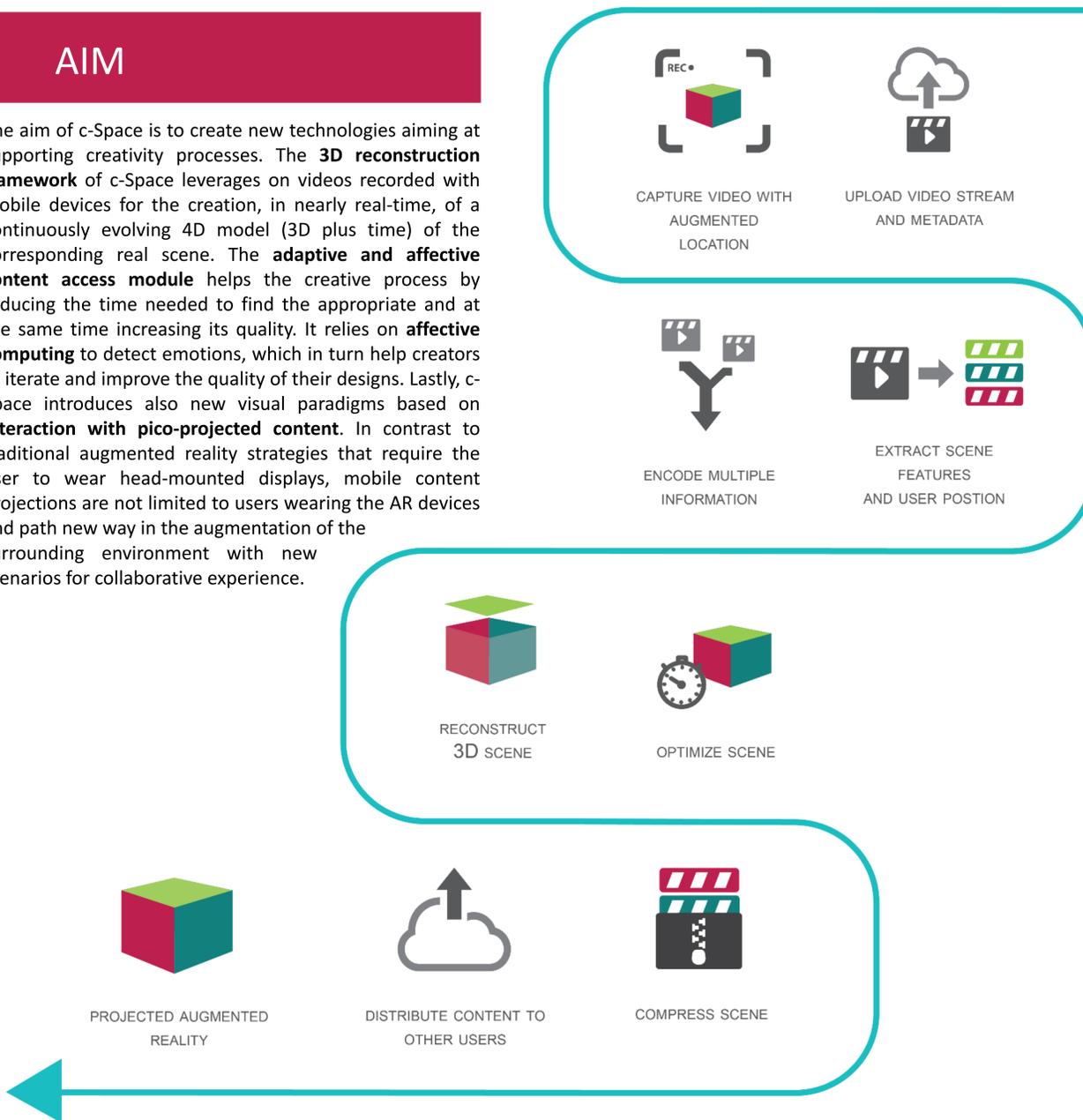




## AIM

The aim of c-Space is to create new technologies aiming at supporting creativity processes. The **3D reconstruction framework** of c-Space leverages on videos recorded with mobile devices for the creation, in nearly real-time, of a continuously evolving 4D model (3D plus time) of the corresponding real scene. The **adaptive and affective content access module** helps the creative process by reducing the time needed to find the appropriate and at the same time increasing its quality. It relies on **affective computing** to detect emotions, which in turn help creators to iterate and improve the quality of their designs. Lastly, c-Space introduces also new visual paradigms based on **interaction with pico-projected content**. In contrast to traditional augmented reality strategies that require the user to wear head-mounted displays, mobile content projections are not limited to users wearing the AR devices and path new way in the augmentation of the surrounding environment with new scenarios for collaborative experience.



## DEMONSTRATORS

### ARCHITECTURE AND URBAN PLANNING

The objective of this demonstrator is to deliver a software framework to professionals in urban planning and architecture that facilitates the access to sets of historical and morphological data through a number of interoperable web-services. The access and use of these web-services is fundamental to a proper "augmentation" of the real scene. For example, these web-services allow urban planners to easily integrate 3D digital reconstructions into their presentations, which are automatically created from images and videos, and that are functional to tasks that involve visual inspection, design iteration and discussion of real landscape.

In addition, this demonstrator explores new forms of collaboration throughout "augmented" scenes to enable people with different backgrounds to join participative and cooperative process.

### MOBILE ADVERTISEMENT

This demonstrator that targets mobile advertisement take advantage of augmented reality to offer brands a unique new opportunity to interact with consumers. The objective of this demonstrator is to rely upon on projected AR paradigms to deliver a richer experience and to create more innovative forms of advertisement through projection - around the users - of interactive content on the real world, perfectly "blended" within the real scene.

### INDIVIDUAL CONTENT CREATION & CULTURAL TOURISM

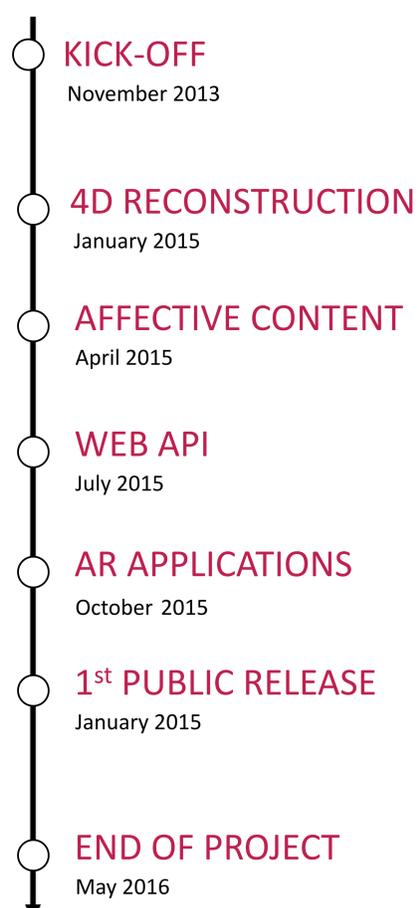
The cultural tourism demonstrator is a software experiment that can be used by SMEs operating in the cultural tourism industry to create highly personalized cultural routes throughout a real space. By using the c-Space, content creators are able to access digital content, reference it to the real space, and cross-link it to create a network of geographical and logical hyperlinks.

## S&T OBJECTIVES

c-Space addresses the strategic Objective ICT-2013.8.1 "Technologies and scientific foundations in the field of creativity" targeting the topic "a) Creative experience tools". The precise list of S&T objectives is:

- **Objective 1:** To allow interactive near real-time 4D reconstruction of real scenes from pictures and live video streams coming from multiple users.
- **Objective 2:** To deliver a mechanism based on crowdsourcing that promotes reconstruction of 3D scenes for different creative purposes.
- **Objective 3:** To ensure the very high-quality visualization of content within an Augmented Reality application for portable devices (smartphones, tablets) that accounts for real geometry of surrounding space.
- **Objective 4:** To deliver a more immersive experience and create new visual computing paradigms based on interaction with content projected in the real environment that surrounds the user.
- **Objective 5:** To facilitate intuitiveness and user friendliness through a dialogue-based interaction founded on affective computing paradigms.
- **Objective 6:** To develop a system that can be run on consumer mobile technology, either already available today or that is set to reach the market shortly (e.g. pico-projectors).
- **Objective 7:** To define a business model that can ensure low-cost 3D modelling software as a service, thus allowing cost-effective, IT-asset-free operations, facilitating adaptation to varying market demand.
- **Objective 8:** To develop low-level technology that is then further specialized to respond to requirements of individual creators as well as specialized SMEs in 3 domains: architecture, advertisement, cultural tourism.
- **Objective 9:** To demonstrate c-Space in the following real life scenarios with involvement of the following SME partners of the project.

## TIMELINE



## CONSORTIUM



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