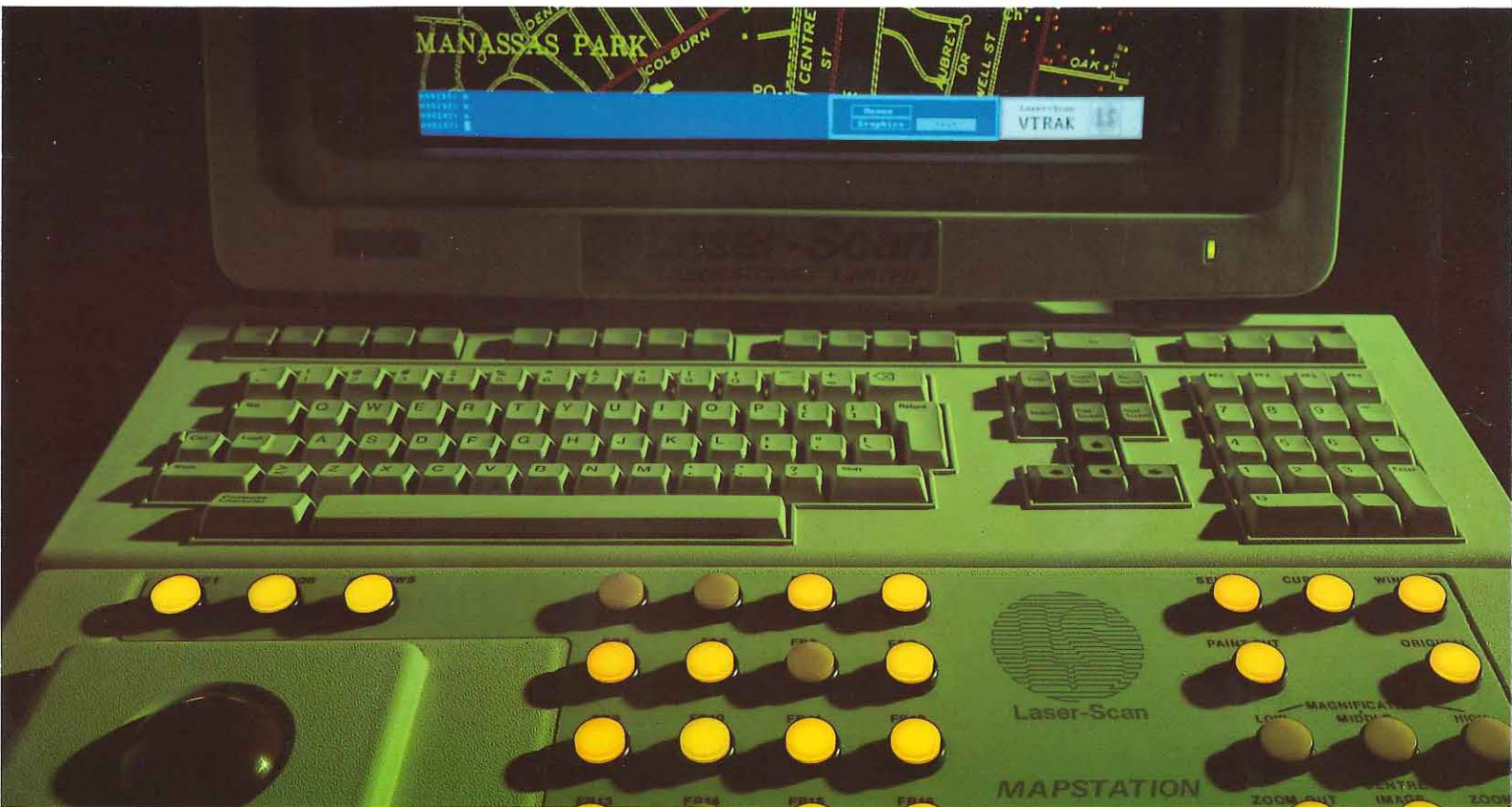


Laser-Scan product information



VTRAK

HIGH PERFORMANCE MAP FEATURE CAPTURE FROM LASER-SCAN



VTRAK is a new software package from the world leaders in digital mapping technology - Laser-Scan. VTRAK builds upon fifteen years of experience from Laser-Scan's involvement in the development of mass data capture systems. VTRAK is designed to digitise topographic and other map data quickly and effectively. Map features such as lines, areas and symbols are captured and stored by the software. These features can then be used extensively in map production and geographical information systems produced by Laser-Scan or other commercial manufacturers.

VTRAK captures map data from a wide variety of sources like digital cameras, sheet-fed, flat-bed or drum scanners. Raster images produced by these scanners can be taken as input to VTRAK which then produces output data in a structured vector form suitably coded with attributes.

For appropriate maps - such as contours, coastlines, area data - VTRAK can run fully automatically. For more complex data - urban plans, culture data, etc - there are facilities to run the software interactively. Of course, most map digitising tasks involve a combination of simple and complex data often on the same sheet. In such cases, users of VTRAK can benefit from the combination of full automation in certain areas and semi-automation in others. Using

either option, the digital data is assured to be accurate, compact and requiring only minimal further editing.

VTRAK is the most cost effective data capture software available. Its ability to work with a standard DEC VAXstation, a variety of scanners, plotters and other Laser-Scan software products cuts down unnecessary expenditure. Fast and easy operation is assured by Laser-Scan's new VTRAK Mapstation console. It plugs into the VAXstation in place of the mouse! Best use of available resources is also given careful thought. One scanner will drive many VTRAK stations and so systems can start small and expand when necessary.

Laser-Scan's experts will be happy to advise you on suitable system configurations. New customers may require a total solution including scanner whilst others may have spare capacity on an existing scanner. In either case, VTRAK is the solution for your map data capture needs.

Installation, training and full after-sales support is no problem. You'll have the full backing of Laser-Scan's VTRAK specialists and other experienced staff.

High quality, accurate digital mapping can now only mean one system, VTRAK from Laser-Scan.



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TECHNICAL SPECIFICATIONS

DATA CAPTURE WITH MAXIMUM ACCURACY AND EFFICIENCY

VTRAK is Laser-Scan's high performance system for map feature capture from digital images. VTRAK applies the latest generation vector scanning techniques using standard DEC VAXstations with input from large format image scanners. Map features including lines, areas and symbols are interactively or automatically collected into an attribute coded, intelligent vector database with optional topological structuring.

HIGHLIGHTS

- map image input from digital cameras, and sheet-feed, flat-bed or drum scanners
- powerful data structures for rapid image manipulation and variable resolution display
- no pre-edit and reduced post-edit stages of data capture
- manual feature capture with on-line coding
- selective interactive capture by line following on the screen
- fully automatic 'batch' feature capture of selected areas on any suitably configured VAX computer
- intelligent junction recognition
- immediate verification of captured vector features against original image to ensure data quality
- automatic removal of captured features from the image ensures completeness
- compatibility with a wide range of industry standard data exchange formats
- adaptive menu-driven user interface

VTRAK FOR DATA CAPTURE

Operators will appreciate the user-friendly menu based graphical interface which can be tailored to individual needs. For greater efficiency, Laser-Scan have developed the MAPSTATION console consisting of a trackerball and fast access function buttons. VTRAK can be tuned for a wide variety of different maps and features. Feature capture can proceed by manual digitising direct from the screen, or by semi-automatic line following, pausing for operator guidance where necessary. Optionally, some maps can be submitted for fully automatic feature capture as a batch process. All processes produce high fidelity vector data. VTRAK can operate on a stand-alone VAXstation and as part of a wider network or Local Area VAX Cluster (LAVc), optionally including a scanning node for image input and a powerful processing node for rapid batch processing.

VTRAK IMAGE SCANNING

VTRAK accepts image data from a wide variety of scanners and data formats. This facility gives the flexibility to use an existing scanner that may be already available within an organisation. Alternatively, a scanner of appropriate accuracy and resolution can be provided which is appropriate and economic for the application.

Typically small scale topographic and thematic maps (1:25000 scale and smaller) require 500-1000 dpi (25-50 microns) resolution, to achieve results of the highest standards of

accuracy. Large scale maps and utility records (nominally 1:1000 scale) require 250-500 dpi (50-100 microns) resolution for adequate results. Laser-Scan is pleased to advise on these issues and provide consultancy as necessary.

VTRAK APPLICATIONS

Topographic maps at scales from 1:10,000 to 1:1 million provide information about the form of the land, the hydrography, transportation network, settlements etc. With VTRAK this information is converted to digital vector form for entry into a Geographical Information System (GIS). Once managed by a GIS, the data can be exploited in such activities as terrain modelling and 3D visualisation, route planning, urban and rural studies, local government information systems and natural resource management.

Thematic maps showing soils, geology, vegetation, land use census tracts and other geographically referenced themes vary in scale and complexity; they are particularly important in GIS applications. Using VTRAK with post-processing for topological structuring and polygon coding, these maps can provide input to the most sophisticated GIS systems or can be used for high quality cartographic publishing.

Large scale urban plans and utility maps, recording underground or overhead plant, are used by gas, electricity, water and Local Government authorities for recording, planning and analysis. Data capture from existing, often imperfect, documents can be improved and speeded by the VTRAK system. Feature codes and attribute tags can be added during or after feature extraction with help from automatic processes for pattern and symbol recognition.

VTRAK IN LASER-SCAN'S MAPPING ENVIRONMENT

VTRAK data is fully compatible with the Laser-Scan mapping environment. Data sheets on other Laser-Scan products are available upon request. Laser-Scan is proud to offer all aspects of map and digital record processing to run on the same standard VAXstation to provide a single point solution to map data manipulation.

Apart from VTRAK data capture, other facilities include LITES2 interactive cartographic editor for additional attribute coding of features. The ability to display digital vector data against a raster scanned or satellite image is particularly powerful and novel. Other comprehensive facilities for vector data manipulation, structuring, plotting and format conversion are available, in the LAMPS product range. Software to drive many industry standard colour, electrostatic and pen plotters is available, as are numerous transfer formats to other digital data base and GIS systems. Exploitation packages include terrain modelling and other GIS tools.

MAINTENANCE AND SUPPORT

Founded in 1969, Laser-Scan is an established world leader in digital mapping and map data capture. Laser-Scan's LASER-TRAK vector scanners, in use worldwide, have set the standard for quality for mass map data capture. VTRAK builds on this unique experience and a continuing programme of research and development ensures that Laser-Scan will stay in the forefront of data capture technology. VTRAK operates on standard Digital Equipment Corporation VAX systems supported by DEC's worldwide service organisation.

