

INTERACTIVE CARTOGRAPHY, SMALL SYSTEMS

There were two Interactive Cartography, Small Systems sessions. Both of these sessions were chaired by Howard Carr of the U.S. Army Engineering Topographic Laboratory and James Carter of the University of Tennessee.

Charles H. Alvord and Stephen L. Morgan of HRB-Singer Inc., presented the paper "Recent Advances in GIS Processing Techniques Using Color Graphics and Mini-computer Technology". In their paper they describe an HRB-Singer independent research and development effort to exploit the areas of automated cartography, digital remote sensing, color graphics, and digital processing for the purposes of developing system specification for an image processing and analysis facility. They describe a prototype geographic information system, the role of interactive display in this system, and some of its data base limitations.

In the talk "Field Exploitation of Elevation Data (FEED)", Howard Carr described the activities of the U.S. Army Engineer Topographic Laboratory in interactive computer cartography. During the past five years, ETL has developed software and use techniques on a DEC PDP-11/45 minicomputer, that has demonstrated the feasibility of producing good quality 3-D terrain graphics in near real time. With rapid advances in technology it is now possible to move 'ruggedized' equipment into a mobile unit that can be transported to participate in military field tests at remote sites. This advance will enable one to perform the field exploitation of elevation data (FEED). FEED data will be useful for a variety of military situations including fire control, communications and mission control.

James Carter of the University of Tennessee presented the paper "The Cartographic Potential of Low-Cost Color Computer Graphics Systems". Carter describes both the uses and limitations of color graphics systems. A variety of color systems are currently available at a relatively cheap cost. Carter describes some possible applications on his own color graphics system. He closes his paper with an important point: "the availability of colors extends our range of

options but it also extends our responsibilities".

Peter Van Demark of the Center for Governmental Research presented the paper "Color Mapping on a Raster Graphic Terminal". (Paper not included in proceedings.) Van Demark described some mapping he has done on a RamTek using a color copier (Xerox) as an output device.

Charles Ross of the Kansas Geological Survey described "GIMMAP: A (Mini)Computer-Assisted Cartography System". This system has been developed jointly by KGS and the Bureau de Recherches Geologiques et Minieres, France. It is designed to process geologic and geographic spatial data extracted from standard U.S.G.S. quadrangle maps. Current developments include an attribute data base, display interface, and graphical query language. Surprisingly, the system is implemented on a minicomputer having only 32k words of memory and random access files.

Michael Dolan and Leonard J. Simutis presented the paper "Interactive Mapping of Environmental Data Analysis Using a Modified Grid Technique". (Paper not included in proceedings.) One major limitation of using grid based approaches has been the poor quality of line printers. Dolan and Simutis described several techniques for employing raster graphic terminals for generating interactively grid-based results. The discussion was based on the Hewlett Packard family of raster terminals.

The final Interactive Cartography, Small Systems paper was by Albert Yen, Harvard Holmes, and Peter Wood of Lawrence Berkeley Laboratory. In their paper "Moving Interactive Thematic Mapping from Mainframe to Mini: Some Design Possibilities and Development Experience", they describe CARTE, a thematic mapping program which produces annotated choropleth, line, and point symbol displays of data on a variety of interactive terminals and hardcopy plotters. The advantage of CARTE is its simplistic design for the novice user and a wide range of options for the advanced user.