

A LOW COST METEOROLOGICAL WORKSTATION

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1. INTRODUCTION

Over the past two years, considerable progress has been made in packaging a low cost interactive workstation with image and graphic displays for meteorological research and forecast applications (see references). Standard off the shelf hardware from the IBM personal computer family was used to minimize costs and to facilitate easy international implementation (a parts list can be found in Dedecker, et al.). CIMSS (Cooperative Institute for Meteorological Satellite Studies) is developing software to provide the following capabilities:

- (a) accessing the satellite data;
- (b) display of satellite images and loops of images;
- (c) derivation and display of meteorological products;
- (d) amalgamation with conventional weather data.

2. CAPABILITIES FOR POLAR ORBITING SOUNDERS

For the NOAA polar orbiting satellite sounding data, the workstation will be capable of interfacing with a direct readout receiving antenna and processing the TIP (TIROS Information Processor) or HRPT (High Resolution Picture Transmission) bit streams into displays of meteorological parameters such as vertical temperature and moisture profiles, surface temperature, geopotential heights, and total ozone. This software, known as the Export Package, has been installed on the IBM-PC-XT by Woolf et al.; the processing of a typical eight to ten minute orbital pass, from TIP formatting through statistical profile retrieval, takes approximately one hour. More efficient operation will be possible on the IBM-PC-AT; a factor of two improvement was realized and more optimization is planned.

3. CAPABILITIES FOR GEOSTATIONARY SOUNDERS

For the geostationary satellite sounding data, the workstation is capable of remote access to a satellite data base via automatic communications and subsequent display of derived information. A menu driven software system was developed by Dedecker, et al. on the IBM-PC-XT to enable general data base communications, retrieval analysis, and satellite image acquisition and analysis. Portions of this software are on display during TOVS-II.

4. CONCLUSION

While more work remains, it is clear that an inexpensive display of meteorological data is evolving. This will make the TOVS data processing capability affordable to many more users (a workstation for roughly \$7000 US, the tracking antenna for roughly \$15,000 US). This technology development needs the support and guidance of the international TOVS user community so that an organized transfer to new users in developing countries can be brought about.

5. REFERENCES

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**The Technical Proceedings of
The Second International TOVS Study Conference**

Igls, Austria

February 18 - 22, 1985

Edited by

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September 1985