

SEMINAR ON INTERACTIVE MAP EDITING

Current methods of interactive map editing were discussed at this seminar, which was chaired by CARL YOUNGMAN of the University of Washington. Since maps are public graphics they are subject to public scrutiny and must be accurate. A basic consideration is that absolute accuracy entails infinite cost. Interactive graphics on the other hand allows more complete editing at a reasonable cost.

HAROLD MOELLERING of Ohio State University made a distinction between real and virtual maps in his presentation, "Interactive Cartography." Real maps represent tangible reality subject to verification by direct observation. A sheet map is an example of a real map. Virtual maps on the other hand exist in abstract form as, for example, the image which appears on the face of a cathode ray tube (CRT) screen. Virtual maps are easily edited or manipulated. Current trends in computer-assisted cartography are exploring conversion methods between real and virtual maps. Batch processes in automatic cartography will give way to interactive graphical techniques because of the advantages of person-computer interaction. A review of the literature reveals that interactive techniques are most advanced in automatic sheet map production and that rapid progress is being made in the geographic information systems (GIS) field. Further research is needed regarding cartographic symbol displays and human factors in interaction.

R. DENIS WHITE gave an informal presentation about current work on "Control Languages for Interactive Mapping" at the Harvard Laboratory for Computer Graphics and Spatial Analysis. Numerous mapping programs have been developed in the last ten years and various types of control languages have been used. Some of the desirable properties of interactive mapping languages have been included in these programs. The characteristics of mapping system languages in contemporary research extend from earlier work and embrace 1) dictionary features to allow the mapper to redefine or symbolize map entities; 2) a natural language syntax; and 3) statements for controlling important cartographic processes.

In his slide presentation on "Interactive Mapping with Interactive Raster Graphics, MICHAEL FISHER discussed the interactive graphics system at the University of Kansas. Entitled "MAPS", the system is able to show time-sequential data, and three-dimensional graphs; it is able to edit/alter map features with little delay and to access individual points.

MARVIN WHITE of the Bureau of the Census discussed ARITHMICON, a program under development by the Bureau of the Census to correct bad coordinates of the GBF/DIME-Files. He described the advantages of supporting a map file edit operation with an access system based on the topological principles of cartography set forth by Corbett. Topics for further research were also suggested.

STEPHEN W. KINZY of the Omaha City Planning Department described ODIS, an On-Line DIME Implementation System for updating and correcting the GBF/DIME-File. Since 1973 the Omaha/Council Bluffs Metropolitan Area Planning Agency and the City of Omaha have been involved in the development of on-line DIME capabilities. The author looked at specific problems involved in the development of the system and the overall potential of teleprocessing for GBF/DIME-File maintenance. ODIS was compared to the Census Bureau's CUE (Correction, Update and Extension) program and differences and similarities were evaluated. Finally, a few remarks were made regarding national GBF/DIME policy and management as viewed from the local level. His paper was entitled "ODIS vs. CUE: A Look at DIME File Maintenance."

LAWRENCE SNIDERMAN of Michigan State University presented a paper entitled "An Interactive GBF Creation and Computer Mapping System." Many persons with varying capabilities and divergent purposes use computer mapping. A major problem results from delays in creating and processing GBF's suitable for thematic mapping. An interactive systems for the creation of GBF's and computer maps has been designed in an effort to expedite the process considerably. The system, an integrated set of FORTRAN programs, is designed for general use in an on-line interactive mode. The role of this system in a daily work schedule has been to decrease the turnaround time of both GBF creation and computer-mapping as well as allowing easy access for general users needing mapped information in a relatively short period of time.

WES SHEPHERD of the U.S. Army Engineer Topographics Laboratories, Fort Belvoir, Virginia, described current hardware and associated software used by the Topographics Laboratory. This slide presentation focused on systems configurations and how they are used.

One conclusion that arose from the seminar, according to chairman, CARL YOUNGMAN, was that no one has yet developed a theory as to how interactive map editing should be accomplished. What is needed is a set of principles similar to those used in cartography.