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INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

PROJECT RESULTS

A new generation of user interaction

Making information available to everyone, wherever they are

While a broad range of interactive digital services is available, they have not fitted well with the way people operate. Making good use of technology has not been easy enough and requires much thought and knowledge from the user. AURORA set out to develop intuitive and simple access to interactive devices and services. The resulting platform works across different services on a broad range of hardware while being easily adapted to all contents.

Until recently, most people were using personal computers (PCs) with dial-up modems to access the Internet. This limited interaction to the computer keyboard and mouse, or similar devices. However, major changes have speeded up access to information and provided new ways of interacting with the content. These advances include:

- Computers connecting to Internet at increasing data rates using asynchronous digital subscriber line (ADSL) technology, cable systems and wireless local area networks (WLANs);
- New wireless devices such as personal digital assistants (PDAs) and tablet PCs making Internet access ever easier and more convenient;
- General packet radio services (GPRS) enabling high speed connection to mobile hardware such as phones and PDAs;
- Display of ever richer content on mobile phones through the multimedia messaging service (MMS) and colour screens; and
- Increasing use of Internet-based communications on business premises.

As a result, new methods of interaction are needed to enable everyone, regardless of skill, experience and background, to communicate with people and information resources when desired.

Defining next generation interaction

AURORA defined a software platform that extends the user interface, enabling many modes of interaction. It offers users the choice of speaking on a phone, perhaps with a wireless headset, or communicating by means of an input device such as a keypad or a keyboard. As feedback, users can listen to audio devices and/or view information on graphic displays such as TV screens. This concept is called *distributed modality*.

A major objective of the AURORA platform was to enable *simplified and effective access to user resources*. Access is adaptive since the system is optimised to the

AURORA (ITEA 03005)

Partners
Bull
EADS Defence and Security Systems
EADS Secure Networks
France Telecom R&D
Intesi Group
Philips CDS
Telefónica Móviles España
XandMail

Countries involved
Belgium
France
Spain
The Netherlands

Start of the project
January 2004

End of the project
June 2006

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user's situation in terms of input and output devices, environment and preferences. Users can also manipulate and manage messaging and address books using their preferred hardware – PC, PDA, fixed or mobile phone.

At the heart of the project, the AURORA concept was adapted in different ways to include:

- ***Multimodality services*** with a multimodal engine providing multilingual text-to-speech, speech-to-text and voice-recognition technologies;
- ***Identification & authentication services*** enabling identification of users and retrieval of their profiles;
- ***Presence services*** registering user presence and showing availability to others;
- ***Communications & personal information services*** providing basic multimodal email, instant messaging, MMS, presence and address-book features;
- ***Identity services*** managing distribution of heterogeneous data related to user identity and providing a common interface to the other components;
- ***Security of the architecture*** such as session initiation protocol (SIP) and Web Services;
- ***Use of a multimodal platform in the context of secure networks*** such as professional mobile radio communications.

Major project outcomes

Dissemination
- Four publications
- Five presentations at conferences and workshop (W3C, Web Archiving, Conferences on multimodal interfaces, Global Forum)
- One workshop

Exploitation

Four new products:
- Multimodal platform for new advanced services
- Messaging, including back-end with universal storage capabilities
- Next generation of remote control with gesture
- Interworking platform for presence management

Three new services to provide for external use:
- Messaging services for professional mobile radio
- Multimodal authentication
- Security for web services and SIP architecture

Standardisation
- Three contributions to standardisation bodies (W3C and IETF)

Patents
- Two applications filed (France Telecom and XandMail)

Major innovations

Major *innovative* achievements are:
- A single software platform manages synchronous, asynchronous, voice and data communications;
- Combination of distributed modality and session continuity;
- No software needs to be deployed to user devices;
- New services can be introduced with new languages and protocols;
- Users enjoy new multimedia ergonomics;
- Entry to a unique and secured knowledge database with a new generation of streaming access;
- Introduction of a new universal multimedia storage technology, unrelated to the transport mode;
- Management of user profiles linked to user availability and user communications environments;
- Services can offer multiple authentication means including voice, keyboard and smart card;
- All communications exchanges in a secure way.

Highly scalable platform

AURORA has resulted in a software platform that can serve as the foundation for developing highly scalable, server-oriented systems. These will be used to provide personal information services offering multiple modes of user interaction as well as multimedia communications and storage facilities.

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