

Networked and Electronic Media (NEM) Networking Session at the IST event

Next Multimedia Content Delivery

Interoperable network infrastructures that enable seamless multimedia networking: Converging telecom, broadcast and home networks and Development of terminals that adapt to various networks

Background and Scope

Today, the mobile, voice, data, video and IP networks are separated, in most cases sharing only the transport infrastructure. There is little or no service interaction, resulting in e.g. multiple customer profiles, multiplied operational costs and missed opportunities for creating more integrated services. A high upfront investment is required every time a new service is introduced, since end-to-end network build-out is needed before any revenue can be generated.

The future network will accommodate seamless end-to-end multi-media communications across a complex combination of network constituents such as personal area networks, body area networks, home networks, fixed access networks, mobile access networks, metro networks and core networks. This will involve interactions of multiple types of consumer devices and services via a broad variety of both wired and wireless access technologies, and result in an increase in the number of sessions with multiple flows per session, and in the bandwidth demands. The complex business relations between the multiple players in the value mesh will impact the network architecture evolution.

The challenges

In the future, an innovative service platform enabling this diversity of multimedia applications and services over heterogeneous access will be required for seamless and cross-platform and cross-operator integration management of the involved technologies, such as seamless, hardware-independent integration of different network technologies, flexible coupling of a diversity of services and service providers and their link-up to technologies, and structures for realisation of services supporting seamless network access and flexible service coupling.

The future network thus is a complex ecosystem to be designed taking into account all actors. The network is formed by the convergence of many players: network operators, service providers, terminal suppliers, IT suppliers, content providers, service aggregators. That part has to be addressed as well as the End-to-end QoS in order to provide a solution compliant to the customer needs (QoS vs. price) and fitting the future business plan.

The Projects and Consortiums required

Projects needs to address the followings topics :

- **Network architecture** : what comes after internet ? Network Directory service, knowledge plan, ubiquitous Gigabit access, Convergence of Broadcast, broadband and mobile for networked MM world
- **Home networking** : Very High Digital Rate Home Area Network (VHDR-HAN), QoS over the HAN, service seamless portability from one device to another one,
- **Network based intelligence** for end-to-end service control : Seamless, hardware-independent integration of different network technologies including cross-platform integration of services, Flexible coupling of a diversity of services and service providers, Support of High number of sessions and flows, high capability of media processing,
- **Seamless service provisioning** : developing integrated service provisioning control platform, Develop handover and roaming mechanisms to seamlessly operate services for consumers on the move, A centralized mechanism for collecting and processing cross-layer and cross-domain information from heterogeneous networks and terminals, Dynamic composition of services from possibly a large number of finer grained services of which behaviour and characteristics depend on context, proximity, time
- **Network planning and organisation** : Flexibility and dynamics, in conjunction with development of new offers (content production, services, networking, etc.) means development of distributed planning and optimization., New dimensioning solutions for the new network architectures need to be investigated in order to permit and efficient deployment of the networks
- **Ubiquitous multimedia networking** : Security mechanisms, simple and reliable, Service models offered on a ubiquitous fashion, Billing and management models, Use complexity that can put the users apart

Consortium should include telcos, manufacturers, SMEs and University in order to take into account the constraints of all the stakeholders of the value chain. Of course, results of the projects should be tested by real users in order to check the acceptability

The results

Expected results of those projects should offer a new network world able to support the convergence of services at home and elsewhere. The user becomes the center of gravity in the Telecommunications world. As such, future networks need to reach them anytime, anyplace what implies that extended connectivity to suburban and rural areas have to be taken into account in network designs. New access networks will need to be developed to cover the last meters in geographically disperse areas in a way that Telecom operators could consider it as a business case.