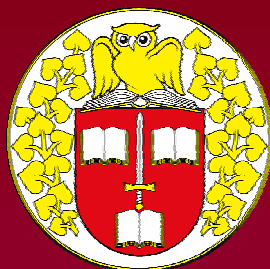**ARMED FORCES ACADEMY**
OF GENERAL MILAN RASTISLAV ŠTEFÁNIK

ABSTRACTS
STUDENTS SCIENTIFIC CONFERENCE

Liptovský Mikuláš, Slovak Republic
May 21, 2009

C O N T E N T S

MECHANICAL ENGINEERING

INFORMATICS AND ROBOTICS

ELECTRONICAL ENGINEERING

ECONOMICS AND LOGISTICS

MANAGEMENT

HUMANITIES AND SOCIAL SCIENCES AND SECURITY STUDIES, SPORTS SCIENCE

MECHANICAL ENGINEERING

THE RESEARCH OF OIL PROPERTIES AFTER DURABILITY TESTS OF POROUS BEARINGS

Tomasz BANIAK, Tomasz BLACHA

Consultant: Artur Król

Military University of Technology Warsaw, Poland

In the article there are presented results of own investigations of selected properties of two oils Hipol 15F and modern synthetic oil PFPE. Then the process of aging was realized in 1000 hour durability tests. After stand test one carried out infra-red and total acid number investigations of oils unsaturated from bearings. Finally, achieved results were compared with the results of fresh oils research.

CONCEPT OF THERMAL PROTECTION OF APC

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The main goal of this paper is to consider contemporary state of camouflaging the military vehicles in the infrared spectrum, tefer to the deficiencies of military rules that does not solve this problems in sufficient extent a the next goal is to bring some new solutions to the area of thermal camouflaging by designing the camouflaging thermal shield.

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VIBRATION ANALYSIS OF COMBUSTION ENGINE

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Noise and vibration analysis as the main analysis signal uses vibrations, agitation and noise. The frequency analysis removes the disadvantages of an analysis in time domain; it detects diseases of several part of an object (unbalance, gear trains, lodes, etc.). Monitoring of a working state of machinery and finding their diseases in initial stage founded on exact analysis of mentioned signals is too much difficult and expensive for everyday use. Based on the monitoring and analysis of these spectra changes it is possible to efficiently diagnose, detect, identify and localize eventually prognose emergent failure without disassembly.

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INFORMATICS AND ROBOTICS

IMPLEMENTATION AND PARALLEL CRYPTANALYSIS OF MASH HASH FUNCTION FAMILY

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MASH (Modular Arithmetic Secure Hash) is a hash function family based on modular arithmetic. The family consist of two unkeyed cryptographic hash functions MASH-1 and MASH-2that have been included in Part 4 of ISO/IEC 10118 standard.

Motivation to use modular arithmetic in hash function is based on two factors: possibility to re-use existing software or hardware (in public – key systems) for modular arithmetic, and scalability to match required security levels and desired hash value size.

In the article, two Java implementations of the functions are presented. The first, uses standard BigInteger class present in Java Development Kit, the second implementation was high memory consumption of immutable BigInteger class.

NO-REFERENCE METRIC FOR ESTIMATION THE INTERNET IMAGES QUALITY

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Now more and more demanded become a search of images on the Internet by means of such Internet searching systems as Google, Yandex, etc. Thus because huge number of images on the Internet (only searching system Google at present indexed more than 4 billion images) the number corresponding to users inquiry of images can consist of ten and hundred thousand. Usually found images are visualized for the user in rather small portions (10-100 icons of images for one page) and there is a question, what images to show first of all? At present users possibilities are limited only by sorting found images according to their size. In this connection the task of development automatic methods for sorting images on their visual quality that involves necessity of development appropriate visual quality metrics for images is very actual.

For a correct measuring image visual quality is required a good mathematical model describing human visual system. In particular, describing unequal eyes sensitivity to various spatial frequencies, brightness and contrast changes, masking effects. The majority of the visual quality metrics are developed at present requires reference presence. The degree of the image difference from the reference is estimated. Difference of the given task is absence of the reference for required images that essentially complicates measure of their quality. In the modern literature only some no-reference metrics are described. And they basically assign for a measuring of quality compressed JPEG or JPEG2000. In this work is offered a new universal quality metrics which does not demand knowledge of any a priori information of the image.

The proposed metric is based on classification image regions on informative and noise components that allows at processing and the analysis to recognize features of images, for example informative boundaries of objects, fine details and textures, and simultaneously qualitatively recognize noise on uniform not informative regions.

The offered approach to an informativity estimation of pixels or image regions can easily be modify to the visual informativity estimation if at measuring energy of image region to include effects of visual masking and various sensitivity of human visual system to various spatial frequencies.

As a measure of pixel informativity of the image it is offered to use the ratio between a prediction error of pixel value on adjacent pixels and a local dispersion of a image region round this pixel. The local dispersion is offered to be calculated in an image block 8x8 pixels. Such blocks allow to consider frequency features of human visual system, making calculations in the spectral coefficients domain of discrete cosine transform. As a value of prediction error in parsed pixel is selected the radical of the minimum deviation between extreme pixels in a block 7x7 pixels and the central.

Let's notice that the prediction should be calculated on an identical scale with a local dispersion. So for a region containing contrast objects of the image and texture, value in a denominator considerably exceeded a prediction error, providing value of informativity close to 1. For a region containing only noise, a prediction error and local dispersions are commensurable. Thus informativity of the region containing only a noise component, will be equal to zero. If more unpredictable pixel values of image region than bigger noise component. Values of informativity are in a range 0…1 and essentially depend on a way of its measuring. We will notice that the offered approach can be used, as for an informativity estimation of separate pixels in the image, and for an informativity estimation of the image in whole (as the general informativity of all its pixels). Value of the quality metric of the image region is calculated as an informativity value of this region, multiplied by value of a local dispersion in it.

For research properties of the offered quality metric has been synthesized the set of test images, each of which was exposed to various kinds of raising and reducing visual quality processing, in particular, additive and correlated noise of various intensity, contrast change, histogram equalization, filtering by Adobe Photoshop Sharpen and Blur filters, etc.

The analysis of the received results has shown good correspondence of the metric values to mean opinion score (average estimations of image visual quality are made by people). Disadvantage of the metric is insufficiently correct operation with such types of distortions as the correlated noise, histogram equalization, contrast change. The further perfection of the quality metrics assumes improvement prediction methods of a pixels values, the registration various frequency sensitivity of human visual system with calculation a local dispersion of the set image region, implantation an algorithm for an measurement noise parameters. It will allow to correctly estimate visual quality of the image, to subject this types of distortions.

INDOOR NAVIGATION

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This work is concerned with designing of algorithms for map creation of unknown indoor space using autonomous vehicle equipped with laser scanner and odometric sensors. Matlab 6.5, 7.6 and 7.7 was used for algorithm design. Main objective of algorithms is to process measured data, solve communication between PC and sensor and to filtrate and render data. Work is also concerned with diferential odometry, abilities of orietation sensors and technical parameters of LIDAR technology. It also shows abilities of laser scanners SICK LMS-291 and Hokuyo URG-04LX and orientaion sensors Microstrain 3DM a Microstrain 3DM-GX2.

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SECURED WIRELESS ACCESS INTO CORPORATE NETWORK USING IEEE 802.1X AND MICROSOFT WINDOWS SERVER 2008

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Presented work summarizes and implements modern approaches to secure wireless access into corporate network using strong authentication methods and Network Access Protection approach implemented in Microsoft windows server 2008. Network Access Protection (NAP) is a set of operating system components that provide a platform for protected access to private networks. The NAP platform provides an integrated way of evaluating the system health state of a network client that is attempting to connect to or communicate on a network and restricting the access of the network client until health policy requirements have been met.

Authors of the work defined and implemented testing environment for evaluation of secured wireless access into corporate network, where testing environment is based on Microsoft Windows 2008 server and Microsoft Windows XP and Vista clients. Achieved results and future orientation of the work will be presented.

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NAVIGATION OF THE MOBILE ROBOT TOWARDS THE MARK USING VISUAL SYSTEM

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The aim of this work is to navigate a mobile robot with visual system to a light-blue cirle mark using only the visual information obtained from the camera. The mobile robot does not use any other sensors. The navigation is divided into the two main parts: image processing and the movement control. Image processing is performed in several steps. The first step is to find the sign in the environment. A color filter is used in this step, which sorts out pixels of certain color from the captured image. The next step sorts out edges from filtered image and by using a Hough transformation finds the circle in the image. The distance from the sign can be calculated from this information. In movement control part first the robot turns itself to the direction of the sign by counting the camera turning steps. Then it calculates the distance from the sign and moves the half of the calculated distance. These steps are repeated until robot reaches the sign. The robot navigation software has an option to change the main navigation parameters and can adapt to the different environments like ligt or floor type changes, or changing the color of the sign. Performed experiments are documented in a video file.

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UNIVERSAL ENVIRONMENT FOR CREATION AND TRANSLATION OF TUTORING PROGRAMS

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Effective and modern way of transfer of knowledge and skills in the conditions of mass training is introduction of tutoring programs, which are capable to adapt for features of mental work, and also a stock of knowledge and skills of each pupil. The constraint on this way - necessity of attraction of highly skilled software developers.

In the report one of possible decisions on overcoming of such difficulty is considered, which is developed at National aerospace university. This is the universal environment for creation and translation of intelligent tutoring programs, not demanding from composers of programs of high qualification in the field of programming.

The system of computer support of training is developed at our university not one year and we have considerable experience of creation of tutoring programs on the various disciplines created by application of programming environments.

Let's consider some examples. Firstly, let's consider the set of programs for modeling of systems. The examples of screen forms you can see on slides.

The next development is for the course "Automatic control theory" which is main on our speciality. The described tools have been created with the help of Delphi. Later tutoring programs, such as the test on the mathematics and a complex on the discrete mathematics have been created in language C #. Creation of the described programs demanded considerable time and labor expenses of the qualified experts in programming. But we have felt, that growth of requirement for computerization of different task of educational courses leads to necessity of automatization of process of tutoring programs development, attraction to process of tutoring programs development of people who do not possess knowledge and skills on programming, unitizations of tutoring programs, framings of unified standards of their organization.

We have analyzed existing systems which can solve the arisen necessity of automation of process of tutoring programs creation. These are such developments, as Script-Editor-Interpreter, system "Revizor", system "Moodle" which has served as the main sample for the future created system. The basic advantages and disadvantages of the considered analogues have been revealed.

 On the basis of the considered points the problem statement and the essence of the problem solving are formulated. As a system design tool the technology of diagrammes of precedents (use cases) has been chosen. The object models of system, such as classes of visual components of the form of the task, classes of the project and the task, classes of the scheme of the work scenario and history of the user actions were synthesized.

Let's consider a stage of TP creation in more details. TP is represented the project which includes some number of tasks. The sequence of tasks performance is defined by the scenario scheme.

The task is presented as a set of certain visual components which selected from palette of components. Components take places on the task form. After that it is necessary to edit their properties. These are beginning color, text of a component and finishing by the right answer, associated with an input component. After

arrangement and editing of components on the form it is necessary to define such properties of the task as name, estimation mode, maximum quantity of points, error price and others.

Final stage of TP creation is editing of project properties and creation of the scenario scheme of tasks performance. The created project is executed by means of subsystem of tutoring program translation environment, after that results of performance are fixed in a report file.

Scenarios of performance of tutoring program tasks are designed in the special graphic editor. The scheme is transformed to the description of the scenario flow chart which is analyzed by means of the developed mathematical apparatus. The mathematical model includes sets of descriptions of tops of algorithm, its relations and conditional transitions. According to the synthesized mathematical model there is an analysis and diagnostics of the scenario scheme, and also the subsequent call of tasks.

Let's consider program implementation of the universal environment. After program installation there is its association to file types. There are 4 file types: a project file, scenario scheme file, a file of the report and files of tasks. Data are stored in files in encrypted form.

Screen forms of the subprogram of tutoring programs creation are presented on these slides.

The course on studying of bases of professional English language was designed on the basis of discipline "Automatic control theory". This course has been implemented in the form of three tutoring programs by means of the developed universal environment.

The comparative analysis of time expenses for creation of tutoring programs at the traditional programming approach and the new approach was performed. Last leads considerable economy of time expenses.

The perspectives of universal environment development are:

expansions of a palette of task components (components of automatic generation and calculation of numerical values, a dynamic displaying of mathematical formulas and functions graphs);

addition of new functions of the scenario schemes editor;

improvement of speed and convenience of work of UECTTP;

development of help system and system of diagnosing of a tutoring program assemblage correctness.

As a result it structural and mathematical models of scenarios of tutoring programs performance on various subjects, developed architectural models, generated models of the ergonomic user interface of the program were developed. Developed algorithms of the universal environment were implemented and operational testing and practical using of the system were performed. Using of the system has shown good results and as we can see leads considerable economy of time expenses for creation of tutoring program.

STABILITY CONTROL DESIGN OF SEGWAY LIKE DIFFERENTIAL DRIVE BY USING MEMS SENSORS

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This article is concerned with using MEMS sensors, processing signals from these sensors and by its mutual fusion using complementary filter. This processed signal is used for stability control of segway like differential drive. It describes design of complementary filter and mathematical model of the stability control. This structure was verified on real model which is based on DSP microcontroller with one 3 axis MEMS accelerometer and 2 axis MEMS gyroscope.

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AUTONOMOUS UNMANNED AERIAL VEHICLE (UAV)

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UAV - Unmanned aerial vehicle – is a plane which is able to operate in aerial environment without human control. It's possible uses include an exploring dangerous areas e.g. radiation leaks, war areas, vulcanos monitoring, creation of regional and urban maps, safety operations of public state corps, spy tasks or meteorological activities. The UAV is radio or autonomously controlled, it is equipped with cameras, radio wireless communication systems and different sensors e.g. accelerometers, gyroscopes, pressure and temperature sensors, GPS receiver etc. They are used in the recoinacsence and military missions. We describe our architecture of the control system, senors and technical realization. The aeroplane is made of balsa wood and laminate, it is driven by combustion motor. Length and wingspan are 2 m.

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REALIZATION OF APPLICATION LOGIC BY MEANS OF STORED PROCEDURES

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Computer technology and software accessories are one of the most important part of management systems and takes part in decision - taking of manager. Nowadays the insistence is putting on management communication with the objective purpose to improve exactness of executive workers which often miss in management expressing. On the other hand the inseparable fact is to take heed to make data safe. It means to choose the best and the safest way how to manipulate with data, mainly to enhance emphasis on transport and process of saving data. These are the reasons which answers the questions why is still needed to search new methods in manipulation with data.

The theme of my scientific work is to clarify options which are possible to use in data processing. The main part of my work is concentrated in pointing to various architecture of data processing in computer technologies.

The possibility of using procedure in programming of application logic of database server and advantages which are typical for this kind of creating database application is closely explained in the end of my work.

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ELECTRONICAL ENGINEERING

ELECTRONICALLY CONTROLED AUDIO PREAMPLIFIER

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Audio signal offers a wide range of operation, for example recording, playback, transmission, processing and other operation, that work in some way with the audio signal. I present the basic modification of sound with corrective preamplifiers in my work. The preamplifiers belong between primer levels in every audio system. The major task of preamplifier is to adapt the source of the audio signal with amplifier and accentuate dull frequencies or attenuate very shining frequencies. Type of construction of preamplifiers are patchworky, therefore I analyze in my work corrective preamplifiers realized by various bases of component. I suggested and realized an electronically controlled preamplifier based on my results of performance analyses. The preamplifier can be operated by remote control, too.

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AUTOMATIC KEYING OF HARRIS RADIO

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Abstract Work is concerned with problem of automatic broadcasting of Morse code for radio HARRIS. The first part of work further characterizes possible ways of radio keying and its application in tactical situations and reasons why do we use Morse code. Body solves the program application, which translates classic text into Morse code and that is next in process for broadcasting through the use of serial port to the simple curcuit for automatic keying. Curcuit works as a simple electronic switch for radio HARRIS keying junctions. Body form is worked as detail procedures of control application design for RS232 port control in computers and curcuit scheme design. Work is also concerned with simplifying of various service information broadcasting through the telegram, flash message, plain text or simple chat. In final path of the work possible ways of utilization of this automatic keying and there are proposed possible improvement of simplified communication are sumed up.

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REVIEW OF SELECTED STEGANOGRAPHIC METHODS AND APPLICATIONS

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Most of us heard about cryptography, the art of encrypting information. But it has one, obvious disadvantage – anyone who is interested, know about existing the information. Scrambling algorithms becomes, in relation with nowadays microcomputers advance, more and more complicated. This situation implies development of other complementary methods of data encryption. One of them is Steganography – science of hiding information. The main aim of steganographic methods is to hide the fact that information even exists.

The source of majority steganographic methods is digital images processing, but they could be easily adapted to acoustic signals. Most often used nowadays is LSB Steganography. It's simple method, with large information capacity, considering human perception, but it is not resistant for lossy compression.

Other methods which I consider are: BPS method – hiding information by the way of block – replacing, replace are blocks that were classified as noise – like; Transform Domain Based Steganography embedding hiding information in the transform coefficients and file structure based steganography inserts secret data in redundant bits of cover file.

One of the most interested steganographic and watermarking methods, especially in a plane of acoustic signals, is hiding information by filtration. It is one of promising methods and it can be high level robustness.

After the rapid development in recent years, the number of steganography software publicly around the internet has reached more than 200. In the article I focused on applications operate on acoustic signals, especially on the most popular, like S-Tools or Invisible Secrets and most interesting like MP3Stego or Data Stash. Important feature of most of this application is connecting steganography with cryptograph – hide data are additionally protected by a password.

In article I include specific information about applications that I consider and compare their robustness against intentional disturbances.

SENSORS FOR UNIVERSAL SECURITY DEVICES

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Sensors have very important post at measuring basic physical quantity and security techniques at the present time. Purpose of work was design and structure four modules with specific sensors (1- module with PIR sensor, 2- module with TGS sensor, 3- module with magnetic sensor, 4- module with laser gate). First module can be used as a fast fire-alarm, security system intrusion detection, system on open doors (automatic doors) or temperature gate. Second module as a residential liquefied petroleum gas leak detectors and alarms. Third module in the application of security technology (door and window contacts), sensing the levels or in the industry. Fourth module is used as laser gate. These modules are only a part of my bachelor work, which will be completed by adding the remote transmission on 433,92 MHz frequency.

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MULTIMEDIAL PROGRAM FOR RADIO OPERATORS TRAINING

Štefan GAŠO

Consultant: Marián Babjak

Armed Forces Academy of general Milan Rastislav Štefánik, Liptovský Mikuláš

Work realizes the design of multimedia tool for HARRIS radio training. It describes the technical characteristics and operational possibilities of RF-5800V MP radio for which the tool is designed. There is an example of network with fixed frequency programming.

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APPLICATION FOR ELECTRIC CIRCUITS COMPUTING BY THE LOOP CURRENT METHOD AND THE NODE VOLTAGE METHOD

Stanislava GAŽOVOVÁ

Consultant: Ľuboš Antoška

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

A presented work thesis deals with a design of code for electric circuits computing by the loop current method and the node voltage method. The work is divided into four chapters. The first chapter is an introduction presenting basic aims and purposes of this work. The second chapter brings a short theoretical background based on electric circuits theory, Kirchhoff's laws theory and loop current method and node voltage method as well. The third chapter contains a software architecture and a design of a main code. This code allows users to solve electric circuits by loop current method and node voltage method up to 5x5 matrix. The code allows users to check results by the first Kirchhoff's law and print results. Next option of code is to save the results and parameters of an electric circuit being solved. The last chapter is conclusion.

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KINEMATIC REACTANCE TRANSDUCERS

Martin HAVIAR

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A presented thesis deals with a design and realization of the kinematic reactance transducers usable for industrial and security applications. As a basic physical principle we can consider a filter topology that was described many years ago - the Generalized Immittance Converter (GIC). This topology allows one to easily realize active filters beginning from a passive filter design. In addition, the GIC filter provides extremely low distortion and noise, at a reasonable cost. Compared with more familiar feedback filter techniques the GIC filter can be shown to have superior noise gain characteristics. Many parameters and requirements are crucial from designer´s point of view dealing with transducer and sensor technology. Among them are: sensitivity, linearity, dynamic range, frequency band, etc. A presented thesis contains several chapters dedicated to particular theoretical and practical issues concerned to kinematic reactance transducers design.

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THE MODEL OF DISCRETE CONTROL SYSTEM

Milan JURÍK

Consultant: Zdislav Exnar

University of Žilina, Žilina

Discrete control systems based on microcontroller play important role in everyday life. The aim of this project is to create a model of a discrete attitude control using a microcontroller that represents the control of the lift position.

The discrete control model is intended as a teaching aid that enables a demonstration of the open control system activity by using the microcontroller. The model is composed of separate functional parts to make possible the demonstration of its composition and the system function.

DISPLAY FOR AN A/D CONVERTER

Tomáš KALINA

Consultant: Milan Ostrovský

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

This paper describes the design of learning object to display the output value of an A / D converter in the automatic and the manual mode. It outlines different types of imaging, principles and modes of their operation. Furthermore the paper addressed handling of display. On the basis of displays and the suitability of the use of the output value imaging of an A / D converter the display is realized using two seven-segmented LED displays. The paper concludes with the description of the device implementation.

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HYBRID POWER SOURCES WITH SUPERCAPS

Martin KACZUR

Consultant: Jan Leuchter

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Hybrid power sources with a supercapacitor are based on an energetic buffer technology with dual DC-DC convertors. Aim of this power source is to bypass time, when an electromotor is regulated or when an electromotor voltage has to be higher than nominal (only for short time period). Usage of supercapacitors is the best solution for the energetic buffer with high dynamics. System with AC-DC rectifier was realised. And mounting DC-DC convertor, and DC-AC inverter. As a next step was realised energetic buffer with supercapacitors and with dual DC-DC convertor. The main advantage of this solution is improvement of the power source dynamics however, the disadvantage is cost of the power control equipment for this power source with a supercapacitor.

SOFTWARE RADIO

Vladimír MAJER

Consultant: Martin Marko

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

The paper describes progress in communication technology, especially last phases of progress from hardware radio to adaptive radio, then software defined radio and cognitive radio with basic block diagrams.

Theory of modulations used in present amateur and professional communication are also solved.

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REMOTE SENSING

Ľuboš MESARČ

Consultant: Ján Ochodnický

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

The work presents overview of basic information about principles, construction and remote sensing systems applications, which are used in military, as well as in civil systems.

There are 10 chapters. The first four chapters described idea of remote sensing, its physical principle and remote sensing sensors classification. In fifth chapter is remote sensing data sorting. The basic of the work is described in sixth and seventh chapters, which include the discussion mainly about airborne and space platforms. Ninth chapter presents applications of remote sensing systems and the tenth chapter describes visions to the future.

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DESIGN AND REALIZATION OF THE POWER SUPPLY UNITS

Martin PAĽUV

Consultant: Jozef Puttera

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

A presented thesis deals with design and realization of the power supply units used for electronic devices supply purposes. During last decade there was implemented many improvements and modernised designs dealing with power supply units. Supply units are demanded to deliver electric energy with strictly defined parameters. A requirements for supply units are diversified upon to particular application. Many parameters and requirements are crucial from designer´s point of view. Among critical paarmeters are: efficiency, stability, weight, etc. A presented thesis contains several chapters dedicated to different basic principles being used for supply units realization.

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PROGRAM FOR YAGI ANTENNA CALCULATIONS

Matej PÁSTVY

Consultant: Zdeněk Matoušek

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

A presented thesis deals with program, which solves an application and calculations of Yagi antennas in frequency band 100 ÷ 1000 MHz. The program is created in Matlab 6.5 development application. On the basis of introduced program is possible to simply design Yagi antenna for upper limit frequency from given frequency band. The program is an elementary tool for Yagi antenna construction.

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CONSTRUCTION OF SECTOR ANTENNA FOR DATA TRANSFERS IN WIFI 2,4 GHZ BAND

Michal SELEŠ

Consultant: Zdeněk Matoušek

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

The paper describes facilities and consecution of building the Obelisk sector antenna, which is derivation of monopole radiator and dual corner reflector and it is characteristic with wide horizontal and narrow vertical radiation angles. Described type of antenna is usable in combination with wireless Access points or routers for wireless data transfers in 2,4GHz band.

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CONTROL AND MONITORING SYSTEM COMPACTRIO

Peter ÚRADNÍK, Ľubomír TUŽÁK

Consultant: Marcela Koščová

University of Žilina, Žilina

Programmable automation controller CompactRIO offers an ideal solution for advanced control and monitoring applications. The NI cRIO-9012 system has an integrated hardware architecture that combines an embedded real-time processor and a user-programmable FPGA chip within a single chassis. This project presents programming with the LabVIEW 8.6 graphical system design platform for digital control of motion stepper motor and acquisition loops along with signal processing algorithms.

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ECONOMICS AND LOGISTICS

PARTICULARITIES OF MARKETING COMMUNICATION IN ENTERPRISES OF SERVICIS

Renáta BARCÍKOVÁ

Consultant: Viera Spodniaková

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Nowadays, the importance and popularity of services industry is growing extremely fast. Services play an essential role in our lives even sometimes we do not realise it. Marketing communication is the way how enterprises inform their customers about goods and services.

There are many differences between marketing communication of enterprises that provide services and those which sell goods. Using of marketing communication mix have many particularities which are connected with specific characteristics such as immateriality and impermanence. The best way how to communicate with customers is by using personal selling which is the most effective and recommended.

The main aim of this work is to specify marketing communication as well as find out which communication channels are used by enterprises of services.

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ENTRY INTO WORLD COMMODITY MARKETS AND PRESENTATION STRATEGIES CALENDAR SPREADS IN THE CONDITIONS OF GLOBALIZATION, THROUGH E-COMMERCE

Maroš KARDOŠ

Consultant: Ladislav Lašček

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

The presented thesis discusses about the commodities futures and about the new electronic futures system. For the theoretical part of the thesis I have gathered important information mainly from spread trading seminar and recommended literature as well. I have focused my attention on the definition and the abstract side of trading especially spread trading, which offers the most efficient use of your capital of any other method of trading we have ever seen. The amount of superb information available for spread trading is without equal anywhere in the business of trading anything at all. More than I can possibly show you here in this thesis

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ECONOMIC DEPRESSIONS IN 20. AND 21. CENTURY

Vladislav KOVÁČ

Consultant: Viera Frianová

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

The main goal of my work was to summarize and to analyze the most important economical depressions , that took place in the 20th. and 21st. century.

The work is divided into several chapters. In the first chapter I summarized and categorized the events of the so called Great depression, that took place in the thirties of the 20th. century, its origins and the attempts to eliminate its consequences influencing the global economy. The following chapters deal with several minor depressions, that occured during the 20th. century. The last chapter is devoted to the recent global financial crisis, the so called american hypothecary institute crisis. Here I tried to explain the reasons of its beginning, the possible ways out and the connections mainly with the „Great depression". I also focused briefly on its progress.

While working up my work I put mostly general scientific methods to use, most of all the analytic-synthetical and inductive-deductive methods. The application of the generalization method together with the synthesis method allowed me to formulate some general conclusions of the presented work.

BUILDING OF INDUSTRIAL PARKS - PERSPECTIVE AND EXPERIENCE

Tomáš MASÁR

Consultant: Stanislav Morong

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

My work deals with the building of industrial parks in the Slovak Republic and their perspective. Its main objective is to characterize the basic concepts of the problem. I will also discuss the work environment for investors. But we can not forget one of the most important factors - the investment incentives. In this section I have also highlighted not only positives, but also negatives of various areas and measures of investment policy in the Slovak Republic. This chapter thus addresses the analysis of the current state of this matter. Last chapter deals in particular with the results of dealing with this subject. Here I want to refer mainly to effects of building industrial parks in Slovakia, on the pros and cons which bring industrial development projects. These effects, I finally summed up in the overall impact on the Slovak economy.

NEW CONCEPTION OF PREPARATION OF LOGISTICS OFFICERS FOR PROFESSIONAL SERVICE IN ARMED FORCES OF SR

Katarína PINKOŠOVÁ

Consultant: Miroslav Žák

Armed Forces Academy of General Milan Rastislav Štefánik , Liptovský Mikuláš

The paper deals with the problem of new conception of preparation of academically educated managers of logistics for execution of logistic support tasks in units of Armed Forces of SR. It illustrates the reasons and resources of the change and introduces the proposal of new style of preparation of logistic officers in short-term and long-term time horizon. The main accent is on the preparation in entrance specialistic officer courses in Armed Forces Academy and in chosen facilities of Armed Forces of SR. The results of this paper can b used for on-coming of The Special Entering Officer Course in The Academy of the Armed Forces of General Milan Rastislav Štefánik for the year 2009.

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THE UNEMPLOYMENT OF STARÁ ĽUBOVŇA DISTRICT

Ivana PRIHODOVÁ

Consultant: Štefan Ižárik

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An unemployment is a natural phenomenon of the free society. In my work I analysed basic information about employment in a small district called Stará Ľubovňa. This analysis is a collection of information from 2005 to 2008 and include situation of the unemployment from January to March 2009 too. It is a summary of information from my mother country.

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UNEMPLOYMENT IN VELKY KRTIS DISTRICT

Nikoleta TOKÁROVÁ

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In the first two parts of this project you can find the basic information about unemployment, employment market, politics of employment. Next part of this project is about unemployment in Veľký Krtíš district, which is around 15kilometres (9mi) north of the Hungarian border and around 75kilometres (47mi) south of Banská Bystrica. In this part of project you can find basic information about Veľký Krtíš district, about its devolopment in the past, about the numbers of unemployed persons, bar graphs of unemployment, the situation in particular industrial areas, the main employers in district, future development opportunities of Veľký Krtíš district and barriers to development.

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MANAGEMENT

WORK DISCRIMINATION AS A PROBLEM OF SUCCESSFUL ORGANIZATION

Lenka ARTIMOVÁ

Consultant: Jaroslav Nekoranec

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

The whole work is focused on the theme of work discrimination. But for better understanding of the complexity of this problem, we decided to describe it in two ways. The first point of view on discrimination is based on theoretical - legal definition of discrimination because protection against work discrimination is very actual problem and employees are not enough aware of their rights in connection with it. The second point of view is based on connection with personnel management and employment. It also considers influence of discrimination on productivity of organization and employees. For better understanding of current situation, work includes reprezentative research realized by Slovak national centre for human rights. The research was aimed at perception of human rights and principals of equlity in Slovak Republic.

LIFETIME EDUCATION AS A NECESSITY FOR PROFESSIONALISM IN SLOVAK ARMED FORCES

Martina ČECHOVÁ

Consultant: Mária Petrufová

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

This schoolwork deals with the problem of lifetime education, its purpose, methods and forms of realisation. We also engaged the problem of E-learning then new form in the proces of lifetime education. I focused my attention mainly on the specifics of education in the Slovak armed forces and career development influenced by lifetime education. By using a questionnaire in my research I discovered how students think of lifetime education, and how they participate in their education program on academy of armed forces.

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SOLUTION OF LINEAR PROGRAMMING USING THE SIMPLEX METHOD

Ivan HAJDIN

Consultant: Ján Račko

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The linear programing models solves maximilization and minimilization problems on military aplikations. Theory of linear programing models is applied on suitable example from military enviroment.

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VIRTUAL REALITY AND POSSIBILITIES OF ITS USE IN TRAINING

Tomáš HANTÁK

Consultant: Pavel Bučka

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

In my work, I addressed the issue of virtual reality and its use in training. I focused on the simulators used in OSSR witch are shooting simulators, simulators of ground and air forces. I describes their properties, uses and the technical parameters. Shooting simulators Test – 1 and Test - 2 are the product of E - Com. It is the connection of computer software and specially designed weapons for use in shooting drills. Simulator T - 72 is a highly realistic simulator, for a joint crew training as well as formations. Its properties approaching the real tank, allowing training at different times of day and weather, including the critical situations that are not possible to train in conditions of peace. The final simulator, which I described in the first chapter, the Mig - 29 is a copy of fighter aircraft Mig - 29, which perfectly replicates it's original features. The second chapter deals with the constructive simulation and its use in training kadets. This enables the simulation exercises and the various military action without damage to the equipment and also save funds. This simulation can simulate all types of units such as Infantry, mechanized, tankers, a helicopter-borne, PVO, and many others. Advantage is the rear projection of the recording and subsequent evaluation exercises. In te final chapter, I focused on the live simulation. It is a new kind of simulation, which used a real fight with the help of modified weapons and sensors can scan laser spot transponders mounted on the main. Starting already in use and OSSR.

USE SIMULATIONS IN AN ARMED FORCES OF THE SLOVAK REPUBLIC

Martin HERICH

Consultant: Pavel Bučka

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

This work is focused on the use of simulations in the conditions of the Armed Forces of Slovak Republic.

In the introduction I briefly inspects the models and simulations that are often encountered in our everyday life. I suggested that the development of modeling and simulation is due to progress in the development of computer and information technologies of today's modern society in the 21st century. Modeling and Simulation is promoted especially in the preparation of the armed forces in training and command and control systems.

The first chapter is devoted to modeling and simulations, the essential characteristics of this concept, I define an environment of armed struggle and to make distribution patterns of armed struggle. I also introduced the category of simulation battle.

I spent the second part of the exercises with the help of a computer (computer assisted exercise - CAX), history of development of these tutorials, current trends and plan for the future.

The third chapter focuses on the use of simulation technology in advanced military and more, I approached the current state of modeling and simulations of our neighboring states.

It is the modern simulation systems, which form the basis of new technologies, allowing to carry out an intelligent and effective training in conditions close to actual fighting, which in extreme cases can not be achieved by any conventional method, and the less economic costs.

In this way, I want to thank my consultant Assoc. Ing. Paul Buck, CSc. That helps me in processing this work.

CONFLICTS IN ORGANIZATIONS AND THE WAY OF THEIR SOLUTIONS

Kristína KAPUSTOVÁ

Consultant: Mária Petrufová

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

In my work is treated current problematic in managerial practice and it is conflicts in organizations, sources of their creation and effects of conflicts on achievement of employees. Treated work has interpersonal character by employing managerial and psychological literature. I equally payed attention how to solve and how to get conflicts under control. If the conflict is solved by the right way, the result can be contribution for organization. The task suggests, that solving of problem and it is effective exploitation belongs together with bargaining to great ability, which should a manager learn. With answer sheet method we discovered, how conflicts are known between students of The Academy of the Armed Forces and what is much difficult, to solve them in Armed Forces or in civil organizations.

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THE CHANCES OF UTILIZATION OF THE SOCIAL FUND AS MANNER OF MOTIVATION OF EMPLOYEES IN OS SR

Viktória KOVÁČOVÁ

Consultant: Soňa Jirásková

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

The aim of my project is to analyse the social fund as factor of motivation of civilian employees in The Armed Forces Academy of General Milan Rastislav Štefánik in Liptovský Mikuláš.

In this project I analyse the theoretical side of motivation and work motivation and compare some of the theories of the motivation. In the other part of my work, there is mentioned a social fund and its theoretical determination, the manners of its creation and utilization according to law of social fund.

The manners of utilization of the social fund in The Armed Forces Academy and its analyse test by the medium of inquiry is presented in the final part of this project.

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KNOWLEDGE MANAGEMENT AND LEARNING ORGANIZATION

Monika KUČIAKOVÁ, Karina KONDRÁTOVÁ

Consultant: Lenka Kurhajcová, Lubomír Belan

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

The aim of our work is to inform readers about the issue. It is aimed to education and to managers learning in entrepreneurially enviroment. Todays managers are facing the always changing and unpredictable enviroment. Just becouse of it they have always to study, wether in information and computer technology or in the other area of study.

PROCCES OF PLANNING IN THE SLOVAK ARMED FORCES CONDITIONS

Peter MAČOR, Martin PIZUR

Consultant: Ľubomír Belan, Lenka Kurhajcová

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

In our project we focus on charakteristic of planning procces. In the second part we try to bring near the procces of planning in the Slovak armed forces conditions. In the next part we want to describe todays tasks of planning events in the Slovak armed forces. We provide some documents on which is planning in Slovak armed forces based on. In the next end we want to present the conclusions of research which we have done on the employees, profesional soldiers and kadets about general knowledge of defense planning documents.

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QUENING SYSTEMS WITH THE REFUSAL OF THE APPLICATION OF MILITARY DECISION-MAKING PROCESSES

Karol POLNIŠER

Consultant: Ján Račko

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Queing model contains waiting line on military aplikations. Theory of queing models is applied on suitable example from military enviroment.

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DECISION ANALYSIS AND ITS USE IN DEALING WITH THE MILITARY DECISION-MAKING PROBLEMS

Ľuboš SAGAN

Consultant: Ondrej Kredatus

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The work is addressed by decision analysis and its use in dealing with the military decision-making problems. The work is aimed at addressing the problems of decision-making decisions in conditions of uncertainty. This work is addressing these challenges minimax rules, Maximax, Savege and Hurwitz rule in Deplhi.

TRANSPORTATION TASKS OF LINEAR PROGRAMMING

Radovan SLIACKY

Consultant: Ondrej Kredatus

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

In this work, the transport problem is solved using linear programming and its military use in minimizing transport costs. It is intended to address a concrete example of transport task by method northwest corner, index method and Vogel approximation method. The example is then optimized potential method and the results are compared with the DSS.

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DEVELOPING METHODS FOR OPERATIONAL ANALYSIS

Michaela TARASOVIČOVÁ

Consultant: Ondrej Kredatus

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

The work is addressing the use of methods of operational analysis in warfare. The work is mainly focused on time projects. Solution of the method CPM and method PERT. Use the application of computer module Decission support system-DSS to address the challenges of the method CPM.

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SUPPORT OF DECISION WITH USING MODELING AND SIMULATION

Boris URBAN

Consultant: Pavel BUČKA

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The aim of my paper is to clarify and a summary of an issue of modeling and simulation, conceptual apparatus connected with the topic and an implementation of the classification models. It also deals with using modeling and simulation of a SST AF SR in Liptovsky Mikulas. Last but not least, a part of its content as well as an overview of centers for modeling and simulation used in selected NATO armies. It is divided into four chapters. The first of them, I paid attention to the cross section succinct history of modeling and simulation, from antiquity to the present. The very definition of modeling and simulation, conceptual apparatus and classification of models is contained in the second chapter. Coherent view of the work of the SST in Liptovsky Mikulas in organizing training battalion staff offers the third chapter in the order. Fourth, the final chapter, it is clear list of centers for modeling and simulation in the other armies in NATO.

EXPLOITATION OF THE THEORY OF GAMES IN DECISION

Bibiána ZEMKOVÁ

Consultant: Pavel BUČKA

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

This work is focused on the use of game theory in decision making. In the introduction I briefly discussed what was the trigger for the development of game theory, which began to emerge and in what areas and who was its founder. The first chapter is devoted to decision making, basic features of this concept and the classification decision-making process. I also introduced the specifics of military decision-making.

The second part, I pay very theories of games and its type. Nashovo equilibrium is an important part of my job, it is useful in probability prison dilemma, which I discussed in another chapter and present a short example to clarify.

Inherent in this work is the war game otherwise known as the method Wargame, where I pointed to their classification and characteristics, the objective comparison and analysis of variants of the war games.

Evidence that game theory is not only a science in itself, gave us in 2005, Swedish Royal Academy. Nobel Prize was awarded to two masters, Robert J. Aumannovi and Thomas C. Schelling, just as a contribution in the field of game theory. In this way, I want to thank my consultant Assoc. Prof. Ing. Pavel Bučka, CSc. That helps me in processing this work.

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THE TASK OF PERSONNEL MARKETING NEAR ACQUISITION, SELECTION AND RECEIVING OF NEW MEMBERS OF THE ARMED FORCES OF SLOVAK REPUBLIC

Lenka ZVALOVÁ

Consultant: Jaroslav Nekoranec

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The part of strategy human resources management is personnel marketing, too. Subject of labour market in personnel marketing is workstation. The organization presents and offers their free workstation in form that covers many people, which are possible to work. Applicants can effective join own future with target of the organization. Personnel marketing of The Armed Forces of the Slovak Republic is used like new instrument to fulfill own personnel structure.

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HUMANITIES AND SOCIAL SCIENCES AND SECURITY STUDIES, SPORTS SCIENCE

10 COMON MISTAKES IN STRENGHT TRAINING AND ACTUAL TRAINING TRENDS IN FITNESS CENTERS

Juraj BEDNÁRIK

Consultant: Ľuboš Letovanec

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

This work is dedicated to the problematic of muscle training. It points out the usual mistakes and myths, that often occur in the strenght preparation of sportsmen. It focuses on their removal and improvement of the sport preparation of sportsmen and mainly cadets of AOS. It also points out various approaches and trends of bodybuilding in fitness-centres.

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THE EMPLOYMENT ANALYSIS OF EASTERN SLOVAKIA REGION

Lukáš GNIP

Consultant: Štefan IŽARIK

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

Work solves in three chapters live social-economical problem of actual Slovakia. First of all in Eastern Slovakia region is stage of unemployment, very critical. It has economical and social aspects, therefore it is necessary to analyze the real situation and realize adequate measures to make the situation better. To this achieve this goal should tend this work, that's main target is to, analyze current stage in Snina a Humenné districts and suggest, which one of the realized measures is the most effective, eventually which measures are necessary, to solve this problem as fast as possible.

My work is divided into three chapters. The first one represents theoretical entrance to the problem, where at 10 pages is unemployment characterized in generally and trend of unemployment in Slovakia. In the second chapter there's the labour market analyzed in chosen region from available data provided by the unemployment bureau in Humenné. The fact is that the unemployment rate has risen in last few months because of the world economical crisis. That brings problems which cause problems in family life, small and medium bussiness enterprise. The big part of qualified labour power leaves the region in order to work in richier regions or abroad. That makes the situation in the region even more complicated. As these people come back because of the world economical crisis, the unemployment rate is rising. The third chapter is the major chapter, because it analyse the options of the solution of the problem. The labour market policy in districts of Humenné and Snina is there confrotated with achieved results. And that leads us to the fact that some elements of this policy miss the effects. In conclusion the government has to put more effort to solve the problems in regions like this.

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IMPROVE THE ENDURANCE OF CADETS

Marek HRAŇO

Consultant: Dušan Litva

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

This work concentrates on improving enduranceas because of it`s necessity for all Professional soldiers and their next development. Students are examined from physical education lessons twice a year and they have to fullfil the certain limits. Endurance is measured in many disciplines as 12 minutes run in 400 metres on tartan ground, 5 kilometers endurance ran in boots, 5 kilometres in sport trainers and edurance interval run of 20 metres.

The aim of this work is to show the change of studedent`s performances in 4 mounths of study. For comparism I used the notes from the physical education lessons that were have been collected from 2004 to nowadays.

ANALYSIS OF ARAB – ISRAELI CONFLICT

Henrich KELEMEN

Consultant: Ladislav Hofreiter

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

This work attach on the last work „ Analysis the conflicts of the contemporary world". The aim of this work was application the classification that was wrote in last work on certain conflict. And that is Arab – Israeli conflict. Why this conflict? Answer is very simple. One of the main reasons why this conflict is length of it that is in proceed since end of First World War. Second reason is violence of this conflict that defines it so much. This conflict is divided in to single parts. This analyze of each part of this conflict should make easier way for reader to understand problems of Middle East and understand importance of quick ending of this conflict.

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WOMEN IN ARMED FORCES OF THE SLOVAK REPUBLIC

Mária PJATEKOVÁ

Consultant: Mária Martinská

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

This project is focusing on women in Armed forces of the Slovak republic. The authors do not concentrate on theoretical stuff, because one of the main aims of this project is to give worthwhile and current pieces of information about quantity of female soldiers in Armed forces of the Slovak republic nowadays. Besides, this project includes the part dealing with two research works, which are sources of remarkable information, for instance how female cadets attending The Armed Forces Academy of General Milan Rastislav Štefánik – as future officers - perceive their career opportunities in armed forces and what kind of conditions are given to them by Armed forces of the Slovak republic.

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CZECHOSLOVAK LEGIONS DURING WORLD WAR 1

Tomáš PURGI

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This work is dedicated to the Slovaks and Czechs, who rose against the oppression and tyranny in the armed fight for freedom. At the fronts of the World War I, whether on battlefields in France, Italy, Russia or Balkan, they fought for their freedom and freedom of their nations. Members of Czechoslovak legions deserved for the formation of the 1. Czechoslovak   republic, independent and democratic state. The main object of this work is to remember those men story, because their actions have been moved to the edge of public interest and there exist a menace, that message, they died for, will be forgotten.

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PROFESSIONAL ETHICS

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The author in her paper focuses on the issue of Professional moral and ethics. She considers this issue a sup to date and monitored. The first part of her paper deals with the questions of the moral and ethics in general and with their meaning for the society. Further, her paper analyses the origins of the Professional ethics as well as their reasons. The author points at the system of the rules of the Professional behavior, which is expressed in the constitution of the approved ethic codes. Some part of the paper is focused also on the issues of education with the stress on the legal and enviromental education as on of the assumptions to acquire the Professional ethic

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THE SAFETY OF THE HEALTHCARE FACILITIES AS A COMPLEX SYSTEM

Anikó Edit SZŰCS

Consultant: Sándor Kolossa

Miklos Zrinyi National Defence University, Hungary

To develop and maintain security of the hospitals means problem all over the world. Miklos Zrinyi National Defence University founded a researcher group for analyzing this problem in december of 2008.. In my proposal I would like to present the following aims of the researcher group:

-an indicator to be set up onto the detached quantifiability of the hospitals safety

-the hospital safety, than the examination of a uniform system

-the partial analysis of the undermentioned subsystems:

  -person and property security

  -building safety

  -parking safety and the protection of the hospital's area

  -using and storaging of the dangerous substances

  -regulated accessing and using of medicines and drugs

  -disaster recovery, fire service

  -information safety

  -the contexts of the safety questions and of the medical cares:

    -personal contexts

    -financing questions

-expected results and the necessary time for the project.

RECRUITING OF MILITARY PROFESSIONALS

Nela URBANOVÁ

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This paper is oriented to problems of recruiting new military professionals in Czech Armed Forces. Recruiting is one of base human resources activities. It presents complex of processes which are proceeded with goal to guarantee quantity of quality potential expectants to military service.

This paper deals with two significant aspects which can notably influence results of recruiting of military professionals.

First aspect is oriented toward to own human resources efficiency of recruitment system within moving conditions on labour market. This aspect makes provision for moving a society´s values too.

Second aspect is oriented to attractiveness of recruitment offer – to become military professional in Czech Army with reference to recruitment offer of another units from public or private sector.

ASSERTIVITE USE SKILLS IN WORK MANAGER

Dominika VOJTAŠKOVÁ

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Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

Abstract Our schoolwork is oriented on the defining of the main characteristics of assertivity, as one of the key management skills, its contents and its utitlization in everyday interaction and communication in the conditions of business practice. We described mainly the possibilities of practical application of assertivite rights, that every individual has. Most people don´t have enough information about the possibilities of correct usage of assertive skills, but the very handling of these skills can be a prerequisite of improvement regarding interpersonal relationschips and work-related climate of the organisation.

We also pointed out the differences between the three basic types of human behaviour: passive, agressive and assertive behaviour.

The chapters of this work were devoted to the theory, but we didn´t leave the practical application of assertivity out of consideration, which we describe in the end work in the form of excersises.

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ACTIVITY OF PRIVATE MILITARY AND PRIVATE SECURITY COMPANIES

Katarína ŽULKOVIČOVÁ, Ján SKALICKÝ

Consultant: Soňa Jirásková

Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš

In our work provides basic information about nowadays Private Military and Security Companies and presents some of their typologies. These cover wide range from logistic support and maintenance through training, consultations to direct battlefield engagement and also on PMCs and PSC (Private military and security companies) that provide aviation services. The text also analyzes the main advantages and disadvantages resulting from contracting these firms for states and international community.

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SES, a.s., pobočka v Liptovskom Mikuláši
Slovenská elektrotechnická spoločnosť je dobrovoľná, nezávislá, nepolitická, spoločenská organizácia, ktorá podchycuje a rozvíja individuálne a skupinové odborné záujmy vo všetkých oblastiach elektrotechniky formou osvetovej a poradenskej činnosti a získavaním a výmennou informácií vo svojej odbornosti.

GAMO, a.s., pobočka v Liptovskom Mikuláši
Poslaním firmy je poskytovanie komplexných služieb a riešení v oblasti informačných technológií.

Spoločnosť LYNX, s.r.o. Košice podniká na trhu informačných technológií od roku 1991. Spoločnosť poskytuje špičkové služby pre klientov v oblasti projektovania, výstavby, prevádzkovania a bezpečnosti informačných systémov. Významnú časť jej portfólia tvorí oblasť komplexnej bezpečnosti organizácií a plánovania kontinuity činností (tzv. business continuity planning, havarijné plánovanie).