

JUSTIFICATION OF EUCIP STANDARD SELECTION AS CERTIFICATION SYSTEM

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Background

Slovenia is an independent country as of 1991. The population is nearly exactly two million¹ and the area of the country about 20.000 square kilometres. Country capital is Ljubljana with population about 300.000. Slovenian economy has seen a strong increase after independence and today the gross domestic product is 9.390 million euro² (as opposed to 2.716 million euro in 1995). There were

180.841 business subjects registered on September 30, 2010, of which 137.340 are commercial companies³. The number of companies with main activities in computer and information engineering⁴ is about 1.900 with total number of about 15.000. It is a safe estimate that more than one half should be computer and informatics professionals of various degrees.

The contribution of those companies to GDP is not a major one but considering importance of their products and services for present and future development of national economy and the society at large their role is much more important than could be seen only from the respective proportion in GDP.

Institutional educational system is divided into basically three levels: primary, secondary and tertiary. Primary education takes nine years, secondary (general and vocational) four, and tertiary, i.e. university level from four to six depending on program. At this time there are four universities in Slovenia of which the oldest is the University of Ljubljana (about 200 years old), followed by University of Maribor (established about 1960), the youngest two being the University of Littoral and Polytechnic of Nova Gorica, both less than ten years in existence. The combined number of students on all four universities is nearly 100.000 of which only 20% graduate each year. Informatics and computer engineering courses are available in Ljubljana (Faculty of Computer and Information Engineering) and Maribor (Faculty of Electrical, Computer and Information engineering). Various other faculties offer courses on informatics but adapted to their basic orientation⁵. However such students and graduates cannot be considered as informatics (or computer engineering) professionals as their main study programs are in other subjects.

Slovenian Society INFORMATIKA

Slovenian Society INFORMATIKA (SSI) has been established in 1976. It is a not-for-profit association of individuals who work in various areas of information technology and information sciences in business, universities, and administration and who, among other concerns, care to exchange their experience and findings among themselves as well as to

¹ 2.049.261 on July 1, 2010

² 2010, second half

³ The rest are non-governmental organisations, central and local government entities, non-profit entities, cooperatives and the like.

⁴ Groups 26.1, 26.2 in 26.3 and division 62 according to NACE Rev. 2

⁵ One such example is the Faculty of Economy in Ljubljana.

make it publicly available. SSI members are natural persons. In 2006 it has been officially recognized as a society that operates in public interest.

Main areas of activities to support the SSI mission are those to increase its visibility and influence, closer collaboration with educational institutions, government and industry, and international activities. The Society has established five chapters lead by chapter presidents: Information Systems Research, Operational Research, Language, History of Computing, and the most recent Seniors which has been established in 2007. As of 2000 it is the holder of ECDL license in the Republic of Slovenia. International activities are subject to SSI affiliations which are: CEPIS (1998), IFIP (1998), ECDL Foundation 2000, IT STAR (2001), EURO (2008), and IFORS (2008).

As of 1994, SSI is awarding recognitions for contributions to computer and information science and for improvement of its work and visibility. So far 44 recognitions have been awarded of which three in 2008 for individual achievements but recipients may be corporate entities as well. The award ceremony is public and normally takes place during the opening ceremony of the SSI annual conference. SSI runs regular and special publications. The regular ones are a quarterly professional journal *Uporabna informatika* (Applied Informatics) in Slovenian language where the Slovenian translation of The Bangemann Report has been published and a scientific periodical *Informatika* in English language. Special publications are proceedings of conferences and special issues of the journals. Special publications are proceedings, monographs, and other.

The main event is the annual open conference *Dnevi slovenske informatike* (The Days of Slovenian Informatics). It has been started in 1993 and has since earned recognition of the most comprehensive event of the year in the field of information sciences in Slovenia. It is a national conference with an international participation and every year notable domestic and foreign guest speakers are invited. Other events are international scientific biannual conferences organized by the Chapter of Operation Research and other conferences and meetings organized in collaboration with various entities.

The SSI home pages are accessible at www.drustvo-informatika.si.

EUCIP in Slovenia

The need for trained and experienced informatics professionals in Slovenia is considerable. As can be seen from the introductory paragraph on national economy and educational system there is a substantial disproportion between the number of qualified labour needed and the number that the education system can deliver. The result is that there are many self-declared professionals that cannot produce any kind of certificate to prove their alleged experience in information technology. There are however various industry and company certification schemes and certificates available but mostly in large multinational companies. There are several shortcomings of such documents. First, they relate in most cases to a specific job or skill. A disadvantage of such certification is that commercial companies are unstable in that they are in many cases subject to advance of technology. We all know of examples of once important companies that have been closed down and the certificates that they have been issuing are endorsed no more. A major weakness of company certificates is that in most cases they are not supported by any national or international standard and consequently they are not generally and publicly recognized as a generally valid certificate.

Because of the shortage of certified professionals the situation is such that in many cases the true expertise of a person in question can be considered only after such person is hired. Only after having succeeded to perform up to the requirements of the job one can decide on the competence of such person. On the other hand, if such person could produce a generally valid and recognised certificate it would increase their competitiveness on the labour market and increase the confidence of employers that they are hiring a competent worker.

SSI has seen EUCIP as a possibility to introduce a recognized training and certification program for those that work in information technology but have no formal qualification. Moreover, as it has successfully introduced ECDL it was confident that EUCIP, although much more demanding in this respect than ECDL, could be established in Slovenia as a scheme desirable by both people with no formal qualification and employers alike. The first attempt in this direction has been made in 2005 when SSI, two faculties and some commercial companies agreed that they would collaborate in a project the result of which would be availability of EUCIP training and certification. Also a study has been made which has shown that the project was viable but for various reasons the project has not taken off at that time. However, the idea has not been forgotten and the SLOOP2desc project has been perceived as a welcome opportunity to revisit the idea and to develop it further.

EUCIP and SLOOP2desc

After initial deliberation about what to offer to the participants of the on-line seminar to be useful in their work the decision has been made in favour of EUCIP. The idea was to choose a product that is established, is supported by a reliable organisation and is recognised internationally. EUCIP qualified by all three criteria but there was an inconvenience in that there is not yet an entity in Slovenia that has been accredited the EUCIP license. The idea has not been discarded but rather modified. Also the scope of SLOOP2desc does not allow for such an extensive system to be established as a deliverable of the project for various reasons, where the finance is not the least important one. The decision was therefore to offer the participants of the on-line seminar a working knowledge based on EUCIP as a standard.

Considering the structure of EUCIP one typical core module has been chosen from each of the three EUCIP areas – Plan, Build, and Operate. In this way the participants will understand the structure and architecture of EUCIP, will be able to deploy it and based on it develop a tool to use in their work. As in EUCIP there is also an independent of module IT Administrator it has been decided to offer this module too. The idea is that many of the seminar participants are operating the IT infrastructure either themselves or are responsible for its operation and the knowledge will be for them of a practical value.

Plan – It refers to requirements analysis and the planning of the use of information technologies, and it is therefore strictly connected to the management processes and to the definition of the business needs in the ICT sphere put into the context of a strategic perspective. Important elements within this area are, for example, the traditional notions of business organisation, return of investments, financing, risk, etc.

Build – Includes the processes of specification, development and integration of IT systems. The central node of the area is represented by traditional aspects of development, implementation, and integration of IT systems.

Operate – This area regards the installation, supervision and maintenance of IT systems. It is characterized by arguments like network management, change management, service and delivery support, etc.

The modules that were eventually seen the most suitable for the purpose are *Project Management*, *Systems Development Process and Methods*, and *Service Delivery and Support*. They are typical of core competences for each area and will illustrate the approach and philosophy of each area. It is believed that they will provide an overview of EUCIP as a certification system and at the same time give the participants practical knowledge that they will be able to usefully apply in their working environment. The aforementioned fourth module – IT Administrator – is somehow alongside EUCIP as a system but will be equally useful as the three that are part of the system. Finally, let us also remark that for the participants there is no certification planned as the goal is not to introduce EUCIP but rather to show EUCIP as a suitable and useful instrument. The outcome that SSI expects from the exercise is to obtain an experience that will hopefully make the launch of EUCIP a little easier.

Decision of the Faculty of Natural Sciences and Engineering

Faculty of Natural Science and Engineering, Department of Chemical Education and Informatics as one of the Slovenian sloop2desc project partner, accepted and supported the selection of EUCIP standard as an example for preparing teaching materials for the Module 4 of the online course “Developing e-learning teaching and learning resources based on EUCIP standard”. The expertise of the Department is primarily in chemical didactics, but due to the goals of the project, we could not decide for our discipline, since a formal framework of competences for science – chemistry teachers does not exist. In the year 2005 University of Ljubljana has started the restructuring of the existing university study programmes according to the Bologna standards, but without a prepared framework of qualifications. The process encompassed all study programmes, therefore also study programmes for chemistry teachers were redesigned. The application of ICT and e-learning is an integral part of the course on chemical didactics. But the selection of competences, aims, and content was not made in accordance to any EU standard or QF, due to the fact that universities are autonomous in designing and preparing their course contents and materials, as well as competences and aims they are going to follow.