Donetsk National Technical University
INSTITUTE OF INTERNATIONAL COLLABORATION
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THE RESULTS OF THE VISIT OT HE BOEING'S TRAINING CENTRE: DONNTU WILL HAVE AVAITION SPECIALITIES

The Rector of DonNTU Prof. A. Minaev and the Dean of the Faculty of Computer Science and Technologies A. Anoprienko were the members of the government delegation that visited the Boeing's training centre in Miami (the USA) on September 10th-12th. The aim of the visit was to learn about the latest aircraft simulators and their application at training of civil aviation pilots. The Ukrainian government has initiated a new area of training of Donbass specialists at DonNTU since September 2013. It will be oriented on quick provision of civil aviation of Ukraine by qualified personnel.

The Vice-Prime Minister, the Infrastructure Minister B. Kolesnikov headed the delegation. The Ambassador of Ukraine in the USA A. Motsyk, the press-secretary of the Vice-Prime Minister Y. Gromitski and journalists of the leading Ukrainian TV channels participated in the event. The Boeing's training centre is the largest of the kind in the world. It has 12 full-featured simulators for the planes of different types including the most modern ones such as the Boeing 777. There are 20 such centres in the world that train up to 7 thousand professional pilots every year. Besides, it uses the so called flat-panel simulators which repeat the conditions of piloting of modern aircrafts with the help of flat sensor screens. It is these simulators that are planned to be installed at DonNTU and at the National Aviation Academy to train the civil aviation pilots by the beginning of the next academic year. For the effect of the simulators to be maximal, our students might be taught by the specialists from the USA at first. The Boeing 737 New Generation which is the latest modification of the most popular in the world aircraft of the present and the nearest future will be the main purpose aircraft. There are about 7 thousand copies of the plane of its different modifications. Thousand of them are in the air every second. Today 11 Ukrainian air companies run 85 Boeings of different modifications. The pilots for them are trained abroad. As Mr. B. Kolesnikov mentioned during the visit to the centre of pilot training of the USA, Ukraine does not have the full cycle of training of the civil aviation pilots of line-haul planes such as Boeing 737 and Airbus 320. He emphasized the necessity of training pilots even during their profile training at educational establishments. For this we need not one thousand and even not tens of thousands of USD. But the social task is more important: the youth of Ukraine should have a chance to get free training of piloting of Boeing 737 or Airbus 320 and should get success due to the knowledge.

The National Aviation University that includes the famous Kirovograd State Flight Academy (KSFA) train civil aviation pilots in Ukraine. It is practically impossible for the children of the mere mortals to be a student of the institutions as it is very expensive. There are budget places to train pilots, but not many (about 100 for the country). The sufficient amount of fuel to fly the necessary

amount of hours is not guaranteed. The tuition fee at KSFA which once was famous all over the Soviet Union is 540 thousand hrn, eight of which is covered by the training itself and the rest is to cover the aviations fuel consumption which a student is to pay himself to fly the necessary amount of hours. 50 thousand hrn is to be paid during the second year of study and about half a million during the fourth one.

The Vice-prime Minister mentioned that there was the lack of highly qualified pilots all over the world and that is would grow further on. The specialists of the Boeing Company said that the world would have needed not less than 34 thousand aircrafts and about a million of highly qualified pilots by 2031. The current system of pilot training is able to train no more than 500 pilots. That is the special attention is paid to the development of the network of modern centres that train professionals on the basis of modern simulators after which the graduates are able to pilot modern aircrafts.

Unfortunately, there are no such centres in Ukraine. The Ukrainian universities train students on out-of-date light motor planes and, because of financial reasons, not in full volumes and that causes long and intensive finish learning to get a possibility to pilot passenger planes. This extra training is not cheap, as a rule which makes it unaffordable for the majority of young people in Ukraine.

The training based on computerized highly realistic simulators excludes the necessity of the additional training and makes it affordable for the talented youth of Ukraine and solves in such a way a number of topical problems.

The opening of a new modern airport in Donetsk that is able to receive planes of different types and become one of the largest centres of passenger air transportation in Eastern Europe made training of pilots at DonNTU topical. Taking into account the high level of computerizing of aircrafts and simulators it is reasonable to establish the corresponding department at the faculty of Computer Science and Technologies if the state order makes up 50 students. Further on the training can be expanded and the state order increased up to 100 students with the establishment of the faculty.

The prearranged title of the project is “The Future Aviation” and its implementation at DonNTU suggests close collaboration with the National Aviation University.

THE VISIT OF THE DEPUTY AMBASSADOR OF MOROCCO

The Deputy Ambassador of Morocco Mr. Nasreddin Fausi Ramdani has visited DonNTU in the frameworks of his official visit to Donetsk.

The honoured guest was received by the Vice-Rector Y. Bashkov, Vice-Director of the IIC V. Strelnikov, S. Dzhura, the Director International, and the Dean of the FEF Prof. G. Klyagin.

Mr. Ramdani learnt about scientific and research potential of DonNTU and its international collaboration.

The issues of scientific, educational and cultural partnership of the two countries were discussed.

FRENCH-UKRAINIAN COLLABORATION IN THE FRAMEWORK OF THE MASTER PROGRAM

The international collaboration of DonNTU and the University of Cergy- Pontoise (France) in the frameworks of the Master program (a double Master’s diploma) is going on.

The Vice-President on International Relations of the University of Cergy- Pontoise Prof. H. Te Dieppe, a famous physicist,

visited our university in early September.

Prof. Te Dieppe met the authority of DonNTU. Both parties expressed their mutual desire to collaborate and continue the work on the MASTER program. The master student E. Snegina spoke on her stay in France and her work at the laboratory ETIS equipped by the advanced facilities.

6 master students had their study-course in France last summer. The results were presented to the commission headed by Prof. F. Gosie who had delivered on-line lectures to the students. The master students E. Snegina, A. Pugach, and A. Nikitin were proposed to research at the laboratory of ETIS and prepare and present their master diplomas at the French university.

Prof. Te Dieppe met the head of the Department Prof. O. Tolochko and visited new laboratories and the equipment which had been presented by the French party. He also talked to the master students who had been proposed to work at their diploma papers at the ETIS laboratory.

Prof. Dieppe's staying program was very informative. He visited the Department's museum, the German Engineering Faculty and met Prof. N. Egorov, V. Pahinski, and V. Goltsov from the Metallurgical Engineering Faculty. They spoke on involvement of other subdivisions of DonNTU into the joint research.

Prof. Dieppe was sure the high scientific potential of the employees of DonNTU would help to widen scientific contacts with French universities.

THE INTERNATIONAL CONFERENCE ON MECHANISM AND MACHINE THEORY

The Associate Professor of the Department of Monitoring Computer Systems participated in the XI International Conference on Machine and Mechanism Theory in Liberec (the Czech Republic) on September 4-6th.

It was hosted by Liberec Technical University and supported by the National Committee on Machine and Mechanism Theory of the Czech Republic.

There were participants from 18 European countries and China and Japan at the conference.

The subject area of the conference was rather wide, but the works related to the development of different robots and manipulators dominated.

A/Prof. V. Belovodski was the chairperson of one of the breakup groups and made his presentation "Non-linear Antiresonance Vibration Screen." The presentations of the experts from the Czech Republic and Kazakhstan were close as to the subject area. The proceedings of the conference were published by the Springer publishing house.

A/Prof. Belovodski made a number of professional contacts. One of them was that with Prof. Stan Zaviclak who represented the manufacturing Engineers Board of Poland. He entered the professor into the collaboration with Polish specialists working in the field of dynamic system analysis.

Liberec Technical University is one of the oldest in the Czech Republic and trains 10 thousand students. The participants of the conference visited the faculty of mechanical Engineering and its laboratory of bi-mechanics and machine element design.

STUDY COURSE IN THE FRAMEWORKS OF THE DAAD PROGRAM

The Assistant Professor S. Gogolenko had his study course in the frameworks of the scholarship program DAAD in October 2011- July 2012. The visit was organized on the invitation of the Professor M. Rash of the HPC Centre of the University of Stuttgart (HLRS).

S. Gogolenko took part in many educational seminars organized by the HLRS and of the Institutes of the university.

He had his supervisor Prof. Uwe Küster and his working place with a modern computer and software.

He also attended lectures of Prof. Uwe Küster and classes on English, German and French at the language Centre of the University of Stuttgart.

S. Gogolenko volunteered in organization procedure of the international conference Cray User Group 2012 (CUG 12), organized by the company Cray (http://www.hlrs.de/no_cache/events/detail/article/cray-user-group-2012/) and was active in the discussions of the presentations.

He also worked with the postgraduate student of the Technical University of Hamburg M. Dosta on granulation system modeling.

He developed the means of parallel modeling of the network dynamic objects with the distributed parameters on the basis of the OpenFOAM. The task of modeling of blood movement along the vessels if there is aneurysm was proposed to him. He implemented the blood movement model with paralleling in the Open Foam medium based on the area decomposition method. The implementation was tested on the latest platforms HLRS NEC Nehalem and CRAY XE6 Hermit. Further on he concentrated on the development of approaches of taking into account the vessel wall elasticity and change of the aneurysm size in the course of time. The HLRS's employees gave a positive mark to the results of the work.

S. Gogolenko studied the results and used them at solving practical tasks of the architecture of modern parallel computer systems the University of Stuttgart was equipped with and deepen his knowledge on modern means of parallel programming. The developments could be used at the Department of Computer Engineering to prepare lectures and practical task on parallel and distributed computing, computing algorithms and methods, theoretical basics of parallel and distributed computing, programming modern technologies. They also could be applied for master students' and postgraduate students' diploma papers on mathematical modeling and computing methods.

THE INTERNATIONAL SCIENTIFIC AND TECHNICAL CONFERENCE ON MANUFACTURING ENGINEERING AND TECHNOSPHERE

The International Scientific and Technical Conference Manufacturing Engineering and Technosphere of the XXI Century was held in Sevastopol in September. It was the 12th conference in which scientist from 65 cities of Ukraine, Russia, Belarus, Algeria, Armenia, Germany, Georgia, Iraqi, Lithuania, Latvia, Moldova, Poland, Romania, Syria, Slovakia, Tunisia, Turkmenistan, Uzbekistan, and the Czech Republic took part.

146 representatives of universities, organizations, enterprises, companies and design departments took part in the conference. They made 165 presentations. Four volume proceeding were published.

The aim of the conference was to exchange the information, define the promising ways of creation and development of new technologies, find out the possibilities of implementation of qualitatively new complex of characteristics and utility measures of goods, develop joint scientific programs, and make business contacts and commercial links in the area.

Universities and research institutes exchange their practical experience in the field of manufacturing engineering. 234 presentations were made at 10 breakup groups meetings. All of them were topical and emphasized the novelty and value of practice and outlooks of development of manufacturing engineering and technosphere. The international status of the conference is growing: more and more countries and participants are presented at the conference.

The Congress of the International Manufacturing Engineers Union (IMEU) was held in the frameworks of the conference. The leading manufacturing engineers of the world countries discussed the main plans and outlooks of the operation of the IMEU for the forthcoming year and admitted new members. The conference defined the promising tendencies of the development of modern technologies, the most important tasks as to creation of new technological systems and elements and carrying out of theoretical and practical research. The conference emphasized the necessity of paying more attention to creation of education integrated systems, widening of the methods of pre-university training, improving of foreign language knowledge, activation of the events related to the psychological and pedagogic support of students.

The conference also noted the topicality of improving of the metrological support of manufacturing engineering, and introducing of the quality assurance systems at enterprises and companies. Scientists and experts working at the companies of a certain profile and teachers should develop the requirements of training of mechanical engineers of the corresponding level. CALS-technologies are to have wider application in labour recourse management.

A NEW PARTNETR FROM ARMENIA

The Director of the Institute of Information Science and Artificial Intellect of DonNTU Prof. A. Shevchenko has visited Erevan State University (Armenia) which is of the same age as DonNTU.

Its 90 year way was fruitful and now the main Armenian University trains 13 000 students at its 20 faculties.

Prof. Shevchenko got to know one of the developing faculties – that of Information Science and Applied Mathematics where bachelors and master students are trained on the speciality of Information Science and Applied Mathematics.

Our scientist met the Rector of Erevan State University Prof. A. Simonyan who is a corresponding member of the National Academy of Science of Armenia (see the photo).

The collaboration agreement between the two universities was signed. It involves exchange of students whose majors are information science, system analysis and programming engineering; short study courses for postgraduate students and young researchers, development of scientific links in new information technologies, artificial intellect systems, interactive programming and pedagogic means with recognition properties.

NEW ACADEMIC YEAR AT THE POLISH ENGINEERING FACULTY

The current (the twelfth one) enrolment of students at the Polish Engineering faculty (PEF) has been quite successful. It was influenced by the 11 year experience. The Faculty was not advertised as the so called “people’s telegraph” and the opinion of former students had helped so much. 40 students of the second and third years of study were enrolled. They improve their language knowledge, study the history of the country and participate in different international exchange programs (which is either studying at one of the universities of Poland or preparation and defense of double Master’s diplomas).

All students that successfully finished their first year of study are admitted to the PEF. There is no competition and the selection is natural as not everybody has a strong motivation to bear a load of optional classes. As practice shows 50% of the admitted continue their study next year. The students that pass the test at the end of the first year get the certificate which is recognized by the partner universities from Poland and proves that the knowledge of the Polish language is sufficient for the students to have their practical training in Poland.

The graduate students who go on with the language studying get the certificate of the B2 level and can participate in the program of double Master's diplomas. They also take part in different programs for postgraduate students which are financed by the famous international foundations.

The economic students **V. Shevchenko** and **E. Shelest** who are the graduates of the PEF finished their study course last summer. Their one year staying at Warsaw and Poznan Universities was financed by the Fulbright Fund (the scholarship of L. Kirkland). The girls had been selected out of 350 other candidates.

The graduates of the Faculty of CETA **Y. Taupeka** and **E. Shkurpelo** defended their double diploma papers at Wroclaw Technical University, the Master's student of the Mining Faculty **D. Beloumtseva** got the Master's diploma of the Mining and Metallurgical Academy of Krakow. Two more Master's students **S. Rodzin** and **E. Volynets** are about to defend their papers.

The Masters **A. Kulakovskaya** and **A. Mospan** started their second year of study at the postgraduate courses of Czestochowa and Lodz Technical Universities correspondingly. The above mentioned **E. Shelest** will continue her four year studying at the postgraduate course of Poznan University and do research in personnel management.

The trainee exchange is continuous. **A. Akulova** (a scholarship holder of L. Kirkland) and twin-sisters **M. Krapivina and V. Krapivina** are having their study course at Lublin University named after M. Curie- Sklodowska. The biography of the sisters is the bright proof of mobility offered to our students by the Bologna Declaration. They got their bachelor's diplomas at DonNTU, Master's diplomas at the University of Pierre Mendes (Grenoble, France), had their practice in Geneva, worked in Ukraine during two years and won the scholarship for young researchers of the government of Poland. For this they needed to have excellent knowledge of two foreign languages.

The postgraduate students **D. Kurdyumov** and **S. Kamnatski** had their practice at the Gliwice plant Khuta Labendy that produces mine supports. They also participated in the seminar-training on processing of the research results in Koshalin and then were the guides for our students who were having their study course at the plant. Four more best students had their training at the summer language school in Wroclaw and Lublin.

120 students of DonNTU and other universities of Donetsk (mainly the students of philological departments of DonNU) are willing to study the Polish language from scratch this year. All of them will get the certificates if they pass the test at the end of the year, but only students of engineering specialities can participate in the competition as to taking of study course and practice in Poland. We always warn the students about it though we are happy to find the proper international program of the humanitarian profile for them.

The Master in Polish Philology **B. Gavlick** has been working at the ЗУА during 4 years. She is not only a wonderful teacher but also a nice person. All the students say that and like her very much.

The academic year at the ЗУА has just begun. The first year students are mastering their pronunciation of nasal and fricative sounds that make the Polish language sound charmingly. The graduate students improve their spelling and study technical terminology, and some of them are packing their suitcases to travel to Poland. **A. Kaduck** and **N. Kulakovskaya** will start their study at Krakow Mining and Metallurgical Academy and Krakow Agrarian University correspondingly on October 1st. They will be the pioneers representing their faculty in Poland and will have to arrange exchanges and collaboration with our Polish colleagues.

By the way, the sisters **A. Kulakovskaya** and **N. Kulakovskaya** are the first dynasty in the history of the PEF. The younger sister continues the course started by her elder sister.

THE COLLABORATION AGREEMENT

Following the desire to strengthen friendship and mutual understanding between the countries and their people and the interest paid to the mutually beneficial collaboration in the field of education, science and culture, bringing up and research DonNTU has signed the collaboration agreements with the **Highest School of Machinery and Mechanics of the city of Trstenik (Serbia) and Erevan Technical University (Armenia).**

The Newsletter is prepared by the International Office of DonNTU.

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