

USE OF HIGH RESOLUTION AND ACCURATE LIDAR DATA FOR UNDERSTANDING AND SOLVING PROBLEMS OF URBAN LANDSCAPE

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LiDAR technology uses laser to measure coordinates of large number of points on an object. The unique characteristics of LiDAR technology is that it gathers these data at a high speed, very accurately, and without missing any detail on the ground. In view of these properties, LiDAR has been found to be in use has been finding use in several applications including urban landscape. Urban landscape is marked with complexities of high order in terms of scale of objects present, details that are required to be known, variety of the objects and difficulty in carrying out traditional surveys. LiDAR therefore becomes the most appropriate technology to measure urban landscape. The data generated are coordinates of billions of points which represent every object present there. Along with LiDAR a digital camera is also often employed. This complements the geometric information given by LiDAR with the colour information thus making the data completed. LiDAR data from all three platforms, viz., aerial, mobile, and terrestrial are useful for urban

landscape. There is a trend worldwide now to capture cities with these data. Recently we have captured such data for the City of Chandigarh and Bangalore in India.

The LiDAR data along with photographs provide several options to develop solutions for solving urban problems. These include urban drainage planning, urban flood modelling and forecasting, roof top solar potential estimation, revamping municipal property tax collection from buildings and billboards, urban transport planning, safe city, urban biomass estimation, air pollution modelling and disaster management. This talk will cover the principle of LiDAR technology, its operation in field, and some case studies on city mapping including developmental planning and roof top solar potential estimation. The talk will also outline the possibilities of financial models which should be adopted in order to generate these data and use the same for cities.