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ESL INCORPORATED • A SUBSIDIARY OF TRW INC.

IDIMS Newsletter

Scripps hosts 1981 users group meeting

It's that time again. The annual IDIMS users group meeting will be held in early May at Scripps Institution of Oceanography in La Jolla, California.

On the agenda for the three-day — May 6, 7, and 8 — session are IDIMS developments, user applications, users group elections, and a demonstration of Scripps' Remote Sensing Facility.

Scripps' Mike Guberek, the 1981 users group chairman, will open the meeting. The first day will include discussions of: new IDIMS developments — transportable software, extension to HP-IB, HP's 3000 line new bus protocol; IDIMS software program and release 4.31; and evolution of GES into GIS. A software panel discussion will close the first day.

After a presentation of recent GIS activities, the following day will focus on user applications and group elections. The 1982 chairmanship and site of the next meeting will be decided before the end of the day.

Before bidding coastal Southern California farewell, attendees will have a look at Scripps' unique IDIMS, which "listens" directly to satellites. Tektronix and Honeywell hardcopy demonstrations will occupy the final leg of the meeting.

TRW/ESL team travels to China

The business trip ESL's Pat Hu and Gary Gnauck took in January was anything but routine. They went to the People's Republic of China.

Pat, IDIMS Operations manager, and Gary, Resource Applications manager, were part of a five-person TRW group invited to present a technical seminar at Qinghua University in Beijing. (The "Beijing" spelling of "Peking" reflects a new system of spelling adopted by China to use the Roman alphabet to render more closely the sounds of Mandarin Chinese.)

Over 70 government and university representatives attended the four-day seminar. They were briefed on our image processing systems and resource management and exploration applications.

"They have a tremendous amount of interest in image processing," Pat observes. "They're trying to get up to speed in this area for applications, primarily, in geology, water resources, forestry, and agriculture," Pat comments.

The university's image processing capabilities currently rest with a home-made CPU and display (built by the professors mainly for teaching purposes), a Bulgarian disk, and Rumanian terminals. Their refresh image plane display has a 256-line by 256-sample capability. Currently, they are manually interpreting Landsat hardcopy.

TRW/ESL team presents seminar in China (inset) and looks at university's system.

The sojourn in China held special significance for Pat, who spent the first five years of his life there. Though this was the first time he's been back there since then, Pat is fluent in both Mandarin and Cantonese Chinese. Giving the official translators a hand, Pat interpreted the technical details during the seminar. (And, Pat's father who lives in Los Altos, California, translated the technical paper Pat and Gary wrote and sent over in advance of their visit.)

"There were no restrictions on where we could go or what we could do," Gary notes. Between the four-day seminar and a four-day visit to several agencies interested in specific applications, the group — which also included Rod Chatt, Lee Eckes, and Vice President Joe DeFries of TRW Components International — went on a one-day sightseeing tour. They saw the Great Wall, the Summer Palace, Ming's Tomb, and the Forbidden City.

Appropriately enough, the TRW group concluded their visit in China with — what else — a "Beijing" duck banquet in honor of their hosts — the China Consul for the Promotion of International Trade and WJS International, TRW's trade representative in China.

Transforming the view from above

A transformation has taken place during the past year — in the most literal sense.

We've perfected software that enables IDIMS to transform images from aerial perspective to ground-level, side-view perspective.

To accomplish perspective transformation — informally called "side view" — IDIMS synthesizes an overhead image with a digital terrain elevation map. The slope of the land in the overhead view — either a satellite image or an aerial photograph — allows for reprojection. IDIMS shrinks and stretches the equally-sized pixels in the original image. The resulting offspring of the original bird's eye view, is a synthesization, not a simulation.

We've already used the technique to determine terrain conditions in areas of the Colorado River Valley, while our analytical techniques department continues to further refine the algorithm in specialized studies. (It will become available to users when it is generalized.)

Perspective transformation, a new means of exploration.

System development

Development program underway. ESL's hardware and software technology studies have led to a three-year development program, which will result in a hierarchy of advanced spatial data processing systems and transportable image processing software. This internal development program, which began in 1980, has moved into the system build phase. phase.

The first advanced system in the developmental program goes by the name of "VIXEN"; its smart display terminal answers to "PIXIE". A DEC VAX 11/780 and a DeAnza IP8500 display are being utilized in the initial implementation of VIXEN/PIXIE.

System equipment has arrived and is now being installed in the new computer room. The operational date for the initial system is December 1981. The IDIMS Geographic Entry System will be part of this initial developmental VIXEN/PIXIE and TIPS (Transportable Image Processing Software) configuration. The first phase of TIPS — well underway already — includes the executive and around 75 basic IDIMS application functions.

GEOMIPS debuts. The Geographic Management and Image Processing System is the newest addition to the IDIMS family. It, of course, ushers in the newest addition to the IDIMS vocabulary — GEOMIPS. GES and Raster-to-Vector Conversion are on this new system's roster. It also includes ERIS, Mapmaker, and project tracking and control software, which provide integrated data base management capabilities. Portions of GEOMIPS are making their debut within the new systems for Sun Exploration and Ramsey-Palmer.

Double billing

The May issue of ***Proceedings of the IEEE*** includes a paper authored by ESL's Cliff Reader and Larry Hubble. ***Trends in Image Display Systems*** — Cliff and Larry's nine-page invited paper in this special issue on image processing — covers the past, present, and future of image display technology. (An example of our new perspective reprojection technique also appears in this issue — it's featured in the TRW/ESL ad on the inside front cover.)

It's a superperson

It started as a joke, but it's become a firmly implanted tradition in ESL's Imagery Data Systems directorate. This superman tie, displayed with Jan Fabini, was given to Director Jim Burke six years ago by a couple of employees. Jim then inaugurated the annual IDS Superperson Award, giving the framed tie each year to a member of the staff. The framed superman tie now adorns the office of Jan Fabini, who has been selected as this year's Superperson. Jan is a member of the senior technical staff in our Imagery Systems Development Lab.

IDIMS wears a 10-gallon hat

Headed for Dallas. The IDIMS bound for Sun Exploration Company in Dallas, Texas is scheduled for delivery in July. The system will assist exploration geologists by displaying, enhancing, and interpreting a variety of image data sets. In a production environment, this sytem will process satellite and airborne multispectral scanner data in combination with other sensor data. Sun Exploration's system will include a HP 3000 Series III IDIMS with an ESL ASAP subsystem. Harry Stewart will manage Sun Exploration's system.

Another Texas-bound IDIMS. Another lone-star-state firm — Ramsey-Palmer and Assoc. — will receive a Geographic Management System in August. Ramsey-Palmer, located in Boerne, Texas, will use its system to encode source maps related to geologic exploration. The system, which will be managed by Brian Fine, will fuse these maps into a common data base that maintains geographic boundaries, as well as graphic characteristics.

A pleasant surprise

A surprise awaited the Bureau of Land Management's Bill Bonner and ESL's Mike Gialdini when they arrived at Johnson Space Center in Houston March 24. Expecting a routine briefing, Bill and Mike were caught unaware by the presentation of certificates of appreciation to them by Chris Kraft, the head of JSC.

The award each received was for their work in a NASA-sponsored technology transfer (applications pilot test) program to foster the use of Landsat data by the Bureau of Land Management (BLM).

The phased three-year program successfully moved from demonstration and training elements conducted by ESL to complete stand-alone operation by BLM. BLM's newfound command of their system configuration of standard IDIMS, ERIS, and GES is planned to help them map 12 million acres this year, 20 million acres next year, and 30 million acres the year after that.

Test sites in Alaska, Arizona, and Idaho were used in the applications pilot test program. The awards Bill (of the BLM Denver Federal Center) and Mike received related to the middle phase of the program, which was conducted primarily in 1979 with the Arizona test site.

IDIMS
INTERACTIVE DIGITAL IMAGE MANIPULATION SYSTEM

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