User Manual

Digital Elevation Model (DEM)

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About DMTI Spatial™

DMTI Spatial Inc. is Canada's leading spatial solutions provider. We enable users to understand their customers, optimize resources, realize opportunities, maximize profitability and make more informed decisions through accurate products and innovative thinking.

DMTI Spatial publishes precision built street map, rail and routing data (CanMap®), and innovative geocoding and address management software (GeoPinpoint™). In addition, DMTI Spatial publishes a full range of positionally accurate geospatial data products including: enhanced points of interest (EPOI), census data and boundaries, postal geography, topographic maps, and US mapping data. As part of a complete business geographic solution, DMTI Spatial offers a wide range of GIS services, consulting, and software training.

Established in 1994, DMTI Spatial is committed to setting the standard within the GIS industry for precision built spatial data and geocoding software products.

At DMTI Spatial, we believe that our true strength comes from working closely with our customer base and providing innovative solutions to meet their strategic business objectives. As Canada's premier spatial solutions provider we pride ourselves with having worked with North America's leading organizations to support their mission critical applications.

DMTI Spatial works with large and small organizations representative of a wide variety of industries:

- Agriculture
- Banking/Finance
- Consulting
- Education
- Emergency Services
- Engineering
- Environmental
- Forestry
- Government
- Health
- High Technology
- Insurance
- Manufacturing
- Media
- Mining
- Real Estate
- Retail
- Telecommunications
- Transportation
- Utilities

We are a member of the ESRI Canada Business Partner Program, and winner of the 2001 ESRI Worldwide New Business Partner of the Year Award. Strategic business partner of Tele Atlas North America, and winner of the Markham Board of Trade 2000 Award for Entrepreneurship and Innovation. Recipient of The Association of Canadian Map Libraries and Archives (ACMLA) 2002 Certificate of Appreciation.

Really Smart Spatial Solutions™

Through the application of its products and services, DMTI Spatial has been involved with projects such as: location-based services, logistics planning, emergency dispatch, facilities management, data management, customer care, land base development in support of network planning, and marketing/demographic analysis applications.

DMTI Spatial can provide all of the components necessary for the acquisition, implementation, operation and maintenance of a successful GIS system within companies of all sizes. Through its product and service offering, DMTI Spatial can provide users with 5 key components:

1. Accurate, detailed and compatible data
2. Comprehensive maintenance program
3. GIS software
4. Consulting and services
5. Software training

DMTI Spatial™ Product & Service Portfolio

DMTI Spatial's product & service offering includes:

CanMap® - *Digital Map Data for Canada*
- CanMap® Streetfiles
- CanMap® RouteLogistics
- CanMap® Rail
- CanMap® Major Roads and Highways
- CanMap® Parks

MultiNet™ - *Digital Map Data for USA*
- Tele Atlas MultiNet™

Municipal Amalgamations
- Municipal Amalgamation File (MAF)

Business & Recreational Points of Interest
- Enhanced Points Of Interest (EPOI)

GeoPinpoint™- *Canada's Geocoding Solution*
- Windows Standalone Desktop Version
- ActiveX (DLL Version)
- UNIX, Java Wrapper

Topographic Data and Base Maps
- Canadian Atlas Map Bundle (CAMB)
- Populated Placenames
- National Topographic Data Base (NTDB)
- 30 & 90m Digital Elevation Models (DEM)
- Clutter Data

Postal Geography & Data
- Six-Digit Postal Code File
- Enhanced Postal Code File
- Forward Sortation Area (FSA) Boundary File

1996 Census Boundaries & Demographic Data
- Enumeration Area (EA)
- Census Subdivision (CSD)
- Census Division (CD)
- Census Metropolitan Area/Census Agglomeration (CMA/CA)
- Census Tract (CT)
- Federal Electoral Districts (FED)

2001 Census Boundaries
- Dissemination Area (DA)
- Census Subdivision (CSD)
- Census Division (CD)
- Census Metropolitan Area/Census Agglomeration (CMA/CA)
- Census Tract (CT)
- Federal Electoral Districts (FED)

GIS Software
- Contour Modeling and Display
- Demographic Profiling and Lifestyle Targeting
- Geocoding and Mapping Software
- Routing and Logistics

Consulting and Services
- Address Management Solution (AMS)
- Application Development
- Database Marketing
- Data Conversion and Creation
- Database Scrubbing
- Geocoding Services
- GIS Consulting
- Technical Support

Error Reporting & Wish List Services

DMTI Spatial is committed to building the best products possible for our customers. By using our data every day in your mission critical application you are our best product tester. Please let us know if you have found an error in any of our products so that we can make the correction for the next release.

This is your opportunity to provide feedback directly to the DMTI Spatial Product Development Team. Please be as specific as possible so that we can improve our products quickly and accurately. To access the Error Reporting Web page please visit: http://www.dmtispatial.com/error_reporting.html or send an e-mail to: fixme@dmtispatial.com

If you have an idea for a new product or an existing product enhancement, please submit your ideas to the Wish List Web page: http://www.dmtispatial.com/product_wish_list.html or send an e-mail to: wishlist@dmtispatial.com

Over the coming months DMTI Spatial will keep you informed of new product releases, enhancements and strategic alliances. Our goal is to provide you with powerful knowledge based tools to help you attain and maintain your competitive advantage.

Contact Information

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About Digital Elevation Data (DEM)

For the most up-to-date information regarding DMTI Spatial's DEM data please visit:
http://www.dmtispatial.com/home.asp

Digital Elevation Data Contents

Features:

- Created from the interpolation of the National Topographic Database (NTDB) 1:50,000 scale digital mapping (Standards and Specifications V3.0 and later): contours, elevation points (spot heights), and water body polygons
- The Hutchinson algorithm is used to eliminate the traditional "stepping" effect and flat-topped hills typically associated with DEM's generated from contour data
- Lake flattening is employed so that all water bodies are filled with spot heights at a 30m grid to represent a flat lake surface elevation. To do so, a grid calculation technique is applied to accurately estimate the elevations of all small and mid-sized lakes
- Oceans and the Great Lakes are assigned the appropriate elevation values to act as contours and\or points
- Standard mean sea level is used across the entire dataset

Future Enhancements:

- Refinement of drainage elevation processing to allow highly accurate watershed analysis
- Incorporation of data from other sources where available to enhance resolution and fidelity. Other sources to include remote sensing, Global Positioning Systems (GPS) and large-scale mapping.

File Properties

Data Source:

- National Topographic Database (NTDB) 1:50,000 scale digital mapping (Standards and Specifications V3.0 and later)

Resolutions:

- 30 metre captured from 1:50,000 NTDB and delivered in 1:50,000 or 1:250,000 geographies, i.e. an area of approximately 28km by 38km or 112km by 152km
- 90 metre resampled from the 30 metre above and delivered in 1:50,000 or 1:250,000 geographies, i.e. an area of approximately 28km by 38km or 112km by 152km

Projection:

- Unprojected Latitude/Longitude
- UTM (Universal Transverse Mercator)

Datum:

- NAD83 (North American Datum, 1983)

Coverage:

- Nationwide based on availability of 1:50,000 NTDB

Formats:

- Vertical Mapper (MapInfo ".grd" files)
- Text (Ascii grid)
- Arc/Info grid
- Planet (UTM projection only)
- Custom formats available upon request

Primary Application:

- RF Engineering
- Terrain Visualization/Line of Sight
- Slope Analysis