

THE SCIENCE OF GEOMATICS

Computers have radically changed how geographically referenced information is gathered, stored, managed and analysed. Technological developments such as total stations, global satellite positioning, digital photogrammetry and image processing have also had a profound influence.

New technologies have resulted in new and more data, ways of interpretation and ultimately derived information. They have also brought increased specialization. Where once the surveyor and the map-maker produced paper maps, there are now experts in each area of geographic data management collecting, processing and producing a vast array of digital geo-referenced data, from geometrically generated urban survey plans to remote images of ocean current patterns.

Together these techniques and technologies constitute the science of geomatics in much the same way as the science of medicine is made up of its constituent specialties. Through the study and use of geomatics, all the different available technologies can be employed to create geo-referenced information systems and the expertise to use them effectively.

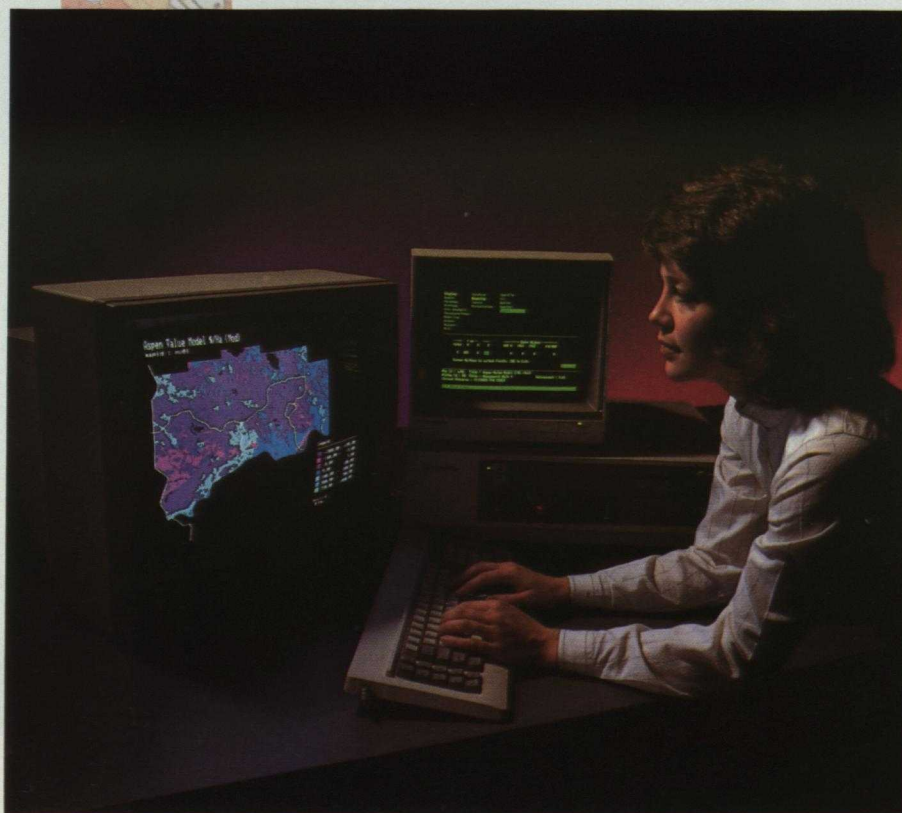
Some areas of geomatics are involved with data gathering, such as surveying, mapping and remote sensing. Some address the production of data in readable form, such as cartography and spatial database design. Others involve analysing the data, such as for land and resource management.

With the technologies and techniques of geomatics, geo-referenced information systems can be designed that address a wide range of applications.

- ✧ Municipal systems help with effective administration and planning for public works, growth, fire and police, land use, water supply, tax assessment, sanitation and sewage, health, and so on.

- ✧ Forestry systems aid in silviculture, harvest planning, yield predictions, future-growth modelling, recreation and wildlife planning.
- ✧ Agricultural systems provide crop yields, soil types, climate conditions, rotation, acidity, irrigation data, and modelling techniques for analysis. Similar systems monitor water quality, flow, sediment patterns and currents.

Tydac Technologies
has developed
software serving
applications such
as land use
planning,
environmental
analysis and
resource
development.



Tydac Technologies Incorporated