EXPLORATION AND UTILITY SYSTEMS

Henry A. Emery, the chair of this session, presented the paper "Automated Mapping and Facilities Management". The Kellogg Corporation assists utilities and local governments in planning and managing automated mapping projects. These project costs can often range from 3 to 30 million dollars.

D.R. Johnston of Gibbs & Hill presented a paper entitled "CADAE: Computer Aided Design and Engineering". In this paper, Johnston describes the tremendous benefits which have accrued to the Gibbs & Hill firm by automating the engineering design process. Automation has resulted in a four-fold increase in efficiency over traditional methods and has encouraged the firm to expand their efforts in the graphics area toward the development of a geo-based information system.

"'Landform' Land Analysis and Display for Mining", was presented by Richard O. Mahan of the U.S. Forest Service. Landform is a system for analyzing and displaying digital data, collected in both surface and subsurface form. One advantage of using the system is the ability to depict what a proposed development will look like before any land is disturbed.

Douglas M. Isbell and William H. Young of Riverside County, California presented the paper "Engineering Applications of Digital Terrain Maps". A major breakthrough in the use of digital ground information occurred in 1976, with the development of a procedure to produce engineering quality orthophoto-contour maps from Digital Terrain Models. Some of the uses of the DTM are for extracting cross sections along any prescribed boundary for stockpiles, and determining flood plain limits.

James P. Corbett gave a paper entitled "Topological Models for Architectural and Engineering Projects". The purposes of the mathematical model are to provide facilities for efficiently evoking selected images and detecting structural or geometric anomalies.