MultimEDia transport for mobIlE Video AppLications

Video is a major challenge for the future Mobile Internet which was not designed with video requirements in mind. The project, including partners from Portugal, Spain, Italy, France, Germany and Israel, will address current limitations and will tailor the future Internet architecture to efficiently support video traffic.

At A Glance: MEDIEVAL

MultimEDia transport for mobIlE Video AppLications

Project Coordinator

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The consortium consists of a careful mixture of competences and profiles, including one of the top manufacturers in the telecommunications market, 3 major operators, an innovative video solutions provider, in addition to 2 research institutes and 2 universities with worldwide recognition.

Duration: *July 2010 – June 2013*

Funding scheme: *STREP*

Total Cost: *€5,4 m*

EC Contribution: *€3,5 m*

Contract Number: *INFSO-ICT-258053*

Main Objectives

Video is a major challenge for the future Internet. This traffic type is foreseen to account for close to 90% of consumer traffic by 2012. However, **the current mobile Internet is not designed for video** and its architecture is very inefficient when handling video traffic.

It is the vision of this project that the future Internet architecture should be tailored to efficiently support the requirements of this traffic type. **Specific enhancements for video** should be introduced at all layers of the protocol stack where needed.

The figure in the next page visualises MEDIEVAL's vision stressing what we foresee as the necessary **evolutionary path for a truly video-for-all philosophy**.

Following this vision, MEDIEVAL aims at evolving the Internet architecture for **efficient video transport**. The proposed architecture will follow a **cross-layer design** that, by exploiting the interaction between layers, can raise performance to values unattainable with individual developments.

MEDIEVAL aims at evolving the Internet architecture for efficient video transport, following a cross-layer design.

The technology developed by the project will be designed taking into account the **requirements of network operators for commercial deployment,** and will aim at improving the Quality of Experience by users as well as reducing the costs for operators.

MEDIEVAL technology will be developed in a **testbed** that serves as a proof of concept of the project results as well as a basis for future commercial deployments.

FUTURE NETWORKS

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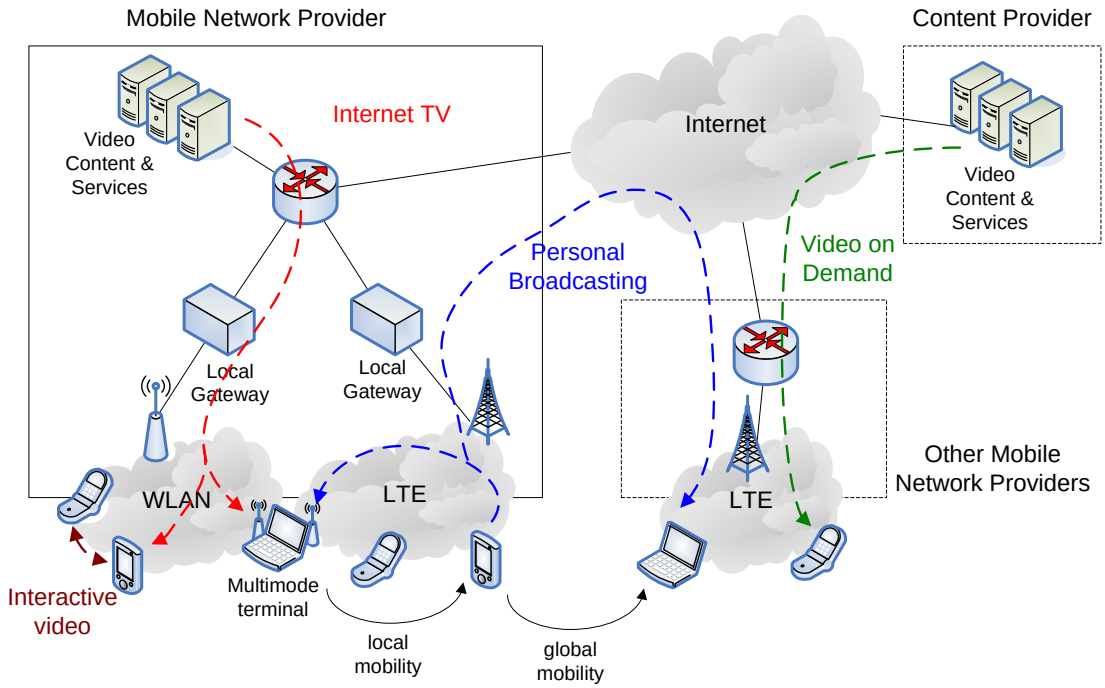
Technical Approach

The key components of the MEDIEVAL architecture are illustrated in the figure on the right. The proposed architecture comprises the following five key functionalities:

- Interaction with the underlying network mechanisms to allow **video services** optimally customise the network behaviour.
- **Enhanced wireless access** to optimise video performance by exploiting the features of each available wireless technology.
- Novel dynamic **mobility architecture** for next generation mobile networks adapted to video service requirements.
- Optimisation of the **video transport** by means of Quality of Experience driven network mechanisms, including caching and network support for P2P video streaming.
- Support for **broadcast and multicast** video services by introducing multicast mechanisms at different layers of the protocol stack.



MEDIEVAL vision

Key Issues

The proposed architecture will address the following five key issues:

- Specification of an interface between the **video services** and the underlying network mechanisms.
- Enhanced **wireless access** to optimise video performance.
- Design of a **novel dynamic mobility architecture** adapted to video service requirements.
- Optimisation of the **video delivery** by means of Quality of Experience (QoE) driven network mechanisms.
- Support for **broadcast and multicast video services,** including Internet TV and Personal Broadcasting.

Expected Impact

Video services are a very promising business case. One key goal of the project is to propose an **operator-driven architecture,** resulting in an integrated video solution that can be **implemented by an operator** and offered to its customers.

The research conducted in MEDIEVAL will also aim at **strengthening current mobile core and video solutions,** resulting in both IPR generation (when applicable) as well as dissemination of these results in prestigious scientific fora.

The project will follow and **contribute** to the **main standardisation bodies** such as 3GPP, IETF and IEEE, which have already detected the need for video enhancements.