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Ukraine

Vladimir Hahanov, Svetlana Chumachenko

IEEE Senior Member, IEEE Computer Society Golden Core Member, Dean of Computer Engineering Faculty
Kharkov National University of Radioelectronics, Kharkov, Ukraine, hahanov@kture.kharkov.ua

I. INTRODUCTION

Ukraine is a state in Eastern Europe. According to the general census of 2001 the population of Ukraine was more than 48.4 million people, according to the State Statistics Service of Ukraine on January 1, 2013 – 45,547,800 people. The territory of Ukraine is 603 700 square kilometres, Ukraine is the largest country in Europe after Russia. Ukraine occupies 30th place in the world in terms of population and the 44th by area. Ukraine is subdivided into 27 regions: 24 oblasts, one autonomous republic, and two "cities with special status" (Kiev, Sevastopol). Kiev is the capital of Ukraine. Major cities are Kiev, Kharkov, Odessa, Dnepropetrovsk, Donetsk, Zaporozhye, Lvov, and Krivoy Rog. Official language – Ukrainian. It is unitary state; the form of government is a presidential-parliamentary republic. In March 2010 Viktor Yanukovich was elected the President of Ukraine; the Prime Minister is Mykola Azarov. There are Black sea and Azov Sea on the south. Ukraine Neighbors are Russia, Belarus, Poland, Slovakia, Hungary, Romania and Moldova. Most of the believers are Orthodox Christians. Ukraine is industrial-agrarian country with developing economy. The GDP for 2012 year amounted to 344.7 billion U.S. dollars (about 7,600 U.S. dollars per capita). The currency is Hryvnia (average rate for 2012 – 8 hryvnia per U.S. \$ 1) [1].

II. CHIP DESIGN AND EDA PRESENCE

Statistics: there are more than 2,000 companies in the country, the gross revenue of companies in the industry is more than 16 billion HRN per year, the average increase in revenues – 30-40% per year, exports of services is about 10 billion Hryvnas. The number of staff employed in the industrial companies is about 180 000. The average salary is 13,000 HRN per month. The share of labor costs in the costs of companies is more than 70%. Number of profile graduates is about 20,000 per year, 25% of which possess the skills to work in the industry. The structure of the industry involves the following kinds of activities: 70% – software outsourcing and the provision of IT services, 10% – development of new software products, 20% – system integration.

Internet offer for Ukraine includes services from 53 companies and enterprises on the design of electronic components and systems [2]. Among them: the design of electronic equipments – 52, production tooling – 18, design of electronic systems – 9, design of Integrated Circuits – 6, design of electronic components – 1. By cities: Kiev – 22, Kharkov region – 7, Dnipropetrovsk region – 5, Donetsk region – 4, Vinnytsia region – 4, Kiev region – 2, Chernihiv region – 2, Poltava region – 2, Zhytomyr region – 2, Khmelnytsky region – 1, Chernivtsi region – 1, Zaporozhye region – 1, Crimea – 1, Odessa region – 1, Rivne region – 1, Lviv region – 1. The project catalogue of electronic components and systems contains 81 proposals from 39 companies and enterprises [3]: development of electronic devices – 54 proposals, development of electronic systems – 14 proposals, development of electronic components – 13 proposals. Among the most important companies in the electronics field we can select the following:

Ltd Company "Institute of Computer Technology" (Chernihiv, Kyiv, Vinnitsa) provides [4]: manufacture of printed circuit boards, printed circuit board design, re-design of printed circuit boards, making stencils for solder paste, electronics contract development and manufacturing, manufacture of microwave filters.

Design Department "Carat", Kharkov [5] offers design and manufacture of custom electronics on order.

Severodonetsk Research and Production Association "Impulse" [6]. Main activity directions are design, manufacture, and implementation of instrumentation and control systems (I&C systems) for nuclear and heat power engineering facilities, oil and gas complex, railway transport, and other industries.

Public Joint-Stock Company «HARTRON» [7] offers development of control systems for rocket complexes and space-qualified hardware, automatic control systems and diagnostics systems for nuclear power plants; manufacturing



Capital
Largest city
Language
Area Total
Population
Currency
Time zone
Internet TLD

Kiev
Kiev
Ukrainian
603 700 km²
48,400,000
Hryvnia (Hrn)
(UTC/GMT +2 час.)
[.ua](http://ua)

of control system hardware for rocket complexes and spacecraft, hardware for nuclear power plants, consumer goods, control panels for railway transport and staves; development and manufacturing of hardware for spacecraft control systems, telemetry equipment, fiber-optics communication lines, systems of telemetry and automatic process control systems for gas and oil industry.

– Research & Production Corporation “RADIY” [8] is the leading company in Ukraine that develops and produces I&C systems to provide safe operation at nuclear power plants with VVER-440 and VVER-1000 reactors. RADIY designs, develops, and supplies equipment and systems for control and protection functions of Nuclear Power Plants (NPPs) and other process industries with stringent safety requirements.

III. ACADEMIA

Ukraine has a very well-developed higher education system. Nowadays in Ukraine there are 823 institutions of higher education and more than 2.1 million students. Education process is provided by 36.4 million teachers and 158.9 thousand researchers, of which 69.3 thousand are PhDs and 13.9 thousand – Doctors of Science [9].

From 2012 by the decision of the Government the volume of reciprocity by the state order is substantially increased as compared to 2011 in the fields of electronics (34%), energy and power engineering (14.5%), radio engineering, radio-electronic devices, telecommunications (almost 25%), metallurgy and materials science (64%), mechanical engineering and metal working (almost 28%), chemical technology and engineering (46%), aviation rocket and space technology (44%), transport infrastructure (32%). For educational and qualification level of Bachelor by the state order the volume is set at 127,200 people, including full-time training - 108 000. During 2010-2012 nine regional university centers at 22 universities was established. On average for a year the higher educational institutions of Ukraine graduate about 20,000 professionals for the sector of software products.

There exists a steady increase in the contingent of foreigners who are now enrolled in higher education in Ukraine from 137 countries. Their number has increased to more than 56,000 in the 2012/2013 school year. Ukraine is one of 10 countries – leaders in the field of international education. Constantly monitoring of international educational programs is performed. There are the following contest programs: DAAD (Germany), The Future Leaders Exchange Program (FLEX) of the U.S. Department of State Educational Exchange Programs for Ukrainians, The Fulbright Graduate Student Program (USA), British Scholarship for postgraduate

education in the UK, The Edmund S. Muskie Graduate Fellowship Program for Master's and PhD (USA). Kharkov National University of Radioelectronics occupies first place among technical universities of Ukraine in the field of microelectronics, informatics and computer engineering. The university contains 6,500 students, 135 Dr of Science and 400 PhDs. University's alumni work for more than 500 Ukrainian and world known companies, including Aldec, Echostar, Microsoft, Intel.

IV. GOVERNMENT PROGRAMS

The development program of information and communication technologies in Ukraine includes the following directions and objectives [10]:

1) The accelerated development of information and communication infrastructure of Ukraine by creating the right conditions to attract significant investment from both companies of ICT industry and consumers of ICT products and services – population, enterprises, institutions and organizations.

2) Public access to information technologies, the Internet and information resources for education, training, communication with public authorities in the framework of the "e-government", the development of independent media, the establishment of the foundations of civil society, the extensive use of ICT tools. Creating and developing public access points for the population to ICT, based on cooperation between the state and entrepreneurs, including small businesses.

3) Creating the venture capital industry and technology clusters of the knowledge economy (export-oriented software development industry) in order to realize intellectual and scientific potential of Ukraine.

4) Improving the protection of intellectual property rights to the software and databases to improve the investment attractiveness of the ICT industry.

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Vladimir Hahanov – IEEE Senior Member, IEEE Computer Society Golden Core Member, Dr of Science, professor, Dean of Computer Engineering Faculty Kharkov National University of Radioelectronics, Ukraine. Scientific supervisor of 4 Dr of Science and 25 Ph. D's in the fields 05.13.05 – “Computer systems and components”, 05.13.12 “Computer Aided Design”; Supervised more than 100 Bachelor/Master degree works. Scientific work: Creation of the computer-aided system for logic simulation, test generation, faults diagnosis of digital devices; Systems and microprocessor-based structures; Two-framed cubic Algebra, cubic form of the graph representation, deductive-parallel method of cubic fault simulation; Brain like computing for Multiprocessor; quantum computing. Chief-editor of 2 journals: Radio Electronics and Informatics, Computer Aided Control Systems and Devices. Author of 490 publications and 14 books. General chair of IEEE TTTS East West Design and Test symposium, 2003 – 2013.