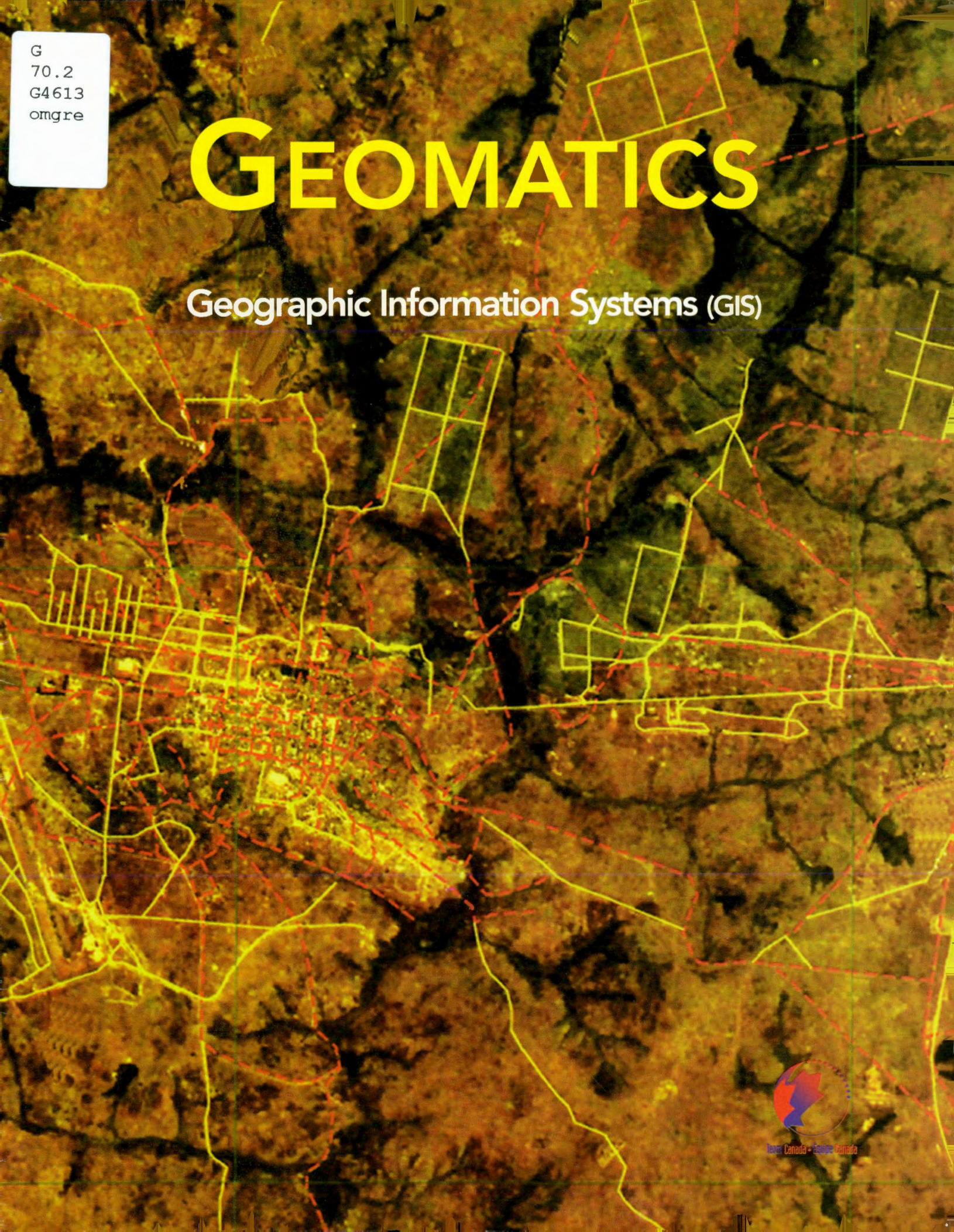
GEOMATICS

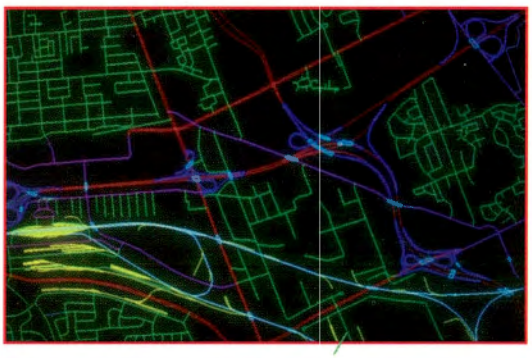
Geographic Information Systems (GIS)



WHAT IS GEOMATICS?

Geomatics is the science and technology of gathering, analyzing, interpreting, distributing and using geographical information. Geomatics encompasses a broad range of disciplines that can be brought together to create a detailed but understandable picture of the physical world and our place in it. These disciplines include:

- surveying and mapping;
- remote sensing;
- geographic information systems (GIS); and
- global positioning system (GPS).



AN EMERGING TECHNOLOGY SECTOR

Geomatics is one of the fastest growing technology sectors of the 1990s – and Canada is at the forefront. Canada's geomatics community is a recognized world leader in providing the software, hardware and value-added services that can help clients address problems and opportunities in such areas as:

- the environment;
- land management and reform;
- development planning;
- infrastructure management;
- natural resource monitoring and development; and
- coastal zone management and mapping.

THE CANADIAN ADVANTAGE

Canada's knowledge and expertise in geomatics are the result of decades of research and development and practical application in gaining an understanding of our diverse geography and managing our resources and environment for the benefit of present and future generations.

Canadian-developed geomatics products and services are now being used throughout the world, by clients ranging from government agencies in industrialized and developing nations to large and small businesses and remote communities.

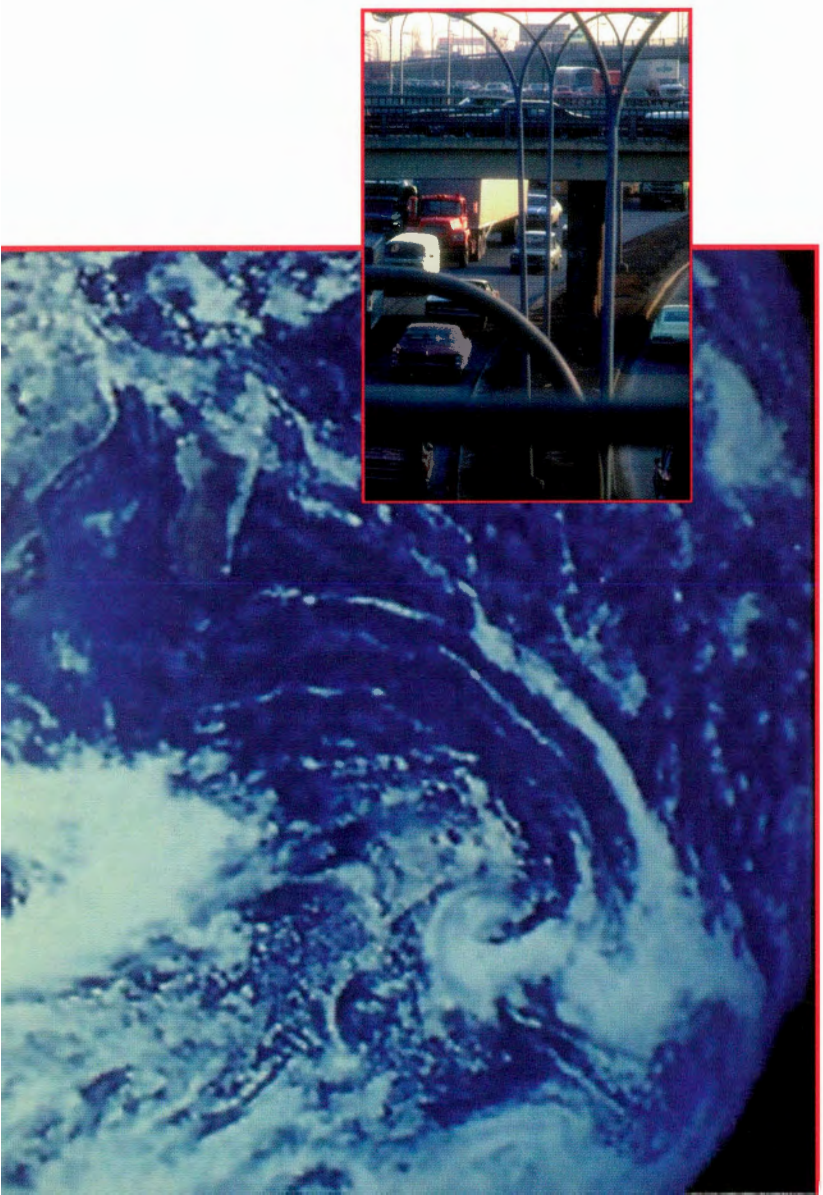
Partnering with the Canadian geomatics community, which welcomes international collaboration through joint ventures or strategic alliances, will give you full and favoured access to these products and services, as well as to some of the world's leading geomatics experts.

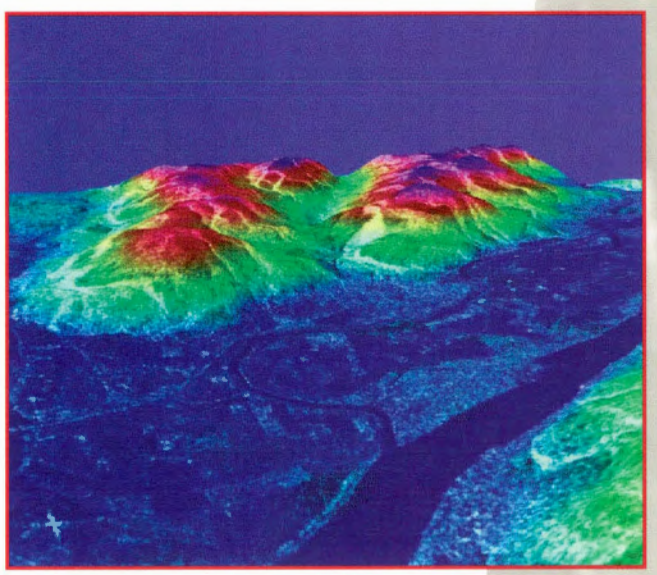
Why not put the Canadian advantage to work for you?

GEOGRAPHIC INFORMATION SYSTEMS

Geographic Information Systems (GIS) – developed and pioneered in Canada close to 30 years ago – are among the most exciting and powerful geomatics decision-making tools in the world.

A GIS uses computer technology to integrate, manipulate and display a wide range of information to create a picture of an area's geography, environment and socio-economic characteristics. Beginning with a computerized topographic map as its base, a GIS overlays and integrates graphic and textual information from separate data bases. The end result is a customized and reliable tool that can support decision making and problem solving and provide almost instantaneous answers to complex questions.





USE YOUR IMAGINATION

GIS applications are limited only by the user's imagination.

Today, Geographic Information Systems are commonly used for everything from basic mapping to supporting resource exploration and development, from environmental management to the planning and administration of transportation and telecommunications systems, utility infrastructures, urban development and land use.

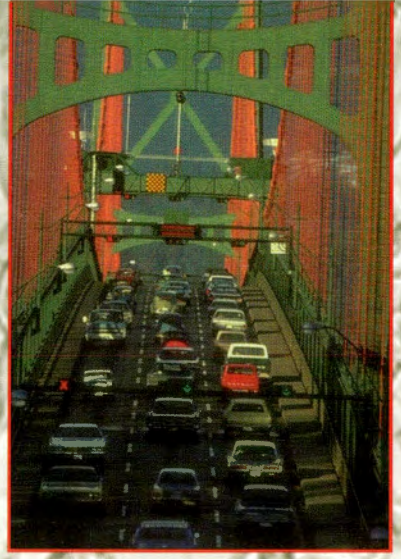
Canadian systems can be found worldwide in the private sector and at all levels of government. In particular, Canada has world-leading GIS capabilities in the following areas:

- transportation;
- infrastructure management;
- land management and reform;
- the environment;
- natural resource monitoring; and
- strategic planning and business development.

Transportation

GIS technology is changing the way we navigate, from supertankers to taxi cabs. For example, GIS programs can be used to create electronic maps of road networks, which can improve rush-hour traffic management, delivery routes and road repair and construction projects. A worldwide market exists for integrating GIS and Global Positioning System technology for vehicle guidance systems. In support of marine transportation, Canadian Geographic Information Systems are also being used for electronic charting of coastal zone regions, river beds and marine traffic.

In large cities throughout North America and in other parts of the world, Canadian GIS expertise has been put to work to save lives through 911 systems. By combining data on traffic flow at different times of the day with road network information, GIS applications can be used to give ambulance drivers, firefighters and police the quickest possible route to accidents and other emergency situations.



Infrastructure Management

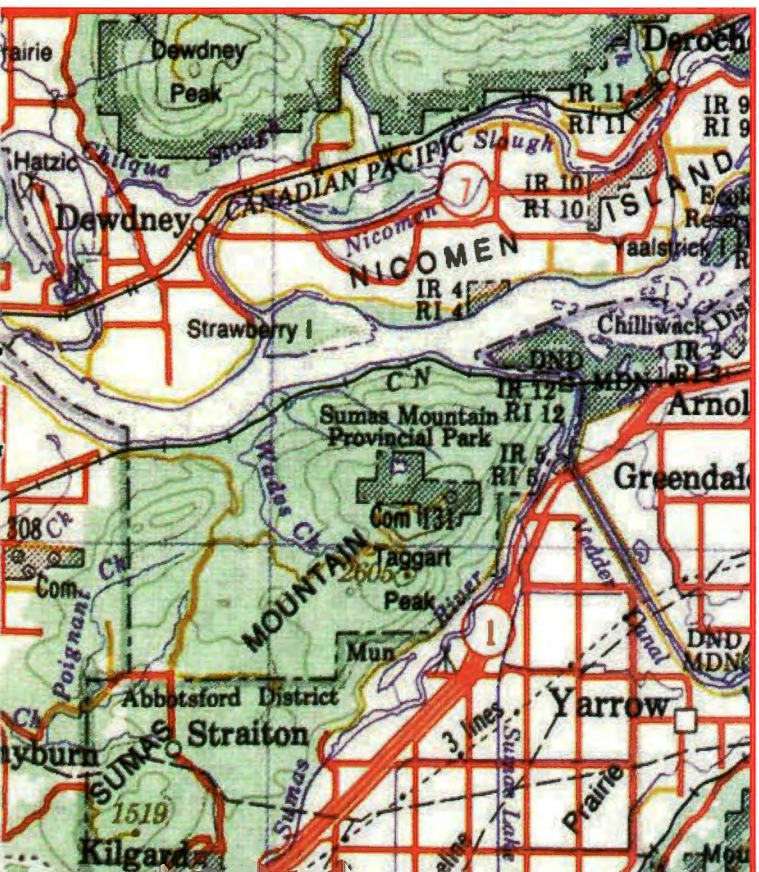
In developed and developing countries, distribution and access routes are critical to ensuring effective infrastructure management and development. Managers of public utilities and other infrastructure-based organizations are among the most frequent and enthusiastic users of GIS technology.

Utility companies have long used Canadian GIS hardware and software to record, monitor and manage information about pipelines and electricity grids, power lines, generating and distribution stations and transformers. In Canada and elsewhere, GIS is being used to support the planning and sustainable development of electricity-generating facilities.

Land Management and Reform

Given its ability to integrate information from different sources, GIS technology is being used extensively in land management and reform initiatives. Applications range from the development and management of land registry systems to the conversion of property from state to private ownership. A GIS can integrate and store accurate information on property size, shape, ownership, taxes and usage. This application area – sometimes referred to as a land information system – offers solutions at many different levels.

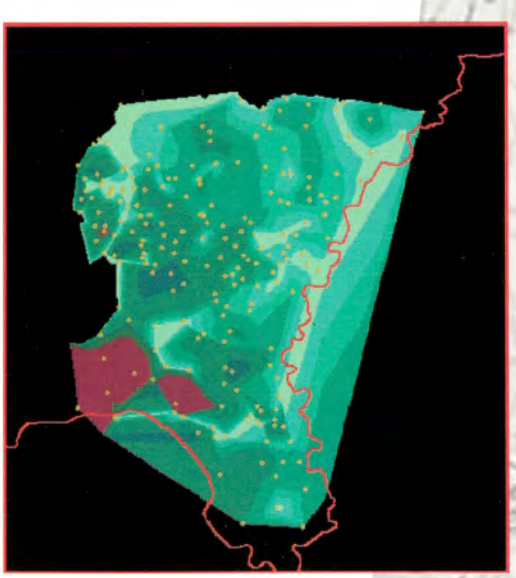
For example, Canadian systems are now widely used by government agencies to implement property taxation programs and to assess land-zoning and land-use policies. Private sector construction and real estate companies have also turned to Canadian GIS firms to support land-use planning, development and monitoring services.



Environmental Applications

Environmental monitoring, management and protection are among the most exciting and effective applications of GIS technology. As nations adopt the principles of sustainable development, demand will grow for GIS decision-making tools to address a broad range of environmental challenges and opportunities in all parts of the world.

Canada is a proven leader in using environmental GIS. Following the Chernobyl nuclear disaster, the governments of Ukraine and Belarus requested Canada's assistance in adapting GIS technology to assess current environmental conditions and develop long-term rehabilitation programs. Canada has installed GIS hardware and software in the two countries, delivered on-site training and developed GIS applications and models.



NATURAL RESOURCE MONITORING

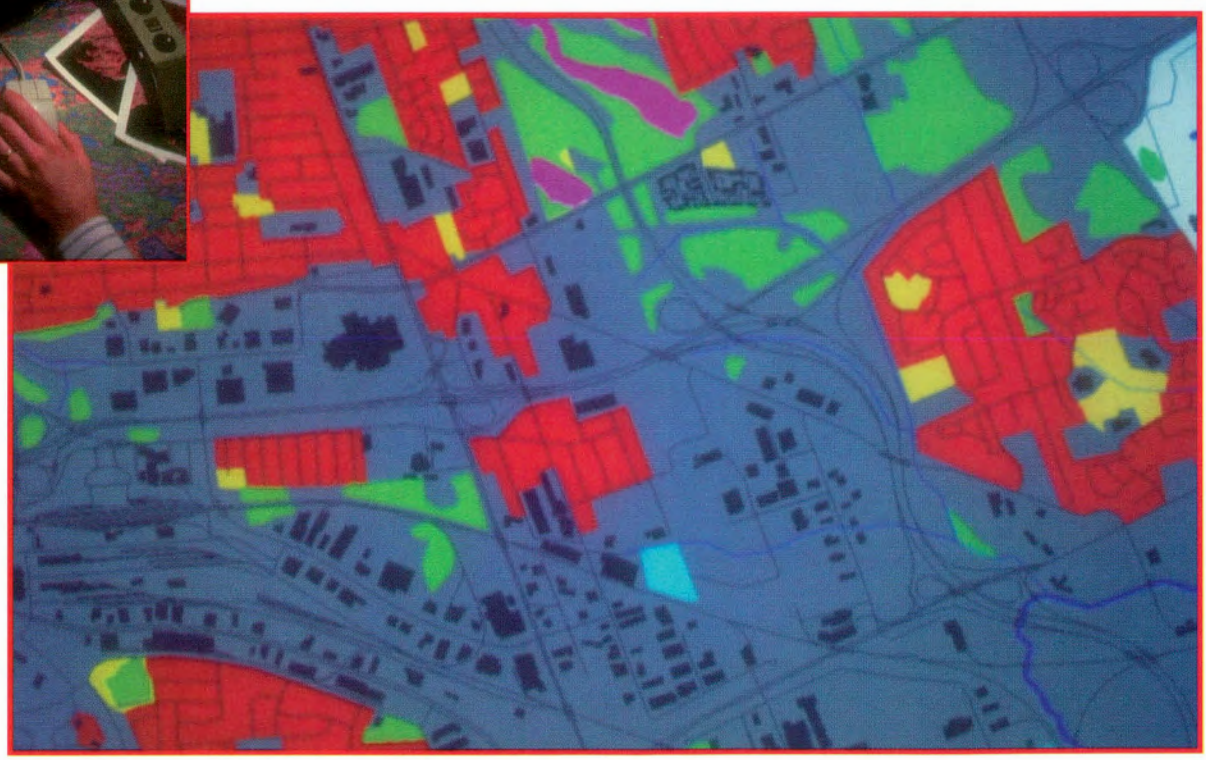
Geographic Information Systems are routinely used in a full range of natural resource applications – from supporting mineral exploration and development to monitoring forest regeneration, agricultural crop yields, the impact of climate and soil on vegetation growth, and wildlife movements.

Today, Canadian systems are being used in several countries to integrate and analyse information on climate, soil and other conditions to determine the best type of crop to plant in a given area. Canada's expertise in sustainable forestry is also reflected in GIS programs that can be used to monitor forestry programs, determine site access routes and manage reforestation efforts.

STRATEGIC PLANNING AND BUSINESS DEVELOPMENT

National and local governments are using Geographic Information Systems to assist in the development, implementation and assessment of socio-economic policies; to plan infrastructure and urban development; to track population trends and redraw political boundaries. Private industry is using the same techniques – and often the same data – to identify new markets, increase operating efficiencies and to develop business expansion strategies.

For example, by using GIS to monitor health conditions as well as disease and economic indicators in different parts of a city or country, policy-makers can develop and implement more effective health care, business development and education strategies. A growing number of businesses are using GIS to assess market potential, develop marketing campaigns and identify the best possible locations for manufacturing facilities and retail outlets.



Why a Canadian geomatics solution?

The Canadian geomatics community is a respected and competitive player in international geomatics markets. Canada exports about $300 million worth of geomatics products and services annually, and many firms maintain offices and support capabilities abroad to meet the needs of clients.

Canada offers you:

- **a partnership approach to geomatics applications**

The geomatics industry, along with federal and provincial governments and the academic sector, often work in teams to develop technology and expertise and to deliver services.

- **flexibility, responsiveness and creativity**

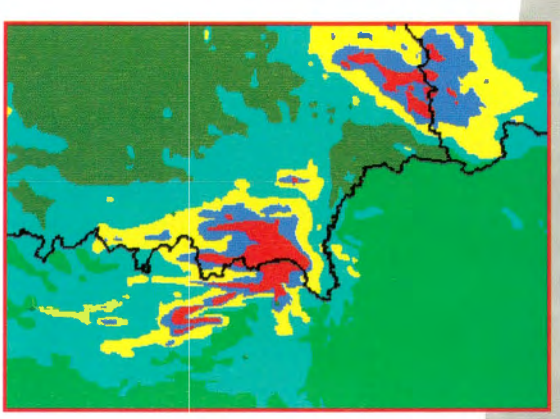
The industry can provide value-added products and services that are tailored to the unique requirements of individual clients. Technology transfer and skill-sharing are important elements of many export arrangements.

- **a commitment to technological innovation**

Working together, government, industry and universities continue to explore and develop new geomatics applications and technologies through cooperative R&D.

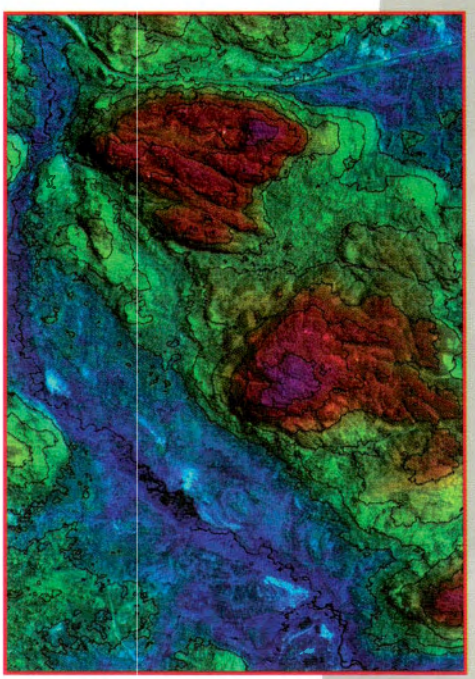
- **a focus on solutions**

Canada can provide multi-disciplinary, integrated solutions to problems related to the natural and built environment. Canadian geomatics expertise has already helped many government and industry clients around the world.



Canada's attractive investment environment

Significant tax incentives exist for companies conducting research and development in Canada. For example, Canada's federal corporate income tax system allows a deduction of current R&D expenditures, including capital expenditures made on R&D machinery and equipment. Canada also allows an investment tax credit on qualifying R&D expenses incurred within the country.



Canadian geomatics products, services and expertise are contributing to sustainable development, socio-economic progress and responsible environmental management in many parts of the world.

For more information on Canadian geomatics capabilities, contact:

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