



The aim of c-Space is to leverage the trend of Internet-based sharing of “casual” videos recorded with mobile devices, by developing a new generation of low-cost creative tools that turn the real-space surrounding us into the backdrop for new forms of creative content. In c-Space, pictures and video streams recorded through mobile devices are sent to a central service that creates, in nearly real time, a continuously evolving 4D model (3D plus time) of the corresponding real scene, which can also be used as the “virtual stage” for ubiquitous media-sharing. By shortening the 3D content creation pipeline, c-Space fills a gap that is not covered by any technology on the market, which yields significant savings in terms of time and resources for individual creators or creative industries (operating in 3D game content creation, architecture, advertisement, cultural tourism, etc).



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A new generation of low-cost creative tools, to turn the real-space surrounding us into the backdrop for new forms of creative content.



Demonstrators

Although the technology developed in c-Space may be applicable to a range of different scenarios of relevance for the creative industry, the following three demonstrators have been identified to test c-Space within a real-world scenario.

Architecture and urban planning

Creativity is, inter alia, what planners and architects need while they are thinking of a complex urban plan, the requalification of an urban area or, on a different scale, when they are designing how to reconstruct an old rundown construction. They often work in teams, comparing ideas with a vision, to assess how their projects fit within the urban, historical, and cultural landscape context where the projects will be inserted.

The challenge of the demonstrator is to provide professionals in urban planning and architecture the possibility to access a set of historical and morphological data through a number of standard web-services, which are used to retrieve data to "augment" the real scene scene. This demonstrator will allow studying collaborative solutions throughout "augmented" scenes that make it possible for the various people to join a participative/cooperative process. This process makes it possible to assess possible projects within the real landscape as automatically reconstructed by c-Space.

Mobile advertisement

Advertisement is the most important component of marketing. Mobile advertisement, especially in the mobile app domain, has created new business models where advertisement is often based on visual features embedded within an app. In the years to come, advertisement will be challenged by personalisation with regard to the user's preferences and location and engagement.

Starting from this assumption, c-Space mobile AR system will allow simple authoring of "augmented" advertisement content that can be used to generate interaction with the "real" scene acquired. With this demonstrator, c-Space will rely upon on projected AR paradigms to deliver a richer experience and create more innovative forms of advertisement through projection -around the users- of interactive content on the real world, perfectly "blended" within the real scene.

“Fostering new creative paradigms based on recording and sharing “casual” videos through the Internet.”

Individual content creation & cultural tourism

When planning a trip, travellers need to make a selection of the sites they want to visit from a large number of options. Standard tourist packages are losing appeal, as tourists increasingly seek dynamic and individual solutions that are tailored to their needs, interests and resources (time and money).

Starting from this viewpoint, we will develop a software component that can be used by SMEs operating in the cultural tourism industry to create highly personalised cultural routes throughout a real space that is transformed into the “backdrop” for various forms of “augmented” hypermedia. Through c-Space clients, content creators will be able to access digital content, reference it to the real space, and cross-link it to create a network of geographical and logical hyperlinks.

This information network is used by c-Space to create highly personalised “cultural paths”, highly dependent on personal profiles, through “smart” routing between sites, locations or activities, by accounting for psychological factors and relationships between (cultural) objects or sites, relaxation or entertainment according to the location and preferences of the user throughout a cultural tour.

Project Overview

GRAPHITECH

Graphitech is a no-profit applied research institute which conducts research and development activities in the broad technology area of advanced computer Graphitech, mixed reality and large scale visualization systems for geographical data. Graphitech has been contributing towards the transfer of knowledge between the research sector and industry, Fondazione Graphitech has been involved in several RTD and industrial projects both at the EU and at the national level.

Project Funding

FP7 / ICT of the European Commission
Technologies and scientific foundations in the field of creativity
Identifier: FP7-ICT-2013-10
Duration: 30 months



Consortium

The consortium is composed by eight partners:



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”. More precisely the list of S&T objectives is:

- **Objective 1:** To allow interactive near real-time 4D reconstruction of real scenes from 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 visualisation 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 specialised to respond to requirements of individual creators as well as specialised 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.



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