GIS Geo-Virtual Reality Interactive tools for participatory planning: the Barreiro case-study.

II International Conference and Exhibition on Geographic Information
Estoril Congress Center
May 30- June 2, 2005

North East South West
INTERREG IIIC
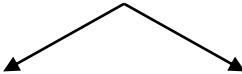
YDREAMS

Barreiro
Câmara Municipal

Introduction

"Participatory Spatial Planning in Europe - PSPE" - Support of participatory planning by Geo-Virtual Reality.

Main Goal

Improve spatial information exchange in participatory regional planning through renewed interactive approaches that make use of geo-visualization.

How to motivate the general public to participate:

Make their concern about

The object of participation

Make their participation

an easy and quick process

Emerging Tools in Public Participation

Human Computer Interaction

The computer game industry has been developing a variety of user devices, such as sophisticated joysticks, pads, steering wheels, pedals and even boards, which *lead to a more intuitive human-computer interaction* (HCI) than the one provided by mouse and keyboard.

Why this concept is not applied to public participation processes and opened to wide range of users?

Emerging Tools in Public Participation

3D Virtual Reality Systems for Public Participation

Several types of virtual reality systems that can be used for public participation in decision making processes.

Immersive Systems:
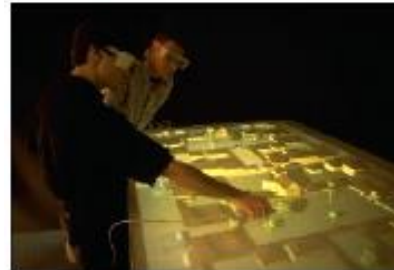
CAVE system

Immersa Desk

Workbench system

Infinity Wall

Non-immersive Systems:

Virtual reality in a desktop screen

The Proposed System - Barreiro Virtual

Barreiro - Portuguese case-study involved in the consortium

Municipality main objective is to apply new developed tools to improve public participation in urban planning projects.

Public Participation:

1. Polis ;

2. Revision of Municipal Master Plan;

3. Quimiparque Rehabilitation.

The Proposed System - Barreiro virtual

Virtual Landscape

Users can navigate through real-time data in realistic virtual scenarios over urban or rural areas interacting with a variety of objects to obtain information.

A keyboard, mouse or joystick enable users to move freely in space, increasing/decreasing navigation speed and interacting.

The Proposed System - Barreiro Virtual

Virtual flights can integrate many features:

- Location maps;
- Geo-referenced databases;
- Multimedia information;
- Pre-defined paths;
- View points;
- Navigation layers;
- Information layers;
- Orientation tools;
- Audio recording/reproduction of geo-information.

The Proposed System - Barreiro Virtual

Multimedia kiosk

Implemented for the support of the Barreiro master plan revision.

Users can explore a 3D environment in a specific area and obtain all relevant geographic information using
mouse/keyboard or a joystick.

The interactive kiosk has other functionalities, such as
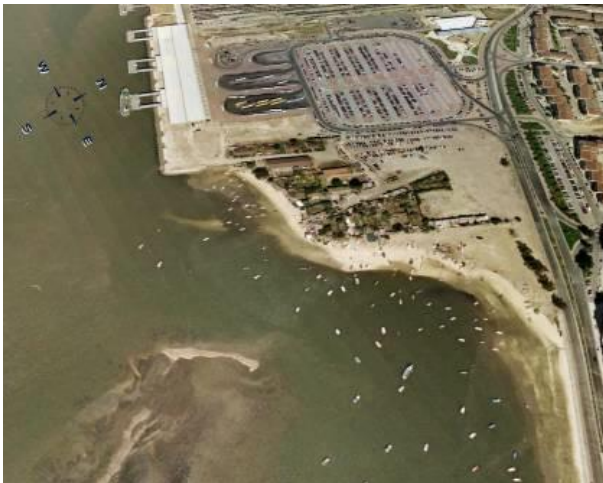geo-sound data input.

The Proposed System - Barreiro Virtual

Multimedia kiosk

Information available for the Barreiro case-study comprises 3D models of future urban interventions.

In the Barreiro case-study, a 3D model of a new projected urban area, which is integrated in the European urban requalification program called 'Polis' can be visualized.
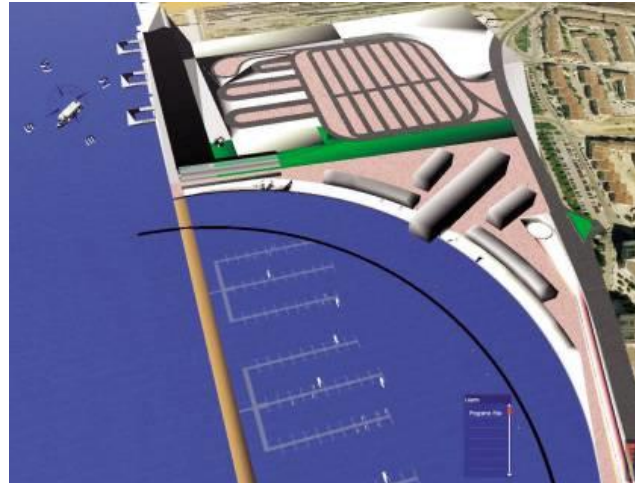
The Proposed System - Barreiro Virtual

Multimedia kiosk

Users can leave complains or comments using a microphone by indicating a geographical position on the kiosk desktop monitor.

Rec

Users can also hear those located comments in sound speakers attached to the system.

The Proposed System - Barreiro Virtual

Usability Test

This tool was first used in a public participation session in Barreiro municipality, in December, 2004.

The recorded sound files stay attached to a specific geographical area.

The system stores this information, and later the messages can be listened and Interpreted.

With this data, the results of a public participation session can be largely improved depending on the commitment level of the policy makers.

The Proposed System - Barreiro Virtual

A user complaining

That's what I want to say: Barreiro people have already pay the bill, now remove this garbage, take this out of here!

The Proposed System - Barreiro Virtual

Conclusions and Future Developments

The next phase in this work will be to perform more usability tests in future public sessions.

Using this tool proved to be an added value to the session and to further work.

The integration of this system in public places involves some modifications in the physical structure.

Namely, the microphone as to be hidden in the furniture, but his location must be some how identified for the sound recording.

Developments on web navigation for high resolution maps using wavelets technology.

Team

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