

# Project Information



## Mobile Networks Evolution for Individual Communications Experience

The expected high growth of the data traffic in the mobile networks over the LTE and LTE-Advanced radio access systems, as well as the need for more individual communications experience, will set challenges on the mobile core and transport networks. Project studies novel network architecture and connectivity concepts for the future of the Evolved Packet Core (EPC) of the 3GPP mobile broadband networks.

### Main focus

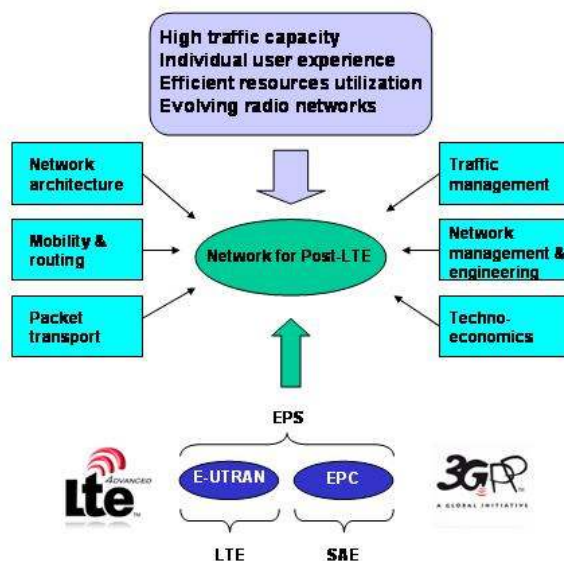
Main scope is on the network architecture and packet connectivity of the 3GPP mobile networks for growing needs of the future mobile broadband & wireless Internet communications. The focus is on the connectivity layers of the network, in particular on the part of the future mobile network which provides the efficient packet transport and mobility support for the applications & end-user services accessed over the LTE and LTE-Advanced radio

systems. The innovations will bring further architectural and functional improvements to the Evolved Packet Core (EPC) of the LTE-networks in the mid-long term.

### Approach

The project will follow a phased approach by first laying out the usage and traffic scenarios as well as the new requirements for the networks. In the following phase the research for new innovations on the evolution of the networks to fulfil the requirements is carried out. Finally, the main selected system concepts are validated. In addition, the techno-economics and networks migration aspects are addressed to evaluate deployment in the future mobile networks.

The main milestones of the project are: Network usage, traffic scenarios and requirements in Dec 2010, Network architecture evolution concepts in June 2011, Validation results and finalized network



## MEVICO

Project ID: CP7-011

Start Date: 1 April 2010

Closure date: 29 December 2012

### Partners:

AALTO University, Finland  
Alcatel-Lucent Bell Labs France  
SAS France  
Artelys SA, France  
Avea Iletisim Hizmetleri AS, Turkey  
Budapest University Technology & Economics, Hungary  
Chemnitz University of Technology, Germany  
Commissariat à l'Energie Atomique (CEA-LIST), France  
Deutsche Telekom AG, Germany  
Ericsson AB, Sweden  
Ericsson Telekomunikasyon A.S., Turkey  
France Telecom SA, France  
Montimage EURL, France  
EXFO NetHawk, Finland  
Nokia Siemens Networks Oy, Finland  
Nokia Siemens Networks GmbH & Co. KG., Germany  
Nokia Siemens Networks Kft, Hungary  
RAD Data Communications Ltd., Israel  
Technische Universität Berlin, Germany  
Telefónica o2 Germany GmbH & Co. OHG, Germany  
Türk Telekomunikasyon AS, Turkey  
University of Oulu, Finland  
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### Project Website

[www.celticplus.eu/Projects/Celtic-projects/Call7/MEVICO/mevico-default.asp](http://www.celticplus.eu/Projects/Celtic-projects/Call7/MEVICO/mevico-default.asp)

architecture concepts in Oct 2012, Migration plan in Dec 2012.

The technical research areas of the project address the expected key challenges for the networks architecture, functions and performance for the individual communications experience of the future. They cover relevant topics in the areas of

- ◆ network architecture,
- ◆ mobility & routing,
- ◆ packet transport,
- ◆ traffic management,
- ◆ network management & engineering, and
- ◆ techno-economics.

The areas are divided into six Work Packages correspondingly.

The project will include both conceptual research and validation by simulations or trial system implementations.

## Main results

The research work proposed in the MEVICO project consists of six Work Packages (WPs). WP1, System Architecture, is responsible for collecting the system level requirements and defining the system architecture for the next generation network systems. Based on the potential identification of the innovation areas during the concept outlining phase, the selected set of those areas will be studied

in this WP. Also, one Task in WP1 is responsible for the implementation of the Evaluations. WP2, Mobility and Routing, deals with the mobility related research topics in LTE-A, where new challenges arise from the new radio network technologies and topologies. WP3, Packet Transport, will research the new strategies and concepts of LTE backhauling, which arise e.g. from the needs for increased capacity and better Quality of Service. WP4, Traffic Management, will collect functional, architectural and operational requirements for the traffic management subsystem, and design and evaluate a traffic management framework for the future broadband wireless telecommunication network. WP5, Network Management and Engineering, aims at identifying the key issues and proposing self organizing solutions to them in the area of network management and engineering of the next generation networks. WP6, Techno-economics and Migration, aims at the techno-economical evaluation of the different aspects of the new network architecture, and outlining a potential migration path towards that architecture.

All Work Packages are responsible for creating the evaluation scenarios and running the evaluations for the concepts that they develop, and to support the system level evaluation to be carried out in Work Package 1.

## Impact

The joint effort of major European players helps to maintain and improve a leading role of European companies in mobile and wireless communication with respect to increasing global competition. The developed system will provide a smooth evolution path from the 3GPP LTE systems towards the IMT-Advanced system. The support of broadband services and the provision of smooth deployment scenarios are the major requirements for the next generation network technologies, allowing reduced OPEX and CAPEX according to operator needs.

The project results will be used as the technical background for the contributions to the standardization processes of 3GPP in 2011-2014. They may also be utilized in other related standardization bodies, such as IETF.

The concepts and specifications will also be shared in publications and conference presentations.

## About Celtic

Celtic is a European research and development programme, designed to strengthen Europe's competitiveness in telecommunications through short and medium term collaborative R&D projects. Celtic is currently the only European R&D programme fully dedicated to end-to-end telecommunication solutions.

**Timeframe:** 8 years, from 2004 to 2011

**Clusterbudget:** in the range of 1 billion euro, shared between governments and private participants

**Participants:** small, medium and large companies from telecommunications industry, universities, research institutes, and local authorities from all 35 Eureka countries.

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