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MONTHLY REPORT

for

FEBRUARY 1978

VISSR Atmospheric Sounder (VAS)
Development and Performance Evaluation

Contract No.: NAS5-21965

Prepared by

Space Science and Engineering Center
University of Wisconsin
Madison, WI

for

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, MD.

I. General

This past month has seen successful testing and operation of the VAS antenna system and the video cassette archive. Preparations for implementing the VAS Data Base Manager, Applications Processor, and User Terminal are proceeding with the ordering of necessary parts and construction of interfaces. Work on the TIROS-N subsystem and applications software development on McIDAS is continuing.

II. Data Processing System Development

The VAS antenna system has been receiving VISSR images for over a month. All operational tests have been successful and the image quality remains very good.

The video cassette archive is now working. The past problems with equalization have been solved and the record and playback cassettes are combining to produce high quality visible and IR images. The cassette archive system has been functioning in an operational scenerio for roughly one month now - recording starts and stops automatically to receive the actual satellite transmissions. The cassette archive system has been interfaced completely with the McIDAS system - images from cassette tapes can be accessed at user terminals, cassette tape can be transcribed onto the ODIS (if necessary), and accumulation of a cassette archive has begun. Work is proceeding to make the search capability on each cassette as efficient as possible.

Work is proceeding on the interfaces between the Data Base Manager (ordered 11/77), the VAS Applications Processor (ordered 2/78), and the existing McIDAS. Construction of a basic user terminal is beginning, from which a VAS user terminal as described in the System Design Review can grow.

The TIROS-N subsystem hardware configuration is almost completely determined. The PSK demod and bit sync remain to be determined. The antennas, the tower mounts, and the preamps have been ordered. Efforts to implement software that derives satellite orbit information and earth locations is awaiting implementation on the microprocessor of the program language PL/M (Intel). Design of interfaces to the microprocessor from the magnetic tape unit and the antennas is progressing.

III. Development of VAS Data Processing Techniques

The SSEC/NESS efforts on McIDAS this past month have focussed on improving the water vapor correction in the HIRS radiances, adapting the solar correction for reflected sunlight, and achieving more self consistent cloud heights with the CO₂ channel technique.



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10 March 1978

Mr. J. B. Connor
Contracting Officer, Code 289
NASA--Goddard Space Flight Center
Greenbelt, MD 20771

Dear Mr. Connor:

In accordance with Article III of Contract NAS5-21965, I am submitting the required Progress Report for the month of February 1978.

If you have any questions or desire further information, please contact me at (608) 262-0118.

Sincerely,

Paul Menzel
Program Manager

WPM/rmk

Enclosure

cc: H. Montgomery, Code 942 (10 copies)