vox.no) on behalf of the Norwegian Ministry of Education and Research.

Figure 1 - Summary of end user e-skills frameworks in Europe

It should be noted that when asked about end user e-Skills frameworks, many of the respondents made reference to the prevalence of ECDL in their country and referred to the ECDL syllabus as the framework in use. The ECDL certification programmes are widely adopted across Europe and beyond (as ICDL), and as a result of 9 million registrations to date[5], ECDL has become the *de facto* standard in this domain.

Other Framework Developments

The research also noted two important European level framework developments which may interact with any future end user e-skills framework:

- European Qualifications Framework (EQF)6
- e-Competence Framework (e-CF) [7]

Aside from the European level frameworks, some national respondents referred to frameworks which were outside the scope of this research. Frameworks such as SFIA (UK), AITTS (Germany) and CIGREF (France) were referenced by respondents from these countries.

3. Definition of end user e-Skills

There are many skills associated with the use of computers. Computing is ubiquitous today and affects both people's personal and working lives. To ensure that the focus and scope of the project would be clear, a definition of "end user e-skills" was researched and agreed.

The resulting definition builds on existing definitions of ICT user skills[8] and digital competence[9], to create a concise definition, suitable for the project:

> *"End user ICT skills: the capabilities required for effective application of ICT systems and devices by the individual in either a work or personal[10] environment. Individuals apply systems as tools in support of their own activities, which is, in most cases, not ICT. End user e-skills cover the utilisation of common generic software tools and the use of specialised tools supporting business functions. End user e-skills vary in complexity from introductory up to an advanced usage level."*

4. Methodology

To supplement the desk based research into existing frameworks in Europe (See Section 2), the primary research will consist of the circulation by the project team of a survey to individuals and organisations representing the four identified potential target groups of the framework.

2 http://www.oeek.gr/documents/oeek_kya_pistopoiisis_foreon.pdf

3 http://www.presidency.ro

4 http://www.e-skills.com/nvq/2541

5 http://www.ecdl.org/publisher/index.jsp?1nID=93&2nID=94&pID=781&nID=830

6 http://ec.europa.eu/education/lifelong-learning-policy/doc44_en.htm

7 http://www.ecompetences.eu/

8 http://ec.europa.eu/enterprise/ict/policy/doc/e-skills-forum-2004-09-fsr.pdf

9 http://ec.europa.eu/dgs/education_culture/publ/pdf/ll-learning/keycomp_en.pdf

10 Includes recreational home usage

The project team will supplement the survey with a series of interviews with key stakeholders from the target groups to clarify issues where required, further explore requirements and discuss potential benefits that could be derived from an end user e-Skills framework.
If you wish to participate in the survey or interviews, please contact neil.farren@ecdl.org for details.

5. Conclusion

The objectives of the project are to establish if there is a need for an end user e-Skills Framework in Europe and to document the requirements for such a framework. The initial research has produced a view of the European activities around existing implementations of End User e-Skills Frameworks. This has demonstrated that there is activity and interest in this area. Further research will allow the description of the need for an End User e-Skills framework for the identified target groups. It will outline the purpose for creating such a framework and detail the benefits to be accrued from its implementation. The structure of a potential framework will be addressed and the tools required to make use of the framework will be described. ■

Member Society News

Croatia
Croatian Information Technology Society – CITS

CITS will host IT STAR's 5th workshop and business meeting in Croatia in autumn 2010. The conference topic and other details will be announced in early 2010.

Cyprus
Cyprus Computer Society – new member of IT STAR

by Panicos Masouras
CCS Board Secretary

The Cyprus Computer Society (CCS – www.ccs.org.cy) was established in 1984 and it numbers today more than 1000 members.

The Cyprus Computer Society is a not for profit organization seeking to improve and promote high standards amongst informatics professionals in recognition of the impact that informatics has on employment, business, society but also on the quality of life of the citizen.

Informatics is a vital component of the international competitiveness of the Cypriot and European economy. The Cyprus Computer Society plays a key role in linking Academia with Industry through the promotion of key elements of Informatics, in particular in the areas of digital literacy, professional skills, professionalism, education, training and research.

Activities
CCS is engaged in a range of activities for the benefit of its members. Over the years, the CCS has established and organizes the following activities:

- Pancyprian Student Programming Olympiad under the auspices of the Ministry of Education and Culture
- Conference: "Cyprus Infosec: From Theory to Practice"
- Conference on "IT & Education"
- IT Academy for the students of secondary education

It actively participates in:

- Technical Committee 11 of IFIP on Information Security
- Technical Committees and Working Groups of CEPIS
- International Education Fair promoting the ECDL and its other certifications
- International and Balkan Olympiad in Informatics
- Junior Balkan Olympiad in Informatics for students at the age of 12-15
- The "Career" event which aims on advising students on their career options in the field of information technology and computing.

Under the auspices of the CCS the Special Interest Group on IT LAW and Information Security was established while Working and Study Groups are formed on a need basis.

The main publication of CCS is "Pliroforiki" (www.pliroforiki.org), published quarterly and managed by an editorial and a scientific committee. "Pliroforiki" is a member of CEPIS UPENET network.

International and European Collaborations
The Cyprus Computer Society has become full member in international and European organisations in the field of Information Technology like CEPIS, IFIP, the ECDL Foundation and IOI – International Olympiad in Informatics. It also participates actively in the international initiative World Summit on Information Society. The CCS cooperates closely with the Greek Computer Society, the British Computer Society and other National Informatics Societies.

IT Certifications
As a full member of CEPIS, the Cyprus Computer Society is the National Licensee responsible for the implementation of the ECDL – European Computer Driving License. It has also implemented other certifications, which cover the needs of the local business and education communities. CCS also explores the possibility of introducing EUCIP and the management of local CISCO Academy.

Czech Republic

Forthcoming event - CSKI
SOFSEM 2010 (http://www.sofsem.cz) - 36th annual international conference on theory and practice of Computer Science
Date and Place: January 23-29, 2010
Hotel Bedrichov, Spindleruv Mlyn, Czech Republic
Organizer and contact data: Roman Spanek
http://www.cs.cas.cz/spanek/ ■

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Journey in Time

by Dorothy Hayden

I was in Rome in conjunction with the 4th IT STAR workshop and with the intention to prepare a short note for this column. Realizing that it would be "Mission Impossible" to absorb in a couple of days and express my impressions of the Eternal City in a few paragraphs, I will focus on just one object, perhaps not so famous, yet a veritable jewel: the Basilica of Saint Clement (San Clemente al Laterano).

The church is dedicated to St. Clement who was one of the early (some sources say 3rd) successors of Saint Peter as Pope. According to legend, he was banished from Rome during the reign of Emperor Trajan and sent to the Crimean stone mines where the prisoners were suffering from lack of water. He performed a miracle – he struck the ground where a lamb had stood and a spring of water appeared. This resulted in many of the local population and prisoners converting to Christianity. The authorities were angered and martyred him – he was tied to an anchor and thrown in the Black Sea.

When St. Cyril and St. Methodius came to Rome in 868 they brought what they believed were the relics of St. Clement. These were enshrined in the basilica. After his death in 869 St. Cyril was also buried here.

11th century fresco in San Clemente depicting Saints Cyril and Methodius bringing the relics of Saint Clement to Rome.

The life and work of the 2 brothers, Saints Cyril and Methodius, has an impact in Central, Eastern and South Eastern Europe. The Cyrillic alphabet (*azbuka*) is one of the 3 official alphabets of the European Union. In 1980 the brothers were declared co-patrons of Europe and are patrons of many holidays, educational and other institutions across all Slavic countries and beyond. Therefore, it is no wonder that San Clemente is a place of spiritual and cultural pilgrimage for many Europeans, irrespective of their religious denominations and beliefs. Pope John Paul II himself used to come sometimes to pray here. Caretakers of the basilica since 1667 are Irish Dominicans after England outlawed the Irish Catholic Church and expelled its clergy.

Archeologically, the church consists of several architectural complexes built one on top of the other throughout the centuries. This offers the visitor a journey in Time.

The lowermost complex dates back to a 1st century building, itself constructed on foundations from the Roman republican era. On top of this construction is a second century Roman temple of the pagan god Mithras. Then there are the foundations of a 4th century Christian church and the current one was built just before 1100 and rebuilt 20 years later after the original church was burned during the Norman conquest of Rome. Each of these levels is a cultural treasure-chest but due to the limited space I only share a few words related to the present top-level basilica which is a typical medieval church with a central nave and two side aisles divided by marble and granite columns.

It is one of the most richly decorated churches in Rome with wonderful mosaics, a ceiling which is a magnet for the eye, a white marble choir, precious frescos, a unique medieval atrium and much more. When in Rome next, visit San Clemente and you will be delighted, just as I was.

■

Institute for Prospective Technological Studies

RFID - The cases of Item Level Tagging and Public Transportation

by Marc Bogdanowicz

RFID (Radio Frequency Identification) is an auto-identification technology, as are also barcodes and contact cards. With respect to them, RFID presents several advantages: it allows contactless and no line-of-sight information transmission, simultaneous identification, sophistication and integration with sensors, and that data which is stored can be modified. These features allow for manifold applications in e.g. logistics, retail, manufacturing and access control.

The potential economic impact of RFID is very large. Already by 2008, the total market size was about € 3-3.5

billion and is projected to grow to about € 15-20 billion by 2018. The European market stands at about 20% of these figures, with a growing share. Economic impacts resulting from the usage of RFID – though inherently more difficult to estimate – could be on an order of magnitude higher. These come in the form of cost reductions/productivity growth and, increasingly, in the form of new products and services.

Still there are a number of barriers to adoption. RFID raises privacy concerns and is vulnerable to security threats. Economic barriers include the investment costs necessary to implement an RFID based application, which combined with lack of skills and uncertainty with respect to return to investment hinder adoption by SMEs. The availability of suitable frequencies as well as of standard protocols and interoperability may also pose barriers, which are relevant especially for the case of item level tagging.

A recent IPTS report investigates the current and future competitiveness of the European industry concerning applications of RFID in general and for the cases of item-level tagging and for public transportation.

It analyses RFID constituent technologies, drivers and barriers to growth, actual and potential markets and economic impacts; it assesses the EU position, its strength and weaknesses with regard to its industrial position and innovative capabilities, overall and with specific reference to item level tagging and public transportation. The report concludes with a number of issues relevant for policy making.

RFID Item-level

Item-level tagging is when an RFID tag is used to identify a single item. Item level tagging represents the most promising field of application of the RFID technology. It can be used in a number of industries and for very diverse purposes, encompasses most of tag types, and is bound to become the largest market in terms of value and tag volumes.

The main applications of item level-tagging include retail (tagging of consumer goods), pharmaceutical and medical equipment, postal services, archiving, manufacturing processes, and libraries. Uptake of RFID in these applications is driven by a range of technological and socio-economic factors. Most pertinent perhaps is the range of benefits which RFID potentially can provide – to increase efficiency, reduce operational costs, and reduce time needed for some operations errors and losses, increase customers' convenience and sometimes enable new services or functionalities. Rapid price reductions as well as developing of complementary hardware and software technologies and improving customer acceptance, allow for item-level RFID tagging to subsequently activate and penetrate new market segments. Notwithstanding the opportunities opened by item level tagging, a number of elements might be hindering or delaying it, in particular privacy and security concerns, and cost barriers for SMEs.

The economic impact of item-level tagging is potentially huge. Global item level business is expected to rise from about € 180 million in 2008 to more than € 6 billions in 2018 (i.e. from 5 to 30% of the total RFID market), of which almost half is the value of tag production alone. Correspondingly, the production of item level tags is expected to grow from about 0.4 to more than 600 billion units yearly (i.e. from 20 to about 90% of the total number of tags). In volume terms, the main engine of growth is represented by consumer goods, which are expected to become largely dominant in tagging flows. This growth is both driven by and driving to rapid cost reductions. The landscape is more varied when it comes to market value, with consumer goods taking the lead, but shortly followed by the health sector and manufacturing related applications. The main parts of the value chain likely to benefit from this market growth are tag and antennas manufacturers, software producers, system integrators and service providers. Other affected actors include those providing complementary technologies (notably, mobile phones for Near Field Communication - NFC), as well as competing technologies (notably, barcode).

In a broad economic perspective, available estimates show that the item-level tagging market for the RFID industry is only a fraction of its envisaged economic impact coming in the form of reductions in labour costs, shrinkage in losses, inventory write-offs and non-working inventory, and benefits in the form of higher product availability, faster time to market and access to customers.

RFID for public transportation

RFID is already established for use in public transport systems. Initially, most projects were very large in terms of economic dimension, organisational issues, visibility and number of users. By now, the technology is at reach of smaller scale projects. The main application of RFID in public transport is in ticketing, i.e. to give the public access to public transportation means such as buses, ferries, trams, subways and trains. In this application RFID substitutes for traditional paper and magnetic stripe tickets, but also go beyond the functionality of those.

The economic impact of RFID for public transportation includes effects on the supply industry, on public transpor-

tation companies and on their customers. RFID enables the realisation of more efficient and effective public transport systems. It does so by reducing boarding time and, in some cases, providing additional information to travellers (time of arrival, time of departure, delays in time schedules, etc.), by offering management information about the traffic patterns in public transport, by reducing fraud, and by extending the range of services that can be offered by public transport operators, if needed in combination with other service providers.

The world-wide RFID market for public transportation can be estimated at about 100-250 million Euros. Main barriers to further diffusion include high complexity and initial investment costs of systems, organisational difficulties, political decision making, systemic risks as well as privacy related concerns. Still, the market is expected to continue to grow in the years to come, due to progress and cost reduction of RFID technology, combined with features superior to its main alternatives (paper tickets, magnetic strips and contact smart cards).

Although in the long run, this application is bound to become relatively less important with respect to other fast growing RFID applications, the spreading of RFID for transport ticketing is deemed strategic from a public perspective. Indeed, besides the direct economic benefits to transport providers, it is a powerful tool for integrating public transportation offers locally, expand it to other services (e.g. bicycles) and move from local to regional or national network integration, and might also allow breaking up local monopolies.

EU position and competitiveness

European technology providers, users and research centres have made Europe a major player in global RFID competition. From chip manufacturers to label makers to system integrators, European actors hold positions in almost every link of the RFID value chain. In many segments, such as special label-making machinery, they are among the market leaders. Within Europe, Germany is in the lead, followed by France and the UK, but also Italy, the Netherlands, the Nordic countries; Austria and Switzerland have strong positions.

Still, the US dominates the market, with large-scale infrastructure projects, first rank companies and R&D programmes, and a stronghold in standard setting and patents related to these standards. In Asia, Japan, Korea and Taiwan are already strong and China is likely to soon catch-up as a result of large domestic demand and industrial policy.

Technology-wise Europe is also doing well, although lagging the US in patenting, especially in core RFID technology. Europe's patenting position is stronger in the application field and also the core is improving. The EU R&D infrastructure is well developed, but is confronted to very strong R&D programmes in other regions, including large-scale projects with multi-technology objectives (e.g. Japan, Korea), or government-initiated infrastructure projects in the US.

Item level tagging and public transportation share most of the above features, although with some specificities. European usage is very strong in both cases, but Europe shares a general lack of business cases for SMEs. In item–level tagging, the relatively weak European position in UHF spectrum and standards may present barriers in the future. This is less of a problem for public transport.

The IPTS report "*RFID - The cases of Item Level Tagging and Public Transportation*", authored by S.Lindmark, A.de Panizza and P.Rotter will be soon available at: http://ipts.jrc.ec.europa.eu/publications/index.cfm.

It is one of a series of 6 reports focusing on the European ICT industry competitiveness in emerging ICT technologies. Other reports cover domains such as WEB20 applications, Displays, Robotics, Videogames software and Embedded Systems in the Automotive Industry. The three latter are work in-progress and should be available in 2010. ■

People

New CEPIS President

In November 2009 **Prof. Vasile Baltac**, a well-known personality in the ICT field in Romania with broad international activities, stepped into the office of CEPIS President.
After graduating from the Politechnical University of Timisoara, Vasile started his long career in IT as a computer pioneer in the early 1960s at MECIPT, a first generation computer built by Romanian scientists. He continued his research studies in 1966/67 at the University of Cambridge, England in the Mathematical laboratory led by Sir M. V. Wilkes, FRS, the father of microprogramming.

Upon his return to Romania he was asked to contribute to the development of the Romanian computer industry. He was first Scientific Director (1968-1978) and then General Director of the Institute of Computer Technology, until 1982. In this position he coordinated national projects leading to the creation of the Felix computer family, "Independent" minicomputers and of the first Romanian industrial software activity.

Dr. Baltac continued his career as manager of important national IT- related research and manufacturing organizations. After the Romanian Revolution in 1990 he was appointed Minister of Electronic and Electrical Industry and during 1992-1994 he was Deputy Minister for Industry. After 1994 he entered the private sector and created a

group of IT companies within the top 10 Romanian companies.

In parallel to his industrial activities, Dr. Baltac was involved in research and has published books and papers on computers, information technology and society, management, digital divide, e-Readiness, history of computers, etc. Since 1962 he has had a university presence - direct or associate, from assistant to full professorship in 1994.

Dr. Baltac is the President of ATIC - IT&C Association of Romania, senior member of IEEE-Computer Society and of other professional societies. In November 2006 he was elected Vice-President of CEPIS in charge of Education & Research and Vice-Chairman of WITSA in charge of Eastern Europe developments. In November 2008 he was elected CEPIS President Elect.

As ATIC President Vasile is active in IT STAR and organized the Association's business meeting in October 2007 in Timisoara.

His activity has been recognized by various awards, the latest was in 2003 when he received The National Order of Merit in the rank of Knight from the Romanian President. He received the Romanian Academy Award for works in software engineering and was nominated as The Entrepreneur of the Year and The Best Promoter of Internet in Romania. He has been invited as a speaker or panelist at many international IT conferences

When asked about his CEPIS Presidency, Vasile responded:

"CEPIS is celebrating its 20th Anniversary and has to remain relevant for the next 20 years. There are new challenges for ICT professionals and CEPIS has to adapt to this very dynamic environment. Among the issues - professionalism in the new even more dynamic environment, education issues for professionals and for ICT users. We may notice the signs of what I call a "Second Generation Digital Divide", when competences have to replace simple literacy.

The 20th anniversary is a moment for CEPIS to reflect on its own capability as an organization. We have to face issues like need for increase in membership, performance improvement, adoption of a new strategy, enhanced recognition, promotion of digital literacy and competences, better visibility, cooperation with other European bodies. CEPIS has challenging years ahead. It is a challenge for me to step in as President in such a moment." ■

Editor meets the Atanasoffs

Fm left: Plamen Nedkov, John II and Tommie Atanasoff

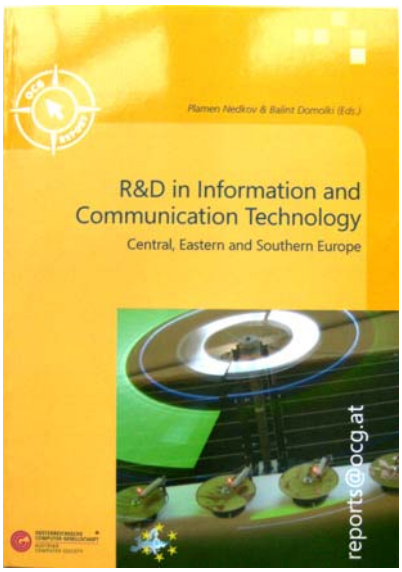
NL Advisory board member John V. Atanasoff II and spouse Tommie followed the advice of the IT STAR Newsletter (*see MultiCulti: Destination – Wachau, Vol.7, no.2, Summer2009*) and joined a cruise, the Blue Danube Discovery, starting from Budapest on board the MS "Avalon Tapestry" up the Danube River to Regensburg, with stopovers in major cities and sites including Vienna and the Wachau.

The Atanasoffs were in Vienna on 28 September and this provided an excellent opportunity to meet with the NL Editor and a long-time friend of the Atanasoff family.

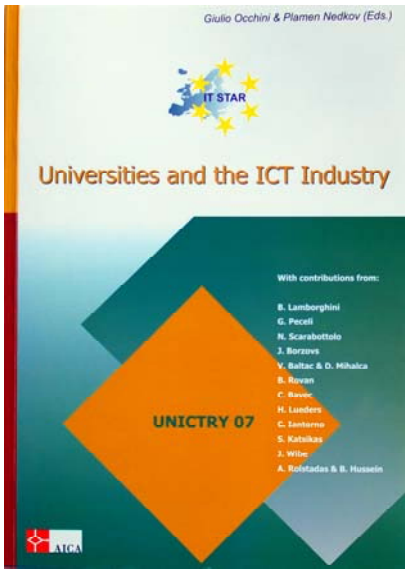
Said John, "We look forward to the Wachau, the Melk monastery and many other places upriver. At the end of this cruise we will go to Prague and then fly to Sofia for meetings related to the John V. Atanasoff IEEE Medal.

I am glad to be associated with the IT STAR Newsletter as member of its Advisory Board. This journal provides an excellent forum to promote ICT activities on a regional and international platform." ■

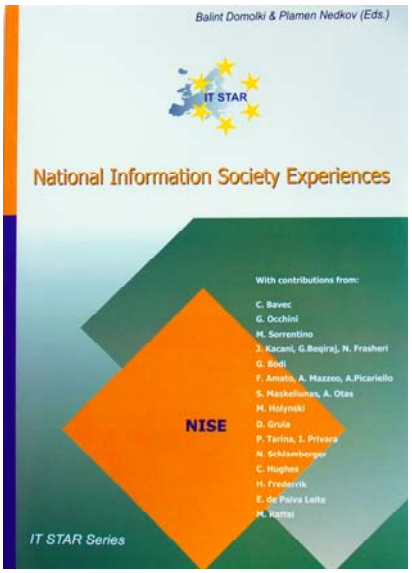
IT STAR Publications



Proceedings of the 1st IT STAR WS on R&D in ICT, 11 November 2006, Bratislava, Slovakia
Editors: Plamen Nedkov & Balint Domolki
© IT STAR, 116 p.
ISBN 978-3-902580-02-3



Proceedings of the 2nd IT STAR WS on Universities and the ICT Industry (UNICTRY' 07), 26 May 2007, Genzano di Roma, Italy
Editors: Giulio Occhini & Plamen Nedkov
© IT STAR, 104 p.
ISBN 88-901620-1-5



Proceedings of the 3rd IT STAR WS on National Information Society Experiences (NISE' 08), Godollo, Hungary
Editors: Balint Domolki & Plamen Nedkov
© IT STAR, 118 p
ISBN 88-901620-2-3

Coming Soon

ICT Skills, Education and Certification

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

Contact info@starbus.org for further information concerning these and other IT STAR publications and their availability.

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 ■

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