



Information and communication technology for generic and energy-efficient communication solutions with application in e-/m-health

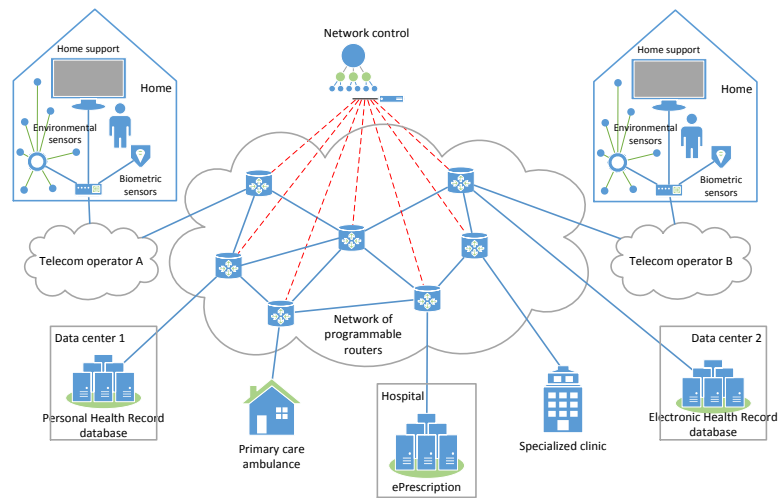
ictgen.fer.hr



The project partners in the project "Information and communication technology for generic and energy-efficient communication solutions with application in e-/m-health (ICTGEN)" are the University of Zagreb Faculty of Electrical Engineering and Computing (FER) and Ericsson Nikola Tesla company, Croatia. The goal of the project is to strengthen the research, development and innovation capacity of FER for technology transfer and commercialisation in the area of design and development of complex ICT services.



FER
UNIVERSITY OF ZAGREB
FACULTY OF
ELECTRICAL
ENGINEERING
AND COMPUTING



The project will research and develop generic software components for future e-health and m-health services, to be delivered over a software defined network based infrastructure, in an energy-efficient way and taking into account the required quality of service requirements. Research objectives of the ICTGEN project include: a) to design a solution for integration and interoperability of Electronic Health Record (EHR) with imaging/radiology e-health systems and m-health systems, b) to develop generic components of software-defined networking infrastructure for ICT services delivery while taking into account user experience, c) to optimize energy efficiency of software-defined networking elements and wireless sensor networks in user environment, based on a model and measurements, and d) to build a laboratory environment and an integrated demo for conducting functional validation of designed application scenarios in a controllable network environment.

The contents of this publication is the sole responsibility of University of Zagreb Faculty of Electrical Engineering and Computing and can in no way be taken to reflect the views of the European Union.

University of Zagreb
Faculty of Electrical Engineering and Computing
Unska 3, 10000 Zagreb, Croatia
Phone: +385 1 6129 757
E-mail: maja.matijasevic@fer.hr

Ericsson Nikola Tesla d.d.
Krapinska 45, 10002 Zagreb, Croatia
Phone: +385 1 365 3535

The project is co-financed by European Union from the European Regional Development Fund.
Find out more about EU Funds at www.strukturnifondovi.hr.



European Union



COMPETITIVE
CROATIA



STRUKTURNI I INVESTICIJSKI
FONDOVI

Investing in future



Ministry
of Science,
Education
and Sports



Advanced technologies in power plants and rail vehicles

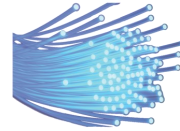
RC.2.2.08-0015

fer-kiet.fer.hr



This project aims to develop new technologies and provide new perspectives with high commercialization potential for applications in power plants and rail vehicles. The project is organized in four research fields:

- *Advanced sensors technologies*
- *Advanced estimation and control algorithms in microgrids*
- *Multilevel converters and energy storage systems*
- *Driver assistance system*



The *Advanced sensors technologies* part aims to develop a fibre-optic system for distributed temperature measurements in power plants applicable in the electrical power sector and other ICT domains such as intelligent transport infrastructure, smart buildings, next-generation information systems, etc. It also aims to develop methods for advanced energy harvesting to be applied to sensor systems for the monitoring of power infrastructure, which provides a 'physical layer' for the implementation of networked embedded sensing systems, i.e. Internet of Things (IoT), applied in all domains related to human activity, smart devices and smart environments.

The *Advanced estimation and control algorithms in microgrids* aims to develop an advanced battery management system, as well as the algorithm for prediction of renewable energy systems availability. These systems will be used for development of more advanced control concepts in microgrids with emphasis on residential, office, and public buildings.

The *Multilevel converters and energy storage systems* component part provides two proof-of-concepts, one for three level neutral point clamped converter and one for the energy storage system based on the

supercapacitor, as well as a simulation model and a Hardware-In-the-Loop model for real time testing.

The *Driver assistance system* to be designed within this project comprises of a network of embedded computers and sensors together with software for data analysis and processing. This system will be integrated into a tram and interconnected with existing tram computer system via appropriate communication interface. The system's main task is detection and tracking of vehicles and pedestrians in the vicinity of the tram, and supporting the overall safety by producing a warning signal upon prediction of collision.

The main aim of all the research conducted within the *Advanced technologies in power plants and rail vehicles* project is to establish knowledge base and develop technologies with expected applications in various fields of modern technology in accordance with the next-generation needs.



UNIVERSITY OF ZAGREB
FACULTY OF ELECTRICAL
ENGINEERING
AND COMPUTING

KONČAR
Electrical Engineering
INSTITUTE

The contents of this publication is the sole responsibility of University of Zagreb Faculty of Electrical Engineering and Computing and can in no way be taken to reflect the views of the European Union.

University of Zagreb
Faculty of Electrical Engineering and Computing
Unska 3, HR-10000 Zagreb, Croatia
P: +385 1 6129 913
e-mail: ivan.petrovic@fer.hr

KONČAR - Electrical Engineering Institute Inc.
Fallerovo šetalište 22, HR-10000 Zagreb, Croatia
P: +385 1 3667 315 F: + 385 1 3667 317
e-mail: info@koncar-institut.hr

The project is co-financed by European Union from the European Regional Development Fund.



European Union



COMPETITIVE
CROATIA



STRUKTURNI I INVESTICIJSKI
FONDOVI

Investing in future



Ministry
of Science,
Education
and Sports