Celtic-Plus
Smart Connected World

Project Information

MITSU

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Project Website

https://www.celticplus.eu/project-mitsu/

http://mitsu-project.eu/

Next Generation Multimedia Efficient, Scalable and Robust Delivery

The objective of **MITSU (next generation Multimedia efficienT, Scalable and roBUst Delivery)** is to study and develop the **next generation of multimedia streaming systems** to be used **over wireless networks**.

Main focus

Market opportunities and pressure are pushing toward a very fast deployment of video solutions that are currently not interoperable and that imply an increasing processing complexity. Video systems are entering a new age where contents will have to be delivered to the users whatever the device or network they are using.

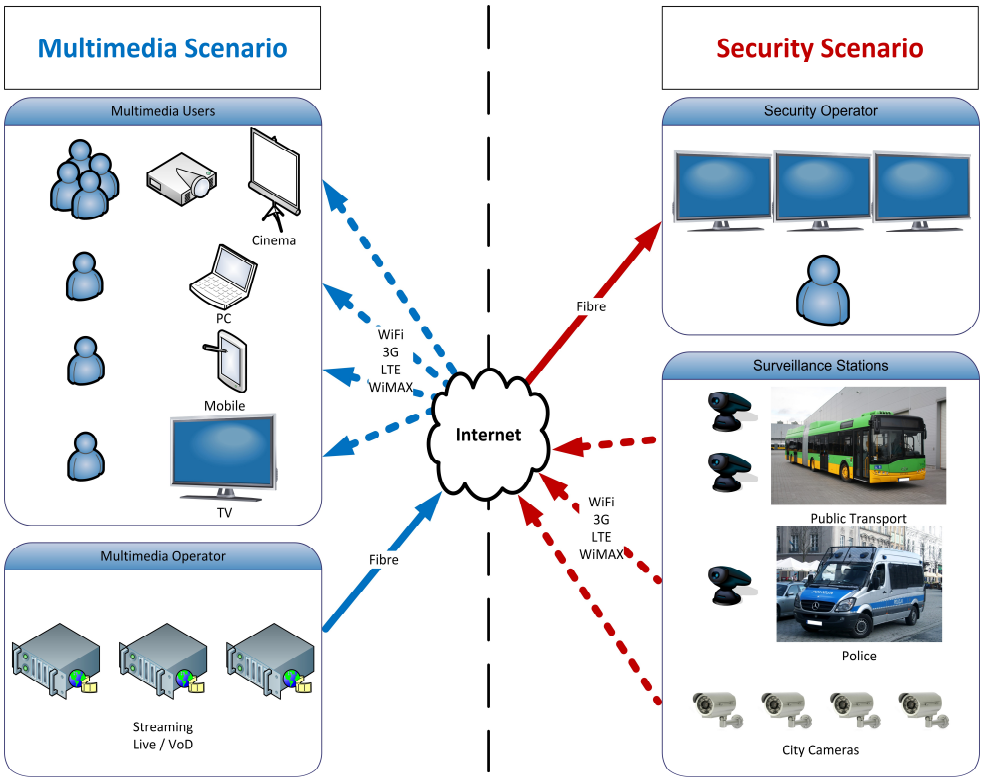
While considering state of the art technologies in that field, **MITSU intends to study and implement this video interoperability while minimising the complexity and power consumption.** Heterogeneous wireless environments increase the number of requests for retransmissions which escalates bandwidth and energy requirements and also creates inherent congestion on the network.

New video consumption modes relying upon the use of smartphones and tablets have introduced new protocols (HTTP streaming), not always interoperable and increasing the issue of data retransmission. Furthermore, various new video codecs are also under development, aiming for either low complexity or for more compression efficiency with increased computational complexity.

Approach

MITSU will propose a robust, efficient and interoperable video streaming solution by studying and implementing the following key elements:

- MPEG HEVC video codec and its competitors



- Video streaming protocols and format interoperability
- Video transcoding and transrating
- Video quality metrics and probes
- Robustness enhancement
- Context aware video streaming adaptation
- Management of heterogeneous networks
- Cross-layer optimisation
- Privacy, security and content protection
- Latest-generation mobile phone communication system (4G)
- Implementation of multimedia and security application use cases
- Field trials
- Cloud Computing management

Two main demonstrators will be considered in MITSU, one for multimedia and one for security applications.

The objective of the **multimedia demonstrator** is to show in a real environment the strong advantages introduced by the bricks of video technologies developed within the MITSU project.

It will take advantage of the different level of video encoding and transcoding modules in order to adapt video content either at server level or during video streaming within the network.

To validate the usage of these solutions, the project will use a number of network technologies such as fixed wire LAN (Ethernet), wireless network (WIFI, WIMAX, LTE, etc.) and also it will address various kinds of user terminals such as PC/Laptop, Connected TV, TV with set-top boxes, Tablet PC and Smartphone with varying performance and video technical characteristics.

The **security related demonstrator** is based on Mobile Monitoring System (MMS) □ a service-oriented mobile surveillance platform. A prototype scenario refers to the real use case of supporting police departments or other public institutions with the ability to remotely monitor selected areas from both fixed and mobile surveillance installations.

Main results

MITSU results will be targeted toward numerous areas of technical innovation. In addition to this MITSU will provide solutions for the convergence of different technologies.

Technical innovation:

The MITSU project will achieve various level of technical innovation either as component (software or hardware) as well as technologies for various usages:

- Convergence of Broadcast, Telecom and Web technologies within a common set of components and tools, in special for cloud services
- Minimisation of processing complexity regarding video transport and adaptation with potential impact of a lower energy consumption
- Better video codec expertise applicable over wireless communication
- QoS and QoE for better Video encoding and transport
- Converging technologies to be used in multimedia and video surveillance application

Innovation in technology convergence:

Technologies for video surveillance and multimedia were generally based on different concepts:

- While multimedia application are fully inter-operable with standard software technologies supporting various video format, video surveillance are based on highly dedicated hardware with specific video format,
- While video surveillance are low bit rate video compression (less than 2 Mbit/s), multimedia application are generally high quality with software decoding on high multimedia PC

Impact

MITSU will reinforce the Networked Media sector in Europe by proposing alternative solutions and optimisation, so that the sector will become more competitive on the international market. It will provide power- and bandwidth-efficient communications for communities of various sizes enabling people to stay connected with their related social groups in a more trustful manner.

This new communication architecture should enable the deployment of new services for an ageing society consuming more personal services, dealing with health, safety or entertainment. It is a growing new market which is open to the MITSU consortium and its service platform with respect to energy and communication resources, with the opportunity to evaluate it at the European level before starting its commercialization.

About Celtic-Plus

Celtic-Plus is an industry-driven European research initiative to define, perform and finance through public and private funding common research projects in the area of telecommunications, new media, future Internet, and applications & services focusing on a new „Smart Connected World“ paradigm. Celtic-Plus is a EUREKA ICT cluster and belongs to the intergovernmental EUREKA network. Celtic-Plus is open to any type of company covering the Celtic-Plus research areas, large industry as well as small companies or universities and research organisations. Even companies outside the EUREKA countries may get some possibilities to joine a Celtic-Plus project under certain conditions.

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