

Federal Geomatics Bulletin

the official publication of the Inter-Agency Committee on Geomatics



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du Canada

SURVEYS, MAPPING AND
REMOTE SENSING SECTOR

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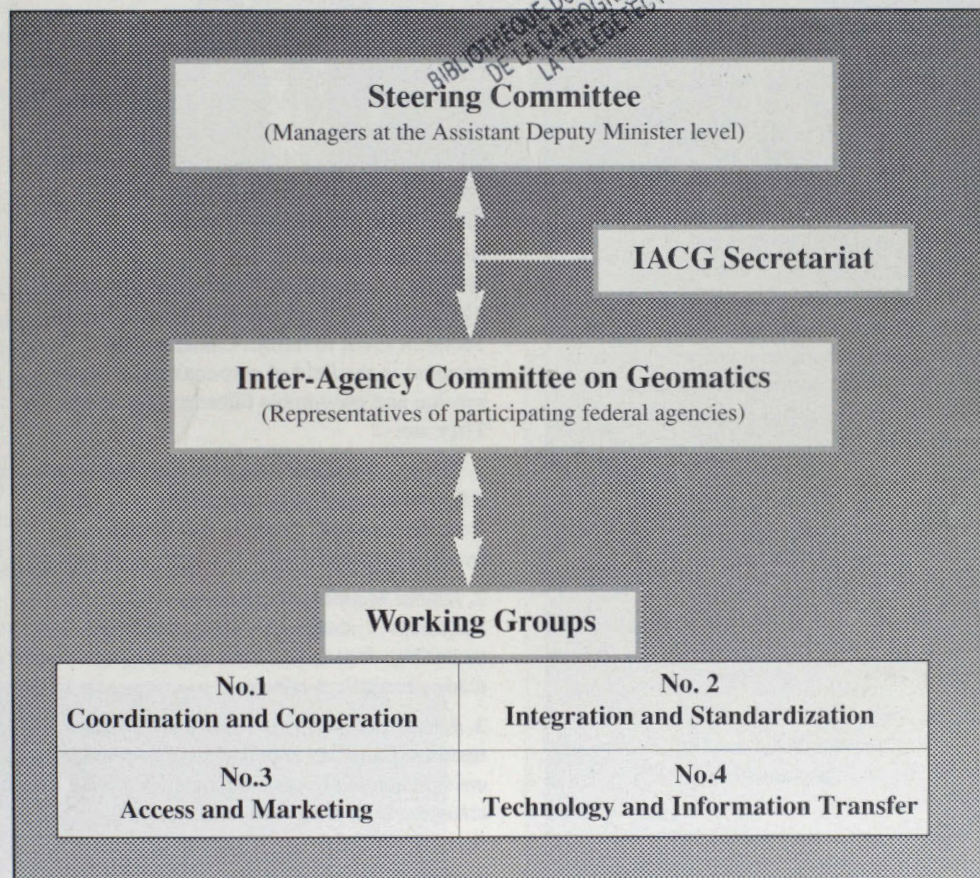
IACG Produces Strategic Plan

During its April 1991 meeting, the IACG Steering Committee decided that the IACG required a strategic plan, and established an ad-hoc sub-committee to produce a draft strategic plan for its consideration.

It was decided that the IACG members would be consulted to form the foundation of the strategic plan. Following this consultation, a report entitled *Consultation on the Future Role of the Inter-Agency Committee on Geomatics* was tabled, from which the draft Strategic Plan for the IACG was completed in July 1992.

The Strategic Plan document first summarizes the purpose and the history of the IACG, gives a description of its past achievements, outlines the present committees and their organization, lists the member organizations, and describes its funding process.

The ad-hoc committee recommends that the IACG strengthen its leadership role within the federal government by having more focused activities through the encouragement of joint projects; by increasing the number of geomatics seminars and workshops; by improving visibility and awareness through better publicity and advertising; and, by a more pro-active involvement of other participating agencies. The Committee also recommends that the IACG evolve to a truly inter-agency committee instead of an inter-departmental information exchange. The IACG must improve its ties to geomatics activities in provincial agencies and in the private sector.



It is necessary that the IACG provide the infrastructure to link science, data collection, data management, interpretation and applications for federal, provincial and private sector programs. Based on this premise, the ad-Hoc Committee recommends the adoption of four future roles for the IACG: "Coordination and Cooperation"; "Integration and Standardization"; "Access and Marketing"; and "Technology and Information Transfer".

The strategic plan was reviewed and approved at the IACG Steering committee meeting in February 1993. For more information on the IACG Strategic Plan, please contact Dave Carney, IACG Chairman, Canada Centre for Mapping, 615 Booth St., Ottawa, Ontario, K1A 0E9. Fax: (613) 995-8737.



Surveys, Mapping and
Remote Sensing Sector

Canada

The Canadian Conference on GIS

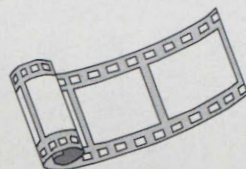
Expanding The Horizon
March 20-26, 1993

The Fifth International Conference on GIS, scheduled for March 20-26, 1993, will be held at the spacious Ottawa Congress Centre. The Conference is being organized by the Surveys, Mapping and Remote Sensing Sector of Energy, Mines and Resources Canada, in cooperation with the Canadian Institute of Geomatics and the Inter-Agency Committee on Geomatics. This premier Canadian Conference on GIS attracts a wide range of distinguished personalities, delegations, and heads of corporations, on a national and international scale.

The potential contribution of GIS technology to the wise and prosperous management of our resources is boundless. Developments and breakthroughs occur constantly, and news of this progress requires a wide and thorough distribution. The Canadian Conference on GIS provides a forum for this information exchange through workshops on a wide range of topics; plenary and concurrent sessions in which invited and selected papers are presented and discussed; exhibits of the products and services of over 40 companies and agencies; poster sessions that encourage discussion with the authors; and tours of local facilities involved in the development and application of GIS technology.

The Conference's theme, *Expanding the Horizon*, provides the focus for the speakers and authors to describe GIS applications used in the areas of municipal applications, mapping, transportation, environment, training, research, education, management, and aboriginal issues.

This Conference generates a great deal of interest in the expanding GIS community, and provides an opportunity to meet with over 1000 participants from government, universities and colleges, as well as the private sector. For additional information about the 1993 Canadian Conference on GIS, please contact: Lou Aubrey, Conference Director, Surveys, Mapping and Remote Sensing Sector, 615 Booth St. Ottawa, Ontario, K1A 0E9. Tel. (613) 995-0266; fax: (613) 995-6001.



Videos, Videos, Videos !

The number of videos pertaining to geomatics is increasing, and several new federal government geomatics videos have been produced and are currently available.

The IACG Users' Need Working Group has recently completed a video entitled: *The Geomatics Revolution*. This video defines geomatics, describes the IACG and the role it plays in the development and exchange of geomatics data; outlines the activities of various federal government departments in this area and stresses the leading role that Canada plays in geomatics. The video lasts eight minutes. For more information contact Mr. Doug Selley, administrative secretary, Canada Centre for Mapping, 615 Booth Street, Room 517, Ottawa, Ontario, K1A 0E9. Fax: (613) 995-8737.

SMRSS Videos

A series of four videos were recently released by the Surveys, Mapping and Remote Sensing Sector of EMR to inform Canadians on progress in the field of map-making, remote sensing and geographic information systems. They are:

1. *Maps: A Valuable Resource* - describes the different types of maps and products available from the Surveys, Mapping and Remote Sensing Sector of EMR. (Length: 4 minutes)
2. *Digital Mapping: Technology At Our Fingertips* - shows how computer-based technology has changed the way maps are made. (Length: 4 minutes)
3. *Remote Sensing: Expanding Our Frontiers* - features Canadian expertise used to provide environmental information, monitor global changes and manage natural resources. (Length: 4 minutes)
4. *GIS: A Revolutionary Management Tool* - shows how GIS can help plan and maintain urban infrastructures and conduct environmental assessments and develop natural resources. (Length: 5 minutes)

To borrow or purchase these videos, please contact: L&M Media Marketing Services Ltd., 115 Torbay Road, Unit 9, Markham, Ontario, L3R 2M9. Fax: (416) 475-3756; tel. 1-800-268-2380.

Other available VHS Geomatics videos include:

The National Atlas Information Service
Year of Production: 1989, Length: 8 minutes
Available from: The National Atlas Information Service, Canada Centre for Mapping, 615 Booth Street, Ottawa, Ontario, K1A 0E9. Fax: (613) 943-8282.

Northern Information Network
Year of Production: 1991, Length: 14 minutes.
Available from: Communications Branch, Indian and Northern Affairs Canada, 10 Wellington Street, Room 1902, Hull, Quebec, K1A 0H4. Fax: (819) 953-4575.

Inland Waters Coastal and Ocean Information Network (ICOIN)
Year of production: 1988, Length: 11 minutes; and,
Electronic Charts: The Future Is Now
Year of production: 1989, Length: 8 minutes.
Both available from: Director, Planning and Development, Canadian Hydrographic Service, 615 Booth Street, Ottawa, Ontario, K1A 0E6. Fax: (613) 996-9053.

IACG List of Videos

The Users Needs Working Group of the IACG has compiled a list of videos related to developments in geomatics. Included are videotaped sessions from various GIS Conferences such as URISA, GIS/LIS, ASPRS and ACSM, and some vendor-specific videos available from A M Productions Inc., 48 East 6th Ave., Vancouver, B.C. V5T 4P4. Fax: (604) 875-9971.

For more information, or to add other videos to this list, contact Charlene Morrison, SMRSS, GIS Division, 615 Booth Street, Ottawa, Ontario, K1A 0E9. Fax: (613) 952-0916.

Activities

IACG Technical Secretary Elected to Eminent ISPRS Position

Dr. Mosaad Allam, A/Director, GIS Division, SMRSS, was elected by the International Society for Photogrammetry and Remote Sensing (ISPRS) General Assembly to the distinguished position of President for Commission II, ISPRS. The election was held at the XVII ISPRS Congress, held in August 1992 in Washington D.C. Dr. Allam, who is also Technical Secretary for the IACG, has been an active member of the ISPRS for many years.

The purpose of the ISPRS is to strengthen international scientific and technical cooperation and to keep the scientific community abreast of state-of-the-art developments. Commission II, entitled "Systems for Data Processing, Analysis and Representation", has organized six working groups led by chairmen from various nations. The term of office for the Commission Executive is for the period 1992 to 1996.

One of the many tasks scheduled for Commission II is the organization of a mid-term conference. As a result, a major event encompassing a joint ISPRS/GIS Conference is being planned for Ottawa in June 1994. For further information please contact: Dr. Mosaad Allam, GIS Division, SMRSS, 615 Booth Street, Ottawa, Ontario, K1A 0E9. Fax: (613) 952-0916.



Presidents of the seven ISPRS Commissions: Front row: Dr. Mosaad Allam, Canada; Dr. Heinrich Ebner, Germany; Dr. Roy Welch, U.S.A.; Standing: Dr. John G. Fryer, Australia; Dr. Li Deren, China; Dr. Roberto Pereira da Cunha, Brazil. Absent: Dr. Luigi Mussio, Italy.

IACG Working Group Chairman Wins International Award

On May 4, 1992, His Serene Highness, Prince Rainier III of Monaco, presented Timothy V. Evangelatos, Chairman of the IACG Standards Sub-committee, with the Prince Albert I medal. The ceremony marked the opening of the XIV International Hydrographic Conference, which is held in Monaco every five years, sponsored by the International Hydrographic Organization (IHO).

To reward authors who prepare original articles for the biannual *International Hydrographic Review*, the IHO awards the Prince Albert I Medal for the best paper published over the five-year period between IHO conferences.

Tim Evangelatos' paper "The Technology of Interactive Compilation", published in the July 1989 issue of the *Review*, was selected for this prestigious Medal.



Tim Evangelatos receiving the Prince Albert I Medal from His Serene Highness, Prince Rainier III of Monaco. Rear Admiral Sir David Haslam, President of the Directing Committee of the International Hydrographic Bureau, applauds.

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 and David Ellwood. Editorial and production support is provided by Barbara McAulay, Diane Blondin, Marguerite Trindade and Marie-Anne Beauchamp. Submissions for Volume 5, No. 1, which should be submitted before April 28, 1993, 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.**

Licences for SMRSS Products

The Surveys, Mapping and Remote Sensing Sector (SMRSS) of Energy, Mines and Resources Canada recently implemented significant changes to its geographic information licensing policy.

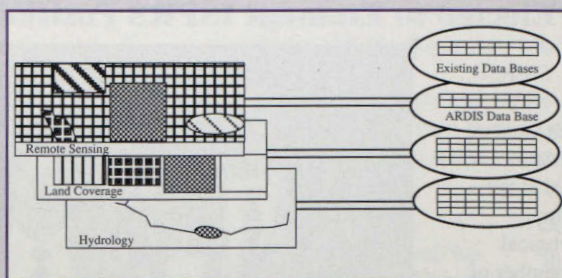
There are two categories of purchasers - End Users, and Licensees. End users are those organizations that acquire products from EMR for their use only, with no intention of resale. Purchasers who wish to resell or redistribute EMR information may sign a licensing agreement. Licensees are required to sign a purchase agreement to use the data, and a licensing agreement to resell it.

The principal revisions to the policy include the following:

- Volume discounts of up to 30 percent are available based on the number of files purchased in a single order.
- Effective June 1, 1992: when an end user purchases a copy of an EMR digital file, EMR grants the customer permission to maintain and use only that one copy in their organization, plus a backup copy for emergency purposes only. For each additional copy that a user wishes to use and maintain, a \$50 fee is levied. This practice (payment on a "per use" basis) is widespread in the software industry, and we have now adopted it. It is not retroactive, and will not apply to files purchased before June 1, 1992.
- With respect to the resale of digital data in digital form, the Sector's royalty structure is now based on a sliding scale, with royalties based on volume, ranging from \$150 to \$10 per file resold.
- There are no longer any restrictions on the format that licensees may use to resell digital data, thus opening new potential markets for private sector licensees.

There are now tremendous opportunities for private sector companies to acquire and resell SMRSS information. To discuss this further, please call Claude Gervais at (613) 995-0314; fax: (613) 995-6001, or write to: *Digital Distribution Services*, Products and Services Division, Surveys, Mapping and Remote Sensing Sector, EMR Canada, Room 400, 615 Booth Street, Ottawa, Ontario, K1A 0E9.

Agricultural And Rural Development Information System



these pressing issues will require integration of land-related data from all four western provinces and federal agencies, to develop application and modelling tools based on GIS technology.

An Agriculture and Rural Development Information System (ARDIS) for western Canada was proposed in 1991 by an Industry Team consisting of: LINNET Graphics International Inc. (Manitoba) as the project leader; Terrestrial and Aquatic Environmental Managers Ltd. (Saskatchewan); AgriTrends Research Inc. (Alberta); and MacDonald, Dettwiler and Associates Ltd. (British Columbia). The ARDIS project was launched at the request of a Premier from western Canada.

ARDIS is designed to support public and private sector decision-making processes at both operational and policy levels. The objectives of ARDIS are:

- to provide services to collect, integrate, normalize, store and disseminate environmental information related to sustainable agriculture and rural development;
- to provide application development services and modelling tools required to support decision-making processes at both the policy-making and operational levels;
- to integrate existing databases and models to complement and interface with provincial land resource information systems;
- to develop a body of expertise within ARDIS that can be exported to other markets around the World.

In early 1993, the ARDIS Industry Team, in cooperation with both levels of government, will be forming a Users Project Team (UPT). The UPT will include senior representatives from federal and provincial government departments and from the private sector, to support the demonstration of the overall viability of the project. The delivery of a fully operational ARDIS system is scheduled to start in 1994.

For additional information on the ARDIS initiative, please contact: Rick Morgan, Western Economic Diversification Canada, 712 - 240 Graham Avenue, Winnipeg, Manitoba, R3C 2L4. Fax: (204) 983-1280.

Image Map Prototypes For Northern Canada

Although the 1:250 000 scale topographic map coverage has been completed for Canada, 1400 NTS sheets of Northern Canada remain unmapped at the 1:50 000 scale.

The conventional 1:50 000 topographic map produced for Northern Canada is generally monochrome. To verify whether image maps, which can be produced faster and at less cost, meet users' needs, the Canada Centre for Geomatics (CCG) has produced three Image Map prototypes (true colour, false colour, black and white). Each potential map product combines orthorectified Landsat TM imagery and contour lines originating from the 1:250 000 data. Cartographic details such as UTM grid, toponymy and surround follow the NTS polychrome mapping standards. Image Map planimetric accuracies meet the "B" NATO standard, while the altimetry is approximate.

These prototypes will be evaluated, along with several other potential map products, for their ability to meet users' needs. For further information, please contact Daniel Clavet, Canada Centre for Geomatics, 2144 King Street West, Suite 010, Sherbrooke, Quebec, J1J 2E8. Fax: (819) 564-5698.

National Atlas Goes Digital

Since 1979, the National Atlas of Canada has been distributed as an unbound publication consisting of loose-leaf sheets that can be bought separately or as a set and stored in a special map box. In loose-leaf form, the Atlas functions as an easily displayed and affordable collection, for both the generalist and specialist. In addition, new maps can be conveniently added and old maps updated, thus responding quickly to change.

Speed and accuracy of updating maps will be improved by the new and evolving Digital National Atlas Data Base. Users who have the means to independently manipulate information and create their own computerized displays, using combinations of digital geographical information, will find the National Atlas Data Base useful.

In general, the features available as digital products consist of drainage, boundaries, transportation routes, populated centres and a projection graticule at the 1:2M scale. In addition, national parks, historical boundaries, and watershed boundaries are available at the 1:7.5M scale. The database is available in a variety of formats and media. Digital products of the National Atlas Information Service can be obtained by contacting Dan Mackay, SMRSS, Products and Services Division, 615 Booth Street, Room 406, Ottawa, Ontario, K1A 0E9. Tel. (613) 992-4252; fax: (613) 995-6001.

GCNet at CCRS: Important Update!

In the Summer 1992 issue of the *Federal Geomatics Bulletin*, Vol. 4, No. 1, it was stated that GCNet users should obtain an account. The CCRS GCNet System was created to provide free on-line access to CCRS services and no account is required!

GCNet was developed at CCRS to serve as a single point of contact for global change researchers, scientists, and users of remote sensing information. It directs users to pertinent international datasets, including a directory service, Data Centre links, CCRS image inventory, CCRS Bulletin Board, SMRSS products and services and other valuable up-to-date information.

Since moving to the Booth Street complex in September, the GCNet communication numbers have changed. For further information, please contact: GCNet Database Coordinator, Canada Centre for Remote Sensing, 588 Booth Street, 2nd Floor, Ottawa, Ontario, K1A 0Y7. Telephone: (613) 947-1298 Fax: (613) 947-1408.
E-Mail: NSI/DECnet>CCRS::GCNETADMIN (or 18732::GCNETADMIN)
INTERNET>gcnetadmin@ccrs.emr.ca

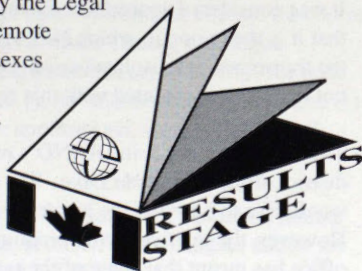
A Results-Oriented GIS For Canada Lands

A cadastral GIS application has been developed by the Legal Surveys Division of the Surveys, Mapping and Remote Sensing Sector to replace conventional survey indexes and to manage the survey frameworks on Canada Lands in a more organized and integrated fashion.

Although developed primarily for the management of survey data, this GIS application was designed in response to the multipurpose land information needs of all users of Canada Lands records. Thus, it provides a GIS environment for the management of parcel-based interests as well as survey information. This application has been termed the **REgistration SURvey and Land Management Triangular System (RESULTS)**. It will provide an information management tool for survey, land registration and land administration data.

RESULTS will lead to the implementation of computerized cadastre (seamless digital representation of the boundaries of all cadastral parcels and a registry of parcel records). RESULTS uses a unique parcel identifier as the primary linkage mechanism for survey information and other related data. The ultimate goal of RESULTS is to extend a computer cadastre across Canada Lands leaving no parcel without a unique identifier.

For further information, contact the Office of the Surveyor General of Canada Lands, Legal Surveys Division, SMRSS, EMR Canada, 615 Booth Street, Ottawa, Ontario, K1A 0E9. Tel. (613) 995-4438; fax: (613) 995-9191.



ACOA Announces Projects Selected in Geomatics Industry Development Initiative

Eight projects have been selected for government support in the \$10 million geomatics industry development initiative for Atlantic Canada, funded by the Atlantic Canada Opportunities Agency (ACOA). The Honourable Elmer MacKay, Minister of Public Works, announced the projects recently at the Geomatics Atlantic '92 Conference in Halifax. He made the announcement on behalf of The Honourable John C. Crosbie, former Minister of Fisheries and Oceans and the Minister formerly responsible for the Atlantic Canada Opportunities Agency.

ACOA will provide funding for the projects over three years, to create value-added geomatics products and services that can be commercialized for markets in Canada and abroad. The initiative is designed to develop an internationally competitive geomatics industry in the region.

The eight projects are as follows:

- The Land Records Management Infrastructure (LRMI) project resulted from the formation of a consortium of four Atlantic Canada geomatics firms, which will create new software products and services for land records management.
- The Passamaquoddy Bay Project: ICOIN Industries Inc. of Fredericton will develop a data-access system that enhances the management of coastal resources.
- A Product-definition and Market Study will be undertaken by the ARA Consulting Group Inc. for three GIS software applications in the areas of environmental and marine resource management, fisheries, and marketing research.
- INFONAV, an electronic chart navigation system will be produced by Matrix Technologies of St. John's.
- An Environmental Information System will be developed by MacLaren Plansearch (1991) Limited of Halifax.
- The Road Centerline Network Project, proposed by Geoplan Consultants Inc. of Fredericton, will develop a unique set of transportation-related software using the highway network as a primary data source.
- A new geographic data management tool, QUIKFocus, will be developed by Earth & Ocean Research Limited of Dartmouth.
- Two relatively low-cost geomatics software products for the peat and orchard industries will be developed by Three-D GeoConsultants Limited of Fredericton.

For further information on ACOA, contact Mr. Alan Miller, ACOA Head Office, P.O. Box 6051, Moncton, New Brunswick. Fax: (506) 851-7403.

Developments in Geomatics

- In June 1992, the name of the Department of Surveying Engineering at The University of Calgary was formally changed to the Department of Geomatics Engineering. The name was adopted because it better reflects the current curriculum in which traditional and emerging disciplines are integrated. It is also consistent with modern terminology as the term geomatics is being increasingly used by the profession and the public. The University of Calgary is the second Canadian university to incorporate the term geomatics in its name: Laval University has had a Faculty of Forestry and Geomatics since 1989. For more information, please contact: Head, Department of Geomatics Engineering, The University of Calgary, 2500 University Drive N.W., Calgary, Alberta, T2N 1N4.

- The members of the "Canadian Institute of Surveying and Mapping" recently voted to have the name of the Institute changed to the "Canadian Institute of Geomatics" (CIG). The French name of the Institute, "Association canadienne des sciences géomatiques" (ACSG) was chosen in 1991. The term "geomatics" was adopted by the Institute as part of its overall strategic plan for the future. For more information on the CIG, contact Meline C. Batten, Executive Director, Canadian Institute of Geomatics, P.O. Box 5378, Station F, Ottawa, Ontario, K2C 3J1. Tel: (613) 224-9851; fax: (613) 224-9577.

- A network information system, called Coastal Ocean Water Level Information System (COWLIS), was recently implemented by ASA Consulting Ltd. COWLIS presently acquires water level information from 21 Canadian ports monitored by the Canadian Hydrographic Service of the Department of Fisheries and Oceans. The system is being expanded to handle other geo-referenced environmental data including water temperature, salinity and atmospheric pressure. It operates in real-time and is available on-line 24 hours a day using a modem and an IBM compatible PC. For more information, contact ASA Consulting Ltd., Box 2025, Dartmouth East, N.S., B2W 3X8. Tel: (902) 465-5535.

- The National Atlas Information System (NAIS), in cooperation with the Products and Services Division of the Surveys, Mapping and Remote Sensing Sector, EMR Canada, has produced a map showing the results of the October 26, 1992 referendum. The map was released on October 27, a few hours after receiving the provisional voting results from Elections Canada, Le Directeur général des élections du Québec and the Canadian Press. It is the first time that a map has been produced so quickly after such an event. For more information concerning this map, contact the National Atlas Information Service, Canada Centre for Mapping, 615 Booth St., Room 650, Ottawa, Ontario, K1A 0E9. Fax: (613) 943-8282.

To purchase this map, contact the Canada Map Office, located at 130 Bentley, Nepean, Ontario. The mailing address is: Canada Map Office, 615 Booth Street, Ottawa, Ontario, K1A 0E9. Tel: (613) 952-7000; fax: (613) 957-8861. Please quote map number MCR 122.

New Research and Development Opportunities in Geomatics

Supply and Services Canada (SSC), in cooperation with Industry, Science and Technology Canada (ISTC), has established the Unsolicited Proposals Brokerage Service to encourage innovative science and technology proposals.

The Unsolicited Proposals Brokerage Service is administered by SSC, which receives the proposals and presents them to potential federal government sponsors. Once a proposal is accepted, SSC negotiates and manages the contract on behalf of the lead federal government department and ensures contractor performance and delivery. The Brokerage Service uses existing financial resources through alliances with the Canadian private sector and government departments and agencies at the federal, provincial and municipal levels.

Unique and creative work involving instruments, equipment and process R&D will be more readily accepted than other types of proposals. This should be of particular interest to the geomatics industry. Canadian industry, universities, non-profit organizations and individuals may submit proposals. According to the federal government's revised policy on ownership of intellectual property, contractors will take title to all inventions and intellectual property developed under Crown contracts.

For further information on the Unsolicited Proposals Brokerage Service or to get a copy of the booklet on how to prepare an unsolicited proposal, contact Mr. Michael Straus, Programs Officer, Science and Professional Services Directorate, Supply and Services Canada, 12C1, Phase III, Place du Portage, Hull, Quebec, K1A 0S5. Tel: (819) 956-1774.

Department of Indian Affairs and Northern Development Evaluates Datacasting Communications

Recently, the Department of Indian Affairs and Northern Development (DIAND) participated in a datacasting project in the Yukon to disseminate directory information in the Northern Information Network (NIN) (see FGB Vol.3 #2). In this project, directory information is carried by the vertical blanking interval of the television broadcast. The transmission is being carried through the Northern Native Broadcast, Yukon, and has the potential for covering many Yukon communities.

It was considered appropriate to implement a pilot project in the North, considering that it is the region in which NIN applies. In this way, an evaluation can be done of the transmission to isolated areas, and of the use of the directory by people who are not normally acquainted with this type of technology.

The host computer is in DIAND's regional office in Whitehorse, the recipient is a district office in Watson Lake. The assumption was that personnel in a district office would like to know of the existence of geo-referenced data that applies to their region. However, the relatively small requirement for this type of information by a district office has meant that some of the testing is rather artificial in nature. It is expected that as the local Indian Band acquires the need for, and competence in, resource planning, it will make more use of the information.

The decision about future transmission of data directories will depend on both costs and effectiveness. For isolated, northern populations where long distance telephone charges are significant, there is no doubt that datacasting is a much recommended method.

For further information, contact: Dr. Valerie Hume, Natural Resources Branch, DIAND, Ottawa, Ontario, K1A 0H4. Tel: (819) 997-9480; fax: (819) 997-0511.

Canadian Geomatics Interchange Standard (CGIS)

On June 26, 1991, the Canadian General Standards Board Committee on Geomatics (CGSB-COG) adopted the Spatial Archive and Interchange Format (SAIF) as a draft Canadian Geomatics Interchange Standard (CGIS). At the same time, the Department of National Defence, through the efforts of the Digital Geographic Information Working Group, developed and adopted the Digital Geographic Information Exchange Standard (DIGEST).

Does the existence of these two standards constitute a conflict? Actually, CGIS is much more than DIGEST and DIGEST is much more than CGIS.

One of the steps in modelling geocoded data for storage and processing involves defining a data structure to support the information. This data structure is the recipient in which the information is placed. CGIS is much more than DIGEST because it describes a set of recipients that are much more elaborate and much more flexible than those of DIGEST.

However, CGIS does not standardize the information contained in these recipients, whereas DIGEST is an information standard as well as a data structure. Thus, DIGEST is much more than CGIS. CGIS is therefore a generic (permissive) interchange standard for all types of geocoded data, while DIGEST is a more defined (restrictive) standard in that it is not necessarily possible to add all types of information to it. CGIS requires a profile that is an information-related specification; it specifies the way information is organized in order to standardize it while DIGEST contains the information standard. Both standards do not, therefore, attain the same objectives.

The work plan proposed by CGSB-COG for implementing CGIS recognizes the differences between the two standards and proposes that one of the official CGIS profiles describe DIGEST information. Once the DIGEST profile specification has been added, CGIS will become an information receptacle similar to DIGEST, allowing for the problem-free movement of data between the two environments. For further information, please contact René Gareau, Canada Centre for Geomatics, 2144 King Street West, Sherbrooke, Quebec, J1J 2E8. Fax: (819) 564-5698.

Digital Geographic Information Exchange Standard

The Digital Geographic Information Exchange Standard (DIGEST) has been designed by the multi-nation Digital Geographic Information Working Group (DGIWG) to establish a uniform method for the exchange of digital geographic data. DIGEST applies to topological vector data, raster and matrix data. A standard scheme for coding features and attributes is provided in a Feature and Attribute Coding Catalogue. DIGEST also provides specifications for three encapsulations: (a) ISO 8211, for bulk transfer and archival purposes; (b) ISO 8824 (ASN.1), for telecommunications; and (c) Vector Relational Format (VRF) for database user applications, such as the Digital Chart of the World.

DIGEST Edition 1.1 was published in October 1992. Canada is the custodian nation for DIGEST on behalf of DGIWG, and in addition, is the NATO custodian nation for the Standardization Agreement (STANAG 7074) on DIGEST.

For more information on DIGEST, contact: Major Mark Phillips, D Geo Ops 5-3, Directorate of Geographic Operations, National Defence Headquarters, Ottawa, Ontario, K1A 0K2. Tel: (613) 992-7739; fax: (613) 996-3328.

Topographic Data for Radio Communications

For about a decade, Communications Canada and the Communications Research Centre (CRC) have used terrain data in the prediction of radio-wave attenuation due to the topography. Terrain elevation is of primary interest, but information on the type of ground cover (trees, buildings, water) is also of value. In the CRC data base, the elevation and a code for ground cover are recorded at the intersections of a 500-metre square grid.

Most of the existing data of this type were obtained in the early 1980s, by hiring students and other temporary workers to digitize information by hand from 1:50 000 scale topographic maps. Elevations were obtained by noting where contours cross UTM grid lines, and ground-cover codes were obtained from the colour of the map. The data obtained in this way covered south-eastern Alberta, southern Ontario, southern Quebec, and Atlantic Canada, excluding Labrador. Elevations were also obtained from the Gravity Division of EMR for southern British Columbia and southwestern Alberta.

A project has been underway to extend the coverage. The new data originated from 1:250 000 scale maps, in two ways. The Department of National Defence has released a large body of Digital Terrain Elevation Data (DTED), an elevation model with three-arc-second (about 100 m) resolution. Secondly, Communications Canada and CRC have just obtained new elevation data, also in DTED format, for about 100 map sheets, beginning with digital topographic data supplied by the Canada Centre for Mapping of EMR. The work was done under contract by Eastcan of Halifax, using DTED production specifications adapted for digital input. It is expected that these data will eventually be added to the existing body of DTED for distribution.

Elevation data from both existing and newly created DTED will be converted to a 500-metre format for compact storage and for use in radio predictions. For the present, only the elevation (not the ground cover) is available for the extended coverage of CRC data. The resulting data base will cover all the western provinces to at least 56°N, and the Atlantic provinces, including coastal Labrador.

For more information, contact Jim Whitteker, Communications Research Centre, 3701 Carling Avenue, Ottawa, Ontario, K2H 8S2. Fax: (613) 998-4077.

Environmental Data Directory

Environment Canada recently published its *Envirosource Reference Directory to Information Holdings*, 1st Edition. The Directory lists and describes the Department's 1000 diverse information collections and databases and provides contact points for accessing them.

The Directory includes:

- an overview of *Envirosource* and the infrastructure for information management in Environment Canada;
- organizational charts for Environment Canada and descriptions of its role, responsibilities and services (including the Acts and Legislation that it administers and the manuals that it produces to carry out its mandate);
- a catalogue of the common information services and systems within Environment Canada (for example, communications, the library, records management, information collection and public opinion research, access to information, privacy, security of information, data administration, information technology management, office automation, word processing/electronic publishing, and forms management);
- an inventory of approximately 1000 documented information holdings, listed alphabetically and indexed by subject, service and region, and program and activity.

The holdings described in *Envirosource* range from small collections (the 10 videos of the AES Atlantic Region Safety and Health Video Collection) to large libraries (the AES Library Collection, which has among its holdings 450 videos). Also included are scientific (the National Registry of Toxic Chemical Residues), historical and geographical (the Gros Morne National Park Map Collection), and administrative listings (the Departmental Correspondence Unit Records Collection).

The holdings range from sophisticated computer databases (the 800 000-entry Test Data for Equipment Under Development) to collections of artifacts (the 155 artifacts of the Pacific Rim National Park Artifact Collection).

A revised edition of the Directory will be published every two years. A limited number of copies are available in either English or French. Copies may be obtained by contacting Brian Faulkner, Records Improvement Officer, Information Holdings Management Branch, Environment Canada, Terrace de la Chaudière, 10 Wellington Street, Hull, Quebec, K1A 0H3. Tel: (819) 953-7267; fax: (819) 953-1099.

For copies of the French version of this Directory, contact Denis Bohémier, Records Improvement Officer, at the above address. Tel: (819) 947-0456.

A Geographic Information System For Private Woodlots in Eastern Quebec

As part of its Eastern Quebec Forestry Program, Forestry Canada, in cooperation with the region's wood producers' association, has developed a geographic forestry information management system called FIMS. The goal of this venture is to provide private woodlot operators with a management tool that can be adapted to their requirements and that uses the most advanced technology available.

Special care was taken to make this system as user friendly as possible, since it was developed primarily for direct use by foresters, not only for capturing data, but also for consultation.

The main functions of FIMS include:

- keeping the description and location of forestry data, contained in management plans, up-to-date;
- producing and updating a management plan for each property registered in a forest development program;
- maintaining a permanent record of any logging carried out;
- integrating biophysical and environmental data and evaluating their impact on forest development;
- simulating the evolution of tree stands, the effects of the silvicultural system used, and the impact of various work scheduling scenarios.

As a forest planning tool, FIMS will allow the setting of long-term forest development goals based on an in-depth knowledge of the forest, its evolution and the predicted impact of logging. Thus, Forestry Canada will contribute to the sustainable development of private forests.

For more information on FIMS, contact Normand Bélisle, Forestry Engineer, 212 Belzile Street, 3rd floor, Rimouski, Quebec, G5L 3C3. Fax: (418) 722-3166.

GIS Calendar of Events 1993

March 20-26

Fifth International Conference on Geographic Information Systems, "Expanding the Horizon", Ottawa, Ontario.

April 19-23

International Symposium of Operationalization of Remote Sensing, ITC (International Institute for Aerospace Survey and Earth Sciences), Enschede, The Netherlands.

May 3-9

16th International Cartographic Conference, International Cartographic Association, Cologne (Koln), Germany.

June 7-10

16th Canadian Symposium on Remote Sensing and the 8th Congress of the Quebec Association of Remote Sensing, Sherbrooke, Quebec.

June 8-11

1993 Surveying and Mapping Conference, the Canadian Hydrographic Service and the Canadian Institute of Geomatics, Toronto, Ontario.

June 15-16

Symposium and Exhibit on Geomatics Applied to Private Woodlands, sponsored by the Syndicat des producteurs de bois de l'est du Québec, in collaboration with Forestry Canada, Sayabec, Quebec.

July 25-29

URISA '93 Annual Conference of Urban and Regional Information Systems Association, Atlanta, Georgia.