Dipix Systems Limited

DIPIX Systems Limited is a Canadian owned company incorporated in 1978. The company is located in Ottawa with representation in major areas of the world. DIPIX manufactures the ARIES range of Digital Image Analysis Systems which are now installed in countries ranging through Australia, Thailand, Indonesia, England, Holland, Italy, S. America, USA and of course Canada.

Although primarily used for processing images from remote sensing satellite and aircraft, ARIES is also being successfully used in applications such as medical image processing.

ARIES IMAGE ANALYSIS SYSTEM

The architecture of ARIES is designed for the analysis, display and processing of many types of images. Because image processing frequently demands increasing computational capability, ARIES is available as a family of Digital Image Analysis systems which are upward compatible from a basic stand alone system to a multi workstation configuration with array processors and a powerful host central processor.

All configurations operate the same ARIES Application Software Package. This ensures that upward growth does not require retraining of any operational staff. Application programs provide a comprehensive set of software for the image processing analyst including:
- Spatial filtering.
- Image enhancement.
- Geometric registration.
- Image classification.
- Interactive contrast stretch, density slice and colour mapping.
- Image input from magnetic tape or video digitizers.
- Network operation using packet switching communications.
- Utility software such as batch processing and file management functions.

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ARIES software is specifically designed to provide the analyst with the flexibility needed to investigate widely different problems without requiring the acquisition of computer systems skills. ARIES provides the analyst with the correct choice of parameters needed to optimise an analytic solution, yet uses the computer to make intelligent default decisions.

ARIES WORK STATION

The basic module in the ARIES systems is a work station containing an image display subsystem, a large capacity disc and a local processor. Optional peripherals provide additional input, output and control functions for the remote sensing analyst. All available peripherals are fully supported with DIPIX software which is integrated into the ARIES operating system and application programs.

The image display subsystem provides for the display of multiple images on a high resolution monitor. The monitor screen can be set up by the analyst to one of several topologies, each providing a mix of independent image display areas on the screen. Available features include split screen, quartered screen and flying window.

When set up in a multiple display area mode each area on the monitor can be freely assigned to any image in video memory. A touch and position sensitive control pad is used by the operator for all such display related interactive control functions. Independent control is provided for each area over display functions such as: zoom; roam; colour mapping; thematic overlays; contrast stretch; colour or black and white density slicing; and logical combinations of images such as sum difference and ratio.

A maximum of eight independent images can be concurrently stored in video memory. The memory has a random access architecture which is dynamically and automatically partitioned by ARIES to suit the particular mix of images loaded for display. The system takes into account the size (number of pixels) and data storage needs of the image, the available video memory and provides an option of automatic decimation (spatial subsampling) or operator selected subareas to fit the image into available video memory up to its maximum configuration of 16 Mbits.

The work station disc provides storage for both images and computer files. Because of the large volumes of data typically associated with remote sensing images, it is available in a 96 MB or 200 MB capacity. The disc is dual ported, with one port available for high speed external system connections, such as a host processor, whilst the other port provides disc access to the work station processor.

DISC TO DISC PROCESSING

As well as the interactive display features, the system provides the comprehensive ARIES Application Software Package which operates (for the basic work