The Callas Consortium:

ENGINEERING Ingegneria Informatica S.p.A. - Italy (Coordinator)
VTT Technical Centre of Finland - Finland
BBC, British Broadcasting Corporation - United Kingdom
Studio Azzurro Produzioni S.r.l. - Italy
XIM Ltd. - United Kingdom
Digital Video S.p.A.- Italy
Humanware S.p.A. - Italy
NEXTURE Consulting S.r.l. - Italy
University of Augsburg - Germany
ICCS, National Technical University Of Athens - Greece
Faculty of Engineering, University of Mons - Belgium
University of Teesside - United Kingdom
Helsinki Institute for Information Technology - Finland
TELECOM ParisTech - France
Scuola Normale Superiore - Italy
University of Reading - United Kingdom
Fondazione Teatro Massimo - Italy
Human Interface Technology Laboratory - New Zealand

…as the unforgettable Maria Callas introduced a more "emotional" approach to the opera music, the CALLAS project has been introducing a new concept of emotionally-enriched natural interaction…

For further information:

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and join the C³,
the CALLAS Community Club!

Credits : Studio Azzurro Produzioni S.r.l

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Emotionally involved

Conveying Affectiveness in Leading edge Living Aadaptive System

WHAT IS CALLAS ABOUT

CALLAS is a European research project, carried out by a leading-edge consortium of eighteen companies and research institutions, which has been delivering multimodal affective and reactive interfaces for Digital Media, ranging from Art to Culture and Entertainment. Humans naturally communicate in a multimodal way combining different "senses" like gestures, movements, speech, non-verbal expressions, all of them conveying emotions and affectiveness.

The multimodal affective interfaces developed within the CALLAS project are paving the way for allowing computers and artificial systems to handle emotions and affect , and this will result in a more natural and user-centric human-computer interaction paradigm. Digital Media represent promising application fields for multimodal affective interfaces, since here the user interaction is emotionally very rich.

AN INNOVATIVE APPROACH

CALLAS is bringing forward cutting-edge scientific and technological innovation at different levels:

• A library of software components -the CALLAS Shelf- for the emotional processing of single inputs (speech, gesture, gaze,…) has been made available

• These components can be adaptively combined and fused together in order to semantically detect the user's emotional state in real-time (CALLAS Multimodal Fusion)

• Different reactive applications for Digital Media, generating an affective output dynamically linked to the detected user state, can be developed on the CALLAS Framework

• An Open Source plug-and-play environment of re-usable software components are being delivered for the rapid prototyping of multimodal applications, reducing complexity for programmers, artists and practitioners.

REAL WORLD APPLICATIONS

The project, started in 2006, is now entering into the final user validation phase, in which some real life prototypes have been delivered.

These currently span from:

• An Augmented Reality artistic installation, the "E-Tree", in which the behavior and appearance of the digital tree artwork dynamically change depending on the affective state of the interacting user

• To a real life theatrical show, "Galileo in Hell", realised by Studio Azzurro partner and performed in July 2008 at Teatro degli Arcimboldi in Milano, where the whole stage becomes an interactive sensitive environment, allowing the spectators to emotionally interact with the installation through their behaviour

• To the MusicKiosk, a museum installation for music edutainment, which engages visitors of the Museum of Musical Instruments at Accademia Nazionale di Santa Cecilia in Roma, in creating different music compositions, depending on the user affective state detected in real time

• To the Interactive Opera, a public installation set up at Teatro Massimo (Palermo, Italy), empowering young people to actively interact and affect the behaviour of the opera characters, as rendered within a cartoon interactive opera.

OUTCOMES

CALLAS technologies are contributing to:

• Reshape completely the interaction process between humans and Digital Media: they can be used by the Digital Media industry for capturing user attention, increasing involvement and helping to make the interaction between humans and media a real unique and unforgettable experience.

• Turn promising research lab prototypes into mature applications in Digital Media

• Lay the foundations for reusing CALLAS technologies in different application fields, ranging from car driver attention monitoring, to affective call-centers, adaptive e-learning systems, and assistive technologies for social inclusion of disadvantaged people, thanks to the modularity of the CALLAS Framework.

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