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

for

Madison, WI
The University of Wisconsin
Space Science and Engineering Center

Prepared by

Contract No.: NAS5-21965

Development and Performance Evaluation
VISSR Atmospheric Sounder (VAS)

MARCH 1977
for
MONTHLY REPORT

Issued: 10 APRIL 1977
The data base manager acts like a Librarian taking in data from VAS, by high speed I/O channels.

The architecture consists of a data base manager (DBM), a terminal communication processor (TCP), and application processors (APs) which are all tied together into three classes: (1) data handling, (2) user communications, and (3) application.

In this architecture, the design is based on the separation of activities described elements of the system illustrate the capability for expansion inherent in the VAS system architecture we propose to use. The figure shows the VAS system architecture we propose to use. Allowing hardware and software design to proceed in a modular fashion, in the network will be responsible for only one class of activity, hence processor system which uses similar processors throughout. Each processor prototype here, the system architecture selected for VAS is a distributed style.

The VAS processor system design presented in the proposal is summarized in II. Data Processor System Design and Development.

I. General

The World Wide AS proposal mentioned in SSC VAS project.

Documentation submitted to NASA during the month consisted of the above.

The program is $1,954,446.

The estimated cost of and the design of the proposed processor system. The estimated cost of major subsystems of the proposed processor system, the performance requirements to the conclusion of the VAS demonstration was completed in March. The proposal of the Space Science and Engineering Center's participation.
Terminals and application processors are added.

Critical tasks and other system functions can grow in a linear fashion as more
optimized hardware and software are added. A single class of time
packet transmission, where packet content and bandwidth values could vary.

The major advantages of this structure is that the processors can be
interfaced to the terminals with a variety of serial, synchronous
the on small processor and also image video processor capability. The
user terminals connected to the terminal communications processor
amount of core memory to minimize the I/O requests for data and writes.

speed mass storage for the data sets requested from the DBM and a large
array of vector processors. These processors contain a small amount of high

The application processors perform the bulk data processing jobs. They
be tailored to specific tasks with external arithmetic units such as

The critical task, terminal message input.

For only one time critical task, terminal message input.

upgradeable to handle a considerable number more (roughly 50) of the
three user terminals are connected (NMS, and GSP), the design is
although initially only
the on-line data storage in the system including disks and magnetic tapes.

The terminal communications processor handles all of the user and
and a card reader.

It also controls the data archive and peripherals such as a line printer.
In a telephone conversation with H. Montgomery the question was raised; if determination of the central frequency of any filter is off, how does this affect the calibration for that band? Using the last thermal vacuum test data for band 8, we found that the absolute and rms error varied in a nearly linear fashion as the assumed central frequency moved away from 895 cm\(^{-1}\) as much as 20 cm\(^{-1}\). The slope of the errors with respect to frequency was only -0.05\(^{\circ}\)/cm\(^{-1}\). Thus initial indications are that central frequency variations pose no serious problems as long as they are nominally constrained.
cc: H. Montgomery, Code 942 (10 copies)

Paul Menzel

Program Manager

Jarl (Quinn)

Sincerely,

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

In accordance with Article III of Contract NAS5-21965, I am submitting the required progress report for the month of March, 1977.

Dear Mr. Connor:

Greenbelt, MD 20771

NASDA--Goddard Space Flight Center

Contracting Officer, Code 289

Mr. J. B. Connor

10 April 1977

THE UNIVERSITY OF WISCONSIN