The Changing Topography of Mapping

Topographic mapping, 3d topographic maps have brought dramatic change in technology today as compared to what it used to be earlier.

Topographic mapping has been around for a while, but advancements in technology have dramatically changed the way it is done today. A topographic map uses contour lines to show the shape the elevation of the land. Today, 3D topographic maps show the entire landscape – roads, mountains, rivers, buildings – in amazing detail.

Topographic maps are based on topographical surveys. They have many uses – for civil works, earth sciences, mining, recreational uses like hiking and so on. Topographic maps show the topography, or land contour, using contour lines. The also show water bodies, forest cover, built-up areas, buildings and so on.

Topographic mapping is much more efficient and accurate today because of advances in survey techniques, instrumentation, design and printing technologies, and the use of aerial photography and satellite data.

Advances in technology have also made it possible to make digital and interactive maps. Such maps are not only accessible to experts but also to lay users on their desktop computers at a click of a mouse. Many popular web sites incorporate such maps to help people find their way about.

Geographic information systems (GIS) have contributed a lot to the mapping revolution. GIS makes it possible to combine layers of digital data from different sources and to manipulate and analyze how the different layers relate to each other. GIS is used in applications as varied as cartography, geodesy, geographic information science, utility networks, pictometry, remote sensing, archaeology, automotive navigation systems, map database management, mining, mineral exploration, soil conservation, crime solving, emergency response planning, and even marketing.

The process of converting 3D topographic maps to digital form involves raster to vector conversion using CAD-based software such as AutoCAD, Microstation, Smallworld, etc. Different features of the topographic map -- such as contour lines, boundary lines, water areas, vegetation, forest areas etc -- are captured or digitized in different layers to generate the topographic map in vector format. 3D topographic mapping is done by assigning the Z-values to the contours to generate the 3D terrain model of the topography.

Today, many companies specialize in such digitization of topographic maps, especially in India. For instance, the India-based AABSyS executed a large-scale topographic mapping and 3D topographic mapping project for the entire south of Belgium covering approximately 5,000 sq km. The company has executed several other topographic mapping and 3D topographic mapping projects for customers in Germany, Belgium , Switzerland , Italy , The Netherlands, USA , UK , and Australia .

Trademarks