

# Kern DSP1

Digital Stereo Photogrammetric System



## The photogrammetric tool of the future

During the last fifteen years Kern has been leading in the revolutionary changes from analogue to digital techniques.

- Analogue instruments have been equipped with encoders and computing power in order to produce digital coordinate output, eg. Kern PG2/ MAPS200
- Analytical equipment Kern DSR, with distributed computing power and modular software, replaced the analogue instruments entirely
- CCD cameras and analogue to digital conversion capabilities have been fitted to the Kern DSR analytical plotter to allow automation of some photogrammetric processes, using digital image processing techniques, eg. the Kern Correlation System

The logical conclusion to this photogrammetric revolution is the entirely digital approach with digital image data input to digital measuring systems. Kern has once again proven itself to be a leader in harnessing the latest photogrammetric hardware and software innovations, and packaging them in a form which allows them to be used by a wide spectrum of the photogrammetric community.

The philosophy of distributed processing and modular software which Kern adopted many years ago has allowed the development of the DSP1 Digital Stereo Photogrammetric System, the solution of mapping from digital images today.

This system will be the photogrammetric tool of the future.



# The Kern DSP1, digital stereo photogrammetric system

This entirely digital mapping system uses stereo digital raster images as input and a completely digital measuring system to allow extraction of three-dimensional coordinate information.

Photogrammetric and image processing techniques have been combined to produce a system that represents digital mapping in all senses.

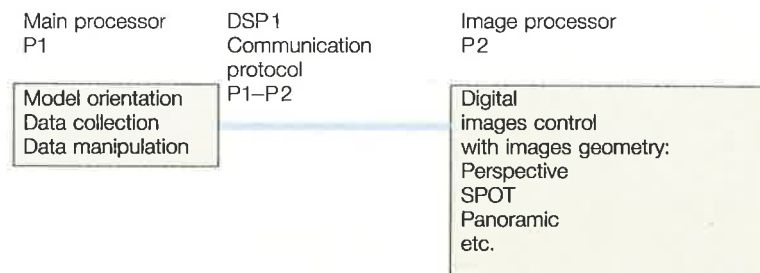
The most advanced hardware technology has been implemented:

- Large amounts of fast access RAM (up to gigabytes) for image storage
- Transputers for fast parallel computation of time-critical functions
- High resolution monitor with split screen facilities for stereo viewing

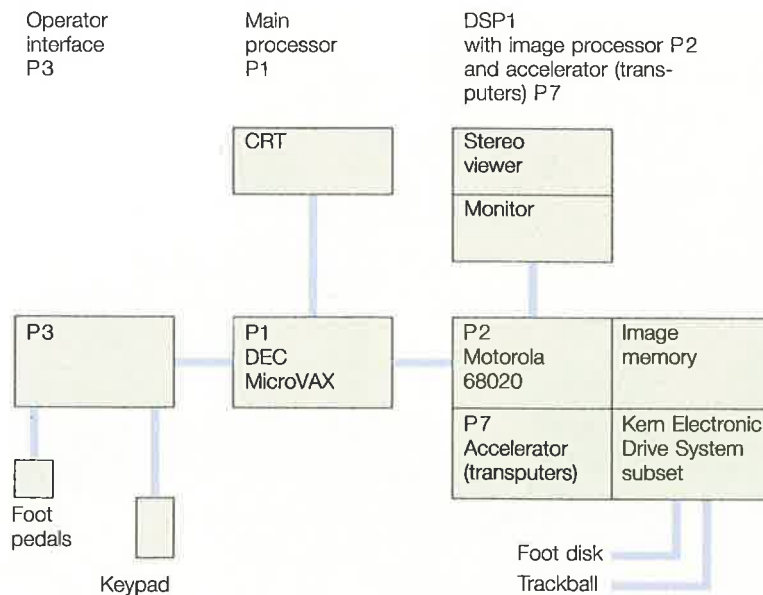
Features of the Kern DSP1 include:

- Display and orientation of digitised perspective aerial photography and digital SPOT imagery with both stereo and mono viewing
- Three-dimensional data capture from stereo imagery
- Image enhancement using digital image processing techniques
- Continuous correlation mode, i.e. as the operator moves in the stereo model in planimetry, the height of the current position is computed in real time. This real-time correlation is possible due to the extremely fast parallel processing of the transputers
- Superimposition of vector information on the digital raster images
- High speed computation of the height of every image pixel to produce Digital Terrain Models for orthophotos, monoplotting, axionometric views

## Kern DSP1 Software



## Kern DSP1 Hardware





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