CT (City Tomography)

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Abstract

CT is a project to reconstruct an existing urban space as a 3D information city on the web. A visitor can browse the city with "building wall browsers" and communicate with other visitors.

Keywords: City Tomography, Information City, Geographical Structure, Space Communication, XVL, X3D

Project URL :
http://www.plannet-arch.com/ct/
http://www.sfc.keio.ac.jp/˜wakita/ct/ (mirror site)

1 Introduction

CT proposes an information browsing system based on a geographical structure of the city instead of a categorical structure of contents. A user of CT explores the city by "scanning" its urban spaces, just as in a computerized tomography (CT) of a human body. The information browsing system shows normally invisible aspects and internal structures of the city as texture images mapped to the walls and 2D texts connected to the walls. The system is developed by using XVL (Extensible Virtual world description Language)[Wakita et al. 2000], an extension proposal to X3D(Extensible 3D) [Web3D Consortium 2002].

2 Spatial Visualization

A 3D model of Ginza (approx. 1km long street and its surrounding) has been constructed to allocate spatially oriented information. Texts and images are mapped onto translucent walls of each building. The new city looks like an accumulation of thin leaves of information. A user can interact with a "building wall browser" to explore information about a specific place and building in the city as well as information on the World Wide Web. Each building wall accepts onMouseOver and click events by users so that they can further browse information and post their messages on the wall. At the same time, information on the wall will contain broader connections to the World Wide Web. User's location in CT is simultaneously represented on a 2D map. A snapshot of CT is displayed in Figure 1.

3 Spatial Communication

CT is not only a visual representation of a physical city but also a communication platform for multiple users. The space BBS, a site specific bulletin board system, is proposed for communication between visitors of the city (Figure 2). It is a message posting system on building walls. A user can read a message by other users and post his/her own message or a hyper linked URL. In this BBS, a place where the message is posted becomes very important as well as date/time or subjects of the communication. Please note that a multi-user environment of CT has not been implemented yet at this stage, and there are no active CT communities on the web.

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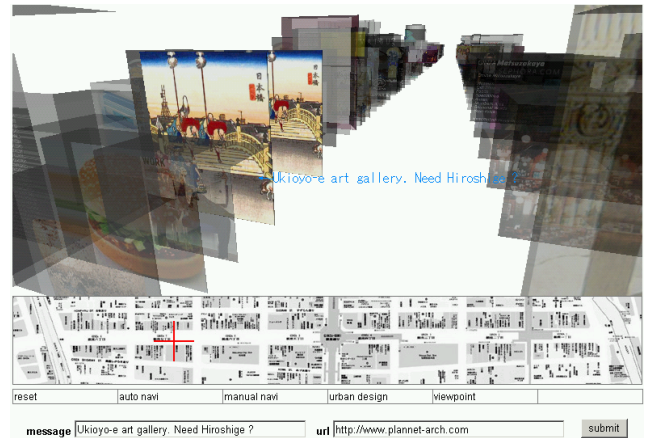
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Figure 1: Snapshot of CT

Figure 2: The space BBS

4 Conclusions

CT is a proposal to build a city on the web through a method of spatial visualization, communication and browsing. Our interest lies in how we can perceive data in the information space in relation with a cognitive structure of three dimensional space. Users will recognize information more intuitively through the use of spatial browsing. Our next goal is to develop a hyper-space browsing system in the information space.

References

WAKITA, A., YAJIMA, M., HARADA, T., TORIYA, H., AND CHIYOKURA, H. 2000. Xvl: A compact and qualified 3d representation with lattice mesh and surface for the internet. *Web3D-VRML 2000*, pp.45–51.

WEB3D CONSORTIUM. 2002. X3D (Extensible 3D) : New-generation open web3d standard. *http://www.web3d.org/x3d/*.