NASA TECH BRIEF

Saturn S-11 Automatic Software System (SASS)

The data processing system developed for the Saturn S-11 Program is designed to process large volumes of test data at high speed by automatic control through the use of digital computers. The SASS system was designed and implemented to aid program development and to increase the overall operating efficiency within the S-11 data laboratory.

The entire Fortran system resides on the SASS library tape. This includes the compiler, the Fortran loader, the Fortran runtime, and the Fortran library. The $COMP control card will load and transfer control to the compiler. The compiler will accept the source program from the card reader or magnetic tape Unit 1 and will punch out the object program on paper tape and/or write a magnetic tape according to the control card. If there are subroutines, these can be compiled at this time, each with a separate control card. Subroutines must be punched on paper tape to be put into the Fortran loader until they become available on the library tape. The compiler exits to the system bootstrap when it completes a compilation.

The $FLOD control card will load and transfer control to the Fortran loader. The loader will accept the object program from paper tape or magnetic tape according to the control card. When the main program is loaded the Fortran loader checks the subroutine flag from the control card to determine whether there are any subroutines that are going to be put in from paper tape. If there are any paper tape

subroutines, the loader requests that a subroutine be placed in the photo reader. The loader then pauses for operator action. When the interrupt switch is depressed it loads the subroutine. It requests and pauses as many times as there are subroutines. It then searches the SASS library for the rest of the subroutines. When the subroutines are all loaded, the Fortran loader reads the runtime system over itself and transfers control to the beginning of the main program just loaded. All main programs will exit to the system bootstrap when execution is complete.

Notes:
1. This program is written in Fortran II for SDS 920 computers.
2. Inquiries concerning this program may be directed to:

>COSMIC
>Computer Center
>University of Georgia
>Anthens, Georgia 30601
>Reference: B67-10405

Patent status:
No patent action is contemplated by NASA.

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