CENTRUL DE CERCETARE IN CALCULATOARE SI TEHNOLOGIA INFORMATIEI

DEPARTAMENTUL CALCULATOARE ŞI TEHNOLOGIA INFORMAŢIEI

Universitatea Politehnica Timişoara

CCCTI Research Center in Computing and Information Technology

Short Overview

2025

1. Introduction and History

- **CCCTI**
  - Supports the R&D activities of the university staff members, PhD students and associated researchers
  - Main area: **Computing and Information Technology**
  - Research center **accredited at the UPT level**
- **1960**: set up of the **MECIPT Research Center** in the Polytechnic Institute of Timisoara
- **1961**: **MECIPT-1** developed in this center
  - **First digital computer** ever built in a Romanian university lab
  - A first generation computer with advanced features (microprogramming)
  - Initiators: I. Kaufmann, W. Lovenfeld, M. Fildan
- **2001**: set up of the **Scientific Research Center in Automation and Computing**
  - Faculty of Automation and Computing, UPT
  - National certification (no. 72/CC-C/May 11, 2001) issued by the National Council of Scientific Research in High Education, Ministry of Education and Research Romania
- **2011**: CCCTI accredited by UPT

2. Structure of the CCCTI

- **Current management** of the CCCTI:
  - Director: Prof. Dr. habil. Eng. Mihai V. MICEA
  - Deputy director: Lect. Dr. Eng. Cristina STÂNGACIU
- **Past directors** of the Research Center:
  - Prof. Dr. Eng. Alexandru ROGOJAN (1960 - 1981)
  - Prof. Dr. Eng. Crișan STRUGARU (1981 - 1992)
  - Prof. Dr. Eng. Vladimir I. CREȚU (1992 - 2016)
- **Composed of the following** specialized research laboratories and research groups:
  - **ACSA Lab**: Advanced Computing Systems and Architectures Laboratory
  - **DBIA Lab**: Databases and Artificial Intelligence Laboratory
  - **DSPLabs**: Real-Time Systems, Robotics and Digital Signal Processing Laboratory
  - **LOOSE**: Software Engineering Laboratory
  - **Microlabs**: Mobile Computing, Sensors Network and Embedded Systems Laboratory

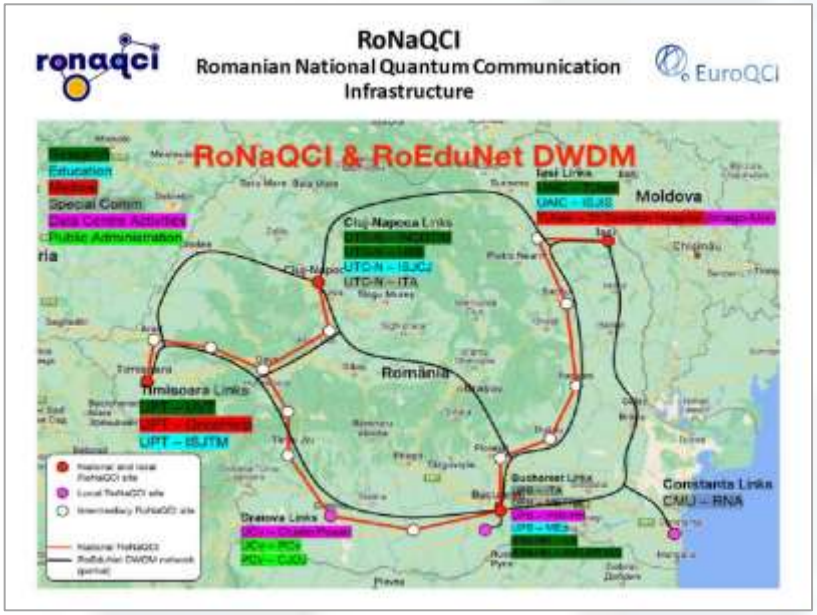
3. General Research Areas

- Artificial intelligence
- Computer graphics and machine vision
- Computing architectures
- Database systems
- Hardware-software systems
- Information security
- Networks and communications
- Signal processing and multimedia
- Software engineering

4. CCCTI Major Projects

- **HRIA: Romanian Artificial Intelligence Hub**
  - Development of the AI area in Romania by producing and stimulating the research of excellence and the application-oriented research at international standards
  - Collaboration with the companies to transfer the AI research results in the industry and to consistently introduce the AI technologies in the Romanian economy
  - Development of highly specialized human resource, including the recruitment of new generation AI specialists and top AI experts from Romania, from the diaspora and abroad, as well as the training of new research talents in the area
  - Development of a research infrastructure at international standards and its efficient use to support the objectives of HRIA
  - Increase of the international visibility of the Romanian AI research, and of the capacity of Romanian researchers to be actively involved in the European collaboration and the EU research networks of excellence
  - **Total Project (Grant) Value:** 67.30 Mil EUR
  - **UPT Partner Grant Value:** 4 Mil EUR
  - **Funding Source:** Programul Creștere Inteligentă, Digitalizare și Instrumente Financiare 2021-2027 (PoCIDIF) and Fondul European de Dezvoltare Regională (FEDR), Prioritatea 4 – STEP, Cod SMIS 2021+ 351416
  - **Project Duration:** 2025.04.01 - 2029.12.30
  - Research Fields:
    - Artificial intelligence
    - Expert and decision systems
    - Fuzzy logic
    - Machine learning
    - Modeling and simulation systems
    - Neural networks
    - Pattern recognition

4. CCCTI Major Projects

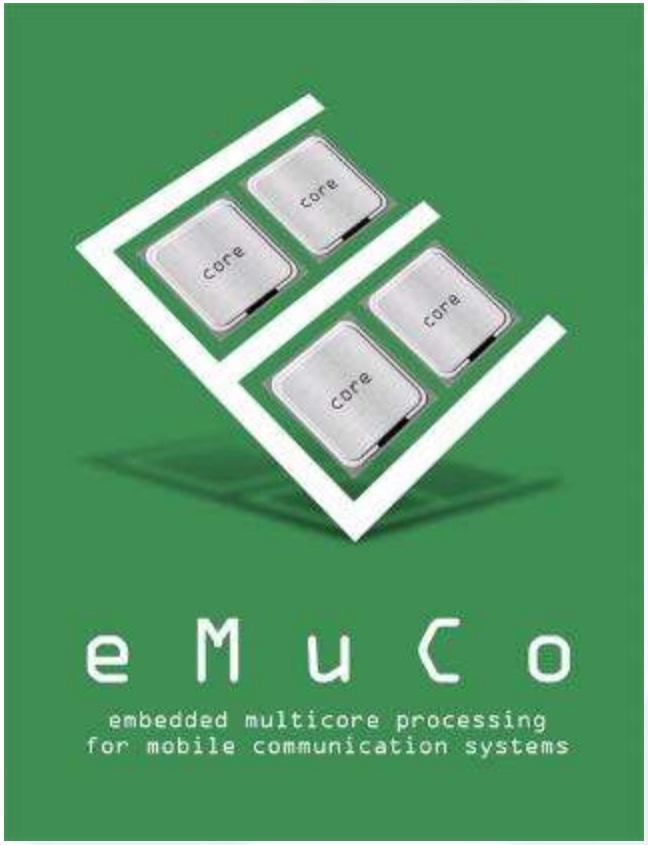


- **RoNaQCI: Romanian National Quantum Communication Infrastructure**
  - Deployment of a 1500+ km QCI network including 6 metropolitan networks in the cities of Bucharest, Iasi, Cluj-Napoca, Timisoara, Craiova and Constanta, with 36 QKD links spanning Romania and connecting 10 universities, 5 research institutes, 5 public bodies, 3 data centers and a medical clinic, and with future links planned for quantum Internet interconnecting with neighbors
  - **Total Project (Grant) Value:** 10 Mil. EUR
  - **Value, UPT Partner:** 143455 EUR
  - **Funding Source:** DIGITAL - Digital Europe Programme, European Union, Code DIGITAL-2021-QCI-01, Contract 101091562/08.12.2022
  - **Project Duration:** 2023.01.01 - 2025.06.30
  - Research Fields:
    - Quantum computing
    - Networks and Communications
    - Information security
    - Cryptography and cryptanalysis
    - Security protocols and systems

4. CCCTI Major Projects

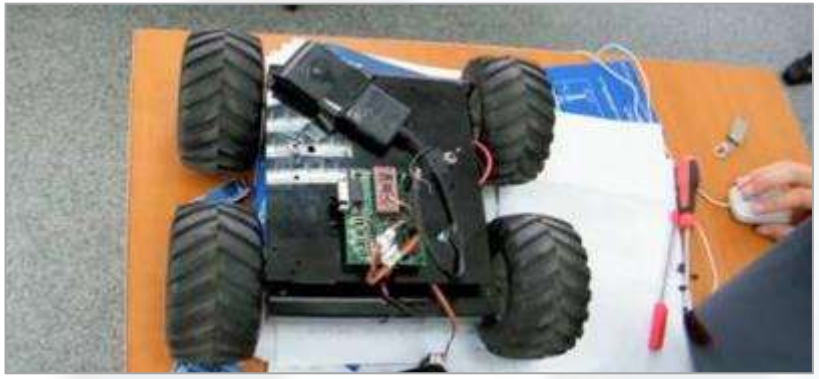
- **CloudPUTing: High Performance Cloud Platform at Politehnica University of Timisoara**
  - Implementation of an energy-efficient, HPC-type of computing and data storage infrastructure to provide flexible to manage and resource scalable virtual environments
  - Implementation of a large capacity data collection, storage and interchange platform, to be provided as a service (PaaS - Platform as a Service)
  - Implementation of a platform for cloud-based functions (FaaS - Function as a Service), for data processing and analysis.
  - Implementation of a local solution for managing and storing of the personal data to the new GDPR standards
  - **Total Project (Grant) Value:** 837535 EUR
  - **Funding Source:** EU Structural Fund, Competitivity Op. Program 2014-2020, POC/398/1/1, SMIS Code 123466
  - **Project Duration:** 2020.05.01 - 2022.04.30
  - Research Fields:
    - Computing architectures
    - Distributed and enterprise software technologies
    - Distributed and multiprocessor systems
    - Operating systems
    - Energy management and optimization
    - Machine learning
    - Big data analysis and management
    - Distributed database systems
    - Cloud and grid systems
    - Complex networks
    - Information security

4. CCCTI Major Projects



- **ICT-eMuCo: Embedded Multi-Core Processing for Mobile Communicating Systems**
  - Addresses the platform architecture of future mobile devices
  - Comprises the relevant controller elements and the operating system and application layers
  - A multi-core architecture to get the best ratio of performance and power consumption while maintaining a high flexibility and scalability in the system through variations in number of cores, cache sizes, clock speeds etc.
  - **Total Project (Grant) Value:** 4.580 Mil. EUR
  - **Funding Source:** STREP R&D Grant, EU 7th Framework Programme
  - **Project Duration:** 2008.02.01 - 2010.01.31
  - Research Fields:
    - Computing architectures
    - Distributed and multiprocessor systems
    - Embedded systems
    - Operating systems
    - Energy management and optimisation
    - Mobile systems

5. ACSA Lab



- **ACSA Lab: Advanced Computing Systems and Architectures Laboratory**
- **Research Areas**
  - Computing architectures
  - Hardware-software systems
- **Research Fields**
  - Computing architectures
  - Hardware-software systems
  - Bio-inspired computing systems
  - Cyber-physical systems
  - Distributed and multiprocessor systems
  - Embedded systems
  - Emerging systems
  - Intelligent robotic environments
  - Operating systems
  - Parallel computing
  - Quantum computing
  - Real-time systems
  - Reconfigurable systems
  - System design and co-design
  - System reliability
  - System testing
  - Ubiquitous computing

5. ACSA Lab

- **Director**
  - Prof. em. Dr. Eng. Mircea VLĂDUŢIU *
- **Research Team**
  - Prof. Dr. habil. Eng. Mihai UDRESCU-MILOSAV *
  - Prof. Dr. habil. Eng. Alexandru TOPÂRCEANU *
  - Assoc.Prof. Dr. Eng. Lucian PRODAN
  - Assoc.Prof. Dr. Eng. Alexandru IOVANOVICI
  - Lect. Dr. Eng. Flavius OPRIŢOIU

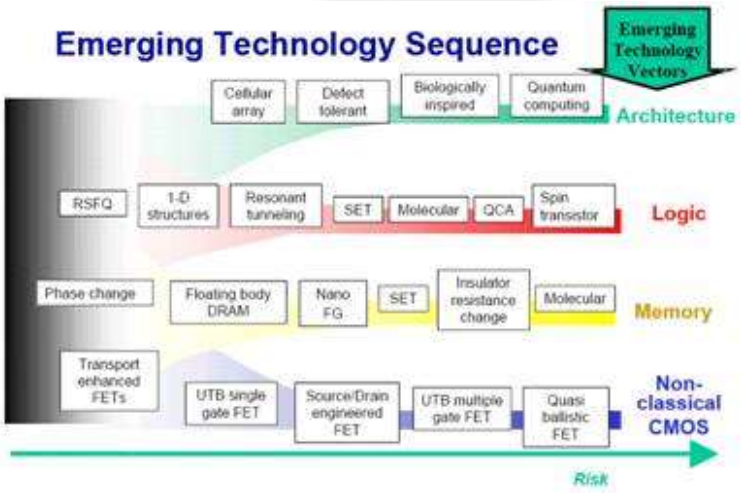
* PhD Supervisor

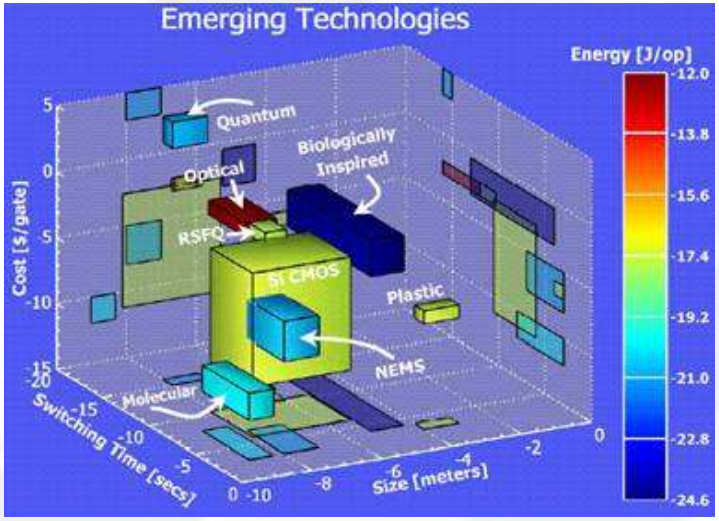
5. ACSA Lab

- **Selected Research Projects**
  - RoNaQCI: Romanian National Quantum Communication Infrastructure
  - PollStream: Agent-based interaction models with temporal attenuation for opinion poll prediction
  - IMPRESS: IMproving the PREdiction of opinion dynamics in temporal Social networks: mathematical modeling and Simulation framework
  - INCEPTION: Internet of Things meets Complex Networks or early prediction and management of Chronic Obstructive Pulmonary Disease

- **Selected PhD Theses**
  - Sebastian-Mihai ARDELEAN: **Development of heuristic methods on reversible and quantum computers**, Supervisor: Mihai UDRESCU-MILOSAV, 2024
  - Alexandru TOPÎRCEANU: Structural and Behavioral Analysis and Modeling of the Society, Supervisor: Mircea VLĂDUȚIU, 2016
  - Flavius OPRIȚOIU: Reliable Implementations for Cryptographic Systems with Testability Facilities, Supervisor: Mircea VLĂDUȚIU, 2010
  - Mihai UDRESCU-MILOSAV: Quantum Circuits Engineering: Efficient Simulation and Reconfigurable Quantum Hardware, Supervisor: Mircea VLĂDUȚIU, 2005

5. ACSA Lab





- **Bio-Inspired Computing Architectures for Reversible Logic and Quantum Circuits Project**
  - Implementing high performance algorithms at the logic level, relying on reversible and quantum circuits and at the architectural level, relying on bio-inspired solutions for architectural structuring and reliability implementation
  - R&D Grant PN–II–ID–PCE–2007–1 (**total value ~275000 EUR**)
  - **Project period:** Oct.2007 – Oct.2010
  - **Project goal and objectives**
    - Develop the QUERIST framework for arbitrary complexity reversible and quantum circuits
    - Elaborating efficient methodologies for reversible and quantum circuits testing
    - Automated synthesis techniques for fault tolerant reversible and quantum circuits
    - Elaborating bio-inspired architecture models for efficient and reliable control of logic level resources
    - Constructing new quantum and reversible hardware platform algorithms
    - Detailing the possible strategies for mapping the architectural level onto logic level

6. DBIA Lab

- **DBIA Lab: Databases and Artificial Intelligence Laboratory**
- **Research Areas**
  - Artificial intelligence
  - Computer graphics and machine vision
  - Database systems
- **Research Fields**
  - Artificial intelligence
  - Computer graphics and machine vision
  - Database systems
  - Big data analysis and management
  - Computer vision
  - Data mining
  - Data modeling
  - Data visualization
  - Distributed database systems
  - Expert and decision systems
  - Fuzzy logic
  - Game engineering
  - Graphics rendering and animation
  - Image and video processing
  - Knowledge-based systems
  - Machine learning
  - Modeling and simulation systems
  - Neural networks
  - Pattern recognition
  - Visual databases

6. DBIA Lab

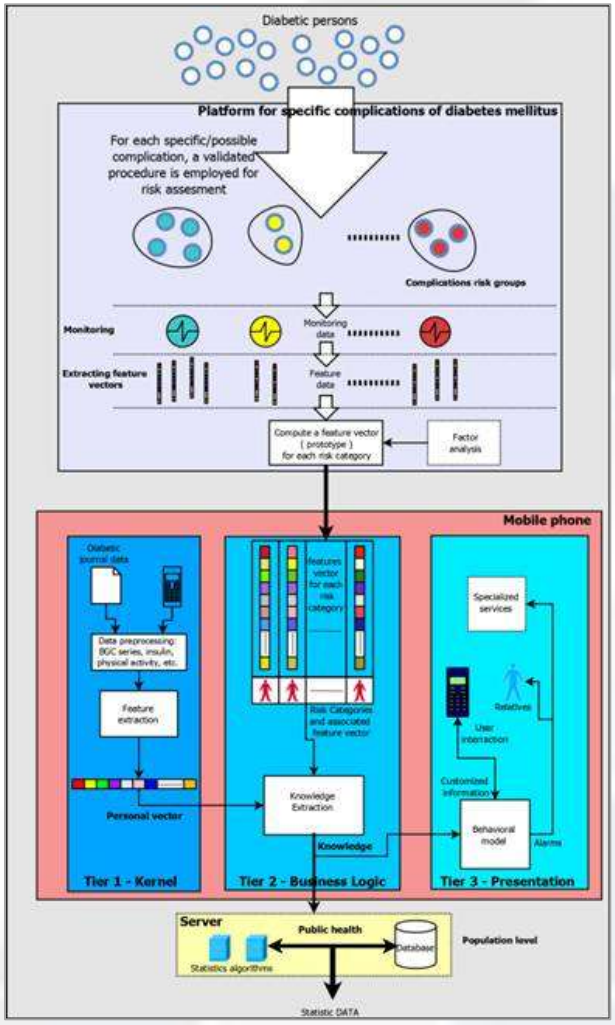
- **Director**
  - Prof. em. Dr. Eng. Ştefan HOLBAN *
- **Research Team**
  - Prof. em. Dr. Eng. Ionel JIAN *
  - Prof. Dr. habil. Eng. Călin-Adrian POPA *
  - Prof. Dr. Eng. Marius CRIŞAN
  - Assoc.Prof. Dr. Eng. Cosmin CERNĂZANU-GLĂVAN
  - Assoc.Prof. Dr. Eng. Codruţa ISTIN
  - Assoc.Prof. Dr. Eng. Doru TODINCA
  - Assoc.Prof. Dr. Eng. Ioana ŞORA
  - Assoc.Prof. Dr. Eng. Dan PESCARU

* PhD Supervisor

6. DBIA Lab

- **Selected Research Projects**
  - HRIA: Romanian Artificial Intelligence Hub
  - CloudPUTing: High Performance Cloud Platform at Politehnica University of Timisoara
  - TPark Assist: Parking assistance system for TPark
  - TEEFIOS: Time and Energy Efficient Framework for Inter-Operation of Smart devices
  - GEMSCLAIM: GreenEr Mobile Systems by Cross LAyer Integrated energy Management
- **Selected PhD Theses**
  - Marius BABA: Behavior classification using video sensor networks in urban environments, Supervisor: Ionel JIAN, 2021
  - Adriana Marina MERCIONI: Improving performance of deep neural networks by developing novel activation functions, Supervisor: Ştefan HOLBAN, 2021
  - Doru TODINCA: Resource allocation techniques for improving the performance of data transfer over GPRS/EGPRS networks, Supervisor: Ştefan HOLBAN, 2005
  - Dan PESCARU: Bridging the Gap between Object Oriented Modeling and Implementation Languages Using a Meta-Language Approach, Supervisor: Ionel JIAN, 2004

6. DBIA Lab



- **MaternQual Project**
  - Integrated Information System for Evaluating the Factors Associated With Risk Prediction and Quality in Obstetrics
  - R&D Grant 99-II CEEX 03 - INFOSOC 4091 (**total value ~250.000 EUR**)
  - Project period: Jul.2006 – Jul.2009
  - **Project goal and objectives**
    - Set the basis of an informational system for collecting and processing medical data. Obstetrics is a medical field whose quality and efficiency have a dramatic impact in the society, so it concentrates substantial European and international efforts
    - Use specific data mining techniques for identifying the factors associated with the pre-term birth and the quality in obstetrics and to develop prediction models
    - Contribute to improving the informational environment in healthcare (mainly for the specific problems of obstetrics) as a suitable context for: (i) medical decision based on knowledge and evidence; (ii) improving the capacity of prevention and the early and personalized diagnosis
    - Put the basis of a long-term interdisciplinary cooperation between the partners, so contributing to the formation of a new generation of specialists for whom the multidisciplinary work to be the common practice in applied research

7. DSPLabs

dsplabs 10010101 Timisoara
Digital Signal Processing Laboratories Timisoara

- **DSPLabs: Real-Time Systems, Robotics and Digital Signal Processing Laboratory**
- **Research Areas**
  - Hardware-software systems
  - Networks and communications
  - Signal processing and multimedia
- **Research Fields**
  - Hardware-software systems
  - Networks and Communications
  - Signal processing and multimedia
  - Cloud and grid systems
  - Complex networks
  - Cyber-physical systems
  - Distributed and multiprocessor systems
  - Embedded systems
  - Energy management and optimization
  - Instrumentation and measurement
  - Intelligent infrastructures and environments
  - Intelligent robotic environments
  - Mobile systems
  - Multimedia systems
  - Operating systems
  - Parallel computing
  - Protocols, interfaces and encoding
  - Real-time systems
  - Sensor networks
  - Signal acquisition and processing
  - Smart sensing and perception systems
  - Ubiquitous computing
  - Web-based systems

7. DSPLabs

- **Co-Directors**
  - Prof. em. Dr. Eng. Vladimir I. CREŢU *
  - Prof. Dr. habil. Eng. Mihai V. MICEA *
- **Research Team**
  - Prof. em. Dr. Eng. Horia CIOCÂRLIE *
  - Prof. em. Dr. Eng. Mircea STRATULAT *
  - Assoc.Prof. Dr. Eng. Alin ANTON
  - Lect. Dr. Eng. Răzvan CIOARGĂ
  - Lect. Dr. Eng. Valentin STÂNGACIU
  - Lect. Dr. Eng. Cristina STÂNGACIU
  - Lect. Dr. Eng. Daniela STĂNESCU
  - Lect. Dr. Eng. Valer BOCAN
  - T.Assist. Dr. Eng. Eugenia-Ana CAPOTA
  - T.Assist. PhD Stud. Eng. Petra CSEREOKA
  - T.Assist. PhD Stud. Eng. Bianca GUŞIŢĂ
  - PhD Stud. Eng. Lucian-Ionel GĂINĂ

* PhD Supervisor

7. DSPLabs

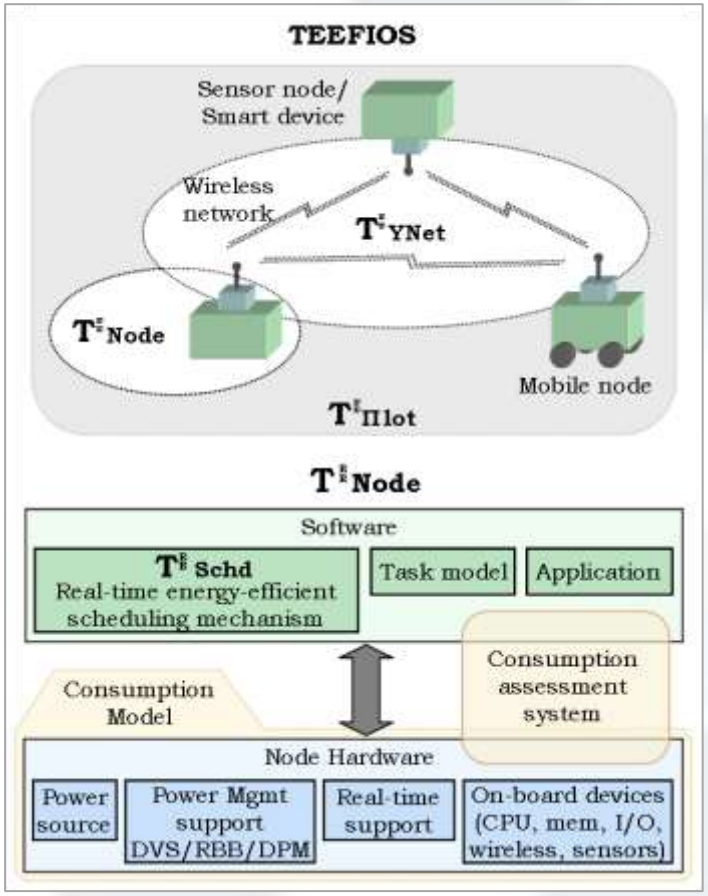
- **Selected Research Projects**
  - HRIA: Romanian Artificial Intelligence Hub
  - 6Sol(T6) - Innovative Systems and Equipment for the Implementation of Authorized Measures from National Security Mandates
  - Bright Cityscapes - Synthia Project
  - RoNaQCI: Romanian National Quantum Communication Infrastructure
  - CloudPUTing: High Performance Cloud Platform at Politehnica University of Timisoara
  - Software Module for Efficiency Assessment of the Hydraulic Pumps in Service for Drinkable Water Systems
  - TEEFIOS: Time and Energy Efficient Framework for Inter-Operation of Smart devices
  - ICT-eMuCo: Embedded Multi-Core Processing for Mobile Communicating Systems
  - MELISSEVS: Development and Analysis of an Integrated Model for Representation of Collaborative Robotic and Intelligent Sensor Systems in Environment Exploration and Supervision Applications

- **Selected PhD Theses**
  - Christian CURIAC: Multi-Recommender Framework to Aid Identifying and Addressing Research Themes Using Bibliographic Metadata and AI, Supervisor: Mihai V. MICEA, 2024
  - Gabriel CÂRSTOIU: Maximizing the Management Efficiency of Rechargeable Batteries in Critical Energy Storage Applications, Supervisor: Mihai V. MICEA, 2021
  - Eugenia-Ana CAPOTA: Scheduling methods for mixed criticality real-time distributed systems, Supervisor: Mihai V. MICEA, 2021
  - Lucian UNGUREAN: Rechargeable Batteries State of Health Assessment for Battery Powered Embedded Systems, Supervisor: Mihai V. MICEA, 2021
  - Valentin STÂNGACIU: Real-time wireless communication for wireless sensor networks, Supervisor: Vladimir I. CREȚU, 2015
  - Cristina STÂNGACIU: Energy efficient real-time scheduling, Supervisor: Vladimir I. CREȚU, 2015
  - Mihai V. MICEA: Design and Implementation of Real-Time Systems for Critical Applications of Digital Signal Acquisition and Processing, Supervisor: Vladimir I. CREȚU, 2004

7. DSPLabs

- **6Sol(T6) - Innovative Systems and Equipment for the Implementation of Authorized Measures from National Security Mandates**
  - The project aims to provide an efficient response to the challenges generated by the evolution of the national security context, through the development and validation of innovative technical solutions with covert use in the operational environment, necessary for the collection, monitoring and management of data of interest at a high quantitative and qualitative level
  - **Total Project (Grant) Value:** 400000 EUR
  - **Funding Source:** PN IV - Program 5.6. Challenges - Subprogram 5.6.3. Solutions, Project Code: PN-IV-P6-6.3-SOL-2024-2-0265
  - **Project Duration:** 2024.07.08 - 2026.06.30
  - **Research Fields:**
    - Security modeling and evaluation

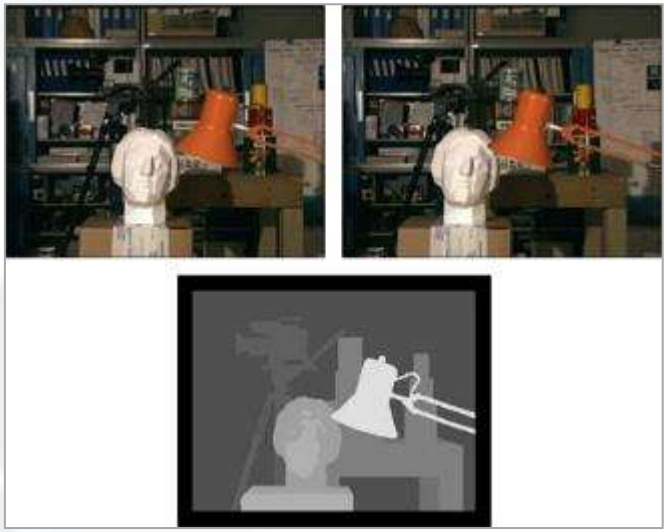
7. DSPLabs



- **TEEFIOS: Time and Energy Efficient Framework for Inter-Operation of Smart devices**
  - Proposes a new paradigm - Time and Energy Efficiency (T: or TEE)
  - Goal is to develop an integrated real-time and energy efficient inter-operation framework for networks of smart sensors and devices
  - Three distinct layers:
    - T:Node, a hardware-software environment and methodology for designing and assessing real-time behavior and efficient energy consumption of embedded devices
    - T:YNet, a system for the development and analysis of TEE communication in wireless ad-hoc networks
    - T:PIlot, a methodology for the power management of the entire network
  - **Total Project (Grant) Value:** 123340 EUR
  - **Funding Source:** R&D Grant, National Research, Development and Innovation Plan II (PNCDI II), Human Resource Program - Young Research Teams (TE), Code: PN-II-RU-TE-2014-4-0731
  - **Project Duration:** 2015.10.01 - 2017.09.30

7. DSPLabs

- **FALX DACIAE Project**
  - Software Development Tools and Processes for Advanced Multimedia Applications on Mobile Phone Multi-Core Architectures
  - R&D Grant POSCCE/A2-O2.1.1 (**total value ~506400 EUR**: EU-ERDF, EU-ESF and RO-ANCS)
  - R&D partnership between Movidius SRL. and UPT (Jun.2010 - Jun.2012)
  - **Main results**
    - ***moviTest*** automatic application validation environment;
    - ***moviOS*** multi-core real-time and parallel operating system;
    - ***moviSim*** multi-core simulator;
    - ***moviAsm*** assembler for the Sabre processor;
    - ***moviDebug*** application loader and debugger for the Movidius execution platforms;
    - ***moviCompile*** C and C++ compiler;
    - **2 patent applications** filed at the OSIM and WIPO patent offices;
    - **9 scientific papers** published at international conferences and symposiums;
    - **11 new jobs** created for highly-qualified personnel



8. LOOSE

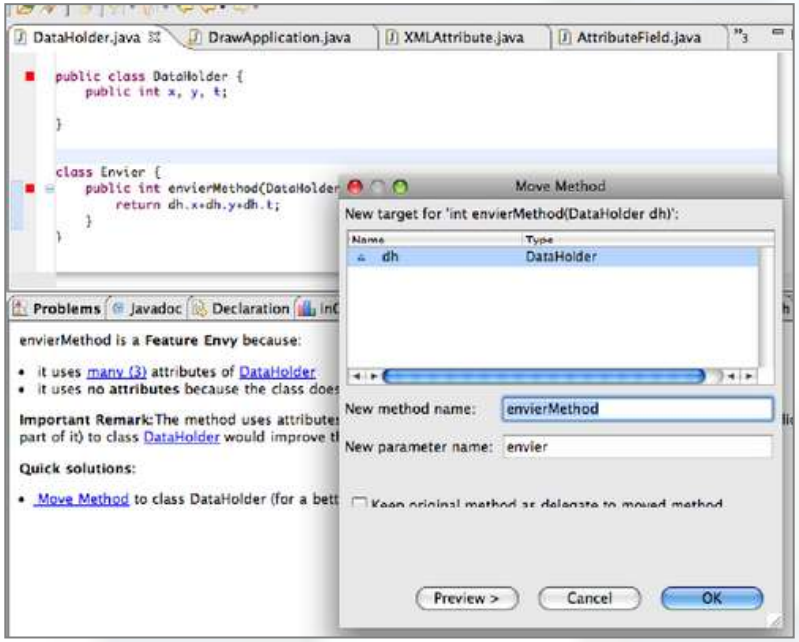
- **LOOSE: Software Engineering Laboratory**
- **Research Areas**
  - Software engineering
  - Information security
- **Research Fields**
  - Information security
  - Software engineering
  - Component-based systems
  - Cryptography and cryptanalysis
  - Distributed and enterprise software technologies
  - Empirical software engineering
  - Information filtering and censorship
  - Information hiding and privacy protection
  - Malware analysis
  - Modeling, formal verification and testing
  - Object-oriented design
  - Programming languages and compilers
  - Security modeling and evaluation
  - Security protocols and systems
  - Software analysis and quality assessment
  - Software maintenance and evolution

8. LOOSE

- **Director**
  - Prof. Dr. habil. Eng. Radu MARINESCU *
- **Research Team**
  - Assoc.Prof. Dr. Eng. Cristina MARINESCU
  - Assoc.Prof. Dr. Eng. Petru MIHANCEA
  - Assoc.Prof. Dr. Eng. Ioana ŞORA
  - Lect. Dr. Eng. Dan COSMA
  - Lect. Dr. Eng. Cosmin MARŞAVINA
  - PhD Stud. Eng. Andrei-Mario RIVIŞ
  - PhD Stud. Eng. Andy MOLIN

* PhD Supervisor

8. LOOSE



- **CONQUERS Project**
  - Methods and Tools for Continuous Quality Assurance in Complex Software Systems
  - R&D Grant PN–II–ID–PCE–2007–1 (**total value ~195000 EUR**)
  - Project period: Oct.2007 – Oct.2010
  - **Project goal and objectives**
    - develop new demand-driven, fast and precise local analyses for object-oriented code by exploiting advances in decision procedures and invariant detection
    - integrate automated test generation with dynamic invariant generation and static checking into an iterative process which generates test suites together with expected correct results, while minimizing user input
    - transform design assessment from a standalone activity into a continuous (agile) process
    - bridge the gap between design flaw detection and complex restructurings by means of correction plans
    - integrate techniques related to design and coding flaw detection
    - support the analysis of industrial-size software systems (developed in C++, Java, C#)

9. Microlabs

- **Microlabs: Mobile Computing, Sensors Network and Embedded Systems Laboratory**
- **Research Areas**
  - Computing architectures
  - Hardware-software systems
  - Networks and communications
- **Research Fields**
  - Computing architectures
  - Hardware-software systems
  - Networks and Communications
  - Bio-inspired computing systems
  - Cloud and grid systems
  - Complex networks
  - Cyber-physical systems
  - Distributed and multiprocessor systems
  - Embedded systems
  - Emerging systems
  - Intelligent robotic environments
  - Mobile systems
  - Operating systems
  - Parallel computing
  - Protocols, interfaces and encoding
  - Quantum computing
  - Real-time systems
  - Reconfigurable systems
  - Sensor networks
  - System design and co-design
  - System reliability
  - System testing
  - Ubiquitous computing
  - Web-based systems

9. Microlabs

- **Co-Directors**
  - Prof. em. Dr. Eng. Mircea POPA *
  - Prof. Dr. habil. Eng. Marius MARCU *
- **Research Team**
  - Prof. Dr. habil. Eng. Oana AMĂRICĂI-BONCALO *
  - Assoc.Prof. Dr. Eng. Răzvan-Virgil BOGDAN
  - Assoc.Prof. Dr. Eng. Alexandru AMĂRICĂI-BONCALO
  - Lect. Dr. Eng. Sebastian FUICU
  - Lect. Dr. Eng. Sergiu NIMARĂ
  - T.Assist. PhD Stud. Eng. Marian Emanuel IONAȘCU

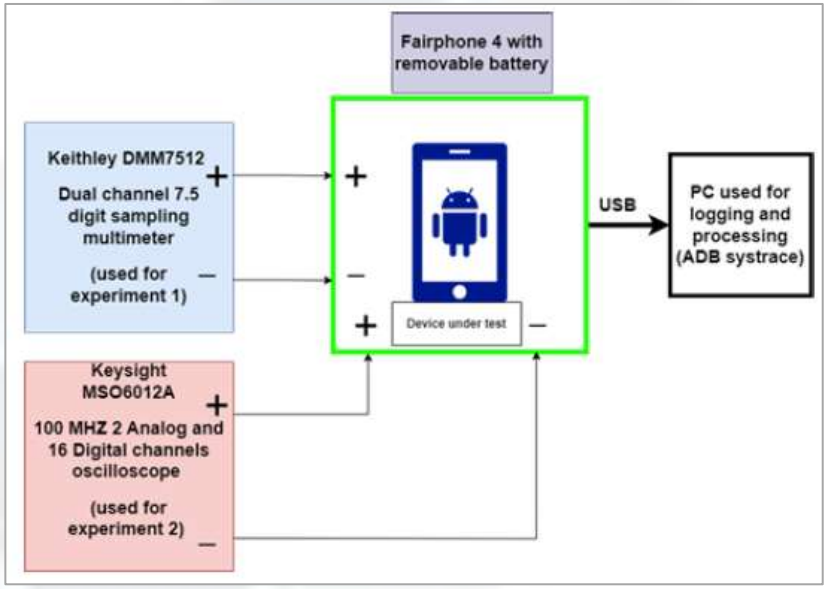
* PhD Supervisor

9. Microlabs

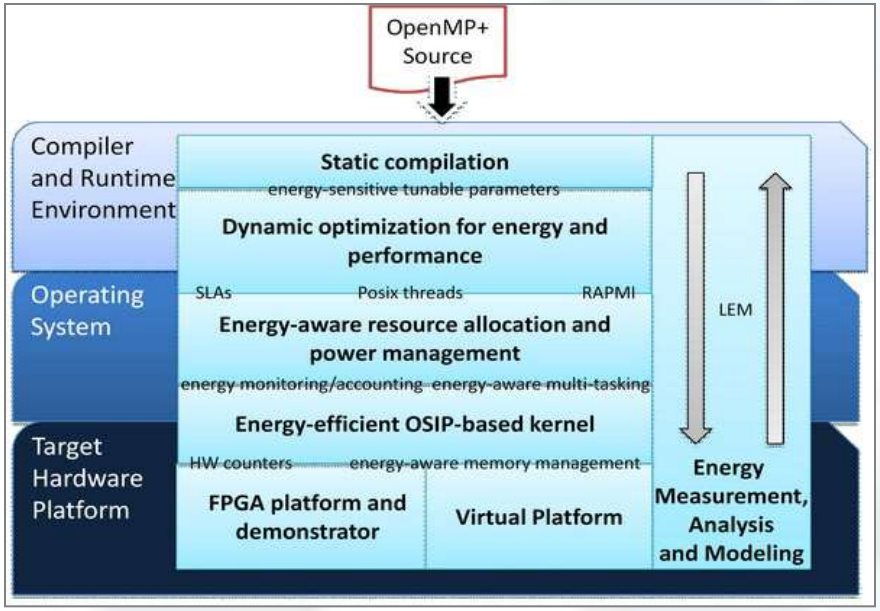
- **Selected Research Projects**
  - RoNaQCI: Romanian National Quantum Communication Infrastructure
  - CloudPUTing: High Performance Cloud Platform at Politehnica University of Timisoara
  - Cross-border access infrastructure to high-level education through web-casts
  - JCBICS-UDPUT: Joint Cross-Border Internet Communication System of the University of Debrecen and Politehnica University of Timisoara
  - GEMSCLAIM: GreenEr Mobile Systems by Cross LAyer Integrated energy Management
  - ECOMOME: Energy consumption measurements and optimization in mobile networks
  - AC_G_xBU_Academy: A data security perspective on information transmission over distributed systems
- **Selected PhD Theses**
  - Mahomed Latif TEJ: Contributions to the Determination of Neural Network Architectures, Supervisor: Marius MARCU, 2021
  - Sergiu NIMARĂ: **Transient Errors Impact Analysis for Sub-Powered CMOS Circuits at Multiple Levels of Abstraction of a Digital System**, Supervisor: Mircea POPA, 2016
  - Gabriel GIRBAN: **Monitoring the available charge in the nodes of a wireless sensor network by establishing the energy consumption with online and offlime metods**, Supervisor: Mircea POPA, 2012

9. Microlabs

- **ECOMOME: Energy consumption measurements and optimization in mobile networks**
  - Accurately modelling and optimizing the energy consumption of a mobile network, with a focus on 4G and 5G technologies
  - Independent measurement study of energy consumption in a mobile network
  - Use the measurement data in order to design accurate energy consumption models for mobile networks
  - The proposal of energy efficient networking solutions
  - **Total Project (Grant) Value:** 160.000 EUR
  - **Funding Source:** EU CHIST-ERA partnership projects, UEFISCDI, PNCDI III, ERANET-CHIST-ERA-ECOMOME
  - **Project Duration:** 2022.01.01 - 2025.01.01
  - Partners:
    - INSA Lyon, France
    - ETS Montréal, Canada
    - IMDEA Networks, Spain
    - Politehnica University of Timisoara
  - Research Fields:
    - Energy management and optimization
    - Energy Consumption Modeling
    - Atomic Network Mechanism Analysis
    - Network Metrology and Measurement Studies
    - AI-Based Network Intelligence for Energy Efficiency



9. Microlabs



- **GEMSCLAIM: GreenEr Mobile Systems by Cross LAyer Integrated energy Management**
  - Energy-aware optimization and parallelization of a heterogeneous multi-core compiler
  - Component aware energy-efficient operating system
  - Customizable HW modeling with energy monitoring facilities
  - Multi-layer (HW, OS, App) energy monitoring and energy optimization
  - **Total Project (Grant) Value:** 1.2 Mil. EUR
  - **Funding Source:** EU CHIST-ERA partnership projects, UEFISCDI, PNII-IDEI, 1/CHIST-ERA/01.10.2012
  - **Project Duration:** 2012.09.01 - 2015.08.31
  - Partners:
    - Universität Innsbruck, Austria
    - Queen's University Belfast, UK
    - RWTH Aachen University, Germany
    - Politehnica University of Timisoara
  - Research Fields:
    - Computing architectures
    - Programming languages and compilers
    - Distributed and multiprocessor systems
    - Operating systems
    - Energy management and optimisation

10. Contact

CCCTI - Research Center in Computing and Information Technology

Department of Computer and Information Technology
Politehnica University of Timisoara

2, Vasile Pârvan Bvd., 300223,
Timisoara, Romania
Room B512

+40 256 403261
+40 256 403273

https://cs.upt.ro/index.php/research/