



Development of 3D rural geospatial database using high resolution satellite images, GIS, total station and GPS

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(Received: August 5, 2011; in final form June 17, 2012)

Abstract: Villages are to be given prime importance in development of infrastructural facilities to reduce the socio-economic gap between urban and rural areas. The new technologies like Geographical Information Systems (GIS) will help to create a geospatial database which is useful in analyzing the available facilities and to plan developmental activities to be carried out. Present paper discusses the development and analysis of 3D geospatial data for Gangadevipally village of Warangal district, Andhra Pradesh, India using high resolution satellite data and GIS. Different thematic layers have been prepared for the study area and the non-spatial data has been collected by house hold surveys. 3D model of the village has been developed in ArcScene with height of extrusion taken from the height attribute that is collected from total station survey. The 3D texture map of the village has been prepared using Google SketchUp. The developed 3D model has been analysed using attributes representing the characteristics of infrastructural facilities in the study area. The methodology presented in this study will help in planning and management of infrastructural facilities in rural areas and better governance at the village level.

Keywords: 3D GIS model, Texture mapping, Geo spatial database, spatial analysis