Laser-Scan Ltd.

Software Product Specification

DTMCONVERT package

(DTM conversion utilities)

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1 **DESCRIPTION**

DTMCONVERT is the Laser-Scan Digital Terrain Model translation package. It contains utilities to convert data between the Laser-Scan DTI format and various other digital terrain model formats. An interface to Laser-Scan IFF format is also provided.

The DTI (**D**igital **T**errain **I**mage) format is the standard raster matrix used by the 3 Laser-Scan DTM packages DTMPREPARE, DTMCREATE and TVES as well as the background package MATRIX. (See the appropriate SPS for details on each of these).

IFF (**I**nternal **F**eature **F**ormat) is the Laser-Scan vector file format generated by Laser-Scan digitising systems and used as the data structure throughout the Laser-Scan LAMPS system.

The DTMCONVERT package operates on Digital Equipment VAX and MicroVAX series computers running the VMS operating system. See below for hardware and software prerequisites.

The utilities use either the Command Line Interpreter, as used by standard VAX/VMS utilities, or the Laser-Scan interactive command interface used by other LAMPS programs. The latter provides interactive help and diagnostic printout facilities. Standard VMS format messages are generated by all the utilities.

All DTMCONVERT modules are comprehensively documented in the DTMCONVERT Reference Manual and the documentation includes an explanation of messages output by the modules together with suggested user action.

2 **HARDWARE PREREQUISITES**

The following computer hardware requirements are needed to run DTMCONVERT.

   o Any DEC VAX, MicroVAX or VAXstation computer supported by the current version of VAX/VMS.

   o At least 10MB available disk space for software, plus sufficient for data files.

   o At least a 4096 page working set per process is needed for efficient operation of the larger utilities.

   o Any DEC-compatible alphanumeric terminal.

   o Any DEC-supported magnetic tape or cartridge tape drive.

3   **SOFTWARE PREREQUISITES**

DTMCONVERT utilities run under VAX/VMS Version 5.4-3 (or higher, assuming upwards compatibility by DEC) concurrently with other interactive and batch processes.

The utilities are standalone conversion programs but the package "MATRIX" is necessary for manipulation of DTI files and Laser-Scan's **I**FF **M**ap **P**rocessing package (IMP) for IFF files. For more advanced DTM processing the **T**errain **V**isualisation and **E**xploitation **S**oftware (TVES) package is recommended.

4   **GROWTH CONSIDERATIONS**

The minimum hardware and software requirements for any future version of this product may be different from the minimum hardware and software requirements for the current version.

5   **SUPPORT LEVEL**

All modules of the DTMCONVERT package are fully supported Laser-Scan standard software products.

6   **FACILITIES**

The facilities offered by the DTMCONVERT utilities are described below in the order they appear in the Reference Manual. Note that customers purchase particular modules as required, so that the presence of a module within this list does not mean that a customer will automatically receive that module.

DTI2DTED and DTED2DTI

> These two programs provide an interface between the Laser-Scan DTI format and the United Statest Defense Mapping Agency (DMA) Digital Land Mass Simulation (DLMS) Digital Terrain Elevation Data (DTED) format. Both utilities are command driven and hence provide on-line help and the facility to display diagnostic messages.
>
> o DTI2DTED - reads a disc file containing a DTI matrix and converts it to a DMA DLMS DTED magnetic tape. Commands are entered at the prompt DTI2DTED>.
>
> o DTED2DTI - reads a DMA DLMS DTED magnetic tape and converts it into a DTI disc file. Commands are entered at the prompt DTED2DTI>

DTI2NTF and NTF2DTI

These two programs provide an interface between the Laser-Scan DTI format and the UK National Transfer Format at release 1.0 level 0, or at a subset of level 4 used by the Ordnance Survey (UK) for terrain models. NTFD2DTI can also convert release 1.1 NTF (at both level 0 and 4) to DTI. Both utilities are command driven and hence provide on-line help and the facility to display diagnostic messages.

o   DTI2NTF - reads a disc file containing a DTI matrix and converts it to a UK National Transfer Format magnetic tape or disc file at release 1.0 with fixed length records. The program is invoked with the command DTI2NTF and various command qualifiers are provided to control the conversion.

o   NTF2DTI - This utility provides a means of converting a raster image on a UK National Transfer Format magnetic tape or disc file into a DTI disc file. It will convert both version 1.0 (fixed length record) and version 1.1 (variable length record) NTF files to DTI. The program is invoked with the command NTF2DTI and various command qualifiers are provided to control the conversion.

DTEDIFF

This is a single utility designed to transfer **D**ata**S**et **I**dentification (DSI) and Accuracy (ACC) records between a DTED DTI format file and an IFF file. The program is invoked by the command DTEDIFF and the direction of the transfer is determined by the qualifier /MERGE.

IIS2DTI and DTI2IIS

These two utilities convert between an **I**nternational **I**maging **S**ystem's (IIS) system 500 raster format and a Laser-Scan DTI format file.

o   IIS2DTI - converts from a IIS system 500 format to a DTI file and is invoked by the command IIS2DTI. Command qualifiers are provided to control the type of data being translated. IIS2DTI may also convert an extension of the usual 500 format supported here, consisting of scanlines across the dataset (with the record length being equal to the number of columns).

o   DTI2IIS - converts from a DTI file to the IIS system 500 format. The command qualifiers are identical to IIS2DTI.

DEM2DTI and DTI2DEM

These programs interface between the United States Geological Survey (USGS) Digital Elevation Model (DEM) format and the Laser-Scan DTI matrix format. Both 7.5-minute (1:24000 scale) and 1-degree (1:250000) DEM's are supported and all DTI header types can be written or read.

o DEM2DTI - reads a DEM either from disk or tape and writes it to a DTI disk file. The program is invoked by the command DEM2DTI and several command qualfiers are provided to control the translation.

o DTI2DEM - reads a DTI from disk and translates it to a 7.5-minute coverage DEM which can be written either to disk or tape. The command DTI2DEM invokes the program and qualifiers are provided to control the translation.

MNT2DTI

This utility provides a means of converting an IGN (France) MNT file from disk or tape and writes it to a DTI disk file. The program is invoked by the command MNT2DTI and several command qualfiers are provided to control the translation.