Example of 3 dimensional map expression using Airborne Laser Survey data.

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http://www1.gsi.go.jp/geowww/Laser_HP/index.html

The Airborne Laser Survey is a technology that can get the altitude data very accurately and in a high density because it measures the height of the ground directly, and is expected as a measurement technology to acquire highly accurate three-dimensional space information in the city region.

Geographical Survey Institute executes the Airborne Laser Survey in 2002, and is publishing 'Digital Map 5m Grid (elevation)' as highly accurate elevation data (DEM :Digital Elevation Model) recording height of each mesh of 5m on the ground in 10cm unit. Data of six areas such as Tokyo, Saitama, Nagoya, Osaka, Kyoto and Fukuoka were published by 2006. In addition, development and the provision of data are scheduled to be executed about densely inhabited district (DID) in the major city including Yokohama City beginning from 2007.

Moreover, in 2006, we made the '1:25,000 scale relief map' that was developed by superimposing topographic map at 1:25,000 scale on the shaded layer tint map generated them 'Digital Map 5m Grid (elevation)'. The shaded layer tint map was produced by coloring brownish warm colors for higher elevation zone and bluish cold colors for lower elevation zone with shading. Therefore, the '1:25,000 scale relief map' enables us to identify places and their minute topographical features. Especially, it seems that we can know the extension of the below-sea-level areas and the situation etc. of topographical features and the rivers in Japanese three major megalopolises.

In addition, when the map including information on the building and vegetation was made for trial purposes with a similar technique by using original data (DSM :Digital Surface Model) of Airborne Laser Survey, it gave us visually information that reflects topographical features and the activities of the city. These maps become one material of the grasps of spatial information in the region, and are expected to be used in disaster prevention and an environmental field.

Thus, this paper shows the examples where the data of Airborne Laser Survey is used in a new map expressing a three-dimensional space.