

Federal Geomatics Bulletin

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NAD83 Briefing Session

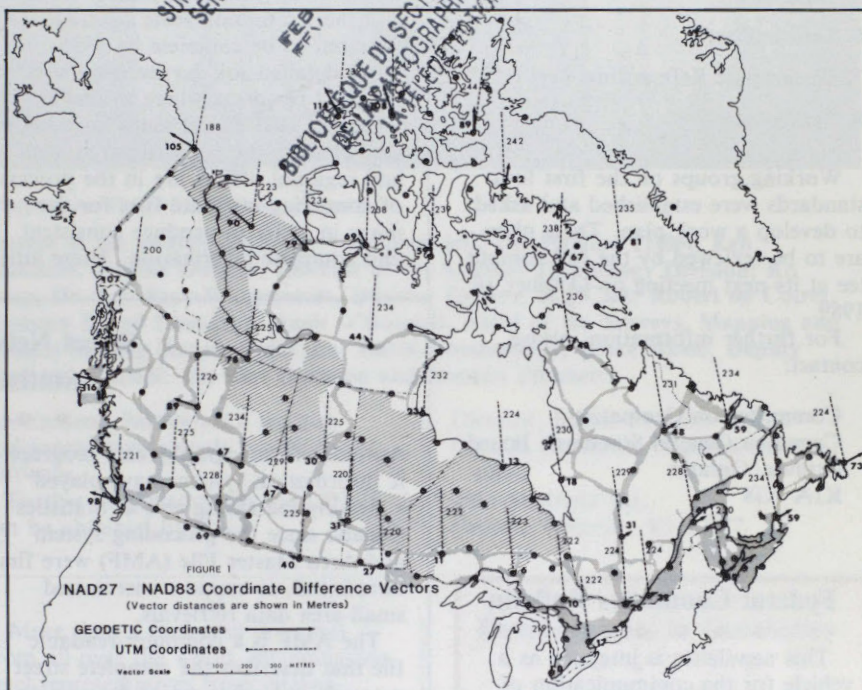
The Canada Centre for Surveying (CCS), Energy, Mines and Resources Canada, recently organized and hosted a briefing session for managers of federal government departments and agencies. The one-day session, on the subject of the North American Datum of 1983 (NAD83) readjustment, was held in Ottawa.

George Babbage, Director General of CCS, indicated that "NAD83 should be considered an important first step in establishing a new Canadian reference system that will provide for compatibility among spatially-referenced data (GIS) and compatibility with satellite-derived positions (GPS)".

The modification of existing NAD27 coordinates to NAD83 coordinates involves transformations, which range from simple shifts through scaling and rotations to distortion modelling and local refinements. The magnitude of the coordinate adjustment ranges from almost zero to approximately 250 metres, depending on the location within Canada.

Mr. J. Hugh O'Donnell indicated in his opening address that "publication of results (final re-adjustments) is expected to be preceded by Orders-in-Council in the various jurisdictions, announcing the new datum and encouraging all users to adopt it. There will be no compulsion to adopt NAD83; however, many government agencies, federal, provincial and municipal, may call for the use of NAD83 in statutes and regulations that they administer and in contracts that they let".

The CCS is facilitating the use of a national transformation through the



provision of documentation, tables and algorithms for interested parties. Further information on the impact and conversion to NAD83 may be obtained by contacting:

Geodetic Survey Division
Canada Centre for Surveying
615 Booth St.,
Ottawa, Ontario
K1A 0E9

Canadian General Standards Board Committee on Geomatics

More than 40 representatives from industry, academia and government attended the first meeting of the Committee on Geomatics (COG) of the Canadian General Standards Board (CGSB) in Ottawa from June 21-22, 1989. Mr. J. Hugh O'Donnell, ADM, Surveys, Mapping and Remote Sensing Sector, welcomed all participants and indicated that the IACG recognized

the need and importance of national geomatics standards. He stated that the work of the Committee would not only advance the geomatics industry within Canada, but could also maintain Canada's role as an international leader.

Mr René Gareau from the Canada Centre for Geomatics, EMR, was selected as chairman of the COG and Dr. Vince Robinson from the University of Toronto was selected as vice-chairman. Attendees established an

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Surveys, Mapping and
Remote Sensing Sector

objective that states: "CGSB's Committee on Geomatics shall strive to develop standards which will help promote the sharing of Geomatics data" The committee discussed geomatics standards activities in Canada and established the following list of priorities:

1. Data transfer/interchange
2. Data models
3. Feature classification
4. Data dictionary/directory
5. Data quality
6. Terminology
7. Geographic Referencing
8. Symbolology

Working groups on the first four standards were established and asked to develop a work plan. These plans are to be reviewed by the full committee at its next meeting on October 16, 1989.

For further information, please contact:

Committee on Geomatics
Canadian General Standards Board
Ottawa, Ontario
K1A 1G8

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 and is available without charge. Articles pertain to the methods, procedures and technologies associated with systems for the collection, manipulation, display and dissemination of geographically-referenced digital data.

Submissions are most welcome. Subscription requests, queries, comments or submissions may be sent to:

Federal Geomatics Bulletin
Secretariat, IACG
Geographic Information
Systems Division
615 Booth Street
Ottawa, Ontario
K1A 0E9

Canada Soil Information System

The Canada Soil Information System (CanSIS) has been developed by the Land Resource Research Centre of Agriculture Canada to store and manage soil survey and inventory information. The original custom software, developed in the early 1970s, was replaced by a commercial GIS system in 1986. The implementation phase was completed in March, 1989, although additional work is still required to complete the National Soil Data Base.

Different levels of information are planned. Currently, 1:5 million scale information gives national coverage and the 1:1 million scale coverage is expected to be complete by 1995. More detailed soil survey maps are included for areas where available.

About 1300 digital maps have been converted to the commercial system and regional offices are in the process of compiling attribute files for the maps in order to produce consistent and complete information. These attri-

bute data are being integrated with the digital map information as the maps are being converted to real world coordinates. The resultant data files will constitute complete digital soil maps ready for general use and storage in the National Soil Data Base.

The CanSIS system is being used to support production of soil maps, to develop standard format map products, to provide data management and analysis capability for the Prairie Land Evaluation Study, to assist in assessing the risk and spread of pests, and to prepare interpretive maps for special projects such as land degradation, bacterial growth and pesticide use.

Further information on the CanSIS system can be obtained from:

Land Resource Research Centre
Research Branch,
Agriculture Canada,
Ottawa, Ontario
K1A 0C6

Street Network Files from Statistics Canada

Automated cartography and geographic information systems have played a steadily increasing role at Statistics Canada since the geocoding system and Area Master File (AMF) were first introduced, to support customized small-area data retrievals.

The AMF is a computer-readable file that describes the complete street network and other major features (e.g. highways, railway lines, hydrography) of urban centres in Canada. An AMF geographically references every street, address range and block-face using UTM coordinates. A block-face refers to one side of a street between consecutive intersections.

Once an AMF has been created, it is kept up-to-date in cooperation with local governments through the addition of new streets and revisions of street names and addresses. AMFs presently cover 327 municipalities, representing 60 percent of Canada's population.

AMFs are being put to a wide range of uses, including vehicle dispatch and routing, address matching and geographic support for the planning and generation of maps. AMFs have been licensed to several companies in the private sector. For further information on AMFs or other geomatics products from Statistics Canada, such as the

Postal Code Conversion File or Cartographic Boundary Files, contact:

Geography Information Services
Geography Division
Statistics Canada
Ottawa, Ontario
K1A 0T6

Making It Work

Following its successful 1989 conference, Forestry Canada and Reid Collins and Associates are putting together final details for a major forestry conference in 1990. To be held at Vancouver's Trade and Convention Centre, March 13-19, the conference will explore practical as well as technical solutions, under the banner "Making It Work". The organizers have planned workshops, tutorials, presentations by leading GIS users, and an exciting trade show with the latest developments in GIS technology. For further information on the conference, please contact:

GIS '90, Symposium Office
134 Abbott Street
Suite 303
Vancouver, B.C.
Canada V6B 2K4

CCRS Team Receives an Award of Excellence

A team of scientists and engineers from the Canada Centre for Remote Sensing received the prestigious Treasury Board Award of Excellence for their contribution to the development of the Landsat Digital Image Analysis System (LDIAS). Ten Awards of Excellence are chosen annually, by a committee of Assistant Deputy Ministers, from the most outstanding merit and suggestion awards selected from all participating federal government departments.

The awards were presented to the LDIAS team by The Honourable Robert de Cotret, President of the Treasury Board, at a special ceremony at the National Gallery. The awards were presented to Dr. David Goodenough, Gordon Plunkett, Ken Barkman, Ko Fung, Dr Bert Guindon, Dr. Phillippe Teillet and posthumously to Arthur Kelly.

The LDIAS is a computer-based system that performs processing and analysis of remotely sensed data and allows the integration of geographic information. Users can combine remote sensing imagery with geographic information for tasks such as resource inventory, environment assessment and land use planning.

The LDIAS software has been transferred to the private sector through Canadian Patents and Development Limited, which licenses technology developed by the federal



photo: John Evans Ltd. Ottawa, Ontario

Present at the awards ceremony were from left, Dr. Phillippe Teillet, Ken Barkman, Florian Guertin, Director of the Systems Technology Division; Ko Fung, Dr. Leo Sayn-Wittgenstein, Director General of CCRS; Robert de Cotret, Treasury Board President; Hugh O'Donnell, ADM of the Surveys, Mapping and Remote Sensing Sector, EMR; Dr. David Goodenough, Bruce Howe, Deputy Minister of EMR; Dr. Bert Guindon and Gordon Plunkett.

government. Numerous Canadian companies have already licensed the software.

Further information on the LDIAS can be obtained from:

Director, Major Projects Office
Canada Centre For Remote Sensing,
EMR
2464 Sheffield Rd,
Ottawa, Ontario, K1A 0Y7

12th Canadian Symposium on Remote Sensing

The 12th Canadian Symposium on Remote Sensing, which was held at the University of British Columbia in Vancouver, July 10-14, was entitled "Remote Sensing: An Economic Tool for the Nineties". The Symposium was co-sponsored by the Canadian Remote Sensing Society (CRSS), the IEEE Geoscience and Remote Sensing Society (IGARSS) and the International Union of Radio Science (URSI).

Dr. John MacDonald, General Chairman of IGARSS'89 indicated: "Canadians have a very large land-mass as well as three coastlines to monitor, map and explore. Initially, we needed to develop remote sensing expertise for mapping and rational management of our vast natural resources. Today, with our increasing concern about environmental management, this expertise is more crucial than ever".

More than a thousand delegates from all over the world, including top level representatives from international high technology companies and government agencies, visited approximately 30 exhibitors' booths and listened to some of the 900 papers presented.

Among the major highlights of IGARSS'89 were details on the Canadian RADARSAT satellite program; concern about global change detection and monitoring; other environmental issues including vegetation, oceans and ice; the uses of various international satellites and sensors; and image and data processing techniques, including expert systems and GIS.

The 13th Canadian Symposium on Remote Sensing is planned for the summer of 1990 in Fredericton, New Brunswick. Information may be obtained from the:

Executive Director
Canadian Remote Sensing Society
601-222 Somerset St. West
Ottawa, Ontario, K2P 2G3

Developments in Geomatics

- Energy, Mines and Resources Minister Jake Epp and Northwest Territories Renewable Resources Minister Titus Allooos announced agreements on cooperation in the development of a NWT GIS capability and, for a series of satellite remote sensing experiments. For more information, please contact Mr. J.H. O'Donnell, ADM, Surveys, Mapping and Remote Sensing Sector, EMR Canada, 580 Booth St., Ottawa, K1A 0E9.

- The Geomatics Association of Nova Scotia (GANS) was formed recently to promote the Nova Scotia geomatics industry and to foster the growth of geomatics capabilities within all sectors of the Nova Scotia economy. More information may be

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obtained by contacting Peter Rogers, GANS Interim President, Nova Scotia Department of Mines and Energy, P.O. Box 1087, Halifax, N.S., B3J 2X1.

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- The Canada Centre for Geomatics (CCG) has completed two experiments in a joint Franco-Canadian project, which investigated the application of SPOT satellite data for use in topographic mapping at the scale of 1:50 000. The first experiment identified forest cover and road networks 90 percent of the time, when compared with ground proof data. In the second experiment, the planimetric and altimetric precisions of a Digital Elevation Model created from SPOT imagery were 6 m, 5 m, and 9 m in the X, Y, and Z directions respectively. CCG believes that these results indicate that SPOT data will assist them in meeting the high cartographic standards required for the National Topographic Data Base (NTDB). For further information please contact: Chief of Data Acquisition, Canada Centre for Geomatics, 2144 King Street West, room 010, Sherbrooke, Quebec, J1J 2E8.

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- Several hundred people from government, industry and academia attended the inauguration of the modern Geomatics Centre in the Department of Geodetic Sciences and Remote Sensing, Laval University. The five laboratories (geodesymetrology, photogrammetry, cartography, remote sensing and spatial information systems) have been grouped together to support integrated R&D activities, as well as graduate and undergraduate students. Industrial partnerships and equipment donations have also been announced to support the centre's activities. For further information contact: Director of Spatial Information Systems Laboratory, Geomatics Centre, Laval University, 1351 Pavillon Casault, Ste-Foy, Quebec, G1K 7P4.

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- The Department of Indian and Northern Affairs, through the Ottawa consulting firm of S.L. Ross Environmental Research, is developing a geographic database for the

Mackenzie Delta-Beaufort Sea Land Use Planning Commission in Yellowknife. It is built on digital data from EMR's Topographical Mapping Division 1:250 000 NTDB and the National Atlas Information Service 1:2 000 000 scale database. The data is coordinated using TYDAC Technology's SPANS software, which also permits the capture and integration of resource and human activity data collected from native communities.

For more information, please contact:

Land Use Planning Office
COGA CHO Building
P.O. Box 2280
Yellowknife, NWT
X1A 2P7

GIS for the '90s

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The Inter-Agency Committee on Geomatics is once again cooperating with the Canadian Institute of Surveying and Mapping in promoting the Second National Conference on Geographic Information Systems, to be held at the spacious Ottawa Congress Centre, from March 5-8, 1990. In its first year, this national GIS conference attracted 1200 participants and was a resounding success. This second conference promises to be bigger and better yet. The announcement on this page provides further information.

GIS FOR THE 90s

Second National Conference
on Geographic Information Systems
March 5 - 8, 1990 Ottawa, Canada

Meeting the Global Challenge

Canada hosts a gathering of the best minds in the industry to discuss current GIS research and applications, and its role in meeting the challenges of the 1990s.

Conference & hotel information:

GIS For The 90s
PO Box 5378, Station F
Ottawa, Ontario Canada K2C 3J1
(613) 820-2291 or 224-0490
Fax: (613) 224-9577



A conference of:
The Canadian Institute of Surveying and Mapping
in cooperation with
The Inter-Agency Committee on Geomatics and Surveys, Mapping and Remote Sensing Sector, EMR



GIS Calendar of Events 1989-1990

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November-December

GIS Seminar and Exhibition, Ontario Ministry of Natural Resources, Toronto, ON;
November 27-28.

Geomatics Showcase, Dept. of Industry, Trade and Technology, Halifax, NS;
December 6.

March

GIS for the 90s, CISM Conference, Ottawa, ON;
March 5-8.

GIS '90-Making It Work, Forestry Canada, Vancouver, BC;
March 13-19.

ACSM / ASPRS Annual Meeting, Denver, CO;
March 19-24.



News Release

90/37
March 5, 1990

EMR MINISTER OPENS NATIONAL GIS TECHNOLOGY CENTRE

OTTAWA -- Energy, Mines and Resources Minister Jake Epp today opened the National Geographic Information Systems Technology Centre. The centre, located at 615 Booth Street in the heart of the Energy, Mines and Resources complex will serve as a computer technology showcase for the new Canadian Geographic Information Systems (GIS).

Geographic Information Systems are computer software packages which are used to collect, store, manipulate and display geographically referenced information to support decision making. They are of interest to all major sectors affecting a nation's economy.

"This research and demonstration facility will benefit Canadian industry by allowing potential GIS users to familiarize themselves with the quality of Canadian technology," said Mr. Epp. "The Centre will foster the development of GIS technology and it will provide a forum for coordinating GIS activities within the federal government and other interested groups."

Computer hardware and software from several Canadian firms including Environmental Systems Research Institute (E.S.R.I.) from Don Mills, Ontario; GeoVision of Ottawa; PAMAP Graphics of Victoria, British Columbia; Tydac Technologies Inc. and Universal Systems Ltd, Fredericton, New Brunswick have been purchased and installed in the new technology centre.

This opening of the new technology centre coincides with the international GIS 90 conference at the Ottawa Congress Centre, March 5-8.

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For more information, please contact: Mosaad Allam
Geographic Information Systems Division
Energy, Mines and Resources Canada
(613) 996-2810