

**InterMedia**  
**(Interactive Media with Personal Networked Devices)**



<http://intermedia.miralab.unige.ch>

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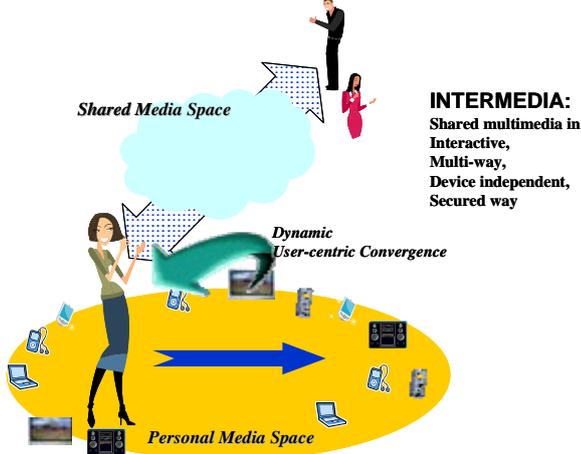
**Main objectives :**

INTERMEDIA's objective is to generate a shared vision of user-centric multimedia services for modern nomadic people, who has a high level of mobility and is connected to network for most of the times.

INTERMEDIA seeks to progress beyond home and device-centric convergence toward truly user-centric convergence of multimedia. Our vision is The User as Multimedia Central: the user as the point at which services (multimedia applications) and the means for interacting with them (devices and interfaces) converge. Key to our vision is that users are provided with a personalized interface and with personalized content independently of the particular set of physical devices they have available for interaction (on the body, or in their environment), and independently of the physical space in which they are situated. Our approach to this vision is to investigate a flexible wearable platform that supports dynamic composition of wearable devices, an ad-hoc connection to devices in the environment, a continuous access to multimedia networks, as well as adaptation of content to devices and user context.

There have been considerable efforts to have Audio Video systems and applications converge, in particular in home environments with homes as spaces of convergence, and for nomadic users with advanced mobile devices as points of convergence. These trends are important but also have limitations that we seek to address and overcome: home-centric systems fail to account for increased mobility and the desire to provide continuous service across spatial boundaries outside the home; device-centric convergence, e.g. in 3G phones, supports nomadic use but provides a very limited user experience as no single device and interface will fit many different applications well.

### Conceptual Illustration of INTERMEDIA



A possible scenario for a platform considered could be as follows: a user starts playing a music album at home with a fixed audio player, continues in the car with the embedded audio system and then with an mp3 player, a mobile phone or simply earphones while walking. In other aspect, a simple desk phone could be networked in ubiquitous environment through the wearable platform, to act as a personalized phone with address books, a personal scheduler interface, a radio music player interface, a SMS messenger, etc. During this kind of daily activity, different devices are used while sharing the same session and content. Each device will provide personalized interfaces to access and manipulate contents.

#### Technical approach :

In a modern nomadic life, the usage of media is not limited by spaces. New interactive mobile devices like mobile phones, portable music players, PDAs (Personal Digital Assistant), and DMB (Digital Multimedia Broadcasting) devices extend the space where people can access multimedia contents. The concept of user-centric convergence will provide freedom to a modern nomadic person without the requirement to carry a range of mobile devices by providing personalized access to media regardless of device types. It will extend personal media spaces for modern nomadic life by removing spatial constraints in our daily activities.

To realize the user-centric convergence, technological advances in a wide range of research domains need to be achieved under the common vision. Europe has built its excellence of research activities in the related domain followed by strong industrial activities from world-leading companies. When it comes to the integration of those achievements in a new concept of convergence, research activities have been separated by focusing on each individual issue without the global strategy of convergence. True multidisciplinary knowledge is required to realize the innovative idea, which includes mobile networking, human-centered interface, and multimedia content manipulation. INTERMEDIA aims to build a multidisciplinary research society to develop a path towards the true innovation we are targeting.

INTERMEDIA will achieve the level of integration in two way approaches. The most important activity of INTERMEDIA is developing and providing common platforms to develop, test and integrate current and future achievements on related technologies. The other approach is building a set of multidisciplinary research groups for each major research elements.

#### Key issues :

- Secured Dynamic Networking: seamless continuity in multimedia sessions over heterogeneous networked devices through transparent handover of multimedia sessions and accompanied contents
- Multimedia Content Management: adaptation of multimedia data with respect to varying usage environments
- Personalized Interface: integration of interface concepts and technologies across different paradigms including mobile multimedia, wearable computing (on the body interfaces), ubiquitous computing (everywhere interfaces), and context-aware computing (interfaces adapting to user situations)

### Expected impact :

#### - Dissolving technical boundaries

The main objective of research activities in INTERMEDIA is dissolving technical boundaries of different disciplines related to the Personalized Media Environment. INTERMEDIA will have a strong impact in restructuring the research capacities and technological skills in the wireless wearable home media field. Wireless wearable home media is now based on a large spectrum of fundamental domains, comprising networking, wireless communication, wearable devices, security, interaction, multi media and computer graphics. The evolution of the domains is now conditioned by how research teams of these different fundamental domains will be able to communicate. In previous collaborative research experiences (including previous related projects), many technical difficulties have been experienced mainly due to the different characteristic in media type with different protocols, different range of networks and device capabilities, and different user models which require knowledge on totally different areas such as networking, wearable interface, computer graphics, video, image processing, signal processing, etc. Those differences have been preventing the realization of new innovative concepts, because of limited expertise in the related areas. To accelerate the emergence of home media technology, it is of paramount importance to allow the sharing of these technologies and the reuse of the huge amount of work it represents.

#### - Spreading innovations

The expert knowledge and innovations made in the Network will be carefully categorized and presented to public to enhance efficiency of research activities inside the network and to provide broader accessibility on the new concepts and technical innovations. INTERMEDIA will provide international research infrastructures for research activities in the field of wireless wearable home media, which will be developed and maintained also for the needs of the outside-the-Network community. This infrastructure and related activities will not be restricted to the period of EU funding, but they will establish sustaining cooperation among research institutions in Europe.

#### - Opening a new market

Researching suitable technologies that targets humans and their multimedia oriented environment will generate new vision for the people to discover the comfort of flexible living while accessing all related multimedia content and devices around them. By this way, new areas of development will be oriented in marketplace both for hardware devices and relevant software technologies. New business models will be developed and the barriers for development of this technology with its relevant extensions will be reduced.

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