

Reprinted from

**Symposium on**

**Machine Processing of**

**Remotely Sensed Data**

**June 27 - 29, 1979**

The Laboratory for Applications of  
Remote Sensing

Purdue University  
West Lafayette  
Indiana 47907 USA

IEEE Catalog No.  
79CH1430-8 MPRSD

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## EXPERIENCE DERIVED FROM TRANSFER OF JPL'S VICAR IMAGE PROCESSING SYSTEM TO OTHER ORGANIZATIONS\*

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JPL's Image Processing Laboratory has developed the IBM 360 based VICAR image processing over a ten-year period. The major components of the VICAR system include (a) a syntax processor that translates simple image processing commands and procedures into IBM 360 job control language for actual task execution, (b) a set of system level subroutines that optimize disk and tape input/output functions for image processing applications, (c) a set of FORTRAN-callable subroutines that provides image manipulation capability to an application programmer, and (d) over 200 general purpose applications programs that can be utilized as modules in constructing processing sequences for one or more images.

Recent additions to JPL's capabilities have included (a) the Image Based Information System (IBIS), a set of programs and subroutines that make it possible to merge graphics and tabular data with imaging data (e.g. Landsat imagery) and generate statistics and reports from merged data bases and (b) MINI-VICAR/MINI-IBIS, which provides a PDP 11 based basic image processing capability and the capabilities of IBIS to the minicomputer user, written to minimize the impact of transfer to other operating systems and other computer manufacturers.

JPL began transferring the VICAR system to NASA's COSMIC program distribution center in 1971, and several updated versions have been transmitted since that time, including the MINI-VICAR/MINI-IBIS system that was sent to COSMIC in April 1979. In most cases, the capabilities

mentioned above have been developed for particular NASA planetary programs and earth resources applications, and the documentation provided to COSMIC has been minimal. In addition, the software does not represent current commercial standards for production software that is marketed by commercial organizations. Despite these problems with the COSMIC submittals, several facilities have determined that it is worth the substantial effort required to transfer the system to their own facilities, and several organizations have received VICAR and IBIS through NASA's Regional Applications Program.

This paper will provide an overview of the VICAR system, a description of the level of documentation available through COSMIC, and a summary of the conditions required for successful transfer of a major software system originally developed for use in a research environment.

\*This paper presents one phase of research conducted at the Jet Propulsion Laboratory, California Institute of Technology, under NAS 7-100, sponsored by the National Aeronautics and Space Administration.