

# Serenoa



Serenoa provides support to create user interfaces (UI's) that are aware of the context and that continuously reacts to its changes. Such UI's are adapted according to the devices, tasks, preferences, and abilities of users, improving their satisfaction when compared to traditional or manually designed UI's.

# **AT A GLANCE**

#### **Project title**

Multidimensional context-aware adaptation of Service Front-Ends.

# **Project coordinator**

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#### **Partners**

Université catholique de Louvain (BE) CNR-ISTI (IT) SAP AG (DE) GEIE ERCIM (FR) Fundación CTIC (ES) W4 (FR)

## **Duration**

September 2010 – September 2013

# Total cost/EC contribution € 5.1M / €

# Programme FP7-ICT-Call 5

Website www.serenoa-fp7.eu

## Scope

While most of the existing applications still target at a pre-defined context of use, of an able-bodied user, with a Desktop PC interacting in a stable environment, currently, the end users interact with different devices, using multiple modalities and from varied situations (e.g. while cycling, driving, shopping). Although the contexts significantly vary, stakeholders, including developers and designers, are not able to find support that is complete enough to aid the generation of applications that are suitable for end users to interact in their environments. As a result the development process is delayed and complex, and the applications launched often target at a specific context of use. Serenoa aims at extending the state-of-the-art of adaptation, by providing support for stakeholders to develop applications that can successfully adapt their front-ends according to the characteristics and constraints posed by multiple contexts.

#### Achievements

To provide support for adaptation, Serenoa achievements encompass a series of tools and methods, including: reference models, languages, authoring environments, prototypes, evaluation criteria, frameworks and toolkits. With such tools and methods, Serenoa provides an innovative platform to support the development of applications that consider adaptation. By using the outcomes provided by the project, stakeholders (as developers and designers) can find guidance to better define, develop, implement, evaluate, and maintain their applications, facilitating and accelerating the development of the UI adaptations.

## **Applications**

Multiple application domains can benefit from adaptation and from Serenoa outcomes, including applications targeting at: mobile terminals, smart phones, tablet PC's, and web. The contexts considered also vary, for instance concerning users with different profiles, preferences and impairments, devices with different modalities, dimensions and capabilities, and environments with different locations, noise and light levels. For example: the user interface can be adapted in a warehouse picking scenario, in which the end user interact with a head mounted display and auditory modality; or in a medical scenario, in which an avatar can be used to mediate the end user interaction, using a simplified language to improve the accessibility of the system.

## Impact

Serenoa has a threefold impact: not only the industry and the academia can benefit

from the outcomes of the project, but also the standardization bodies. Industry can use the authoring environments, apply the frameworks and use the toolkits produced within the project. Academia and researchers can benefit from the reference models, languages and problem spaces defined within Serenoa. The standardization bodies can benefit from a unified terminology, a standard approach and also find progress in the definitions of model-based concepts for the design of user interfaces.

#### **Benefits**

The results produced by Serenoa provide benefits for both end users and stakeholders (including UI designers, software engineers and architects, developers, and project managers). For the end users, the user interfaces able to adapt themselves according to the context, tend to provide higher quality levels, i.e. the enhancing usability and the accessibility levels. improving the performance and the user satisfaction. For stakeholders, support can be found during the whole SDLC, since the definition and design process, through development and implementation, until the evaluation and maintenance. As a consequence, the context-aware applications generated with Serenoa support tend to have a shorter time-to-market, a better cross-device consistency and an easier interaction.

