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# Federal Geomatics Bulletin

the official publication of the Inter-Agency Committee on Geomatics



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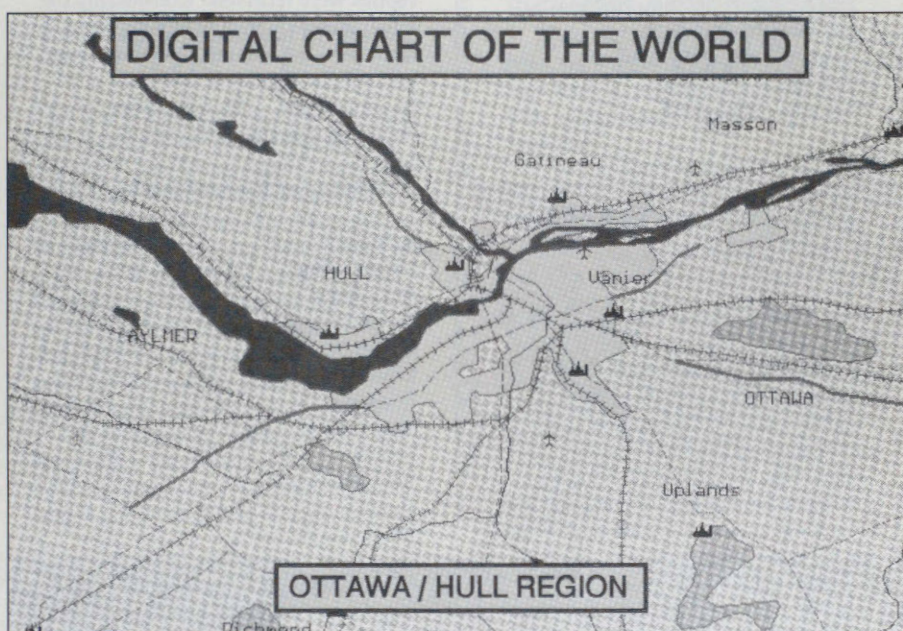
## Digital Chart of the World



1. The Digital Chart of the World (DCW) package of four CD-ROMs is scheduled to be released for public sale in Canada in September 1992. The entire package includes the following:

- Four ISO 9660-formatted CD-ROMs with over 1.5 gigabytes of topologically structured vector data. The data is derived from 1:1 000 000 scale Operational Navigation Charts (ONC) and includes all six continents.
- Two diskettes (3.5 inch and 5.25 inch formats) with viewer software (one source code and one executable code).
- One user manual and one set of installation instructions.

2. The DCW is designed to run on a 286 PC with one MB RAM, an 80287 math co-processor, an adapter (preferably VGA), CD-ROM drive, and at least five MB free on a fixed-disk drive.
3. The database contains most of the information that is on the world-wide Operational Navigation Chart (ONC) series. The data is in 17 feature layers covering such items as populated places, roads, and drainage. Each layer has numerous sub-layers; for example, within drainage there are 22 sub-layers covering such features as open water, snowfields and oases.
4. Another product of the DCW project is a viewer software, which will be released with the DCW Database. This viewer software has simple display,



zooming and query functions. It permits the user to select an area by latitude/longitude, by pointing, and by place name. Distance can be measured from one to several places. Four map projections are available. Simple text reports can be generated. The viewer is a software toolkit that allows users to view and query the database.

5. Since the viewer software source code (50 000 lines in "Turbo C") and executable code are in the public domain, it will provide ample GIS development opportunities and allow users to develop additional applications. The geographic data on the CD-ROMs is in Vector Relational Format (VRF), a recently developed encapsulation of vector data in terms of relational tables, which is part of the international Digital Geographic

Information Exchange Standard (DIGEST).

6. DIGEST was designed to establish a uniform method for the exchange of digital geographic information. It was developed by a multi-national body and has been accepted in Canada by the Canadian Council on Geomatics (CCOG) as the international geomatics exchange standard. DIGEST will soon be proposed as an International Standardization Organization (ISO) standard. VRF is a generic data model designed to be used with any digital geographic data in a vector format that can be represented using nodes, edges, and faces.
7. DCW is a cooperative project involving Australia, Canada, the United Kingdom and the



Surveys, Mapping and  
Remote Sensing Sector



United States. In Canada, this effort is led by the Department of National Defence, with the support of Energy, Mines and Resources Canada and Fisheries and Oceans Canada.

8. For information on ordering, contact the Products and Services Division, Surveys, Mapping and Remote Sensing Sector, Energy, Mines and Resources Canada, Room 400, 615 Booth Street, Ottawa, Ontario, Canada K1A 0E9.  
Tel: (613) 995-0314;  
fax: (613) 995-6001.
9. For technical information on the DCW project, contact Mr. David McKellar or Major Pierre Bilodeau, Directorate of Geographic Operations, Geographic Requirements Section, National Defence Headquarters, Ottawa, Canada K1A 0K2.  
Tel: (613) 992-7666;  
fax: (613) 996-3328.

## Federal Geomatics Bulletin

This newsletter is intended as a vehicle for the communication of information on geomatics activities within the Canadian federal government. It is published several times a year under the auspices of the Inter-Agency Committee on Geomatics. Articles pertain to the methods, procedures and technology associated with systems for the collection, manipulation, display and dissemination of geographically referenced digital data. The editorial board consists of Gordon Plunkett (chairman), Brian Cromie, Martine Couture, David Ellwood and Joel Yan. Editorial and production support is provided by Barbara McAulay and Diane Blondin. Submissions for Volume 4, No. 2, which should be submitted before **September 4, 1992**, are most welcome. Subscription requests, queries, comments or submissions should be sent to:

Federal Geomatics Bulletin  
GIS Division, EMR  
615 Booth Street  
Ottawa, Ontario  
K1A 0E9  
Fax: (613) 952-0916

## IACG Activities

### • Summary of Results IACG #6 User Needs Mini-Survey

In December 1990, the IACG Sub-Committee #6 - User Needs and Applications, circulated a questionnaire in the *Federal Geomatics Bulletin* (Vol.2, No.2). The purpose of the survey was to obtain an indication of the nature and extent of the unfulfilled and potential user requirements for federal geomatics data. The results were expected to show up any serious discrepancies between data being provided and user requirements. The circulation list for the Bulletin is approximately 6000. A total of 123 replies were received. Considering the small sample size, it is not advisable to draw any conclusions from this survey. It can only be used as an indicator of a possible trend. The following is a summary describing the results:

#### Breakdown of Respondents by Province

Province	Number
Newfoundland	3
Nova Scotia	5
New Brunswick	7
Quebec	16
Ontario	41
Manitoba	3
Saskatchewan	4
Alberta	10
British Columbia	27
Yukon	1
Northwest Territories	2

#### Breakdown of Respondents by Organization

Federal	Provincial	Private	Educational
29	24	50	8
Municipal		Other	
2		5	

There were four major trends in data requests. They included digital data on topography, street networks, soil and boundaries. Many of the data sets requested by the respondents are already available from various federal departments. Please see "Report on Current Status and Trends in Federal Digital Geographic Data in Canada." This report is available from Gordon Plunkett, IACG, Data Dissemination and Government Data Bases Sub-committee, 753 - 615 Booth St., Ottawa, Ontario K1A 0E9.  
Fax: (613) 952-0916.

### Question #1:

What georeferenced data would you like to have available for your work in digital form? Please describe and rank up to 10 requirements.

#### Digital Data Requests

Street Network	81
Topographic Data (1:50 000)	64
Topographic Data (1:250 000)	44
Soil	45
Boundary, Lot, Concession	44
Canada Lands Inventory	39
Digital Terrain Models	24
Geology	12
Forest Inventory	12
Hydrology	8
Land Use	7
Watershed	4
Coastal Zone	2
Climate	4
Toponymy	4
Agriculture	3
Crops	2
Hydrography Network	1

### Question #2:

What specific changes would you like to have in existing federal digital data sets that you are familiar with?

Common changes specified were:

- a. availability of digital structured data,
- b. lowering of prices,
- c. data availability by layer.

*The User Needs and Applications Sub-committee wishes to thank all the respondents who participated in this survey. For further information, please contact Dr. Phyllis Charlesworth, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8.  
Fax: (613) 996-8748.*

### • Marine Resource Management

A report entitled *Information Requirements for Marine Resource Management: Workshop and Survey Results* was prepared for the IACG Sub-Committee on User Needs and Applications by Peter B. Hale of the Mineral Policy Sector of Energy, Mines and Resources Canada. The report provides details on federal government agencies with marine regulatory responsibilities, types of information used by federal marine regulators and managers, and describes the GIS Integrated Resource Management



Information System (IRMIS) developed for the Mineral Policy Sector.

For a copy of this report, contact IACG Technical Secretariat, GIS Division, EMR/SMRSS, 615 Booth Street, Ottawa, Ontario K1A 0E9. Fax: (613) 952-0916.

#### • **Wanted: Copies of Directories of Databases**

Working Group 4 of the Committee on Geomatics of the Canadian General Standards Board has the mandate to develop a standard format for database directories. To ensure that the formats of all existing collections of database descriptions are taken into account, the chairman asks that she be sent copies or be informed about directories held by federal, provincial and territorial government departments, municipalities, industry, interest groups and by educational and research institutions. Directories may contain information about databases existing locally, regionally, nationally or internationally. At the same time, the working group wants to hear about the kind of information users like to see in directories.

If you can help with information or viewpoints, please contact Dr. Valerie Hume, Natural Resources Branch, Department of Indian Affairs and Northern Development, Ottawa, Ontario K1A 0H4.  
Tel: (819) 997-9480;  
fax: (819) 997-0511.

#### • **CGSB Committee on Geomatics Status Report**

During the past year, the IACG-funded Committee on Geomatics (COG) of the Canadian General Standards Board (CGSB) continued its work on developing standards for geomatics.

- The 4th draft of the "Geomatic Data Sets Cataloguing Rules" is being edited, in preparation for publication.
- Working Group 4 on data directories is meeting regularly. The group, under the leadership of Valerie Hume, intends to present a National Standard in March/April of 1993 (see article in this issue).
- The next meeting of the group on International Liaison will be held in June.

- The group on the National Implementation Strategy for the Canadian Geomatics Interchange Standard (CGIS) met in Ottawa during the GIS-92 conference. A revised version of the draft standard was accepted (CGIS Draft 0.2) and significant progress was made on the harmonization of the existing efforts.

The Project Directive for the National Implementation of CGIS was distributed in April. The committee is presently seeking financial and strategic support. For further information contact René Gareau, Chairperson, CGSB-COG, Canada Centre for Geomatics, 2144 King Street West, Suite 010, Sherbrooke, Quebec J1J 2E8. Fax: (819) 564-5698.

#### • **The Fourth International Conference on GIS**

The Fourth International Conference on GIS, held in Ottawa from March 22 to March 27, 1992, was another success in this annual series of GIS Conferences. Organized by the Surveys, Mapping and Remote Sensing Sector (SMRSS) of EMR in cooperation with the IACG and the Canadian Institute of Surveying and Mapping (CISM), this conference was attended by a large number of Canadian and international delegates from government, industry and academia.

The Minister of Energy, Mines and Resources, The Honourable Jake Epp, officially opened the Conference and signed a Memorandum of Understanding

(MOU) on behalf of the Government of Canada, with the State of Qatar, to strengthen the links between the two countries through the exchange of information and personnel in the fields of surveying, mapping, remote sensing and geographic information systems. The State of Qatar was represented at the signing ceremony by Sheikh Ahmed Bin Hamad Al-Thani, Undersecretary of the Ministry of Municipal Affairs and Agriculture.

Mr. Hugh O'Donnell, ADM, SMRSS, and opening session chairman, introduced Mr. Richard Higgins, President of Intera Tydac Technologies Inc., who gave the keynote address entitled "Expanding Canada's Role in the International GIS Market". Following the opening session Mr. Bruce Howe, Deputy Minister of EMR, officially opened the exhibits.

Nine pre-conference workshops were held, ranging from hands-on, interactive data analysis and modelling in GIS, to GIS management, applications and standards.

The technical program consisted of plenary session addresses by Tom Dewald, Richard Dépani and Dale Rhyason on "Issues in the Applications of GIS," and by Jim Linders, Gary Sawayama and David Wells on "Establishing GIS Infrastructures." Two panel discussions were held on "Issues in the Provision of Spatial Information," and on "Strategic Technologies for Spatial Information." Four concurrent sessions, two poster sessions, an exhibitors' day and post-conference technical tours filled out the program.



Sheikh Ahmed Bin Hamad Al-Thani, right, cuts the ribbon to open the exhibits at the GIS '92 Conference. Assisting were EMR Deputy Minister Bruce Howe, centre, and Hugh O'Donnell, ADM, SMRSS.



Copies of the GIS 1992 Conference proceedings can be purchased from the Canadian Institute of Surveying and Mapping, Box 5378, Station F, Ottawa, Ontario K2C 3J1. Fax: (613) 224-9577.

The Fifth International Conference on GIS will be held once again in Ottawa from March 23 to March 25, 1993, with pre-conference workshops on March 21 and 22. For further information or a copy of the call for papers, please contact Mr. L.L. Aubrey, Conference Director, GIS '93, 615 Booth Street, Room 403, Ottawa, Ontario K1A 0E9. Fax: (613) 995-6001; tel.: (613) 995-0266.

### **Inland Waters, Coastal and Ocean Information Network (ICOIN)**



Today, as never before, decisions involving resources and environmental issues are subject to detailed scrutiny and question. Decisions are made based on up-to-date information, accurate interpretation of the situation and the predicted impact of actions taken. Accessing specialized information relevant to inland, coastal and oceanic waters is a prerequisite for sustainable resource development in Canada's coastal and inland waters.

The mission of ICOIN is to find better ways of transferring data by improving access to the vast stores of existing spatio-temporal scientific data and other information that is needed for decision-making.

For almost a decade, Canada's Department of Fisheries and Oceans (DFO) has been developing the concept of ICOIN in consultation with the marine and freshwater communities. ICOIN is now a nation-wide computer information network linking marine and freshwater environmentally related sources within government, academia and the private sector. An implementation strategy is now in place that calls for wider networking, simpler third-party access and ultimately, data interchange standards aimed at increasing efficiency and effectiveness.

DFO is taking the lead in ICOIN implementation. It has established an inter-agency ICOIN Management Board to oversee development which, in turn, has created the inter-agency ICOIN Program Office (IPO) in DFO. Over the next three years, the IPO will be jointly developing ICOIN network capabilities as specific projects, often undertaken in partnership with members of the community. Governments, universities and private

companies will be involved in the implementation and use of these network capabilities. A number of inter-agency committees are already working on standards and protocols in support of ICOIN, at both federal and provincial levels. Several universities and private companies have come on board, and a number of ICOIN-related proposals are being studied by funding agencies.

An information kit overviewing the ICOIN Project will be available shortly, as will the "ICOIN Registry", a computer list of agencies likely to be interested in ICOIN. Its purpose is to help the IPO identify and interact with the ICOIN community, to accelerate development of ICOIN benefits and advertise them as widely as possible.

The IPO is now working quickly to implement a prototype of what is to become the electronic, dynamic, multimedia "ICOIN Directory". This Directory will hold information on all the databases, data services and data sources that will be a part of ICOIN. Its main purpose is to help those who provide data, as well as users of data, in achieving the most efficient and effective data interchange, individually and collectively. It will also underline data needs not presently met, and encourage potential providers to develop and offer such new services. The Directory will not only span ICOIN but will further network coverage to ensure that benefits expand together with specific needs.

To learn more about ICOIN, simply call 1-800-668-5222 or write to the ICOIN Program Office, Fisheries and Oceans Canada, 1202-200 Kent St., Ottawa, Ontario K1A 0E6.

### **An Information-rich Electronic Learning Package for Canadian Schools**



In 1986, Richmond Hill High School became the site of Statistics Canada's first CANSIM/TELIChart pilot project. The project gives high school teachers and students access to an extensive array of current socio-economic and demographic information via an easy-to-use software interface for displaying the data graphically. The joint school and government project was very successful, and led in 1990, to the expansion of the project to 40 schools across Canada.

Part of the project required teachers and instructors to evaluate the CANSIM/TELIChart and make a

detailed report to Statistics Canada. Among the highlights that the users noted in the evaluation were the following:

"an important source of Canadian information for a wide variety of courses: geography, economics, business studies, social studies, history"; "easy to use and therefore students have a positive experience"; "promotes computer literacy"; "hands-on experience with real technology"; "allows for individual creativity as students can create their own unique illustrations of real data"; "excellent for research and independent study reports; these data are not readily available in any other way."

The objective of the current phase is to make the CANSIM and Census data more broadly available to Canadian high schools and colleges. The chosen vehicle is CD-ROM.

The integrated software and data product to extract the data on the compact discs is called E-STAT. A prototype E-STAT product incorporating easy-to-use graphing and mapping presentations on a PC was tested in over 50 schools across the country in the spring of 1992. The feedback provided by these test sites is being taken into account to fine-tune the end product. It is anticipated that the product will be available for sale and distribution for the 1992-93 school year.

For more information, please contact Yves Dupuis, Ruth Kelly or Joel Yan, Electronic Data Dissemination Division, Statistics Canada, Ottawa, Ontario K1A 0T6. Fax: (613) 951-1134, or contact your local Statistics Canada Regional Office.

### **Canadian Parks Service Holds National GIS Workshop**



The Canadian Parks Service (CPS) held a National GIS Workshop in Ottawa prior to the GIS 1992 Conference. The objective of the five-day event was to encourage the use of GIS in the Canadian Parks Service of Environment Canada, through formal training and the exchange of ideas and experiences.

One hundred and sixteen participants from all regions of Canada attended. The keynote address was delivered by Ed Kennedy, President of the Geomatics Industry Association of Canada, and there were 14 invited speakers. Eleven companies set up booths at the mini trade show. Training sessions on geographic information systems as well as seminars were provided by a commercial vendor.



At a panel discussion on data sources and services, representatives from Statistics Canada, Fisheries and Oceans Canada, Energy, Mines and Resources Canada, Agriculture Canada and Environment Canada discussed their work, available data and opportunities for cooperation. Visits to these agencies were also organized.

For more information on this workshop, you may contact the chairman, David Welch, Canadian Parks Service, Environment Canada, Ottawa, Ontario K1A 0H3. Fax: (819) 994-5140.

### Environmental Innovation Program: Research and Development Funds

The Environmental Innovation Program (EIP), a spin-off of Canada's Green Plan, is designed to involve Canadians as active partners in contributing fresh ideas on research and development to meet the environmental challenges that we face. EIP offers Canadian industries, universities, native groups, non-government organizations and interested individuals the opportunity to submit innovative research and development proposals.

Contracts will be awarded under EIP for ideas that will result in tangible new environmental products, processes, or services. EIP is managed by Environment Canada and administered by Supply and Services Canada (SSC). Proposals should be submitted to SSC, after which they will be distributed to potentially interested government departments. The funds for EIP contracts come from a combination of EIP's \$20 million budget over the next six years and money from sponsoring government departments.

Only projects directly supporting the goals and objectives of the Green Plan will be considered. These include clean air, water and land; sustainable use of renewable resources; protection of our special areas or species; preserving the integrity of our North; global environmental security; environmentally responsible decision-making; and, minimizing the impact of environmental emergencies.

For further information on the Environmental Innovation Program or to obtain a copy of the EIP guidelines, contact: Michael Straus, Programs Officer, EIP, Science and Professional Services Directorate, Supply and Services Canada, 12C1, Phase III, Place du Portage, Hull, Quebec K1A 0S5. Tel: (819) 956-1774.

### Call For Papers

The fourth Vehicle Navigation and Information Systems Conference, VNIS '93 will be held at the Ottawa Congress Centre, from October 12-14, 1993. Subtitled "IVHS Toward 2000" the conference is co-sponsored by a group of institutes and societies, led by the Institute of Electrical and Electronics Engineers (IEEE) and the Vehicular Technology Society. Over 500 attendees from around the world are expected, and they will have a choice of over 100 technical presentations and exhibits including several on GIS applications. For more information on this conference, or to get a copy of the call for papers, please contact: Hugh Reekie, Box 3083, Station D, Ottawa, Ontario K1P 6H7. Fax: (613) 998-7008.

### Geological Survey of Canada Celebrates its 150th Anniversary



The Geological Survey of Canada (GSC) marks its 150th anniversary in 1992. The early scientists and explorers of the GSC drew the first maps of much of Canada and accurately charted its resources. They laid the foundations for the development of the resource industries, notably mining and petroleum, that underpin the prosperity of Canadians.

Today, the GSC explores contemporary frontiers: the Arctic, the sea-beds off Canada's coasts, and the geology deep beneath the surface of the Earth. The Survey continues to study and explain the land on which Canadians live, helping to meet the challenges of economic development and environmental protection. In pursuing these quests, the Survey pioneers leading-edge concepts in geomatics and other technologies.

The GSC produces an ever-increasing amount of information that it must analyze

and provide to more clients, more quickly. In the future, computerized data-entry systems will be widely employed in the field. Artificial intelligence technology will perform analysis, and high-tech distribution over telecommunications lines or on laser disks will give customers fast, convenient and customized access to GSC reports, maps, and data.

There will be a number of events across Canada throughout 1992 to mark the GSC's 150th anniversary. Should you need additional information about the GSC, or if you would like the schedule of events, please contact Le'Anne Frieday, Project Manager, 150th Anniversary Coordination Office, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8. Fax: (613) 996-8059.

### Canadian Space Agency Long-term Space Plan

The Canadian Space Agency (CSA) has officially started the development of the next Long-term Space Plan (LTSP) for Canada. This plan will provide the federal government with options for continuing the Canadian Space Program into the next century. The CSA has established a Task Force to oversee development of the LTSP. The intention is to have a plan ready for Cabinet consideration this year.

Eight working groups have been established to develop strategic options and program proposals in the following areas: space infrastructure, space science, Earth observation, Radarsat II, telecommunications, space technology, international relations and industrial strategies. The Working Groups consist of experts in their fields from government, industry and universities. Each working group has prepared a development strategy including a statement of objectives for the sector, program options, costs and anticipated socio-economic benefits.

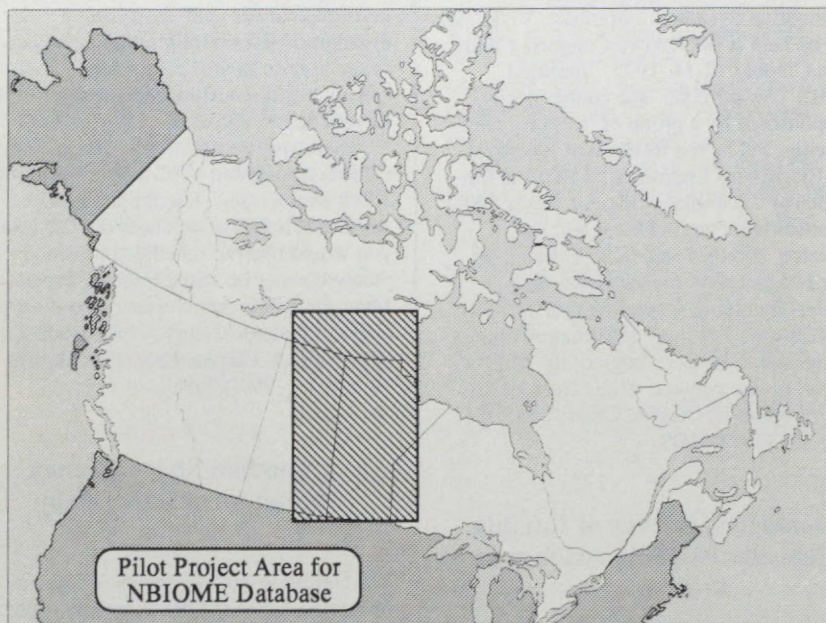
The Canadian Space Agency will consolidate these discussion papers for review by the Interdepartmental Committee on Space. Finally, a Memorandum to Cabinet will be developed to seek Cabinet approval for a plan.

For further information on the Long-term Space Plan, contact:

Mr. André Faucher, Canadian Space Agency, 500 René Levesque Blvd., Montréal, Quebec H2Z 1Z7. Fax: (514) 496-4220.



## The Northern Biosphere Observation And Modelling Experiment (NBIOME) And Digital Data Bases



Vegetation is a key natural resource, yet the role of vegetation in the natural processes and the potential impact of global climatic change are poorly understood.

The Northern Biome Observation and Modelling Experiment (NBIOME) is a multi-agency, multidisciplinary effort to improve our understanding of the role of northern vegetation in the global system. Its principal goal is to develop an observation system to monitor, evaluate and predict the impact of global change on Canadian regions including forests, agro-ecosystems, wetlands and tundra.

NBIOME was initially conceived in 1988 to take advantage of the data sets that will be provided by the international Earth Observing System (EOS). A proposal, submitted by the Canada Centre for Remote Sensing, was accepted in 1990.

NBIOME will require nation-wide digital databases of environmental parameters/attributes for the study of terrestrial vegetation. Such databases are administered by various agencies and are not necessarily easily compatible with one another. The establishment of a national digital database for NBIOME will thus be a challenging task.

As an initial step in the compilation of databases for the 10-year NBIOME project, a workshop was held in January 1991 with the following objectives: to document individual databases relevant to NBIOME;

to establish the feasibility of integrating these databases; to define steps that must be taken to effect the integration; and to prepare a report on the findings.

Following the workshop, a pilot project was initiated to prepare a consistent database for the province of Manitoba and to develop a methodology that can then be used to complete the national coverage. The pilot project involves the cooperative effort of several groups from Environment Canada, Agriculture Canada, Forestry Canada, and EMR. The database will contain the following parameters: basemaps (including lakes, rivers, coastlines/islands, political boundaries), satellite data (NOAA AVHRR 10 day-composites), ecodistricts, forestry data, land cover, watershed boundaries, soils data, elevations, meteorological data.

The pilot NBIOME database project is expected to be completed in 1992.

Further information on the NBIOME project can be obtained from Dr. Josef Cihlar, NBIOME Principal Investigator, Applications Division, Canada Centre for Remote Sensing, 1547 Merivale Rd., Nepean, Ontario K1A 0Y7.

Information on the pilot database project or on the January workshop may be obtained from Dr. Louiselle St-Laurent, Geographic Information Systems Division, 615 Booth St., Ottawa, Ontario K1A 0E9.

## Transport Canada Hosts Geomatics Awareness Day



On March 5, 1992, the Informatics Executive Committee and Information Management Services of Transport Canada held a Geomatics Awareness Day in order to initiate a Transport Canada Geomatics/GIS Working Group. Guest speakers included Neil Anderson, Canadian Hydrographic Service, who discussed opportunities and outlook, as well as panel members Hugh O' Donnell, Assistant Deputy Minister, Surveys, Mapping and Remote Sensing Sector, EMR, and Ed Kennedy, President, Geomatics Industry Association of Canada. The session concluded with hands-on demonstrations of applications provided by commercial vendors.

For more information about the activities of the Transport Canada Geomatics/GIS Working Group, contact: Mr. Jacques Simard, Senior Information Systems Specialist, Advanced Engineering Centre, Information Management Services, Transport Canada, 330 Sparks Street, Ottawa, Ontario K1A 0N5.

Fax: (613) 954-5858;

tel: (613) 990-5334.

## The Canadian Centre for Training in Geomatics



The Canadian Centre for Training in Geomatics (CCTG) has been established by the Surveys, Mapping and Remote Sensing Sector to identify geomatics training and development needs within the Sector and to draw on all available educational and training resources in Canada.

Starting in May 1992, the CCTG will also be the focal point for the *Geomatics Professional Development Program*. This program will provide a two-year development period for selected new graduates and recently hired professional and technical staff in the Sector.

For more information on the CCTG, contact Randall Trenholm, Director, 615 Booth St., Room 490, Ottawa, Ontario K1A 0E9. Fax: (613) 947-0146.



## Development of the United States/Canada Common Border Database



The Common Border Database research project, a cooperative venture of the Geography Divisions of Statistics Canada and the United States Bureau of the Census, will release two prototype geographic files products in 1992. The files, one of the Detroit/Windsor street network and the other containing limits of the south-central Canadian Census Divisions (counties) and northeastern United States counties, are intended for the evaluation of the potential for a variety of North American research projects. The Detroit/Windsor network file combines information from Statistics Canada's Street Network File (formerly called the AMF) and the TIGER File from the U.S. Bureau of the Census. Three elements are combined: attribute information, two sets of geographic features, and linkages to each nation's Census database. The attribute information consists of data on polygon areas, population and dwellings.

The uniform nature of the files, their embedded attributes and most importantly, their linkages to the immense census data sets, make them ideal bases for GIS analysis and mapping in support of a great variety of cross-border research applications. Highlights will be presented at the upcoming URISA Conference in Washington. Interested users who are willing to provide feedback to the developers will in turn be provided with the CD-ROM files and related documentation. Contact Tom Haythornthwaite, Geography Division, Statistics Canada, Jean Talon Building, 3rd floor, Ottawa, Ontario K1A 0T6.  
Tel: (613) 951-3918;  
fax: (613) 951-0569.

## Statistics Canada's National Geography Program



To better describe its activities, the Geography Division of Statistics Canada has established a formal business plan known as the National Geography Program (NGP). This plan provides a timetable for the release of the division's products and services, and for formal consultation and communication activities.

The objectives of the NGP include:

- 1) the management and implementation of geographic and cartographic concepts, products and services;
- 2) the collection and dissemination of geographic and cartographic data in support of national statistical activities and the Geocartographic Frame Data Base (the geographic and cartographic infrastructure maintained within the division); and
- 3) the resolution of related issues.

The first edition of the National Geography Program report was released in November 1991 and contains the business plan for the years 1992 through 1995. The plan will be updated and distributed on a regular basis.

To obtain a copy of the National Geography Program document, contact: Marketing, Geography Division, 3rd floor, Jean Talon Building, Tunney's Pasture, Ottawa, Ontario K1A 0T6.  
Fax: (613) 951-0569.

## Computer Products from the Canada Centre for Geomatics



In recent years, research and development activities at the Canada Centre for Geomatics (CCG) have led to the development of a variety of computer products (software, procedures and standards) used in defining and processing digital topographic data. These products are in diverse fields such as scanning, stereodigitizing, remote sensing, data standardization, cartographic editing and data validation.

In order to inform the geomatics community and to make available its various products, the CCG has prepared data files describing each product that could be of interest to suppliers or users of digital data. These documents are available from the CCG in both official languages. For more information send your request to: Luc Ouellette, Canada Centre for Geomatics, 2144 King Street West, Suite 010, Sherbrooke, Quebec J1J 2E8.

## CCRS Implements a Global Change Network System



Under the auspices of the Canadian Global Change Program, Canadian scientists have

proposed a number of studies to monitor environmental change. Most of these studies require large volumes of data and will succeed only if this data can be located and delivered in a timely, effective and coherent fashion. GCNet is a system developed recently at the Canada Centre for Remote Sensing (CCRS) in response to this requirement.

GCNet serves as a single point of contact for Canadian global change scientists and other users, who want to obtain information about CCRS and other Canadian data holdings. It also provides direct network links to international directories and inventories.

GCNet provides a directory service that allows the user to search for datasets based on any combination of keywords such as discipline, location, geophysical parameters, dates and data source. A Master Directory developed by NASA provides the GCNet directory service and contains descriptive information about many datasets in various countries. Once the required dataset has been identified, the user can automatically connect to data systems and catalogues in Canada and around the world. Over the next two years, a significant effort will be made to add Canadian dataset descriptions to the Master Directory database.

GCNet also supports an inventory service (QUERY) that provides access to an image inventory database describing all the satellite data in the CCRS archive. This database contains records of approximately one million images, archived since 1972 from the Landsat (TM and MSS), SPOT (MLA and PLA) and MOS (MESSR) satellites. All future satellite data archived by CCRS will be added to this database.

GCNet was installed late in 1990 and became fully operational in 1991. For further information, or to obtain an account on GCNet, please contact: Andrea Buffam, GCNet Database Coordinator, EMR, SMRSS, 2464 Sheffield Road, Ottawa, Ontario K1A 0Y7. Fax: (613) 954-9783.

## Directory of St. Lawrence River Data Bases



Known under the acronym REPEN (Répertoire informatisé des bases de données environnementales sur le fleuve Saint-Laurent), this tool will make it easier to consult and manage biophysical and socio-economic data bases on the St. Lawrence River. It was produced under the St. Lawrence Action Plan set up by the



federal government in June 1988 to help reduce the levels of toxins in the river, to preserve marshes along its shores, and to improve our knowledge and management of the environment.

REPEN is a directory of data bases operating independently on IBM-type microcomputer. The information contained in these data bases has been collected on fact sheets. The file can be consulted using one of 45 subjects, such as water quality, sediment quality, fauna, wetlands, industries, riparian land use or by geographical location (23 zones along the St. Lawrence River), data acquisition dates, or the names of data holders.

To date, REPEN includes 156 data bases that are available or can be consulted through the approximately 50 organizations that own

the information. One of these organizations, the St. Lawrence Centre, has some 20 data bases that can be consulted through the Centre ACTIF (Centre d'acquisition et traitement informatique de données environnementales sur le fleuve Saint-Laurent).

These data bases present a considerable challenge. One of the major problems is to update them. We ask you to please send any information you may have on new data bases on the St. Lawrence River to the St. Lawrence Centre.

The directory is available in French only. For more information or to obtain a copy of the disk, contact: Mr. Michel Melançon, St. Lawrence Centre, Centre de documentation, 105 McGill Street, 4th Floor, Montréal, Québec H2Y 2E7. Tel: (514) 283-2762; fax: (514) 283-9451.

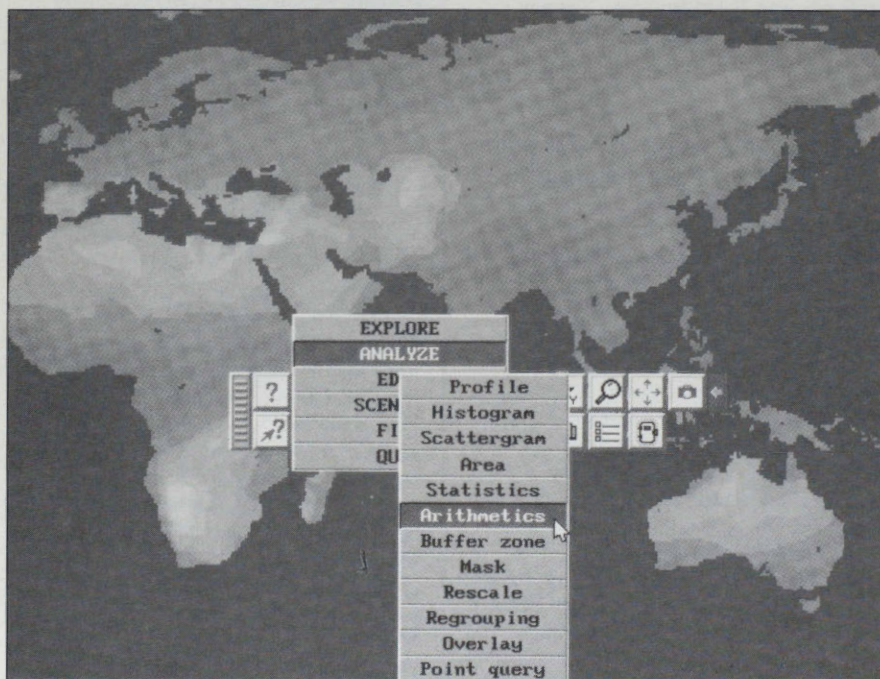
temperature and desertification. Users will be able to zoom into countries and regions of the world to watch, as in motion pictures, changes in vegetation growth.

The project team has collected data from more than 40 contributing organizations in countries including: Australia, Belgium, Canada, Colombia, France, Germany, Norway, Sweden, and the United States.

The GCE project will produce two products, one on diskette and one on optical disk, for use by students, junior scientists and interested members of the public from around the world. Preliminary versions are now being demonstrated. The full version, with software that will illustrate the data and show the changes, as well as manipulate and extract quantitative information about those changes, will be available by the end of 1992 in English and French. Following its publication, the Global Change Encyclopedia, which will be marketed under the name *GEOSCOPE*, will be updated on a regular basis.

For further information, contact Dr. Réjean Simard, GCE Project Leader, Applications Division, Canada Centre for Remote Sensing, 1547 Merivale Rd., Nepean, Ontario K1A 0Y7. Fax: (613) 952-7353.

## CCRS Assembles Global Change Encyclopedia



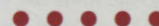
**Satellite Imagery Analysis:** GEOSCOPE provides the means to analyze the data collected by satellites. Among its features are simple arithmetic operations (addition, subtraction, etc.) of two images in order to extract quantitative results. Other analysis functions will also allow better understanding of the observed environmental phenomena and their mutual interactions.

The Canada Centre for Remote Sensing is leading an International Space Year project to produce the Global Change Encyclopedia (GCE). The project, sponsored by the Canadian Space Agency, consists of assembling a broad range of environmental remote sensing data and installing it on a

personal computer equipped with software to analyze and manipulate the data.

The planned GCE will be a dramatic, full-colour animated display that will show changes in such phenomena as vegetation, agriculture, climate, snow and ice, wind patterns, atmosphere, ozone, surface

## GIS Calendar of Events 1992-93



### 1992

#### October - November

GISDEX '92 - Second Annual Geographic Information and Spatial Data Exposition, Washington, D.C.  
**October 6-9, 1992**

GIS/LIS '92 Annual Conference and Exposition and ASPRS Fall Convention, San Jose, California.  
**November 6-12, 1992**

EURNAV '92 Digital Mapping And Navigation Conference, London, England.  
**November 17-19, 1992**

### 1993

#### March - May

Fifth International Conference on Geographic Information Systems, Ottawa, Ontario.  
**March 25-29, 1993**

16th International Cartographic Conference, International Cartographic Association, Cologne (Koln), Germany.  
**May 3-9, 1993**