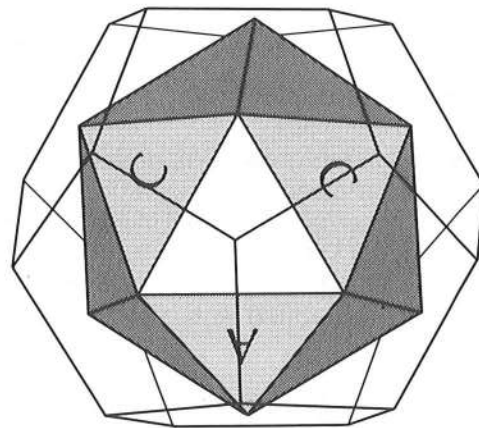
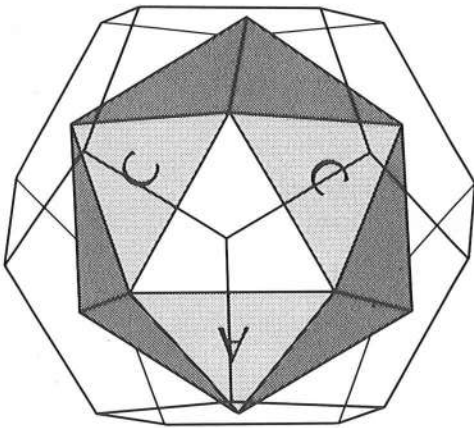


**Canadian Cartographic Association
l' Association canadienne de cartographie**

Newsletter/Bulletin



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...Demande de participation: Congrès Annuel 1991

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The CCA Newsletter (soon to be *Cartouche*) is produced quarterly by the Canadian Cartographic Association.

Content Deadlines are: January 31, April 30, July 30, October 31. (see page 19)

You are welcome (urged!) to submit items to be considered for publication. It is the current policy of the editor to provide dual language copy for editorial content and journal mechanics. All other articles appear in language of submission. While every effort is made to ensure accuracy of content, the editor (*like all cartographers!*) cannot be responsible for errors in compilation, or loss of any item submitted. Opinions expressed in the editorials and submitted articles and letters are not necessarily those of the Canadian Cartographic Association. For advertising policy, please contact the Manager, Roger Wheate. (Address, page 3)

Le Bulletin de l'ACC (qui sera connu bientôt sous le nom de *Cartouche*) est publié trimestriellement par l'Association canadienne de cartographie.

Les dates limites pour l'envoi d'articles ou de documents sont les suivantes: 31 janvier, 30 avril, 30 juillet, 31 octobre (voir page 19). N'hésitez pas à soumettre des articles (vous êtes même priés de le faire!) que vous désirez publier dans le bulletin. Présentement, selon la politique en vigueur, l'éditeur doit publier en français et en anglais, l'éditorial ainsi que la description du processus de publication du bulletin. Le reste des articles paraîtront dans la langue dans laquelle ils ont été écrits. Bien que beaucoup d'efforts sont déployés en vue d'éviter de tels problèmes, l'éditeur (*de même que les cartographes!*) ne seront pas tenus responsables des erreurs de compilation ou de la perte d'articles qui leur seront soumis. Les opinions exprimées dans le cadre des éditoriaux, des articles et des lettres publiées dans le bulletin ne reflètent pas nécessairement celles de l'A.C.C.. Pour ce qui est des tarifs publicitaires, veuillez contacter le responsable de la publicité, Roger Wheate (voir l'adresse page 3)

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L'Association Canadienne de cartographie remercie vivement le Conseil de recherches en sciences humaines du Canada pour son apport financier.



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From the Editor's Clipboard Un message de l'éditeur

Our members/Notre membre.....!

In this issue you will find a view of our organization; a listing of all our regular and institutional members from around the world. It comes as we say good-bye to the newsletter, and hello to the next issue Cartouche, Volume one. A number of you had asked for such an issue for a while. Here it is: a profile of who we are as we head into the last decade of the century. A decade that will be very exciting. A review of the membership provides the following numbers breakdown:

By Country: Canada: 253
 USA: 94
 Overseas: 27
 Hong Kong: 8
 UK: 5
 Belgium: 2
 Germany: 2
 Spain Italy Switz Malaysia Iceland
 Japan Saudi Arabia Netherlands
 Sweden Israel: 1 each.

In Canada:

By province: BC 21, AB 43, SK 7, MN 7, ON 109,
 PQ 37, NS 9, NB 4, YUK 5 NF 11

Cities: Vancouver 9, Victoria 12, Calgary 30,
 Edmonton 10, Lethbridge 3, Regina 5,
 Winnipeg 6, Brandon 1, Ottawa 41, Toronto 39,
 Lindsay/Peterborough 10, Quebec 13,
 Montreal 20, Sherbrooke 4, Whitehorse 5,
 Fredericton 4, St. John's 11

In USA:

VA 11, NY 10, CA 8, MA 7, PA-WI-MI 6 each,
IL-OH 4each, D.C.-KS 3 each, MN-SC-TX-VT 2 each
CO-MO-IA-MD-OR-CT-HI-IN-KY-LA-NM-RI-SD-WA
UT-NC-ME-WV all 1 each.

You will also find that we have invited our corporate members to submit a profile of their organization outlining recent events, trends, or latest developments. You will find these most informative.

Feedback.....

Lastly, I would like to reiterate

- a: my apologies for being late with these first issues and,
- b: my request that you send me comments, feedback, constructive criticism, and above all, content. I need photo's, articles, news, events, clippings, cover art, etc., etc., etc.....thanks!

*Thanks for this issue go out to Roger for his input and patience, my technician Sue for the loan of her laser printer at a critical time, and to my girls who ignored my *!#!* behaviour while working out the problems of these first issues on the home workstation, while all the time keeping themselves busy and out of trouble.*

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CALL FOR PARTICIPATION DEMANDE DE PARTICIPATION

CCA/OICC Annual Meeting, May 31 - June 3, 1991
Congrès Annuel ACC/OICC, le mai 31 - 3 juin, 1991

BROCK UNIVERSITY, ST. CATHARINES, ONTARIO

Planning is well under way for the 1991 CCA Annual Meeting, to be held in conjunction with the Ontario Institute of Chartered Cartographers at Brock University. The program will be the usual eclectic mix of paper sessions, workshops, exhibits and social events, and will incorporate a visit to the new NCGIA facilities at SUNY Buffalo (we might even get to see Niagara Falls at some point too).

We invite your participation! If you plan on...

- giving a paper
- organizing a session
- conducting a workshop
- mounting an exhibit
- going over the Falls in a barrel

...please let us know as soon as possible.

A formal call for papers with details on how to prepare abstracts will be issued in February, but please don't wait till then. We particularly want to hear from you if you are thinking of **organizing a session**, or if you have **special requirements**, e.g. for display space, computer lab facilities or barrels.

L'organisation du congrès annuel de 1991 de l'ACC a déjà commencé. Cette réunion aura lieu de concert avec celle de l'Institut de l'Ontario des cartographes sous charte, à l'université Brock. Dans notre programme, nous aurons le mélange éclectique habituel de sessions de communications, d'ateliers, d'expositions et d'événements sociaux, y compris l'occasion de rendre visite aux nouvelles facilités NCGIA à SUNY à Buffalo (peut-être que nous pourrions voir les chutes Niagara aussi).

Nous vous invitons à participer! Si vous avez l'intention soit de...

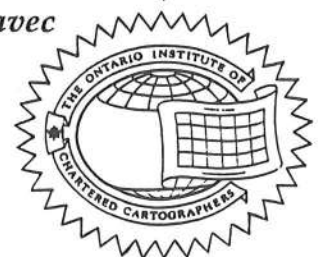
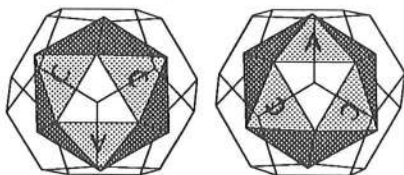
- présenter une communication
- organiser une session
- introduire un atelier
- monter une exposition
- descendre les chutes dans un baril

...veuillez nous avvertir aussi tôt que possible.

En février, nous ferons un appel conventionnel pour les communications avec des instructions pour la préparation des abstraits, mais s'il vous plaît, n'attendez pas jusqu'à ce temps-là pour nous parler. En particulier, nous voudrions vous en entendre des nouvelles si vous avez l'intention d'organiser une session, ou si vous avez des besoins spéciaux, par exemple, d'un certain espace, des ordinateurs, ou des barils.

Please contact/*Veuillez vous mettre en contact avec*

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St. Catharines, Ontario, L2S 3A1.
(416) 688-5550 ext. 3489
ggfhughes@brocku.ca



Intergraph Introduces ...

New GIS Signature. Since its inception, Intergraph's relational GIS environment - MicroStation GIS - has experienced both success in the GIS market and expansion of GIS products. Owing much to its popularity are the offerings of i) modules for GIS applications, and ii) integration between different applications, workflows, users, and data. To better reflect the modular and integrated nature of this product family, Intergraph has renamed 'MicroStation GIS' to 'Modular GIS Environment', now commonly referred to as 'MGE'.

Modular Integration. Building on the UNIX operating system, MicroStation 32 graphics and relational databases, MGE is a set of modular tools structured in an integrated environment for the capture, management, analysis and presentation of geographically-related data. The base module for the series of MGE products is called MGE/SX. It serves as an integration point to set up, control, access, and manipulate data for GIS projects. MGE/SX also is the integrator of all the other GIS modules and relational databases.

For nongraphic attribute management, MGE currently supports the INFORMIX, ORACLE, and INGRES databases. The communication between relational databases and MGE applications is handled through Intergraph's Relational Interface System (RIS). RIS uses a standard SQL interface to access different databases so that the type of database becomes transparent to the user.

MGE provides users with considerable flexibility for the structure of an integrated Geographic Information System. Modules are combined and 'slotted' based on user requirements, and system expansion is possible without risking existing investments. MGE also allows for an open system environment to accommodate customized application growth and to promote the seamless sharing of data within a centralized environment or across a distributed network. A development toolset is available for end-users, system integrators, and mapping consultants to easily extend capabilities.

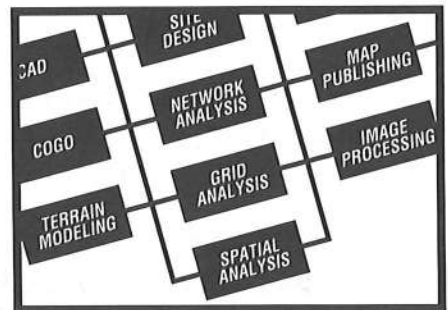
Application Expansion. As MGE continues to evolve, available GIS modules will be enhanced and additional applications added. Currently, MGE

modules are available for applications in: topological analysis (MGE Analyst), coordinate system transformations and conversions (MGE Projection Manager), grid analysis (MGE Grid Analyst), digital terrain modeling (MGE Terrain Modeler), image processing (MGE Imager), field survey input (MGE ETI), network analysis (MGE Network Analyst), and cartographic publishing (MGE Map Publisher). MGE data can also be interchanged between related Intergraph application products, such as civil site planning, roadway design, scanned data capture, utility distribution engineering, petroleum exploration, and vehicle dispatch management.

Three significant product additions have been recently made to MGE. The first is MGE Dynamic Analyst which is an object-oriented geographic analysis module. The product is unique for providing dynamic attribution and interactive topology. These capabilities allow users to perform "what if?" analysis on the fly. The second new MGE module is MGE PC-1. This product endeavors to include existing customer PCs into the MGE network by placing a functional subset of MGE/SX into the PC-DOS environment. The addition of this product strengthens the integration of diverse technologies into a comprehensive GIS network. The third introduction is with MGE Map Finisher. This product is designed to streamline the production of high-quality color map plots. MGE Map Finisher provides utilities for map compilation, preparation, symbolization by priority, and plotting. Standard marginalia (i.e. legends) can be automatically generated along with grids, graticule, ticks and labels. The resultant map may be previewed onscreen prior to plotting.

Canadian Consultants. Intergraph has expanded its Intergraph Registered Consultant (IRC) program for GIS and Mapping into Canada. Authorized IRCs are independent third-party consultants, including conversion vendors, GIS consultants, and universities with proven GIS and mapping experience. The program prepares consultants with training in MGE products, project planning and implementation. Software development, pilot project coordination, data conversion, and scanning are among the services provided by IRCs. More than 150 consultants have completed training and received certification in the United States. As of August, some ten Canadian companies have registered in the program. An IRC directory is available upon request from Intergraph. ■

MGE is



Integrating GIS Applications

MGE: Modular GIS Environment

MGE is a set of modular GIS applications integrated into an environment for the capture, management, analysis and presentation of geographic data.

Intergraph Canada Limited

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ZYCOR CANADA

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ZYCOR Inc. has been a major vendor of mapping and modelling software for the petroleum industry for the last eleven years. Recent development at ZYCOR includes the next generation mapping software, Z-MAP Plus and the initial offering of GIS software.

Z-MAP Plus is a technically advanced and flexible automated surface modelling and mapping system. Designed to operate on the current generation of VMS or UNIX based workstations, the system integrates basemapping, industry proven modelling techniques and interactive graphics under a highly productive user interface based on the X-Windows technology. Z-MAP Plus provides you with the graphic and data management tools that are required to produce high quality basemaps, including modules for posting wells with over 900 different symbols, displaying seismic lines and shotpoint values, drawing and shading area boundaries such as leases, land grids and other cultural information. A full set of map projections lets you combine and map data from multiple sources and projections. Automatic overpost resolution solves the problem of overdrawing spatially conflicting text and labels.

Surface modelling and operations are strengths of Z-MAP Plus with gridding modules designed to work with scattered well data, digitized contours or seismic line data. You can model tops, isochores, times, velocities, porosity and many other types of data. Over 100 different operations are provided to combine surfaces, filter, smooth and compute reserves.

A highly flexible contouring module generates contours from any gridded surface model, faulted or not. When the data is too sparse or the maps do not agree with your interpretation, Z-MAP Plus provides you with extensive interactive graphic control to reshape or literally redraw contours as you desire allowing your interpretations to be integrated back into the grid models.

Z-MAP Plus was designed to integrate ZYCOR's most significant mapping features with a database management system. The nucleus of ZYCOR's GIS is a database scheme that is designed for petroleum industry data. The database has over 1200 attributes organized in 200 tables that represent well, seismic and lease records among other petroleum entries. Efficient procedures to spatially index and model these data are currently being added. For those with corporate relational databases in place, links can be made to allow Z-MAP Plus to extract and update the existing database. Phase one of this project will be commercially available by the end of 1990.



BOX 944 HAY RIVER, N.W.T. X0E 0R0

Ph. 874-2420 Fax (403) 874-3396

Northern Micro has made a lot of progress in developing it's GIS/GPS capacity in the 1990 year and we are at this time the only GIS/GPS systems house in the North West Territories.

Our main GIS platform is MAPINFO and we have incorporated a GPS to work with MAPINFO. The GPS consists of Trimble Pathfinder satellite receivers and a very new Canadian product known as Trailblazer. Trailblazer is amazing in that in under 3 days, anyone with a little computer experience can run a route with the Pathfinder, punch in any attributes they wish such as power poles, go back to the computer and create a map. Trailblazer is bringing GIS/GPS down to earth and within a couple of years any company can have their own in-house mapping system.

Northern Micro is also developing a photo-imaging, audio package that can pull up datapoints off a map and show high resolution photos or sounds of that particular pointfile.

Northern Micro is interested in any inquiries from anyone wishing to develop their own GIS/GPS services using the Trailblazer and MAPINFO.

For more information on Northern Micro GIS/GPS products and services, call; (403) 874-2420, or write; Northern Micro, Box 944, Hay River, NT X0E 0R0, CANADA.

TYDAC TECHNOLOGIES INC.

TYDAC Technologies Inc. takes a unique approach to Geographic Information Systems (GIS). TYDAC's PC and workstation-based product, SPANS (SPatial ANalysis System), is strongly oriented toward data analysis, rather than data conversion, and integrates data from a wide range of vector and raster sources.

SPANS is a standalone GIS which now operates under OS/2, AIX, and DOS. It is designed for organizations and professionals who develop geographic and cartographic data bases and who work with, analyze, and model geographic information. The system is easy to learn, with a customizable user interface. Also, SPANS can be operated using its own command language.

SPANS 5 was recently released under OS/2 with IBM's Presentation Manager. OS/2 makes SPANS considerably more powerful by offering many advantages including expanded memory, compatibility with IBM's SAA (System Application Architecture), calls to user-defined programs, multi-processing, programmable macro language, and applications development capabilities.

SPANS 5 also offers new capabilities and functionality including:

- o Builds and integrates databases. SPANS now has more than 20 interfaces to existing GIS and data base file formats and links to graphics systems, spreadsheets, word processors, and statistical analyses packages. SPANS supports relational data bases such as IBM's Database Manager within OS/2 which conforms to SQL, an industry standard language for data retrieval.
- o Support for full vector-based topology integration. SPANS now supports a complete topological linear network data structure. This facilitates network analysis applications such as defining the shortest path between any two nodes in a network.
- o Explore relationships among spatial data sets. SPANS provides a battery of analytical tools to measure and understand the relationships between different geographic entities and theme layers. Using this information with statistical methods, models of reality can be constructed using SPANS' modelling language or user-defined subroutines.
- o Query and identify locations. By simply pointing to a location with the cursor, SPANS can query several map layers simultaneously to explore the spatial relationships that exist in the study area data base.
- o Hard copy and large vector and raster plotter support.
- o End user applications. SPANS can be customized to construct specific user applications. A toolkit is provided to incorporate SPANS into in-house information management systems.

SPANS 5 will be available under AIX (IBM's version of UNIX) on IBM's RS/6000 in first quarter 1991. The AIX operating system provides SPANS users with increased communication abilities, access to a wide range of software, and powerful tools and utilities - all within a multi-tasking, enterprise-wide AIX environment.

LAND INFORMATION SERVICES DIVISION

*Surveying & Mapping Branch
Government of Alberta*

Development of digital and subsequent monochrome and multicolored maps has been ongoing in Alberta over the past ten years. Conventional cartographic work has diminished, to preparation of the province's road map and a minimal number of small scale projects. It is anticipated that the Alberta road map will also go digital in the next few years, as have the other mapping projects.

The province is continuing its efforts towards mapping the province digitally at a scale of 1:20,000, utilizing photogrammetric compilation methods. Seventy five percent of the 2775 map sheets required to cover Alberta will be complete at the end of the 1990/91 fiscal year, with 100% completion planned for 1994/95.

Complementary to the 1:20,000 Provincial program, a 1:20,000 city program has been completed for the sixteen cities in Alberta. The file indicates centrelines of all existing roadways within the sixteen cities. The digital data is utilized to produce conventional monochrome maps for use as street maps or bases for electoral mapping.

The 50 - 1:250,000 digital files developed in the early 1980's by Alberta are being utilized not only as digital products but as a source to produce the printing negatives required for multi-coloured map production. Plotting of the negatives is done on an in-house Gerber plotter on photographic film.

Digital base maps have also been completed at scales of 1:1,000,000 and 1:2,000,000 to cover the province. The 1:1,000,000 digital base has been used to produce the printing negatives for the province's 1:750,000 multi-coloured map. The digitally produced, 107cm x 183cm map is considered to be a first in Canada, possibly North America. The 1:2,000,000 digital base map is also complete and utilized to produce printing negatives for the 1:2,500,000 Series Maps.

Some preliminary testing and development of generalization software has been done and utilized to produce a 1:50,000 scale base map from four - 1:20,000 Provincial digital compiled files. It is felt considerable effort will have to be forthcoming to automate the process completely.

Further information regarding the cartographic programs, products, and developments may be obtained by contacting:

M. R. Weiss, Assistant Director
Surveying & Mapping Branch
Land Information Services Division
4949-94B Avenue
Edmonton, Alberta
T6B 2T5

(403) 427-5955

The National Atlas Information Service

Energy, Mines and Resources Canada

The National Atlas Information Service (NAIS) supports the objectives of the Canadian Cartographic Association by promoting the study and development of Cartography in Canada. The Service is dedicated to many of the same goals, most notably through the publication of the National Atlas of Canada. The Atlas, now in the 5th Edition, was first published in 1906, only the second such national endeavour world-wide. Unlike previous editions, the current edition is a loose-leaf one, in which map sheets are released as they are completed; some 65 have now been published and 35 more are planned or in production. Recent maps have dealt with such diverse subjects as the 34th Federal Parliament; Native Peoples - 1823; Urban Systems; and Income per Capita.

As a service, NAIS is dedicated to providing the Canadian Government and public with authoritative geographical information in map and other forms, at small scales covering the country. We support, through a permanent Secretariat, the Canadian Permanent Committee on Geographical Names (CPCGN), a federal/provincial coordinating body which gathers and manages all of the place and feature names of Canada. A digital data base exists of some 450 000 geo-referenced names records, for use in making topographical maps, gazetteers, and other names publications. We also provide cartographic services for many other government departments who lack their own facilities.

NAIS is in the process of converting from a traditional publishing role to a multi media one. A GIS is helping to transform the National Atlas into machine-readable form, as well as to provide more timely response to requests for geographical information. For map publishing, SCITEX technology is being developed to go from digitized computations to final four-colour plating negatives without manual intervention. The entire cartographic process, with the exception of some type placements, can now be accomplished entirely through computers. When available, information for the Atlas is also being gathered from source agencies in digital form in order to accelerate publishing schedules. For instance, a new vegetation cover map is being produced from NOAA AVHRR remotely sensed imagery under contract by the Manitoba Centre for Remote Sensing. Other socio-economic themes using Statistics Canada data will be delivered under contract in digital form, to be integrated with NAIS base and toponymic information.

The Service is actively marketing its digital information, which so far is primarily base data at the 1:2M, 1:7.5M and smaller scales, as well as the toponymic records of the Canadian Geographical Names Data Base.

For more information on this or other aspects of the programme, please contact:

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Energy, Mines and Resources Canada
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Ottawa, Ontario
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Tel (613) 992-3892 Fax: (613) 992-4961



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GEOMATICS INTERNATIONAL

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Geomatics International is a privately held Canadian Company with its headquarters in Toronto, Ontario. Specializing in the use, development and applications of Geographic Information Systems (GIS) and remote sensing technologies, Geomatics offers a complete range of environmental services, worldwide, for natural resource management and planning. Clients of Geomatics include Federal and Provincial governments, educational institutions and private industry.

The technology of GIS and remote sensing are integrated with staff expert in environmental sciences to provide clients with a wide range of services relating to:

- Biophysical and ecological surveys
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- Terrestrial and wetland ecology
- Environmental assessments
- Resource inventory and analysis

Geomatics has acquired the most advanced hardware and software technologies to offer clients the widest range of services. Hardware capabilities include several microcomputer workstations, UNIX engineering workstations, high resolution displays, digitizing tables and high throughput printers and plotters. Prominent software packages include:

- Tydac's SPANS GIS software
- ESRI's ARC INFO GIS software
- Pamap's PAMAP GIS software
- PCI's EASI/PACE remote sensing software

For more information contact:

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Burlington, Ontario Canada
L7N 3M6

tel: (416) 632-4259
fax: (416) 333-0798

DATASPAN TECHNOLOGY INC.

Advances in Automated Digital Data Capture

Rapid advances in the field of Automated Digital Data Capture (DDC) make this technology increasingly more cost effective and time efficient than any form of manual digitizing. DataSpan Technology Inc. has been at the cutting-edge of DDC research and development for the past 4 years, and is an established leader in the commercial application of this technology.

DataSpan's DDC process begins with scanning a document (i.e. map, chart, engineering drawing, facility management figure, etc.) in order to create a raster file. The raster file is then automatically converted to vectors using edge detection and skeletonization software (i.e. DataSpan's RCVS software). Additional raster processing includes filtering to remove any noise.

The next step in the DDC process is vector editing. This is performed to remove spurious information, correct undershoots/overshoots and verify data integrity. DataSpan's interactive graphics editor (ALF) has been designed for high efficiency in all editing functions. This is accomplished through the use of call-out procedures, and a high-performance user interface characterized by modern windowing techniques and pop-up menus.

Following editing, the data is structured for input to a Geographical Information System (GIS). DataSpan has developed software to perform a wide range of structuring functions including feature association (grouping), overlay creation, attribute tagging and edge-tying. Pattern recognition techniques based on constraint processing are applied to automatically close gaps in line work (i.e. line following), recognize numbers/characters and perform attribute linkage (e.g. elevations attached to corresponding contours).

The final stage in the DDC process is translation of the digital file to a geographic base such as UTM or lat./long. coordinates. DataSpan can provide output in standard formats including IGES, IGDS, and SIF.

In summary, today's DDC technology represents a fast, cost-effective and very accurate alternative to manual methods of data conversion. The objective of DataSpan's current research and development is greater overall automation so as to further reduce time and cost factors.

For more information on DDC, contact:

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Calgary, Alberta T2P 0M2
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