

MMI Gives "User Friendly" a New Meaning

User friendly — it means something different today than it did yesterday. Now it's becoming almost synonymous in the computer industry with man-machine interface (MMI).

At ESL in conjunction with prototyping a spatial data workstation, investigation of MMI development for image processing and GIS programs has been underway for the past few months. At this time, the independent research and development project's purpose is to determine how MMI technology might be exploited by ESL in the future.

"Our goal is to come up with something as easy to use as some of the new office automation and personal computer systems," said Jan Fabini, user station development manager. "We want to take advantage of some of the tech-

niques used in these systems, such as multiwindow menus and mouse interaction, so that command language is not necessary."

virtual memory CPU with 6 megabytes of E.C.C. memory. However, this is not necessarily the hardware upon which ESL would market the

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In addition to using a "softcopy" video screen and a mouse, the MMI on the spatial data workstation could provide hardcopy menus utilizing graphics tablets, soft function keys, and touch and voice entry.

The research model, called a User Interface Management System (UIMS), works in a UNIX environment on the MASSCOMP MC-500 microprocessor, a 32-bit VLSI

MMI. Ultimately, the MMI might be incorporated into a variety of IDIMS workstation configurations.

Intended to run on top of UNIX, the interface would only require that the user have enough knowledge to log on. It would still be possible to escape back into the UNIX shell, for those desiring to utilize the various additional capabilities of the operating system.
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Long-Awaited Landsat 5 Pulls Up to the Launch Pad

The dry spell on current, high-resolution satellite data ends March 1 with the launch of Landsat D', to be known as Landsat 5, from Vandenberg Air Force Base, north of Santa Barbara, Calif., on the Coast. All other earth resources satellites remain in the design phase.

Constrained by power and communications failures, Landsat 4 has not been able to transmit thematic mapper (TM) data since last fall. Although multi-spectral scanner (MSS) data is relayed smoothly, high-resolution 30-meter as opposed to 80-meter pixel-size land management information has not been available. Simulated, aircraft-acquired thematic mapper data from NASA has been used in Landsat's absence.

Landsat 5 is expected to begin transmission within 45 days of the launch via the TRW-built Tracking and Data Relay Satellite (TDRS) directly to the ground station at Goddard Space Flight Center in Greenbelt,

Md. From the Image Generation Facility at Goddard, radiometrically corrected MSS and TM data will be relayed in digital form to the EROS Data Center for final processing and archiving. Launch of a second-stage TDRS craft is planned by the end of this year, which will further improve the quality and quantity of TM data from Landsat.

Landsat D and D' satellites hold two principal sensing instruments, the new TM and the original MSS, similar to those implemented on Landsats 1-4.

The radiometric sensitivity of the TM is much improved over that of the MSS, even though the TM spectral bandwidths are narrower and the pixel size is smaller. The TM also offers improved spatial resolution.

The TM operates in seven spectral bands, the first six for monitoring vegetation and the seventh for geological applications, primarily.

Display Maintenance Offers Two Levels of Support

ESL is now able to better serve IDIMS customers with the introduction of a display subsystem maintenance program. The program, initiated last October, provides hardware maintenance for display processors (IP8500 and IP8400), control CPUs (LSI 11/23 and 11/24) disk drives (37 MB and 300 MB), monitors (Mitsubishi and Conrac), trackball mechanisms and interfaces to VAX or HP computers.

There are two levels of support offered under this new program. The first is a standard maintenance agreement consisting of remedial and preventive maintenance, for a one-year contract at a fixed monthly price, with parts and labor included. (Travel and ship-

ping are billed separately.) The second level of support, depot repair, would be coupled with a diagnostic operation and interpretation training program provided by ESL. This level of service is targeted for a five working day, in-plant turnaround on display processors and control CPUs. On-site support is also available on a time and materials basis.

"Our prices are competitive," said Andy Failla, IDIMS product manager. "ESL has a complete spares inventory, a dedicated field engineering repair facility, and DEC- and factory-trained engineers. We are now able to provide a total subsystem support for both hardware and software."

All Sites Will Benefit from VAX/IDIMS Release 10.14

VAX/IDIMS Release 10.14, scheduled for late-February, is the first updated release to be delivered to all sites with a common software baseline, thus ensuring that all sites may benefit simultaneously from developments that have been ongoing in the IDIMS development area.

VAX release 10.14 will offer four new system functions: MACRO, which permits manipulation of a MACRO within an IDIMS session; GOTO, which permits branching within a MACRO; PROMPT, which permits prompting within either a MACRO or a command file; and WRITE, which permits writing of information within either a MACRO or command file.

Two new application functions are available: PIXSERT, which inserts rectangular blocks of specified size and intensity into an existing image; and DSKXFER, which copies an IDIMS image to a disk file (in operating system format). Also available are three new display functions: BITS, to turn on or off any of eight bits of intensity for the current image; AF, a graphics area file that does not produce an area database entry; and IMAGE, a full resolution image (greater than 512X512) display which will be used by the soon-to-be-announced

PAN ROVE function. The release also includes the IDIMS utility MACROLIB, which can create, replace, delete or list IDIMS MACRO command entries. Release 10.14 is supplying the MACRO functions AUTOCOR, CEPSTRUM, CROSSCOR, HFILT, MAGPOWER, and WIENER.

The release will offer many new enhancements and capabilities. IDIMS will be able to use all discs that are configured into the ID file (as opposed to previous IDIMS versions which could only use data on the default logon device). IDIMS display subsystem interaction has been modified so that if IDIMS is terminated abnormally, the display will be freed automatically, thus ensuring that any ensuing IDIMS sessions will be able to GRAB successfully. Also, more rigorous VAX display I/O checking is performed during all display accesses, allowing greater stability during display interaction. All session-saved display map and pseudo tables are accessible between sessions (transferred during GRAB and FREE). CANCEL may be used to abort MACRO files and display interactive functions. TA handles arbitrary overlays as well as TR-generated polygon boundaries and fills the actual visible region, as the

area database is now built using an invisible overlay.

Enhancements have been made to several utilities: CLEAN now handles multiple disk cleanup; DISPLAY has an unjam facility to free up a session from a display hang and a CONTROL facility to examine actual display subsystem memory status information; and WHATISIT now provides record length. BUILDID's machine-specific disk section now allows either configured or non-configured information and indicates display local disk and shared disk information; and NEWUSER now prompts for directory creation for all disks configured by BUILDID.

Release 10.14 includes corrections to several problems reported since the installation of VAX release 10.12. Now resolved are: a major BATCH problem; GRAB, SAME, and FREE; the cubic convolution problem (using ROTATE, REGISTER, MAGNIFY, and REGCOEFF); the LOAD/STORE function-launch problem; and the major problem in SESSION (FIRSTLN error).

How Do You Spell "IDIMS" in Chinese?

ESL has completed its fourth overseas installation of an IDIMS system, this time in the Republic of Taiwan. Final installation and acceptance tests of the VAX-based system were completed Nov. 6, at the National Central University of Taiwan, located in Chung Li, a city about 25 miles from the capital, Taipei. The system will be administered by the Department of Atmospheric Physics and will be used for various projects relating to meteorology, oceanography, geology, geophysics, agricultural management, and forest resource management. A primary objective of the university is to apply IDIMS to take inventories of the rice crop, upon which Taiwan's economy is fairly dependent.

In addition to the courses taught at ESL, two weeks of on-site training were conducted. Jan Fabini, manager systems development, conducted one week of programmers' training, and Bob Ferrie, quality assurance manager, trained system analysts on IDIMS for one week. Because of the difficulty in training with the all-English manuals, the users are translating the instruction manuals to Chinese. Although they will learn procedures in their native language, the actual

commands are going to be in English. However, they are considering rewriting some code to change the titling to Chinese characters.

The IDIMS system is based on a VAX 11/750 and includes a Tektronix graphics terminal, a Talos digitizer, and GES and ERIS software.



Just after installation in November, faculty and students, above, were eager to try out the IDIMS at the National Central University of Taiwan. Below, overlooking rice paddies adjacent to the campus is Chung Li in the background.



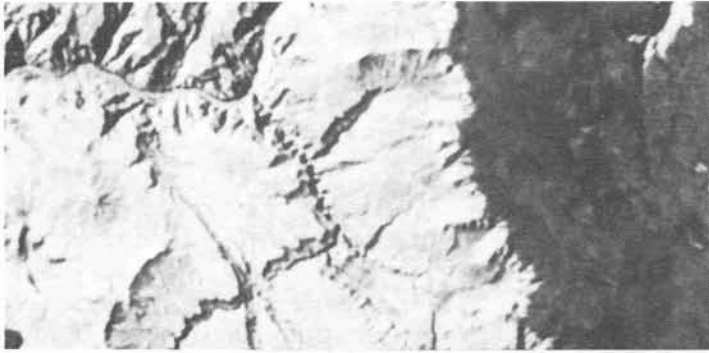
Annual Meeting Coming in April in Colorado

The seventh annual IDIMS Users Group (IUG) meeting is scheduled for April 10-12 this year in Breckenridge, Colo. The call for papers has been issued, and all IDIMS users are encouraged to participate with presentations on specific study areas, applications, or any subject which would be of interest to the IDIMS community.

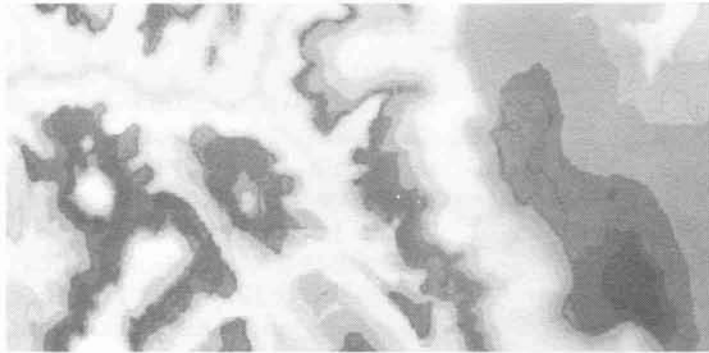
Robert Brovey of Exxon Production Research, IUG chairman, intends this year's meeting to be more technically oriented, with an emphasis on practical applications within IDIMS. The meeting will be held at a convention facility called Beaver Run in Breckenridge, a town 75 miles west of Denver and approximately 150 miles northwest of Colorado Springs. Special room rates have been negotiated with Beaver Run for IUG attendees.

This year's IUG meeting is targeted to immediately precede the Third Thematic Conference, presented by ERIM April 16-19 in Colorado Springs. This industry-oriented meeting will address the theme, "Remote Sensing for Exploration Geology," including studies of the operational use of remote sensing in exploration programs as well as future directions for research and development in geologic remote sensing.

If you have comments or suggestions concerning the IUG meeting please contact one of the officers. Bob Brovey may be reached at (713) 965-7063; Vice Chairman Dave Freeman (Sun Exploration) at (214) 258-4524; and Secretary/Treasurer Andy Failla (ESL) may be contacted at (408) 743-6152. For more information on the Thematic Conference, contact: Donald Morris-Jones (Technical Program) or Robert Rogers (Exhibits and Displays) at ERIM in Ann Arbor, Mich., at (313) 994-1200.



The Colorado River Valley's Hurricane Cliff in Arizona is shown here in Landsat bands 7, 5, 4.



And, this is registered terrain data of the same area.

This simulated image at ground-level perspective is the result of synthesizing the Landsat image and terrain data shown above.



A Matter of Perspective

IDIMS' perspective generation software transformed this Landsat image and terrain elevation map into the ground-level, side-view image of the Colorado River Valley shown here. A simulated oblique view can be constructed from vertical imagery, graphics, and any coregistered, contoured data, i.e. terrain, gravity, or magnetics.

Along with perspective generation, several technology advancements will be discussed at the 1984 IDIMS Users Group meeting, April 10-12 in Breckenridge, Colo. (See story on page 3.)

For each advanced technology function, the operational requirements will be explained, as well as the estimated investment required for implementation. The functions include: raster to vector conversion of imagery or raster graphics; high-speed map digitizing and entry; interface to other vector data bases, for example converting GES files into Intergraph format and vice versa; a comprehensive production plotting package for GES vector files; and data base technologies, such as entry, storage, manipulation, and output of analyses as well as integration of raster, vector, and tabular data. Also, ESL's investigation of three-dimensional data base management will be discussed.

MMI

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Work to date has been in two distinct areas, namely the prototyping of the screen and mouse interactions, and bringing up a batch-oriented version of IDIMS that still accepts command language input. The prototyping activity currently allows us to see the screen partitioned into a number of windows (such as one window for

help, another for an IDIMS menu, and others for parameter prompting and status information). Seeing choices in these windows does not mean that choosing will execute any IDIMS commands yet. Much work must be done before it will be recognizable as a useful image processing environment. The other activity, the batch command language interpreter, is well underway starting with a subset of the IDIMS language.

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Published by ESL Incorporated, a subsidiary of TRW Inc., for members of the IDIMS Users Group.

Do you have news about your system, site, or application that you would like to share with other IDIMS users? If so, please contact Andy Failla at ESL, (408) 743-6152.