



In a quickly changing world where global processes influence varied aspects of our lives, the integrative approach to deal with spatial data is the way to go. Such an approach is exemplified by the discipline of geomatics, which integrates various aspects of data acquisition, modelling, analysis as well as offline and online management of geospatially referenced data.

Over the past decade geographic information system (GIS) has been utilised by many new domains, from climate change modelling, to biodiversity estimate to landscape planning and has become part of general computational infrastructure. This underlines the need for integration of heterogeneous data sources. Today geospatial sources of data comprise those originating from terrestrial and marine surveys using airborne or satellite based sensors, laser scanners, in situ sensor networks and measurement systems and as well as the classical technologies utilised to acquire spatial and other data. Location is everywhere; social media are showing a strong geospatial component and increasing wireless availability offers instant data exchange.

New satellite data at high spatial (IKONOS, Orbview-3, Ball's Global Imaging System-2000 (BGIS-2000), RapidEye) and spectral resolution (Compact High Resolution Imaging Spectrometer (CHRIS), Hyperion, Global Imager (GLI), Medium Resolution Imaging Spectrometer (MERIS) and

Moderate Resolution Imaging Spectrometer (MODIS) together with long term programmes like Landsat make it possible to study any terrestrial region of the globe at a resolution of even a few meters. For cloud prone areas, radar satellites are of major interest and help. Spatial accuracy of terrestrial observations is obtained from global satellite positioning and navigation systems (GNSS), metadata are managed through dedicated standards and systems along with online catalogues. The boundaries between surveying, mapping, GIS, remote sensing and GNSS are thus blurring and resulting in the 'whole' i.e. geomatics becoming much more versatile than the 'parts'.

While geospatial data have been long used by military, government agencies and public administration in resource management, environmental studies, security, hazard and emergency mitigation; today such data has become available even to individuals. The public awareness of the 'geospatial' dimension has reached the masses and a new branch - volunteered geographic information (VGI) has been established. This phenomenon is illustrated in the creation and improvement of the OpenStreetMap.org database and portal, which followed the Free and Open Source Software (FOSS) development movement that was initiated in the GIS sector more than a decade ago. The Free and Open Source GIS (FOSS4G) has specially kept pace with the adoption and sometimes even the definition

of geospatial standards. FOSS could be the future in geomatics research, development and use and because of its 'availability' it would ensure that individuals especially those located in developing countries are not left out of the reach of geomatics. Decision makers and leaders today are greatly supported by the availability of Open Source GIS (OSGIS), which includes geospatial programming libraries, desktop GIS, web mapping, and catalogue systems for handling metadata. The OSGIS history goes back more than 25 years when the first desktop GIS, Geographical Resources Analysis Support System (GRASS), (<http://grass.osgeo.org>), became available along with its numerous scientific applications (landscape ecology, epidemiology, remote sensing, urban planning, 3D representations).

### Endnote

While the traditional role of land surveying has changed enormously in the past decade, new service and business opportunities continuously arise due to the growing need for geoinformation. The availability and access to a large volume of up-to-date and sometimes even 3D geoinformation online offers exciting perspectives. New career opportunities as well as market niches for entrepreneurs are emerging. Geomatics is fast becoming a strategic discipline with exciting years ahead. ☒

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