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SPATIAL MODELS FOR ARCHITECTURAL HERITAGE IN URBAN DATABASE CONTEXT

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Abstract. Despite the GIS (Geographic Information Systems/Geospatial Information Systems) have been provided with several applications to manage the two-dimensional geometric information and arrange the topological relations among different spatial primitives, most of these systems have limited capabilities to manage the three-dimensional space.

Other tools, such as CAD systems, have already achieved a full capability of representing 3D data. Most of the researches in the field of GIS have underlined the necessity of a full 3D management capability which is not yet achieved by the available systems (Rahman, Pilouk 2008) (Zlatanova 2002). First of all to reach this goal is important to define the spatial data model, which is at the same time a geometric and topological model and so integrating these two aspects in relation to the database management efficiency and documentation purposes. The application field on which these model can be tested is the spatial data managing of Architectural Heritage documentation, to evaluate the pertinence of these spatial models to the requested scale for the needs of such a documentation. Most of the important aspects are the integration of metric data originated from different sources and the representation and management of multiscale data. The issues connected with the representation of objects at higher LOD than the ones defined by the CityGML will be taken into account. The aim of this paper is then to investigate which are the favorable application of a framework in order to integrate two different approaches: architectural heritage spatial documentation and urban scale spatial data management.

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