WHO WE ARE AND WHAT WE ARE STRIVING FOR
The Quality Engineering and Management Research Centre (QEMRC) was established in 2002 within the Technical University of Cluj-Napoca. The Centre is an advanced research and training unit encompassing equipment, facilities and interdisciplinary knowledge, focused on topics related to quality.

VISION
To be the national leader and a widely internationally recognised centre of competence in the field of quality engineering and management.

MISSION
To improve the competitiveness of the Romanian society and organisations within the economic environment, by generating, integrating and transferring quality engineering and management knowledge and by developing their quality culture through research, education/training and direct assistance.
OBJECTIVES

• **To develop** master, doctoral and life-long learning **study programs**, in the field of quality engineering and management;
• **To continually enhance** our **research capability**;
• **To offer solutions** to the organisations from the economical environment for the **design, development and continual improvement** of their products and processes.

STRUCTURE

The QEMRC comprises **three research laboratories:**

- CAD/CAM/CAQ
- Precision 3D Scanning and Measuring
- Measurement and Industrial Applications

FIELDS OF COMPETENCE

- Quality and integrated management systems;
- Methods and techniques for continual improvement;
- CAD, CAM, CAQ;
- Precision 3D measurements, 3D surface scanning;
- Training methods in virtual environment;
- Computer aided high speed data acquisition and process monitoring and control;
- Tools and techniques for new product development;
- Reverse engineering.
RESEARCH DIRECTIONS

- **Quality improvement** of products, processes and organisations;
- **Simulation** of products and automated manufacturing systems using CAD, CAM, CAQ;
- Customer oriented **new product** design and development;
- **e-Learning** methods and platforms;
- Measuring of organisational and process **performance**;
- Quality in **higher education**;
- **Web technologies** for process monitoring and control.

EDUCATION AND TRAINING

The QEMRC offers training within the **academic environment** through master and doctoral studies.

EDUCATION

- **Doctoral study programs** in the field of quality engineering and management.
- **Master study programs** coordinated by QEMRC are:
  - Quality engineering;
  - **Computer aided design** of products, processes and integrated systems;
  - **Robotics and automated manufacturing systems** (with teaching in English, in partnership with HAMK University of Applied Sciences Finland).
EDUCATION AND TRAINING
The QEMRC also responds to the needs of the economic environment by providing customised training (life-long learning) for industry.

TRAINING
• Quality management;
• CAD-CAM in mechanical engineering;
• Design and simulation of integrated manufacturing systems;
• Techniques, instruments and methods of quality management for the continual improvement of products, processes and organisations;
• Training for using coordinate measuring machines and 3D scanning systems.
CONSULTANCY AND CUSTOMER SERVICE

The Centre provides **direct assistance services** for: 3D surface scanning; 3D measurements (lengths, angles, shape profile deviation) and video inspections for dimensional control; Reverse engineering; Integrated manufacturing solutions and industrial automation; e-Learning methods and platforms.

and **consultancy in the following fields**: General management; Design and implementation of quality and integrated management systems; Applying methods and techniques for the continuous improvement of the product and processes, as well as for the competitive development of products and organisations; Consultancy for reverse engineering and designing measurement strategies; Consultancy for selecting, purchasing, utilisation and management of measuring equipment.

THE INFRASTRUCTURE OF THE CENTRE

- **5 COMPUTER NETWORKS** - 60 computers, 5 servers

MEASUREMENT EQUIPMENT AND SOFTWARE:
- **RENISHAW 3D Scanning machine** - Cyclone Series 2
- **ABERLINK 3D measuring machine** - Axiom
- **CIMCORE Stinger II** - portable measurement device
- **KREON ZEPHYR TECHNOLOGIES 3D Laser Scanner**
- **TRACECUT software**
- **POWER INSPECT software**
THE INFRASTRUCTURE OF THE CENTRE

VIRTUAL REALITY EQUIPMENT AND SOFTWARE:
EON ICATCHER, EON VIRTUAL STUDIO, DG5-VHand

CAD/CAM SOFTWARE: DELCAM, DELMIA, Autodesk Products, CATIA, SolidWorks
THE INFRASTRUCTURE OF THE CENTRE

NATIONAL INSTRUMENTS EQUIPMENT & SOFTWARE FOR DATA/IMAGE ACQUISITION AND PROCESS CONTROL:

12 Data acquisition boards, 12 Portable data acquisition modules, Programmable field-point system for data acquisition and control for distributed industrial applications, 2 Image acquisition boards, LabVIEW NI - A completely integrated visual programming language and hardware for data acquisition and processing, SAMSUNG Digital Camera, can be used and manipulated from the distance via INTERNET using the Ethernet transfer data, 2 Industrial high resolution digital digital cameras for video image processing.

SOFTWARE FOR PRODUCT AND PROCESS DEVELOPMENT

Qualica QFD
Rektron FMEA
RESEARCH PROJECTS

RESEARCH & DEVELOPMENT PROJECTS AND FUNDING ORGANISATIONS


SOME OF OUR PROJECTS PARTNERS

CURRENTLY RUNNING PROJECTS

Integrated platform of research and education for innovative production
“Factory of the future”

The purpose of this project is to develop a knowledge community able to integrate within a research and education platform (generically called „Factory of the Future“) elements of infrastructure, equipments, facilities and knowledge at the most advanced European standards and practices in the interdisciplinary and transdisciplinary field of „innovative production“. Innovative production consists in developing and integrating in a harmonized way all the phases of the enterprise life-cycle with all the phases of the „extended“ product life-cycle with the purpose to generate innovative, intelligent products, based on new knowledge, with high value-added, new business models, new forms of organization, new technologies, new equipment and manufacturing systems.

The QEMRC is one of the initiators of this research project and coordinates the teaching/learning division of the “Factory of the future” platform.
CONTACT

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