3D CADASTRE IN THE PROVINCE OF QUEBEC: A FIRST EXPERIMENT FOR THE CONSTRUCTION OF A VOLUMETRIC REPRESENTATION

Jacynthe Pouliot, Tania Roy, Guillaume Fouquet-Asselin, Joanie Desgroseilliers

Geomatics Department, 1055, avenue du Séminaire, Laval University
Quebec City, Quebec, Canada, G1V 0A6

Commission IV, WG IV/8

KEY WORDS: 3D cadastre application, data modeling, data integration

ABSTRACT:

The current cadastral system in the province of Quebec is a graphical one in the sense that it presents the limits and the official measures of the property on a 2D digital map. To be able to represent superimposed properties like condominium, the Quebec cadastre uses “le cadastre vertical” that is a polygon with a number that refers to an external complementary plan (PC). This plan shows vertical profile of the properties and a detail draw of each floor (private and common parts). A single PC-number could refer to hundreds of lots and plans depending on the geometric complexity of the building. The understanding of the spatial arrangement of all superimposed properties contained in the PC file is a tricky mental exercise. To help users of the cadastre vertical, a semi-automatic procedure is proposed that enables the construction of a volumetric representation from the PC image file. In this specific constraint situation, the various data processing steps are described starting with the vectorization (from image to vectors), the 3D modeling (the construction of the volumetric representation) and finally the data exchange. The ins and outs of every data processing, the time and efforts required to achieve each step are discussed, and we conclude with remarks made by the end-users about potential usages of such cadastral volumetric representation.

This contribution was selected in a double blind review process to be published within the *Lecture Notes in Geoinformation and Cartography* series (Springer-Verlag, Heidelberg).

Advances in 3D Geo-Information Sciences

Kolbe, Thomas H.; König, Gerhard; Nagel, Claus (Eds.) 2011, X
ISBN 978-3-642-12669-7, Hardcover
Date of Publication: January 5, 2011
Series Editors: Cartwright, W., Gartner, G., Meng, L., Peterson, M.P.
ISSN: 1863-2246