

Geographic information for Strasbourg : from historical land register to 3D GIS city modelling

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Abstract

The city of Strasbourg has a long-standing tradition of handling accurate and detailed geographic information. In fact, the department of land surveying was created in 1881 by the German government, in order to establish a new and modern land register for Strasbourg. These historical data were afterwards maintained and even extended during the seventies, with the creation of a regular surveying map covering the whole territory of the new-born urban district of Strasbourg. The benefits of maintaining precise and up to date geospatial information for urban planning, facilities and utilities networks management were identified at this period. Since then, this information grew more and more detailed and comprehensive. All the paper maps were digitized in the nineties along with the implementation of a Geographic Information System (GIS). This allowed a much more generalized use of geospatial data in all the departments of the district, for a wide range of purposes. Aerial photographs started to be acquired on regular basis and cross-border collaboration with the city of Kehl. Nowadays, the GIS of the city and eurometropolis of Strasbourg has become not only a powerful tool for technical management of the public services but also a strategical tool for decision making through the use of generalized and geostatistical data for spatial analysis and territorial diagnosis. These territory observations enable the collectivity to have a better understanding and a dynamic knowledge of the living conditions of its inhabitants and the way they are changing. One of the main developments in progress is the evolution from a 2 dimensions based GIS to a 3D GIS city modelling. The department of geomatics and territory knowledge is involved in collecting 3D data for this issue with various innovative technologies including laser and imagery point clouds, both aerial and terrestrial in a complementary approach. The 3D imagery is completed with a 3D semantic model based on terrain, buildings and vegetation data. From there, the other data of our GIS can be represented in the 3D scene using a 3D model library. This might be converging with building information modelling (BIM) in the coming years. This 3D city model is already in use for different purposes ranging from urban project or land-use planning simulations to environmental studies. The intuitive understanding of places allowed by 3D representations make them highly effective for getting information to inhabitants.

Categories

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Additional Fields

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