# NASA TECH BRIEF

Goddard Space Flight Center



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

# Small Interactive Image Processing System [SMIPS]

#### The problem:

Increased machine/user interaction was required for an image processing system.

#### The solution:

A small interactive image processing system (SMIPS) has been designed to facilitate the acquisition, digital processing, and recording of image data, as well as pattern recognition in an iterative mode.

### How it's done:

To allow the use of existing image processing programs, the SMIP system is fully compatible with the VICAR (video image communication and retrieval) system. A SMIPS user can execute any image processing program in the VICAR library.

Operation of the SMIP system is similar to the use of a desk calculator. It is a repeated sequence of single requests followed by responses. The user requests a computation by typing a command, pressing a function key, or using a light pen. The system responds with the display of a message or picture on the screen of the graphics terminal or by indicating the completion of the request with an audible alarm signal.

Three modes of operation can be distinguished. In the dialogue mode, each command is interpreted, and

the appropriate processor is called for execution. In the input mode, each command is interpreted as a request for an image processing task; the corresponding program must exist in the systems library.

These requests are inserted into the task queue file. This is the feature that provides the extendability of the system without increasing the core size. New image processing programs are added to the library, and can then be specified as tasks in the input mode. The image processing tasks queued in the task queue are processed in the task processing mode.

#### Notes:

- 1. This program was developed using IBM ASSEM-BLER and FORTRAN IV to be utilized on the IBM 360.
- 2. Inquiries concerning this program should be directed to:

COSMIC 112 Barrow Hall University of Georgia Athens, Georgia 30601 Reference: GSC-12079

> Source: J. G. Moik of Computer Science Corp. (GSC-12079)

## Category: 09 (Mathematics and Information Sciences)

This document was prepared under the sponsorship of the National Aeronautics and Space Administration. Neither the United States Government nor any person acting on behalf of the United States Government assumes any liability resulting from the use of the information contained in this document, or warrants that such use will be free from privately owned rights.