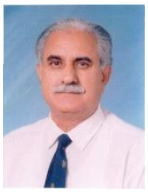
NEW TECHNOLOGYIES WHICH ARE TO REDEFINE

SURVEYING MAPPING



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Electronic Distance Measurement (EDM) was a big leap in the surveying profession in the late sixties and early seventies. It changed the century old triangulation method of establishing survey control network over large areas of the World.

Development of computers introduced electronic methods of processing large quantities of data in a matter of minutes as against through hand cranking calculating machines and seven figures trigonometric / log tables. EDMs brought in the digital data format. Angle measuring good old theodolite coupled with EDM gave birth to Total Station and a new instrument was born. Data storage on electronic data recorders, followed by storage on board the instruments completely eliminated the use of old field survey note book and human errors that came with reading and recording of field survey data. Field surveyor's performance improved many fold resulting in saving of time and surveying costs.

Manual methods of mapping were immediately replaced with computer aided mapping (CAM) resulting in quality mapping produced in fraction of the time compared to the ages old manual methods.

With all these developments and changes involving a number of associated technologies and changes in the demand from centuries old surveying profession resulted in redefining of this 2nd oldest profession in the World, the new name *Geomatics* came into being and the surveyor became G*eomatician*.

Very rapid development of electronics has indeed brought in Global Positioning System (GPS) and now literally everyone with a mobile phone is carrying a built-in GPS.

Passive remote sensing has been aroud for more than a century in the form of photographs and electronic sensors coupled with satellites have brought in satellite imagery of varying resolution and now nothing is secret anymore. It was a common practice and in some places it still is prohibited to take pictures of buildings and

structures for security reasons. What security when one can see the same on satellite imagery available off the shelf?

Satellite based large scanners are now available in different formats; tripod mounted terrestrial scanners, vehicle mounted mobile scanners and even hand held scanners for scanning small objects in difficult to reach spots.

Amateur drones have facilitated the introduction of drone mounted scanners for survey and mapping of small areas of interest; remote and non-accessible for open cast mining projects, archeological sites, and mapping areas with limited time-window.

Ground Penetrating Radar (GPR) is another of the new technologies which facilitates surveying and mapping of what is buried underground. This is a great tool for agencies who have lost track of their buried services. Old method of locating and mapping these buried amenities with require months of field work whereas MGPR can survey at the rate of around 50 km per day.

MGPR technology is a blessing for countries like ours where gas companies, telephone department, water supply agencies have no or very poor record of the location of their service lines.