VVOS AUDIOVISUAL GUIDES

ANIMATED VIRTUAL VISION AND COMBINED INDOOR AND OUTDOOR POSITIONING

ACTISA

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What is an audiovisual Guide?

The majority of us have ever used an audio-guide in a museum or monument. These devices display audios that provide information about the environment in which the user is located. Usually the number of the audio is indicated in a signboard .

Audiovisual guides VVOS, **besides conventional audio,** include virtual vision of **3d animated objects**, **photo galleries**, **texts**, **thematic videos and 360º videos** concerning the environment. The identification of the environment is automatically computed by the application.

Audiovisual Guides VVOS are **android applications that have been specifically designed for monumental environments, for museums and natural or urban environments**. The Audiovisual Guide VVOS integrates the application CADIOP for positioning and the application VVOS for artificial vision, and also includes **games** (question-answer-challenge), allows taking pictures merging virtual and real objects that users can get in digital format, and 360º videos.

A photograph taken by VVOS

How to use the Audiovisual Guides VVOS?

The VVOS audiovisual guides work on a tablet or smart-phone with an Android operating system and requires a digital compass and accelerometers, WIFI and GPS and a minimum of 2 GB RAM. We currently use the Nexus tablet.

When an user starts a visit, the Guide informs about the environment in which the user is located and indicates the available virtual 3d displays, audios, texts or thematic videos that are available concerning that environment. The user can select the desired audiovisual element.

These tablets include a protector and can be hung around the neck if desired.

For monumental environments of great dimension it also includes a backpack and a 3500 mA autonomous battery, facilitating the use during the entire visit. In this backpack the user will also find instructions, plans and elements concerning the games that are deployed. An eyewear is also provided when 360º videos are displayed.
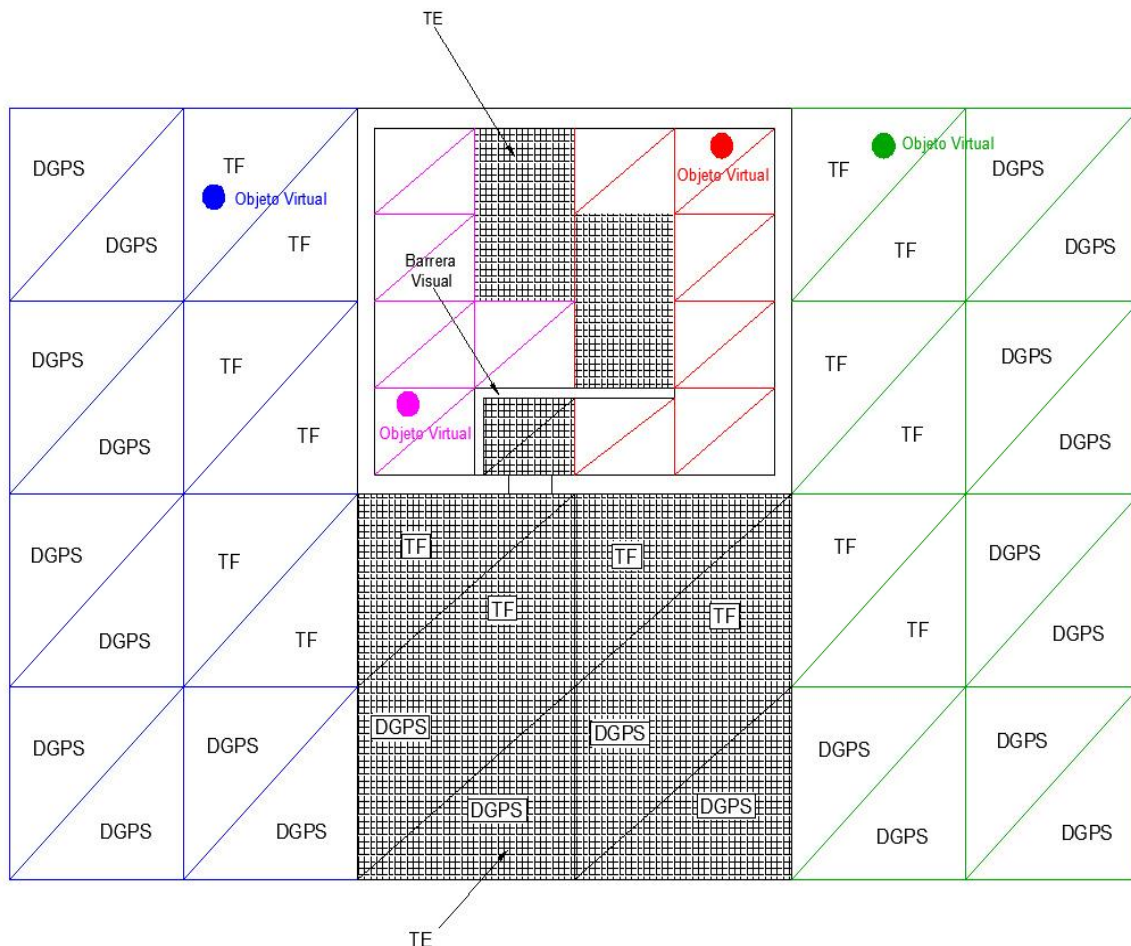
Positioning. Software CADIOP

The CADIOP software has allowed the development of the MDEVV concept, (Digital Model of the Virtual Vision Space).

CADIOP is the only software in the world able to carry out the computation of the positioning outdoor by differential correction GPS, and at the same time indoor by WIFI. The user's position data is obtained dynamically every 0.1 seconds.

The users will be able to see geo-positioned objects according to their location in coordinates.

Positioning. Software CADIOP

Micro-computers that include WIFI and GPS are used to generate the MDEVV spaces.

The creation of MDEVV spaces is done with the CADIOP Desktop software and the devices must be properly located.

The devices can be located connected to the network, with rechargeable autonomous batteries or with solar power.

Its location can be made hidden in ornamentation, lampposts or smart solar tiles can be used.

The Virtual Vision. Software VVOS

The development of virtual films, (scene sequencing), where the virtual characters move and interact around the user is one of the main contributions of VVOS. Scenes follow each other and the characters and virtual scenarios disappear to make way for the next scene.

The VVOS system is currently implemented for the conversion of objects and animations made with Autodesk 3DS software.

VVOS includes software for the design of virtual spaces and another vision software that is integrated into the Audiovisual Guide.
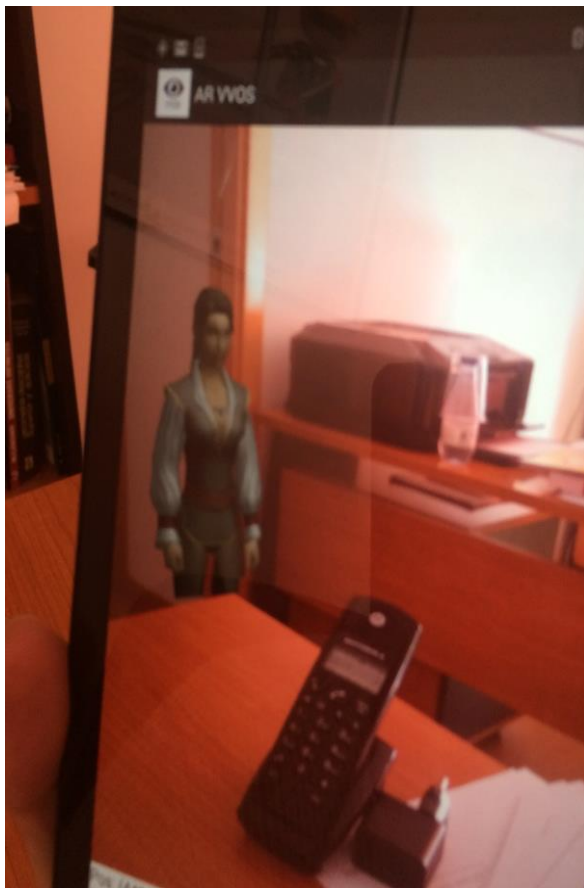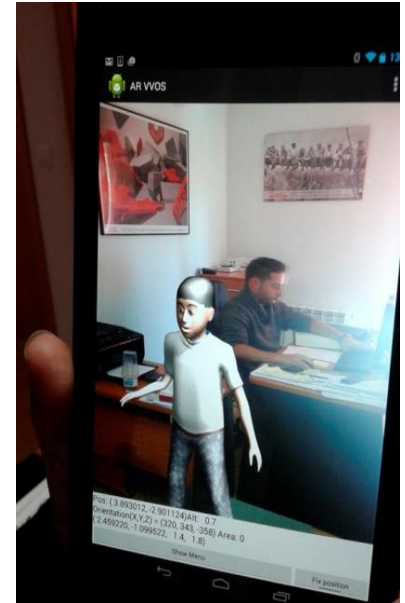
The software allows to implement virtual shadows according to the direction of the sun for each day and each hour.

Another of the most interesting features is the possibility of hiding virtual objects by real objects, improving the integration of digital elements in the real vision.
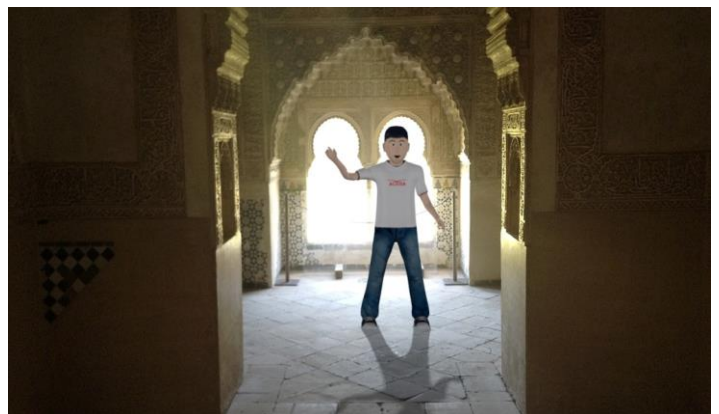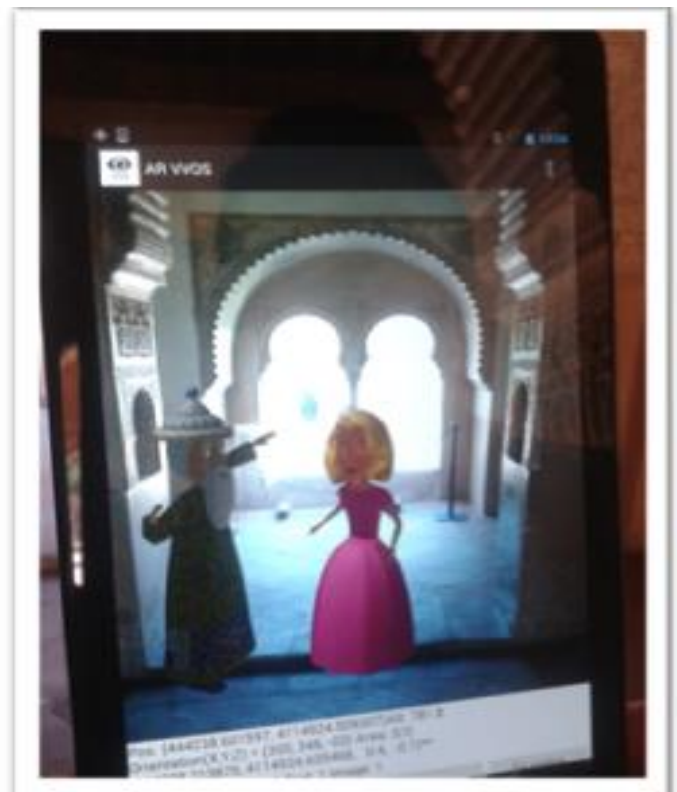
The Virtual Vision. Software VVOS

The sequence of scenes around the users allows the creation of a new way for approaching the past, developing themed tours, and targeting specific audiences such as children.

Below we can see several scenes of the Washintong Irving's tale that were represented in the month of September 2015 in the Tower of the Three Infantas of the Alhambra in Granada.

In the first scene the Virtual Guide called "Alhamar Columbus" makes an introduction to the story. After this first scene the second appears in which the King asks for the Christian princess' hand, but she denies.

The rest of the scenes complete the story with a duration of 4 minutes and a half.
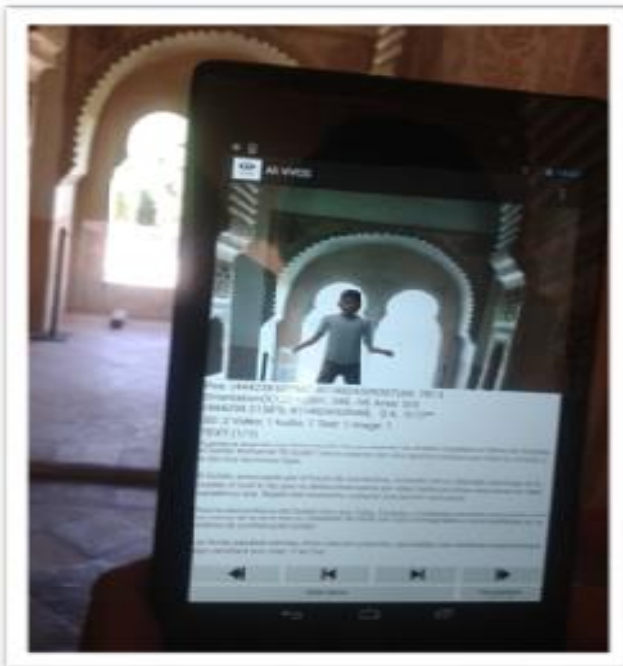
The virtual characters are printable and could be purchased as dolls in the same stand in which the rental of the devices is made .

The Virtual Vision. Software VVOS

The inclusion of texts for the deaf, audios for the blind, thematic videos or photo galleries, 3d information positioned indoor or outdoor and 360º videos, define the capacity of the system.

Interactive games

The games that are included in the VVOS Audiovisual Guides are of multiple choice type and grant points to accurate answers. Points can be added to achieve a certain challenge, (a specific threshold will be set).

These games encourage the attention of the users, especially of the children's audience, and they are also oriented to be developed in family and by the school community.

Some elements that complement the game can be added to the backpack, and a prize can be given to users who achieve the challenge.

Snapshots for the memory

The Audiovisual Guides allow taking photographs that integrate the virtual image that is displayed at each moment, making possible to take amazing digital photographs for the memory.

These photographs may be requested when returning back the audiovisual equipment in the rental stand.

Design of 3d objects and characters

VVOS performs the conversion of objects, characters and 3d animations carried out with Autodesk 3dS. The characters will be customized to the criteria of the client or the theme of representation. High-precision laser scanning of real objects or people can also be done.

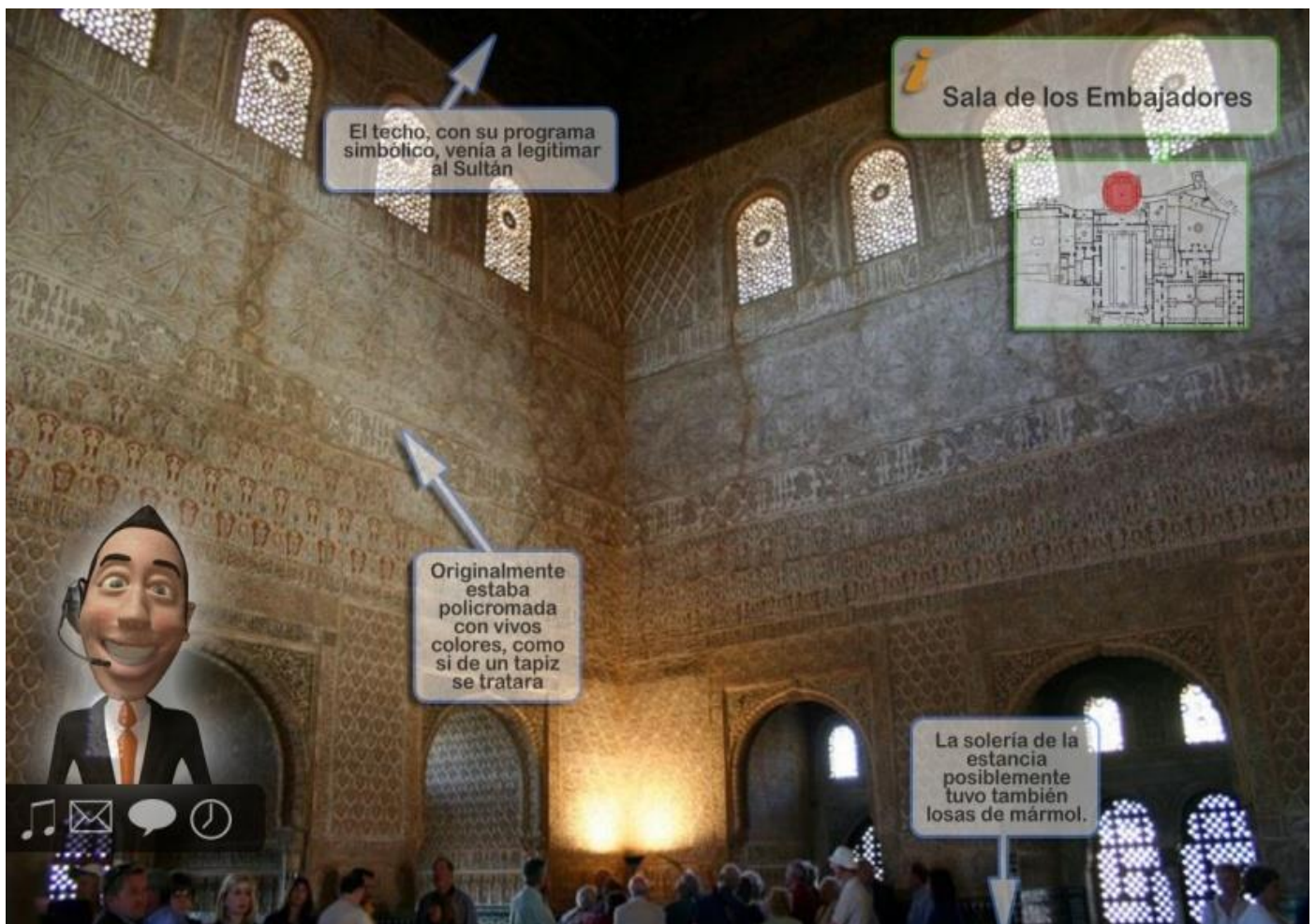Diseño de personajes AR
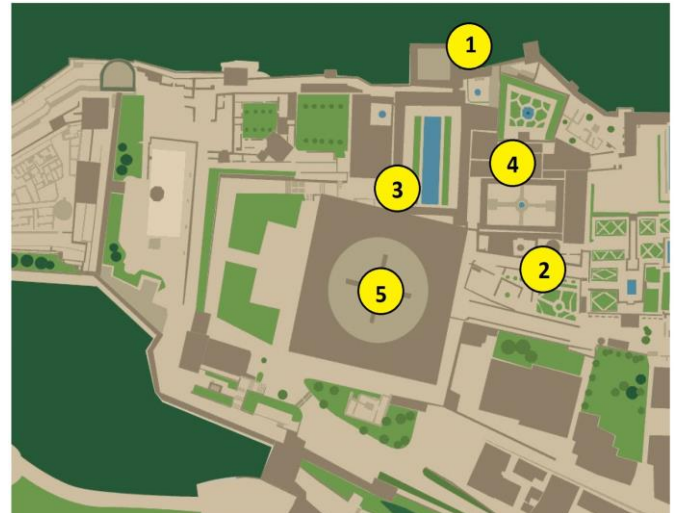

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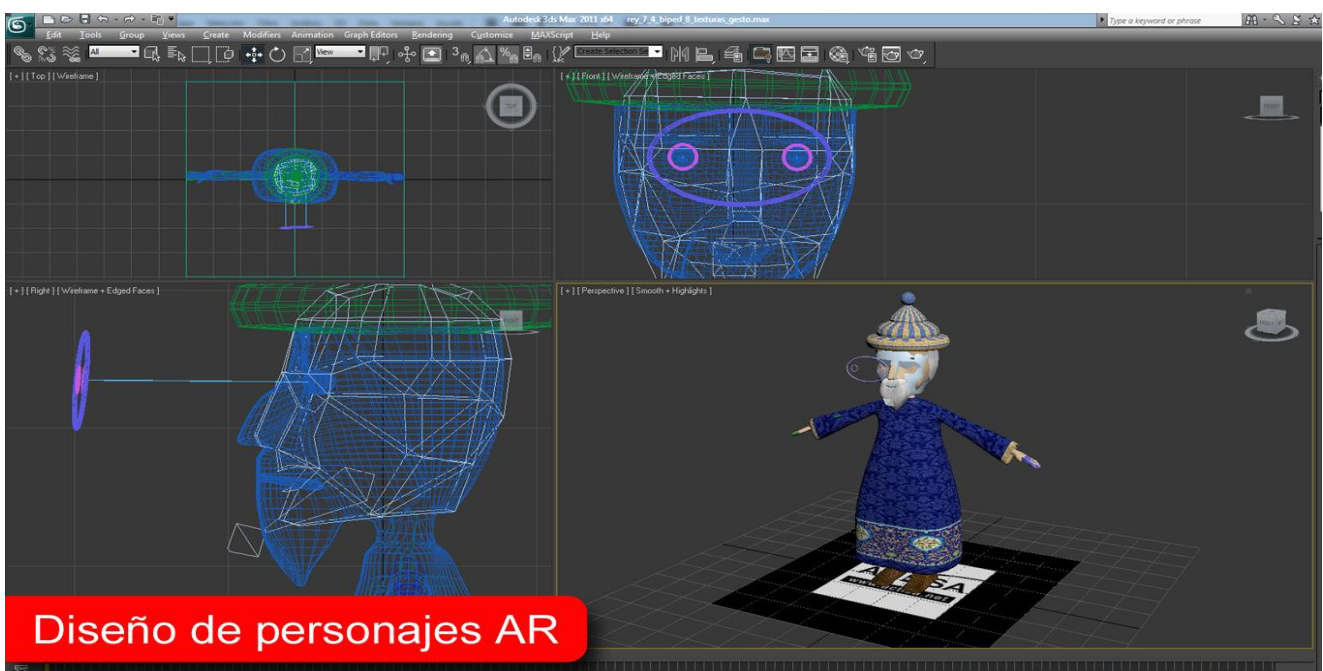
THE GENERATION OF THEMATIC ITINERARIES

The application of the VVOS Audiovisual Guide allows generating thematic itineraries in monuments, museums, geo-parks or natural parks, or cities. These itineraries can be addressed to different audiences and a map with the location of each of virtual space is provided.

USE FOR COMMERCIAL APPLICATIONS

The VVOS application allows creating virtual environments inside commercial premises creating new experiences. Its implementation in restaurants for instance, allows listening to the suggestions of a "virtual chef" or playing videos about the preparation of meals, or texts with the recipes. Its use in big shopping centers allows the location of the most interesting offers, etc.

VIRTUAL RECREATION OF ARCHEOLOGICAL SITES

The reconstruction of ruins is of special interest for the community of archaeologists and historians as we have already contrasted in several works.

Its incorporation in itineraries at archaeological sites allows a better approximation to the past.

USE IN CIVIL WORKS

The origin of software VVOS and CADIOP lies in its application to the project and design of civil works. The application for instance allows visualizing how a bridge will be seen in its real location, or the visual impact that a clearing or an embankment can generate. At the level of urban infrastructures it allows the location of urban pipelines under the subsoil. Its combined use with design software and 3D printing has allowed the generation of a new way of conceiving civil works projects.

USE IN ARCHITECTURE AND INTERIOR DESIGN

The VVOS application will be an essential tool for the design of architectural constructions, not only after the project completion, but during the period conception. In the same way, the application is ideal for interior design. The client can locate on the street level, observe the facade of his future building, and even virtually access inside it and observe the interior.

USE IN INDUSTRY AND TRAINING

Undoubtedly the use of VVOS in training will provide new ways of transmitting knowledge.

Its use in industry facilitates the start-up of new production lines, the repair and assembly of equipment.

MARKETING AND INFORMATION IN THE SMART CITY

It is possible to display virtual information making use of the VVOS audiovisual guides. These deployments can incorporate virtual marketing.

Marketing deployments can be associated with tourist itineraries depending on the line of business .

The company ACTISA is already working on the incorporation of VVOS into the application for Smart Cities IRMAPP.

In the near future, every milestone in the city, including vehicles such as buses or taxis, will be able to broadcast their location with information that users can receive on their smart-phones.
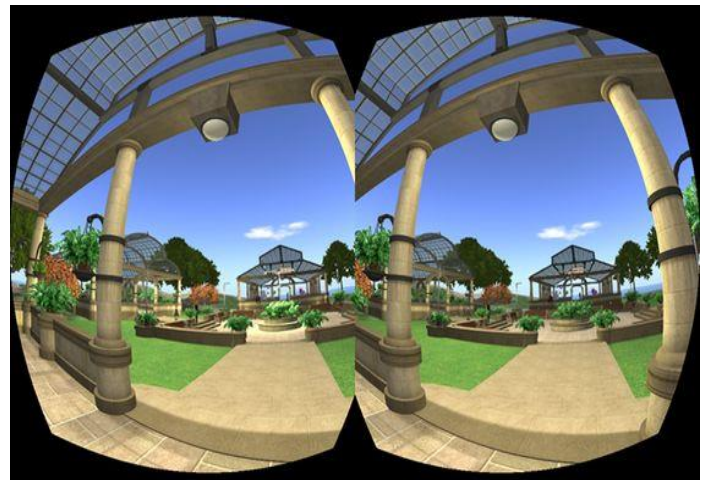
INTEGRATION OF STEREOPTIC VISION

360º videos can be displayed making use of an eyewear that is provided inside the VVOS backpack.

These videos are shot making use of 360º 4k cameras.

Spherical films can be visualized in any direction. With VVOS the user can visualize historical scenes in the same place where it happened, constituting an authentic journey into the past.

Virtual avatars can be designed for anyone to send messages. Even you can create your virtual I.

GET TO KNOW US AND TRAVEL TO THE FUTURE,
OR TO THE PAST!

INCREASE THE ATTRACTION OF YOUR MUSEUM, MONUMENT OR NATURAL PARK. MAKE YOUR CITY AN AUTHENTIC SMART-CITY.

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FONDO EUROPEO DE DESARROLLO REGIONAL
UNA MANERA DE HACER EUROPA

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ACTISA TE ABRE UN MUNDO DE POSIBILIDADES.
DESARROLLA TU EMPRESA, ÚBICALA EN UNA NUEVA ERA.
INNÓVATE DE LA MANO DE ACTISA.

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