ITEA
INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

PROJECT PROFILE

Ambient Ecologies

Facilitating a user centred evolution to Ambient Intelligent environments

As digital technologies become increasingly pervasive we might, within the next decade, find ourselves living with almost invisible, intelligent interactive systems: an 'ambient intelligence' that will form a part of our everyday existence and ecology. The implications of this development are far reaching for individuals, businesses and communities. Ambient Intelligence might lead to great opportunities. But as with all new technologies, we know that the technology itself is neither good nor bad. It is how we might use it that will make the difference. At the moment, the main challenge is to guarantee that the new ambient intelligence technologies are appropriate, sustainable and meet people's individual and social needs.

The vision
The AMEC project explores how an ambient ecology of products, services and content that is adaptive and intuitive to use can support domestic life in the connected home of the future.

In our understanding and vision ambient ecologies, ideally, have the following characteristics:

- They enable the user to create, shape and maintain a personal and dynamic arrangement of connected products and services that are interrelated with each other, the environment and the members of the household, supporting the user's lifestyles and well being in a meaningful way.
- The ambient ecology is present in all aspects of daily life, presenting an outwardly simple and intuitive presence to its users. Its heterogeneous components evolve intelligently in a synergistic way with the daily activities, values and changing needs of the members of the household that it serves.
- As a whole, its flexibility and relevance provides business opportunities that add value for people and, therefore, to the whole value network.

Making sense to people
People, human desires and needs are the starting point and focus of the AMEC project. Users are involved in the very early development phases so to build a detailed understanding of their daily activities and interactions and design solutions that are relevant, culturally specific and individually meaningful. Within AMEC people centred design methods will be used and developed further. Personas will be used as a tool to communicate the collected user insights and to support product and idea creation throughout the innovation process. The multiple encounter approach provides us

AMEC (ITEA 03016)

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European Software Institute
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Ibermatica
Ikerlan
Institut Cerdà
Mobilera
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Countries involved
The Netherlands
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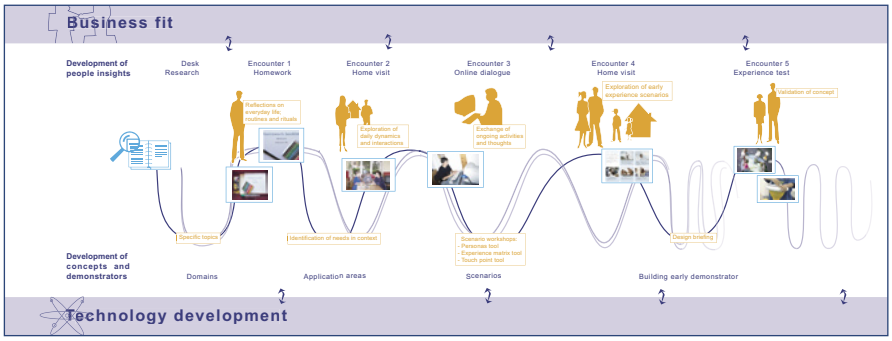

The multiple encounter approach

with insights into the dynamic contexts in which people interact with the system. A dynamic interaction model enables us to capture the subtle changes and trends in a person's increasingly complex life. It helps to understand which applications add value to people's lives and how they add that value, both now and in the future.

A layered component oriented architecture

The AMEC architecture will enable the construction of pervasive computing applications and services by integrating heterogeneous software and hardware components. The AMEC architecture consists of two layers: the hardware/communication layer and the operating system/ middleware layer. Within the first AMEC layer is the infrastructure, including sensors, embedded devices and computers (artefacts) with the needed communications. In the second layer are the OS and middleware: all the services, features, applications links and software structures that make it possible to offer users a high level interface for building applications. To facilitate a relationship between the layers and the external interface that's offered to user applications, an interoperability mechanism will be developed as well as an ontology. This ontology provides a shared means (a standardised common language) for communication and collaboration between artefacts, even though different manufacturers might produce them.

People and objects in context

Demonstrating the vision

Within AMEC, experience will build while proof-of-concept demonstrators will be constructed. System components will be evaluated against the potential use scenarios, based on the findings of the people-based research studies. Within the extended home, applications will focus on scenarios around changing lifestyles, family living and communication and health and wellness. The demonstrators will be vehicles to evaluate the potential experiences that users can gain with such systems.

Business opportunities that add value

The key factor for success will be whether the new products and services provide added value user-experiences. AMEC will generate innovative commercial products in the field of home control, consumer health and wellness, communication as well as new components and building blocks for ambient intelligent solutions. Its methods and tools can be used in a variety of applications. Applied to the consumer products of the future they will give Europe a strategic advantage in this new field.

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ITEA - Information Technology for European Advancement - is an eight-year strategic pan-European programme for pre-competitive research and development in embedded and distributed software. Our work has major impact on government, academia and business.

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ITEA-labelled projects build crucial middleware and prepare standards, laying the foundations for the next generation of products, systems, appliances and services. Our projects are industry-driven initiatives, involving complementary R&D from at least two companies in two countries. Our programme is open to partners from large industrial companies, small and medium-sized enterprises (SMEs) as well as public research institutes and universities.

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