SOFTWARE COMPETENCE CENTER OSIJEK

SVEUČILIŠTE J.J. STROSSMAYERA OSIJEK

TRG SV. TROJSTVA 3, 31000 OSIJEK ● TEL.: 031 224 102 ● FAX.: 031 207 015 ● EMAIL: REKTORAT@UNIOS.HR

WWW.UNIOS.HR
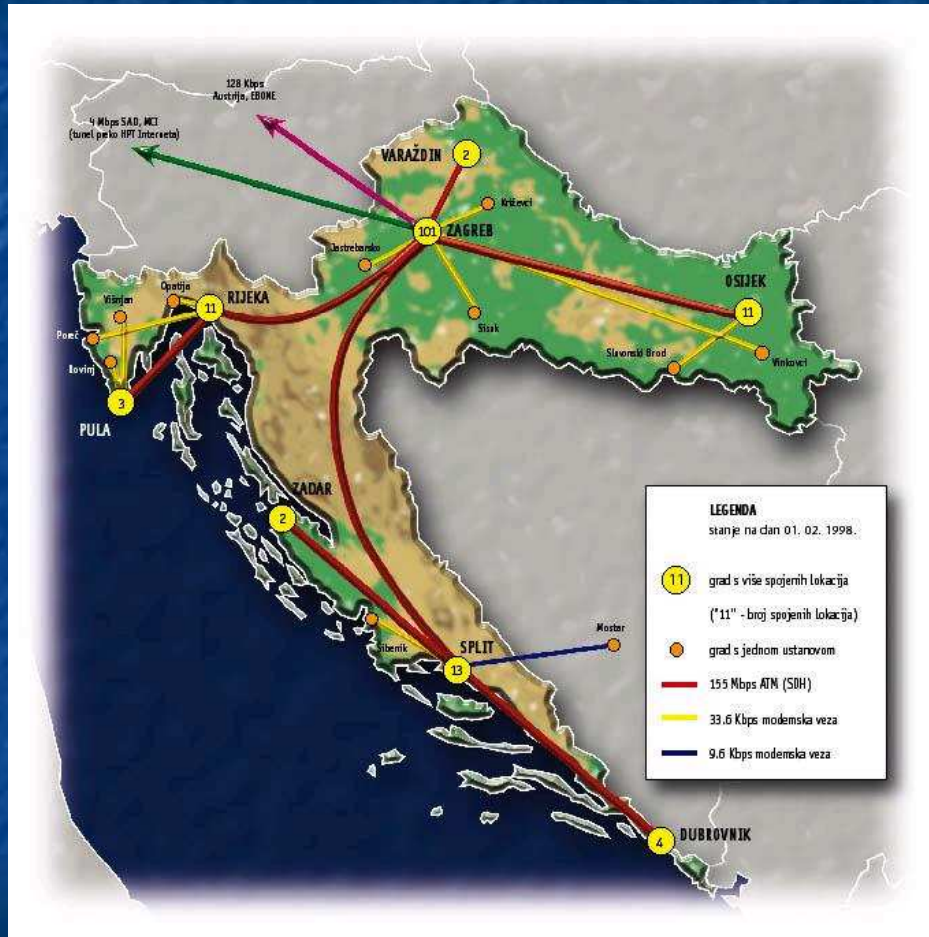
Prof.dr.sc. **ŽELJKO HOCENSKI**

KISEK project coordinator at

JOSIP JURAJ STROSSMAYER UNIVERSITY OF OSIJEK

UNIOS POSITION IN CROATIA

- EASTERN PART OF CROATIA
- 287 KM FROM ZAGREB
- 250 KM FROM BUDAPEST
- 5 COUNTIES WITH 900 000 CITIZENS
- 2 AIRPORTS
- HARBOUR ON RIVER DRAVA

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FACULTIES:

- AGRICULTURE
- CIVIL ENGINEERING
- ECONOMICS
- EDUCATION
- ELECTRICAL ENGINEERING
- FOOD TECHNOLOGY
- LAW
- MECHANICAL ENGINEERING
- MEDICINE
- TEACHING TRAINING
- INST. APPLIED MATHEMATICS

FUNDAMENTAL FACTS IN 2005/2006

- *HIGH SCHOOL BEGINNS IN 1707*

- *MODERN EDUCATION SINCE 1959 IN FACULTY OF ECONOMICS*

- *TEACHING STAFF: 611 TOTAL*

  - *399 PhD*

  - *369 PROFESSORS*

- *STUDENTS: 16922   TOTAL*

  - *2938   NEW IN 1ST YEAR OF 36 BSc STUDIES*

  - *1628 NEW IN 1ST YEAR OF 13 SPECIALIST STUDIES*

- BOLOGNA PROGRAMS SINCE 2005/2006

SCIENTIFIC ACTIVITIES

- *39 SCIENTIFIC PROGRAMS, 140 SCIENTIFIC PROJECTS BY CROATIAN MINISTRY OF SCIENCE*
- *55 PROGRAMS IN 72 PROJECTS IN PARTNERSHIP*
- *72 MSc AND 22 PhD PROMOTIONS AT UNIOS*

UNIVERSITY CAMPUS

- *232 048 M2*
- *NEW STUDENT HOSTEL 9 909 M2, FOR 504 STUDENTS*
- *NEW BUILDING FOR AGRICULTURE FACULTY*
- *NEW BUILDINGS FOR OTHER FACULTIES IN 2ND PHASE*

FACULTY OF ELECTRICAL ENGINEERING

Kneza Trpimira 2b, 31000 Osijek, Croatia

tel: 031/224 600, fax: 031/224 605

www.etfos.hr

FACULTY OF ELECTRICAL ENGINEERING
BRIEF HISTORY

- **1978. FOUNDED AS A COLLEGE OF ELECTROMECHANICAL ENGINEERING**
- **1981. INDEPENDENT UNIVERSITY INSTITUTION**

- **1985. REGISTERED AS SCIENTIFIC AND RESEARCH ORGANIZATION**
- **1990. FACULTY OF ELECTRICAL ENGINEERING, Bsc. EDUCATION**
- **1991.-1994. *WAR PERIOD, TWO ASSISSTANTS AND 5 STUDENTS KILLED***
- **1995. STUDIES PROGRAM IN TWO DIRECTIONS:**
  - **POWER ENGINEERING**
  - **ELECTRONICS & AUTOMATION**
- **2000. STUDIING DIRECTION: COMPUTING & COMMUNICATIONS**
- **2003. NEW DIRECTIONS:**
  - **POWER ENGINEERING**
  - **COMMUNICATIONS & INFORMATICS**
  - **AUTOMATION & PROCESS COMPUTER ENGINEERING**
- BOLOGNA PROGRAM 2005/2006:
  - **ELECTRICAL ENGINEERING STUDY**
  - **COMPUTER ENGINEERING**

FACULTY OF ELECTRICAL ENGINEERING

DEPARTMENT ORGANIZATION

- **AUTOMATION & PROCESS CONTROL DEPARTMENT**

- *COMPUTING DEPARTMENT*

- *COMMUNICATION DEPARTMENT*

- **FUNDAMENTALS OF ELECTRICAL ENGINEERING, MEASUREMENTS AND MATERIALS DEPARTMENT**

- **MATHEMATICS AND PHYSICS DEPARTMENT**

- **POWER ENGINEERING AND ELECTRICAL MACHINES DEPARTMENT**

FACULTY OF ELECTRICAL ENGINEERING LABORATORIES ORGANIZATION

- **FUNDAMENTALS OF ELECTRICAL ENGINEERING**
- **PHYSICS**
- **POWER ENGINEERING, EL. MACHINES & EL. DRIVES**
- **ELECTRICAL MEASUREMENT**
- **POWER DISTRIBUTIVE NETWORKS**
- **RELAY SAFETY**
- **AUTOMATION & PROCESS CONTROL**
- **DIGITAL ELECTRONICS**
- **COMMUNICATIONS**
- **FUNDAMENTALS COMPUTING & COMPUTER GRAPHICS**
- **COMPUTER ARCHITECTURE**
- **ARTIFICIAL INTELLIGENCE**
- **APPLIED COMPUTING**
- **MULTIMEDIA**
- **OPTOELECTRONICS**
- **BIOMEDICAL ELECTRONIC**

STUDYING PROGRAMS
UNIVERSITY PROGRAM

- **BSc degree PROGRAM-6 semesters:**
  - **COMMON PREPARING STUDY 2 SEMESTERs**

  - **ELECTRICAL ENGN STUDY 4 SEM- 130 stud**
  - **COMPUTER ENGN STUDY 4 SEM- 130 stud**

- **MSc degreee PROGRAM- 4 semesters**

  - **POWER ENGN ENGN**

  - **COMMUNICATION**

  - **COMPUTER ENGN**

- **SCIENTIFIC POSTGRADUATE PROGRAM 6 SEM**

FACULTY OF ELECTRICAL ENGINEERING
INTERNATIONAL COOPERATION

- UNIVERSITY PADERBORN, PADERBORN, GERMANY
- UNIVERSITY OF APPLIED SCIENCE, BREMEN, GERMANY;
- UNIVERSITY OF APPLIED SCIENCE, SCHWEINFURT, GERMANY;
- UNIVERSITÄT DES SAARLANDES, SAARBRÜCKEN, GERMANY;
- FAKULTÄT MATHEMATIK UND INFORMATIK, PASSAU, GERMANY;
- FACHHOCHSCHULE ALBSTADT, ALBSTADT, GERMANY;
- KANDO KALMAN FACULTY OF EL.ENGN., BUDAPEST, HUNGARY;
- TECHNISCHE UNIVERSITÄT GRAZ, AUSTRIA;
- INT. ZENTRUM FÜR INFORMATIK, DAGSTUHL, GERMANY;
- POLLACK MIHALY COLLEGE OF ENGINEERIG, PECS, HUNGARY;
- FACULTY OF EL. ENGN. & INF. TECHNOL. BRATISLAVA, SLOVAKIA;
- EUROPEAN EMTP-ATP USERS GROUP E.V. OSNABRÜCK, GERMANY;
- TECHNISCHE UNIVERSITAET MUENCHEN, GERMANY;
- ESAIP, ST. BARTHOLEMY, ANGERS, FRANCE.

SOFTWARE COMPETENCE CENTER OSIJEK

SWCC-Software Competence Center Osijek

- Competent centers are established with the intention:
  - to be a primary channel for the development of economic associations or clusters of small and medium-sized enterprises in selected strategic areas of national development.
- These centers cover:
  - research, development, production, investment, marketing, public relations, etc.
- In regional development:
  - used as catalysts for cooperation between domestic and foreign participants.
- Competent centers define:
  - recognizable regional profile and identity through cooperation and joint activities with partners in the environment.

http://www.etfos.hr/tempus/kisek

SWCC in Region

- Starting from theoretical knowledge and analysis of regional endogenous influence of Slavonia and Baranja province imposes the need of joint discussions:

- dialogue between all actors of regional development.

- competent center for the development of logistics and information technology in the wider region.

- "crystalisation point" and regional center

- The geographicall position between Bosnia and Herzegovina, Serbia and Hungary and the potential of endogenous influence of town Osijek, this center could become regional development center.

SWCC Goals

- Improving cooperation between state institutions, universities and the economy through public-private partnerships, joint research and development, training, exchange of experiences, practical work in business companies, conducting other activities useful for partners.

- Support in internationalization of University J.J. Strossmayer of Osijek and regional economies,

- Support the opening of study for foreign students in English

- Teacher exchange with foreign universities and companies.

- Refinement of teaching, professional, administrative and leadership personnel with European project partners.

SWCC Goals continued

- Transfer of modern "know-how"
- Learning "in field",
- Strategic positioning and establishment on the regional and EU-market educational and professional brand "Made in Croatia" in the field of software engineering and logistics,
- Support the assurance of education quality in the field of software engineering:
  - Higher - undergraduate, graduate, doctoral studies, internationalization of teaching
  - Professional - "life-long-learning"
- In accordance with European Union
- Development of strategical partnership with domestic and international cooperation in natioanl and european projects.

SWCC Activities

- The creation of a Web site for information of members and partners.

- Creating a database of members, partners, their areas of interest, the educational profile and general information and experience.

- Procurement of equipment and accommodation and the space in which to keep meetings and lectures and research work.

- Start teaching in the field of interests of members or partners, which would be performed eminently experts from the economy and university teachers and researchers with partner universities TEMPUS project.

- Launching workshops on a specific topic in the field covering the members of the center.

- Forming teams to research specific problems, develop teamwork.

- Work with young people, linking with primary and secondary schools or specialized organizations and centers

Areas of Contribution

- software engineering
- Software testing
- software quality
- fault tolerance
- real time processing
- operating systems
- communication protocols
- multimedia
- image processing
- automation and control systems
- embedded systems
- artificial intelligence

Local Partners

- Siemens d.d., Osijek
- Tvornica elektro opreme, 31551 Belišće,
- KIO keramika d.o.o., Orahovica, V.Nazora bb
- Hrvatska elektroprivreda, Operater distribucijskog sustava, Osijek
- Osječko-baranjska županija, Osijek
- Grad Osijek, Poglavarstvo grada,
- Slavonska banka d.d., članica Hypogroup Alpe-Adria, Osijek, Kapucinska 29

Organizing Committee

- Prof.dr.sc.Željko Hocenski,
  - Coordinator for University of J.J.Strossmayer
  - President
- Prof.dr.sc.Franjo Jović, vice-president
- Doc.dr.sc.Goran Martinović, vice-president
- Prof.dr.sc.Drago Žagar,
  - Vice-chanchelor University of J.J.Strossmayer
- Prof.dr.sc.Snježana Rimac-Drlje
- Prof.dr.sc.Davor Antonić
- Doc.dr.sc.Ninoslav Slavek

Members

- Mr.sc.Željko Štanfel, Castle worldwide, Morisville, NC, USA
- Mr.sc.Ljubivoj Cvitaš, Siemens d.d.
- Mr.sc. Alfonzo Baumgartner, assistant
- Suzana Vasilić, dipl.ing., Privredna banka Zagreb
- Željko Lasinger, dipl.ing., Ericsson- Nikola Tesla, Zagreb
- Igor Novak, dipl.ing.,Slavonska banka d.d., Osijek
- Darko Trtanj, dipl.ing., assistant
- Ivana Magušić, dipl.ing., HEP ODS Elektroslavonija , Osijek
- Tomislav Keser, dipl.ing., research assistant
- Mladen Antunović, dipl.ing., research assistant
- Krešimir Nenadić, dipl.ing., research assistant
- Marina Pešut, dipl.ing., research assistant
- Miran Karić, dipl.ing., assistant
- Damir Filko, dipl.ing., assistant
- Ivan Aleksi, dipl.ing., assistant
- Tomislav Matić, dipl.ing., assistant, webmaster, administrator
- Vuković Zvonimir, dipl.ing., Siemens d.d., Osijek
- Stanislav Komlenac, Slavonska banka d.d., Osijek

THE END

THANK YOU and WELCOME

VISIT US AT

www.etfos.hr/tempus/kisek

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SOFTWARE COMPETETION CENTER OSIJEK

SWCC Osijek
Software Competence Center Osijek - Mission and Vision

Prof.dr.sc.Franjo Jović

ETF Osijek

Mission and Vision

- SWCC Center for Software Competition in Osijek Croatia is in preparation for start-up
- Therefore we are presenting the necessary mission and vision of the center
- Facts, paradigms, market forces, core competences and values are presented for the mission and vision definition
- In addition some remarks are given regarding strategy, goals and action

SWCC Paradigm

- Competence center is basic station for development support of SMS business in software engineering
- SWCC connects university, business, and government at the regional level
- Technology transfer and know how is performed through controlled channels

SWCC Facts

- The quality is measurable by defining measurement model of the software process (MMPS)
- MMPS is based on international standards
- Basic for software development quality are software engineers and managers, their education and permanent training
- Software process quality is maintained by periodical enterprise assessments

SWCC Market Forces

- Market forces are emerging from software paradigm and quality facts
- Basic for market forces is the unique competence of the SWCC experts
- Center's activities stem from marketing issues as well as from the positive oriented environment

SWCC Core Competences

- Process quality measurements
- Process quality assessments
- Software quality consultancies
- Software quality profiling
- Studies in quality engineering
- Application of Quacol algebra modeling to software quality

Values

- Strict engineering ethics
- Keeping the knowledge base of assessed firm data
- Professional approach to security projects
- Long-term activity planning
- Agile engineering
- Combined experience and youth

Mission

- Enhance the quality of software solution in the region by involvement in software design and marketing.

Vision

- Fruitfull combination of market forces in the region and software quality solution at the SWCC

Strategy

- Definition of long-term goals and activities in software competiton
- Planning the market development for software quality
- Education of engineers for software quality

Goals

- Establishment of the SWCC
- Software quality promotion
- Education in software quality
- Support to regional firms in the software quality process
- International cooperation and knowledge transfer

Action

- WEB marketing and team building
- Data base on center members and competencies
- Procurement of equipment and center allocation in Osijek
- Seminars and workshops on software quality
- SME support in software quality

Faculty of Electrical Engineering Osijek

Software Engineering Department

Lectures

Diploma works

 Projects

Conference papers

Lectures

Only in Croatia, the Faculty of Electrical Engineering (FEE) Osijek held the lectures of "Software quality assurance- SQA", with the topics:

- SQA activities
- Software quality concept
- Software Quality Standards
- Software product quality
    - McCall's model
    - ISO 9126
- Quality control
- Software process maturity
- Process models
    - The Waterfall model
    - The Spiral model
    - The RAD model
    - Prototiping

    Software process change

- Software process assessment
- The Repeatable process
- The Defined process
- The managed and Optimizing Process
    - Models: Bootstrap, SPICE, CMMI

Projects

- FEE Osijek, Software Engineering Department developed the "Software Process Measuring Model (SPMM)" .

  SPMM is assessment method created as the web application, which focuses

  on the quality of software production in software organizations.

  The main references are: standard ESA PSS 05, ISO 90003, SPICE, CMM, CMMI and Bootstrap project.

- SPMM is tested and shows the same results as CMMI for the same organization and project.

- The SPMM Data Base is produced that will encomapse assessments data in the region as the base for assessment of owerall maturity level of software producers.

Conference papers

- N. Slavek, k. Nenadić, D. Blažević: "Software Quality Metrics System (SQMS)", MITIP 2008, Prague, 2008,

- N. Slavek: "Toward Software Process and Software Product Integration", CADAM, Medulin, Croatia, 2007.

- N. Slavek, T. Grgić, D. Blažević: "Assessment of the Software Process", Info – Tech – 2007, Varna, Bulgaria, 2007.

- N. Slavek, F. Jović: " Quality Factors for Real–Time Embedded and Safety – Critical Software Systems", EISIEE EUROSIM Congres, 2004.

- N. Slavek, F. Jović: "The Reliability Optimization in Safety–Critical and Real – Time Embedded Systems" , WSEAS Press, 2003.

- N. Slavek, F. Jović: "Toward Total Quality Management Model to Ensuring the Quality of Software", DAAAM International Scientific Book, Vienna, 2002.

- N. Slavek: "The Concept of Quality Information System (QIS)", 23 Conference ITI, Zagreb, 2001.

- N. Slavek, F. Jović: "TQM Model in Software Production", DAAAM International, Vienna, 2001.