



IDIMS Newsletter

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ANNUAL I.U.G. MEETING

The second annual meeting of the IDIMS User Group drew IDIMS users from all parts of the continent to NASA-AMES Research Center in Mountain View, California. More than 50 people attended the two-day session, held on May 23 and 24. Ethel Bauer of NASA-ARC chaired the meeting.

"We were very pleased with the results of this year's meeting," said Andy Failla, IDIMS product manager. "Once again, it proved to be an effective vehicle for the interchange of ideas, applications, and information about digital image processing and analysis."

Attending the meeting were representatives from nearly all IDIMS user sites, as well as ESL personnel, TRW personnel, and prospective customers.

Reports on new applications in image processing, new IDIMS developments, and display technology, given by ESL's Norm Lyon, Don Hurd, and Cliff Reader, were included on the agenda. Jim Shea, Hewlett Packard area service manager for ESL, led a panel discussion on HP systems and maintenance procedures. Also on the panel were HP district manager Bob Shebesta, HP account representative Rick Ellinger, and Andy Failla and Dave West of ESL's IDIMS Product Group. Jim, who is responsible for all on-site HP equipment at IDIMS installations, stressed HP's commitment to prompt, complete service, and support.

(See related story — *Major Account Status Benefits IDIMS Users* — in the March 1979 issue of the *IDIMS Newsletter*.)

Discussions were also held on ESL's maintenance support and user services. "A number of useful observations came out of the meeting," said Andy Failla. "A need was voiced for greater visibility of services and updates of software, including bugs that had been fixed and new software releases. We were also pleased to hear a general consensus expressed at the meeting of major advances in both quantity and quality of service over the past year," continued Andy.

By-laws and elections of officers were voted upon at this year's meeting, creating a formal IDIMS User Group organization. Sheldon Levy (EG&G) was elected chairperson; Bill Alford (NASA-Goddard), vice-chairman; Chuck Nelson (USGS-Eros Data Center) secretary-treasurer; and Karen Smith, ESL representative.

"We know that it is important to work together and develop lines of communication between the group and ESL," said Ethel Bauer. "A first step in this direction will be formal statements from the users group to ESL to indicate enhancements and improvements of software, hardware, and services they feel are needed."



Attendees of the second annual IUG meeting listen intently to a presentation.

IUG PRESENTATION

LATEST PRODUCT DEVELOPMENTS HIGHLIGHTED

IDIMS latest product developments, many of them developed in direct response to needs expressed by the IDIMS User Group, were highlighted for the attendees of the second annual meeting by Don Hurd, ESL System Development Laboratory Manager. Here is a synopsis of his presentation.

The application of the IDIMS system is now more closely tailored to user requirements. This has been accomplished with an improved system level foundation, controlled releases, a new approach in the support of maintenance activities, an improved and expanded functional system capability, and the development of new systems and subsystems.

IDIMS Standardization

IDIMS is now a standardized, tested system that at the system level provides complete user interface for system-level functions, which allows controlled stages for system changes. Software support activities have been standardized to provide updates for system software, to identify system bugs, and to document the requirements for the bug fixing activity. ESL's support service identifies and resolves system problems and has further developed the maintenance subscription service to provide users with taskable contracts.

Improved functional capabilities of the system include a variety of new, bug-free, modular display controllers developed for ESL under a subcontract with DeAnza Systems. System upgrades include a user-tailored menu with sets of commands, new versions of entry software for LANDSAT C tapes, newer versions of standard software providing dynamic loading for quicker updates, and the development of a Distributed System (DS) concept.

Linking Systems

The DS is a significant development that allows users to link systems together for information exchanges, demonstration, or for research and development.

The IDIMS 33 is a less costly system based on the DeAnza ID5424 display. The HP33 series computer has the same functional capabilities as other IDIMS systems, yet is a compact, high performance computer which has been fully tested for bugs and system problems. The IDIMS 33 is fully compatible with other IDIMS systems.



The SIO IDIMS system in staging at ESL.

SIO Goes IDIMS

An ESL team headed by Rick LaPado has developed a real-time acquisition/analysis capability for Scripps Institute of Oceanography (SIO), University of California at San Diego. The system has a direct down-link to pull in NIMBUS and TIROS meteorological satellite information as the satellites pass over the institute. The system configuration includes:

- HP3000 Series II Model 6 computer
- DeAnza IP5532 Color Display System
- HP2640B display/user terminals
- Honeywell 96 Analog Recorder
- Information Handling Subsystem (IHS), designed to convert both real-time and tape recorder playback of satellite signals into computer compatible form for use by the IDIMS system.

How It Works

The new subsystem takes raw data directly from a satellite and stores the data on a disc or high density tape drive. At the same time, the acquisition pass may be scrolled on the image display in real time. The acquisition pass is entered into an automatic capture system by an interactive program. Information on time, location, and sensor type is supplied to the program for response to future processing. On request, the system will provide a graphic output of either the satellite subtrack or the specified sensor/channel coverage.

DMA Gets IDIMS

A new IDIMS system installation is now undergoing acceptance testing at the Defense Mapping Agency Aerospace Center (DMAAC) in St. Louis. DMAAC's Digital Interactive Multi-Image Analysis System (DIMIAS) will help automate the detection and delineation of rural radar significant features through the classification of Landsat data and the application of site-specific IDIMS functions. These functions eliminate undersized features and develop feature boundary descriptions. DMAAC will use existing techniques and equipment to supplement the vector boundary descriptions with photointerpreted data before entry into their Digital Land Mass Simulator (DLMS) data base. The DLMS data base is used by the Navy and Air Force to support pilot/navigator radar training over domestic areas in a ground based simulator.

The DIMIAS hardware configuration includes:

- HP3000 SII Model 6 with 256 KB of memory
- 3 HP7925 120 mb disc drives
- 1 HP7906 20 mb disc drive
- Telex 1600/6250 bpi tape drive
- HP1600 bpi tape drive
- A complete ASAP-D subsystem
- Comtal Vision 1 display
- Versatec 8222,22" electrostatic printer/plotter.

The DMAAC site-specific software consists of six new IDIMS functions. EDITAREA uses the image display and has several commands which modify input image grey levels. The analyst may automatically eliminate all features whose major axis length or area is less than a given threshold; a different threshold may be set for each resource category (grey level). The analyst may digitize with the trackball any type of polygon, assign it a resource category, and have it inserted in the image. The analyst may position the trackball over any feature and either change its resource category or eliminate it all together. EDITAREA also assigns each feature a unique number and initializes the DMAAC feature analysis description table (FADT).

DMAPLOT is PICPLOT modified to print the feature identification number in the upper left of each feature. EDITFADT allows the analyst to interactively modify and list the FADT. GETBOUND detects and records feature boundaries and removes most pixel "stairsteps." FIXBOUND enlarges and displays a section of the input image and draws the boundaries on the graphics overlay. The analyst may modify boundaries by inserting and moving vertices. DMA-TAPE assembles features and formats a magnetic tape for DMAAC's UNIVAC 1108, which contains the DLMS data base.

HSHD TAPE DRIVES NOW AVAILABLE

ESL is now shipping high-speed high-density (HSHD) magnetic tape subsystems to IDIMS facilities. To date, five subsystems have been installed. By the end of this year, 11 subsystems, consisting of 16 tape drives and 11 formatters, will be operational in IDIMS facilities throughout the country. The tape subsystem controller is designed and built by ESL; the tape transports and formatters are off-the-shelf items from TELEX Computer Products, Inc.

ESL will have overall maintenance responsibilities for the subsystem. The tape drives and formatters will be maintained by TELEX under contract to ESL. Initially, personnel from the OEM division of TELEX (where the tape drives are manufactured) will perform the maintenance. Eventually maintenance will be performed by the TELEX Service Company. The TELEX Service Company, a division of TELEX CPI,

is a large organization in the business of maintaining computer equipment. It has 177 service locations in 37 states. They have committed to ESL to maintain the TELEX tape drive equipment installed by ESL in IDIMS facilities. A master maintenance agreement has been executed between ESL and the TELEX Service Company. Maintenance of equipment at any given location will be covered by initiating releases to this agreement. ESL will administer and manage the agreement and all releases. The end-user will contract directly with ESL for a maintenance agreement. Under ESL authority and control, TELEX customer engineers will interact directly with the user for preventive and remedial maintenance.

ESL believes that this arrangement will provide satisfactory maintenance coverage for TELEX equipment in all IDIMS facilities.

Mate Van to "Hit the Road" Again

The NASA/Ames Mobile Application and Training Extension Program (MATE) came back to life under a contract to ESL for a mobile version of the new IDIMS 33 system. Priority requirements to replace the former van that was destroyed by fire in early 1978 were met by an unsolicited proposal for ESL's development of the HP3000 Series 33 computer as a low cost, compact, full capability IDIMS. The new MATE II will bring Landsat technology and training to the western regional states in support of Ames's WRAP programs. MATE II will have full stand-alone capability in the field, while being fully compatible with the Ames fixed center. Communication to the main center will not be required, but can supplement the van's activities in the future by adding HP's distributed systems DS/3000. When the van is "at home" it will be able to off-load the heavy demand presently existing at the main center.

Potential Growth

Potential future growth of the IDIMS 33 includes host computer upgrades and ESL's Geographic Entry Subsystem and Earth Resources Inventory Software to complete the total earth resources inventory tools. Multistage resource inventories can then be completed within the IDIMS 33 with minimal assistance from the main center.

The Ames Van project work is moving ahead quickly. The IDIMS 33 is now in staging and integration. The Van installation has been well planned and tested by mockups. The equipment for MATE II will pass through a 26-inch wide door of the van and operate on single phase 220 volts wherever it visits. Every effort is being made to ensure that MATE II makes its first appearance at the Western Regional Remote Sensing Conference in Monterey, California, October 17 - 19. The lead program people are Larry Hofman and Brad Gibbs of NASA/Ames and Bob Putnam and Don Hurd of ESL.



IDIMS 33 in staging at ESL, top; a cardboard mockup of the system inside the MATE van, center; an exterior shot of the van, bottom.



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