

Visualization/dissemination of 3D Cadastral Information

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SUMMARY

More and more countries in the world are developing 3D Cadastre. Cadastre is about making the information available to the public and therefore visualizing it on the web is very important to reach the potential users. However, 3D visualization is still a challenge!

Some of the main challenges are: occlusion, distortion, unbounded volumes, perception of position, size and shape of an object. Combining topography (earth surface and reference objects) and legal boundaries is a further challenge because occlusion issues rise with the growing number of objects shown on the viewer.

We therefore first investigate the requirements to obtain a proper, clear and not misleading visualisation of 3D cadastral parcels through a geo-web viewer.

We explore how to handle the above mentioned issues such as occlusion, distortion and ambiguous perception (in terms of position, size and shape) of objects while interacting with 3D cadastre. Also, techniques for combining the visualization of legal boundaries (cadastral parcels) and real world objects (topography) are analysed.

The overall technical architecture of a system for the dissemination 3D Cadastral parcels is presented, stating with the storage the data at the backend server (DBMS and webserver) and the possible encodings for data transfer (such as XML, JSON, glTF) to the client. WebGL based solutions at client side are preferred as these do not require the download of a plugin in the web browser, while still offering many well performing visualization and interaction options.

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