

MONALIS

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- Alcatel-Lucent – Nokia España SA, Spain
- Creanord Ltd., Finland
- Elisa Corporation, Finland
- INDRA Sistemas, Spain
- Instituto de Telecomunicações, Portugal
- Mint Media sp. z o.o., Poland
- National Institute of Telecommunications, Poland
- Netplaza Oy, Finland
- Networker QoS Oy, Finland
- Orange Polska S.A., Poland
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Project Website

www.celticplus.eu/project-monalis

Monitoring and control QoE in large scale media distribution architectures

The MONALIS project focuses on the implementation of architectures and management of advanced communications infrastructures, such as the distribution of multimedia content with ubiquity in the Internet of the Future, which require large-scale traffic management solutions.

Main focus

MONALIS focuses on managing the quality of the experience in the content distribution on Internet communications of future networks. To this end, user-based management capabilities will be provided by monitoring, analysing, measuring and estimating the quality of the Over-the-top multimedia content experience. On the other hand, mechanisms for its implementation in content distribution networks will be established in order to efficiently manage services with maximum user satisfaction. Since users are the main players in the multimedia sector, measuring the customer experience an essential task.

Approach

The MONALIS project will target heterogeneous QoE that covers a wide range of Internet of Things (IoT) multimedia devices, which are important for content broadcasting over future communication networks. The gradual migration of applications, communications, and network systems to cloud-based architectures impose new challenges, especially to large-scale media distribution systems. In this context, MONALIS will tackle these challenges by providing a QoE-based management through understanding, measurement, analysis, monitoring, and estimating QoE on a large heterogeneity of IoT multimedia devices. This will help heterogeneous cloud-based media distribution providers to adapt, control, and manage the services in an efficient way with a high user satisfaction.

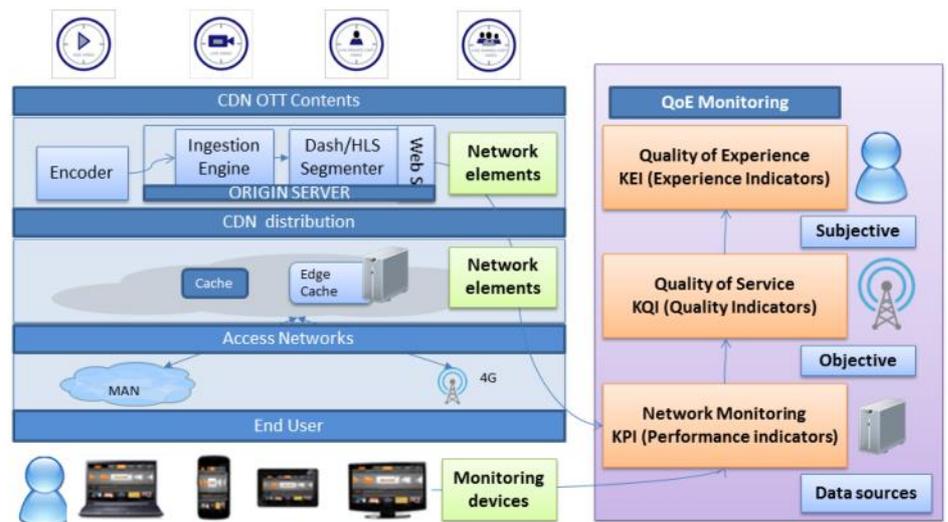


Figure 1: Architecture of MONALIS project

Main results

The MONALIS solutions will contribute to Future Service Platforms development paradigm. The scalable, efficient and QoE-controlled open environment for multimedia content delivery is a key factor for future services deployment, which strongly rely on high quality media experience. It is crucial to provide it in the over-the-top manner, which will support the concept of global service delivery and enable third-party applications deployment.

The expected impact of MONALIS will improve European industry in the field of next generation large-scale multimedia services, the underlying network management technologies for QoE assurance, as well as contributions to standardization bodies and fora. MONALIS will contribute to the Celtic Integrated systems approach with lab trials, integration work and field tests.

The main results of MONALIS project are:

- ◆ To provide new evolved monitoring techniques and tools for QoE evaluation and analysis relevant for overall customer satisfaction specifically for large scale technologies, where network-aware supervision methodologies are applicable.

- ◆ To provide measurement platforms making data available from all network levels from low level packet information up to data about end user experience
- ◆ To provide an experimental evaluation of video-on-demand distribution system with QoE monitoring and exchange of QoE-relevant data between actors in the delivery chain

Impact

As currently constructed, the transport network supports Internet traffic, VoIP and video over the Internet, but the quality-of-experience (QoE) for each of these services is limited. MONALIS is taking a step forward by proposing to put QoE at the centre of the delivery architecture and making everything to hover around the QoE. MONALIS is expected to impact the QoE-based delivery landscape for years to come. The QoE for broadband end users is a primary driver for their satisfaction, loyalty and adoption of new applications. The challenge for today's media actors is to measure and quantify the business opportunities and revenue impacts of personalized QoE, one of several high value network capabilities. Increased Internet access speeds created the breakthrough for end users to embrace online content. As broadband became ubiquitous, social

media expanded beyond simple instant messaging and texting to music, gaming and YouTube downloads. Higher broadband speeds improved the quality of experience, which in turn, encouraged applications and content providers to develop innovative new applications - for 'everything'. Higher broadband speeds have enabled 'free' or 'nearly free' consumption of online video and cloud computing services. With advancements such as high definition video and 3D video streaming, the need for improved quality of service (QoS) will only increase. As end user expectations for a richer experience continue to grow, the impact of QoS on end user QoE and the implications on media cloud provider business model can be assessed through a large array of criteria, from jitter, latency, clarity, delivery within multimedia applications to video clarity, immediate starting, and no stuttering during playback for video consumption.

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 inter-governmental 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 join a Celtic-Plus project under certain conditions.

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