

The MEDIEVAL Project (MultiMEDia transport for mobile Video AppLications)

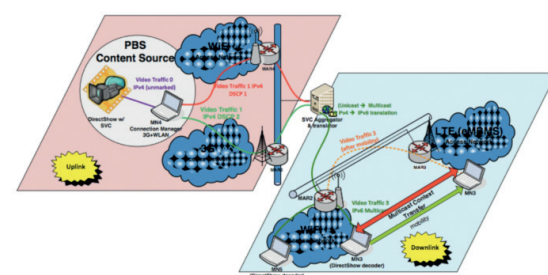
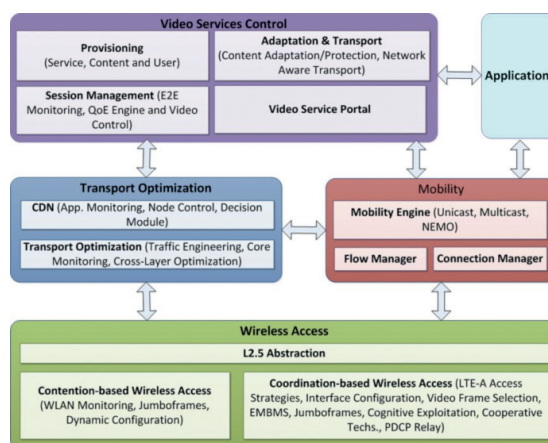
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The MEDIEVAL project was a FP7 EU research project, which started in July 2010 and finished in July 2013, which focused on the problems faced by mobile operators when confronted with the expected huge traffic increase caused by the explosion of video services. The project aimed at providing novel solutions that can be fed into existing network solutions for mobile operators based on future evolutions of the 3GPP Evolved Packet System (EPS) architecture. To address this problem, the project proposed a set of mechanisms that individually provide enhancements in the efficiency of video transport while cumulatively exploit their cross-layer functionalities to boost performance. The mechanisms targeted in this project include enhanced wireless support (with general abstractions to address heterogeneous wireless technologies), improved mobility (to allow opportunistic handovers across technologies), improved video distribution (with embedded caches in the network), and flexible video service provisioning and control (exploiting the interaction with video applications). These mechanisms can potentially be incorporated separately to future cellular networks, which allows for multiple evolution paths towards the deployment of the MEDIEVAL architecture, which considers an integrated framework that includes all these mechanisms.

The Instituto de Telecomunicações, was a decisive contributor into key areas of the project, composing the framework architecture, mobility management, multicast aspects, L2.5 and contention-based wireless access abstractions. Two important pieces of open-source software were implemented as well, in the form of ODTONE (<http://atnog.av.it.pt/odtone>), an open source implementation of the IEEE 802.21 Media Independent Handovers standard, and OPMIP (<http://atnog.av.it.pt/opmip>). Moreover, extensive experimentation activities were conducted in the Advanced

Mobile wireless Network playground (AMaZING - <http://amazing.atnog.av.it.pt>), a set of 24 interconnected wireless nodes deployed on the rooftop of the Instituto de Telecomunicações premises in Aveiro.

The Instituto de Telecomunicações was also responsible for one of the three project demos, focusing on the Personal Broadcasting Service and showcasing sender side multilink transmission and session management, cross-layer architecture enhanced with intrinsic IP multicast awareness, MIH-boosted multicast session initiation and context transfer and scalable layered multicast.



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FIGURE 1
The MEDIEVAL Architecture.

FIGURE 2
MEDIEVAL Personal Broadcasting Service Demonstrator