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# Software AG International Users' Group Newsletter

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# Contents

## **Users' Group News**

President's Message .....	1
All That Jazz .....	1
Change/Enhancement Request Form .....	3
Call for Papers .....	4

## **Regional Reports**

Eastern Canada .....	6
Eastern Region .....	6
New England Region .....	8
Northwestern Region .....	9
Sierra Pacific Region .....	9
Southwestern Region .....	10

## **ADABAS News**

ADABAS Product Rep's Report .....	12
ADARUN Parameter Functions and Relationships .....	12
Saving Time in Data Base Recovery .....	17
System Development Using the Data Dictionary .....	18
ADABAS Internal Sort Timings .....	20
Data Administration/Data Base Administration SIG Report .....	21
DBA Tools SIG Report .....	21
DOS SIG Report .....	25
Education/Documentation SIG Report .....	25
ADABAS Performance SIG Report .....	26
Restart/Recovery SIG Report .....	27
ADABAS Special Interest Group Chairpersons .....	27

## **NATURAL News**

NATURAL Product Rep's Report .....	28
A Library Machine for NATURAL and CMPEXIT in ADABAS/VM .....	28
NATURAL Version 1.2 .....	30
NATURAL Special Interest Group Chairperson .....	33

## **COM-PLETE News**

COM-PLETE Product Rep's Report .....	34
COM-PLETE Special Interest Group Chairpersons .....	34

## **ADABAS-M News**

ADABAS-M Product Rep's Report .....	35
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## **Software AG News**

Software AG Introduces Larry Jayne .....	37
Advanced Markets Update .....	37
Software AG Education News .....	37
Software AG Class Schedule .....	39
Release Levels & SAGUTILS .....	40
Early Warnings .....	41
Denver Support Numbers .....	41
Software AG Contacts .....	42
Need Some Help? .....	42
Users' Group Regions in the United States .....	42
SAGGROUP Regional Representatives .....	43
International Software AG Users' Group Executive Committee .....	44
Editors, Dates to Remember .....	44

# President's Message

Jennifer Lee  
The Aerospace Corporation

The Executive Committee met for two days, November 4 and 5, in Reston to discuss SAG-GROUP issues with Software AG.

Lynne Snelling of Getty Oil was appointed the Change/Enhancement Coordinator and reviewed the change/enhancement process and schedule for the 1982 change/enhancement voting cycle with the Executive Committee.

Bruce Smith, Software AG's Senior Vice President of Technology, was introduced to the Executive Committee. He then outlined the quality assurance procedures that have been instituted to monitor temporary fixes, system modifications, and initial releases. The quality assurance function is intended to ensure the adequate testing of zaps and reduce the volume of problems requiring fixes.

The Executive Committee also discussed user concerns regarding COM-LETE with Bruce Smith and Don France, Senior Vice President of Sales and Marketing. The Executive Committee was assured that COM-LETE problems were being addressed as a high priority and that changes to COM-LETE would be applied in a controlled environment with zaps being grouped together, reviewed by quality assurance, and distributed on a periodic basis. Any situation in which COM-LETE stoppage occurs would, of course, continue to receive immediate response.

ADABAS-M concerns were raised by Dick Gemoets, ADABAS-M Product Representative, who is distributing a report to ADABAS-M users. The DOS Special Interest Group Chairperson Bernie Connor addressed DOS user concerns and was pleased to learn that

Software AG of North America now has DOS access during the day.

Bob Becker of Foremost Insurance has been appointed Chairperson of the Technical Support Committee, which has the responsibility of preparing and distributing the technical support survey questionnaire, tabulating the results, and formulating an analysis along with recommendations to SAG-NA. The results of the 1982 survey are to be distributed to the user community in a report produced in cooperation with SAGNA.

An update on the New Orleans International Users' Group Conference was presented by David Schmidt, Software AG's Conference Planner, and it was agreed that the May Newsletter would be devoted to articles dealing exclusively with the Conference. Every effort will be made to make the 12th International Conference a true Users' Conference and to prepare users as well in advance as possible. We are all encouraged, therefore, to plan ahead and register as early as possible.

## ALL THAT JAZZ

New Orleans, home of the Mardi Gras, will play host and set the theme for the 12th International Software AG Users' Conference—"All That Jazz."

"All That Jazz" communicates the energy of a young, growing and vital company. When that energy is combined with the dreams, goals and successes of each member of the Software AG family, "All That Jazz" becomes the spirit of a vibrant work force.

Scheduled June 5-9, 1983, this year's Conference will highlight the new, advanced, and exciting features of Software AG's full service software products. The week will include a full schedule of guest speakers, user presentations, and workshops. Tutorials geared for beginning, inter-

mediate, and advanced level users will be given. Users will have the opportunity to share their experiences with Software AG products, describe interesting applications, and discuss their responses to the data processing and data administration needs of their organizations. Change/enhancement sessions for each product and Software AG presentations of product status and future goals will complete the agenda.

## Charles Lecht and Ulric Weil Keynote Speakers

Setting the tone for a week of stimulating sessions, a variety of guest speakers are sure to provide insight and inspiration.

Charles Philip Lecht, President of Lecht Sciences, Inc., will be the keynote speaker. In "The Technology Vector," he will explore hardware and software trends in 1983 and some of the incredible effects these trends may produce in the future.

Lecht is the author of *The Waves of Change*, several other books on computer languages and project management, and innumerable articles, including "Lecht on Technology" which appears regularly in *Information Systems News*. His professional activities have included positions with IBM's Service Bureau, Lincoln Laboratory, MITRE, the U.S. Army Ordnance Corps, and Advanced Computer Techniques Corporation (ACT), a software consulting firm which Lecht founded and served as President and Chairman of the Board. In 1976, "The Gallagher Presidents' Report" designated Lecht one of the "10 Best Businessmen in the U.S.A." in companies with income below \$1 billion.

Ulric Weil of Morgan Stanley & Co. Inc. will also address Conference attendees. A new edition of his book, *Information Systems in the 80s*, is due to be released this spring and will be the basis for his presentation.

Before joining Morgan Stanley as a principal in the Electronic Data Processing De-

# Users' Group News



partment, Weil spent 16 years in programming, marketing, and financial planning for IBM and was the EDP analyst at Lehman Brothers Incorporated.

Additional sessions will be addressed by Ronald Ross, Editor of *The Data Base Newsletter* and William Perry, Executive Director of the Quality Assurance Institute. Both Ross and Perry are noted for their expertise in data base technology.

#### **Demonstration Time Included in Daily Schedule**

Due to the need for larger user meetings and increased numbers of terminal demonstrations, a typical day will be scheduled as follows:

8:00 a.m.—9:00 a.m.  
Breakfast  
9:00 a.m.—10:30 a.m.  
General Session  
10:30 a.m.—11:00 a.m.  
Coffee Break  
11:00 a.m.—12:30 p.m.  
Concurrent Sessions  
12:30 p.m.—1:30 p.m.  
Lunch  
1:30 p.m.—3:00 p.m.  
Concurrent Sessions  
3:00 p.m.—3:30 p.m.  
Coffee Break  
3:30 p.m.—5:00 p.m.  
Concurrent Sessions

Technical demonstrations of each product will be scheduled at specific time periods throughout the day, and the terminal room will remain open during the early evening hours for demonstrations.

A Software AG International Users' Group meeting will be scheduled on Monday morning from 11:00 a.m. to 12:30 p.m. Current President Jennifer Lee will preside over the session.

#### **Companion Program Expanded**

The companion program will be expanded again this year to include more seminars, tours, and specific Conference sessions in addition to all meals and social events.



#### **Early Registration Bonus**

Prepaid round-trip coupons for transportation between the New Orleans airport and the Conference hotels will be mailed to those whose registration and payment are postmarked by the April 30 deadline.

#### **Registration Procedures**

A new registration form is enclosed with this brochure. Please fill in the form completely and return all except the last copy in the return envelope. Upon receipt of the registration form, a pre-registration packet containing hotel and travel information, companion program details, post-Conference trip brochures, and other pertinent information will be mailed.

Several new policies are being instituted this year:

1. An additional \$100 will be added to registrations post-marked after April 30, 1983.
2. A \$100 fee will be charged for those who cancel after June 1, 1983.
3. Fifty percent of the registration fee will be assessed for those who do not attend and fail to cancel prior to June 5, 1983.

#### **Two Hotels Co-Host Event**

The New Orleans Fairmont Hotel and the Royal Sonesta Hotel will co-host the Conference. All major Conference activities will be held in the Fairmont Hotel, with all companion activities scheduled at the Royal Sonesta Hotel on Bourbon Street. The two hotels are only a few blocks apart. Attendees may select their preferred hotel on a first come, first served basis. Rooms will be \$65 single or double occupancy at both hotels, thereby allowing conferees to bring companions at no additional room cost. If necessary, additional rooms will be available at the Royal Orleans Hotel for \$70 single or \$75 double occupancy.

#### **Travel Services**

Eastern Airlines has been designated the official airline and Global Enterprises, Inc. of Austin, Texas, has been selected as the official travel agency for the Conference. Together, the two companies will assist you in making arrangements more easily and economically.

#### **Post-Conference Trip**

A five-day, four-night trip to Cancun, Mexico will depart New Orleans on Friday morning, June 10. Reservations will be handled by Global Enterprises. Details will be available in the pre-registration packets.



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## CHANGE/ENHANCEMENT REQUEST FORM

Please forward completed requests to:

Product \_\_\_\_\_

Category \_\_\_\_\_

Title of Request \_\_\_\_\_

Ms. T. Lynne Snelling  
Getty Oil Company  
Information Services Dept.  
Data Administration—Room 1465  
P.O. Box 1404  
Houston, Texas 77001  
Telex: (713) 658-0169 (USA)  
(910) 881-2693 (International)

Complete Description of Change/Enhancement (please type):

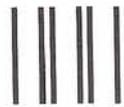
Identify Benefits:



Date: \_\_\_\_\_  
Submitted by: \_\_\_\_\_  
Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
\_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_

For Users' Group Use Only:  
  
Request Number: \_\_\_\_\_  
Date Received: \_\_\_\_\_  
Received by: \_\_\_\_\_  
Consolidated with Request Number: \_\_\_\_\_

..... - FOLD - .....



PLACE  
STAMP  
HERE

**Ms. T. Lynne Snelling  
Getty Oil Company  
Information Services Dept.  
Data Administration—Room 1465  
P.O. Box 1404  
Houston, TX 77001**



..... - FOLD - .....



## Call for Papers

The International Software AG Users' Group (SAGGROUP) invites its members to submit papers for presentation at the 12th International Software AG Users' Conference in New Orleans. The Conference offers a unique opportunity for users of Software AG products to present information on their individual systems and describe their use of the products.

Topics for the papers should focus on one of the major products. Suggested topics include but are not limited to the following:

### ADABAS, ADABAS-M

Performance Monitoring and Tuning  
File Design  
Managing the DBMS Environment  
Security  
Data Dictionary  
System Testing  
Auditing  
Multiple Data Bases  
Restart/Recovery  
Applications

### COM-LETE

Performance Monitoring  
Tuning  
Security  
Applications

### NATURAL

Programming Techniques  
Training  
Application Development  
Managing the NATURAL Environment  
Security  
Interfaces  
Case Study

### Abstracts Due

A one- to two-page abstract or detailed outline is due for review no later than December 10, 1982. The purpose of the review is to determine the topic you are presenting, the type of audience you are addressing and the level of experience required to understand the materials. This will allow us to ensure variety in the presentations and assist in developing a preliminary agenda. The abstracts should be submitted to:

Users' Group Liaison  
Software AG of North America,  
Inc.  
11800 Sunrise Valley Drive  
Reston, Virginia 22091

### Important Dates:

Abstracts Due—  
*December 10, 1982;*  
Notification of Acceptance—  
*January 10, 1983;*  
Papers Due—  
*March 1, 1983;*  
Acknowledgement—  
*March 15, 1983;*

## Change/ Enhancement Process

Due to difficulties experienced in the past with the Change/Enhancement process, the SAGGROUP Executive Committee approved the following revisions:

1. A Change/Enhancement Request Form will appear in each issue of the Newsletter to allow users to submit requests throughout the year;

2. The deadline for requests to be considered for responses at the annual Conference will be November 30;

3. An interim detailed report will be prepared for the fall Executive Committee meeting to give both Software AG and the committee an idea of the nature of the requests coming in.

These changes should alleviate past problems by allowing users to submit C/E requests throughout the year. Also, the interim report will allow Software AG of North America and Darmstadt an opportunity to review the incoming C/Es and assist the Users' Group Product Representatives in consolidating the requests—a difficult and time-consuming effort. Finally, distribution of the ballots for those requests to be responded to at the annual Conference will take place in early December to avoid the mailing difficulties encountered last year.

The Executive Committee also acted on the distribution of the final responses and voting by approving the following:

1. Change/Enhancements and replies are company confidential;
2. Change/Enhancements and replies will not be published in the Proceedings to the annual Conference;
3. Change/Enhancements and replies will be distributed only to authorized licensees of each product.

We hope that the revisions will alleviate previous difficulties.



## Eastern Canada Region

*Gene Miklovich  
Systemhouse Ltd.*

The September 14 meeting was hosted by RCMP in Ottawa and 27 users were in attendance.

The meeting started with a review of the status of SAG products by Cliff Wietzel of R.D. Nickel. Cliff indicated that NATURAL 1.2 should be out fairly soon and that a fair amount of work on ADABAS 4.2 was taking place with new features like PT (preliminary ET), multiple data base support, additional commands (interactive utilities), and a better sort in LD2 and 50-100 change/enhancements. Cliff also indicated ADABAS VTAM was being tested at four sites.

The meeting moved on to a discussion of user problems. Tom Okrainec indicated that the regenerate problem he was having (reported at last meeting) was due to not having a second SIBA tape available. This is because the copy function uses the nucleus which needs a log for Auto Backout and Recovery. It was also indicated that SM05 allows changes to the data base block sizes.

The meeting was highlighted by two presentations by Bill McCrosky from SAG Education. Bill conducted a tutorial in the ADARUN parameters and followed in the afternoon with one on ADABAS file design. The presentations were very well received and the users who attended felt it was one of the better meetings we have held.

Next meeting is scheduled for November 30, 1982, at TCPL in Toronto.

## Eastern Region

*Dan Nolan  
Computer Sciences Corporation*

Over 120 people attended the September 28, 1982 meeting, which began with a brief description of each representative company's interest and environment. Tom Bradbury then presented the status of the newly forming Delaware Valley Users' Group. He observed that it is more user-oriented than the main sessions and will remain more a "special interest" for end users for the time being. (It is noted that if we have some difficulty with end-user involvement, we may wish to send some of ours "Down in the Valley".)

First on the agenda was Computer Science Corporation's Michael Davies, who described his "AJAX" system which plugs into online applications. End users blest with this tool have no need to switch modes in order to process batch as the application programs prompt the user for pertinent details at an appropriate time and submit the jobs for them. Mike deftly fielded the question of its availability but noted that it is in operation at CSC.

Tom Berrisford of Lone Star Software (Houston, Texas) knocked down a few birds with a single rock by presenting his Electronic Mail System, introducing their line of financial packages and speaking about his company's efforts in controlling the development cycle.

This is crucial since virtually all Lone Star's efforts are aimed at the non-procedural language (NATURAL) segment of the marketplace, and the lessons Tom and his group learn should be of value to those of us attempting to get a rope around our own inhouse work.

Tim McGovern of MIT introduced his installation and spoke of ADABAS in a VM/CMS environment. Of almost as much interest as the technical details, were Tim's descriptions of the administrative problems which had to be overcome to make effective use of their facility. At MIT, each effort is almost a world unto itself and must be able to both coexist and run independently of every other effort. This is quite different from those of us who are focusing on integration; MIT frequently discourages such dependencies.

Steve Robinson, true to form, filled in a few minutes with his discussion on Effective Use of a DBMS. He pointed out something we have all learned but frequently need to be reminded of: ADABAS, particularly with NATURAL, is easy to program, but the result can be equally bad or good depending on the amount of planning and experience brought to the problem. One example showed a magnitude of improvement with a single one-line change in a program.

The second half of the day, Software AG answered questions of some concern to the users. Dick Jones spoke about the Natural Advanced Facilities, giving those users faced with making changes to CICS the alternative of waiting for a SAGNA solution. Dick also spoke on the subject of Soft-

ware AG's reorganization and the subsequent relegation of training and consulting to each sales district. Users have expressed concern that one region may have different (better/worse) offerings than another and wanted to know what measures were intended to promote, if not consistency, informed choices. Dick's answer was that realistically no plan was available but these issues would be addressed as soon as things settled down a smidgen.

The final presentation was by Ed Forman on Software AG's position and support of independently marketed application packages. Users have been getting literature on virtually every form of application implying an endorsement by SAGNA frequently for the identical package. Ed cleared this up by stating that Software AG, as a company, supports all vendors using or selling its services and it remains incumbent on each site, as it always has, to select the appropriate product. In other words, laissez faire and caveat emptor, y'all.

The next meeting will be January 24, 1983, at Stouffers, Crystal City, Arlington, Va.

Omitted from the last Newsletter were the minutes from the previous meeting, June 1, which follow.

More than 100 people attended the June 1, 1982 meeting, which began with an introduction of new members. (At the request of old users, the practice of a general "roll call" was discontinued; at the request of the new users present at this meeting, it will be resumed every other session.)

The business session included suggestions that the Pennsylvania/Delaware/New Jersey contingent was large enough to form its own Users Group called "Delaware Valley" and that ADABAS-M users were not being addressed. It was noted that the main responsibility for users' activities rests upon the users and that any such formations will be wholeheartedly supported by the Region once begun.

The ACFII security package was presented by Paul Keister of Cambridge. The objective of this package, as Paul noted, was not merely to lock people out of data but to make subsequent administration of passwords and privileges more manageable by avoiding multiple protocols, thus placing a different class of people in control of security.

Tom Bradbury and Hay Hugins staff presented ADA-SASS, a statistical accounting package available for use against ADABAS data files. While essentially an extraction/preformatting/processing technique, it appears to be able to gather quite a following among the end-user community.

Dean Morehead of Computer Science Corporation gave an overview of the Rocky Mountain users' meeting he attended the previous week with special regard to performance and the use of clusters in an online environment. Dean noted that COM-PLETE was used more prevalently there than here and that certain topics concerning COM-PLETE tuning would be largely inappropriate to most CICS shops.

Chuck Tobler, also of CSC, Marilou Sazon of The Boston Co., and Ed Zielinski of Delaware State led discussions on the highlights of the Las Vegas Conference for those unable to

attend and provided a view of some sessions missed by others. Chuck suggests, at the next Conference, we "pool" our time by planning to attend different classes and exchange notes later.

Marilou Sazon also gave a presentation of the ADABAS debugging tools presently in use at The Boston Company and provided some new insights into the use of internal controls in isolating and resolving problems with performance and execution.

Insight was what Steve Robinson provided in his discussion on Monitoring Contracts. As a contractor, Steve exhorts users to watch more than their budgets, to plan on becoming involved themselves and to not keep the contractor in the dark any more than they would hide their problems from a physician.

Laura Sadowski from the State of Delaware and Dan Nolan led a point-counterpoint discussion of NATURAL. Laura discussed problems with 1.1 and their resolution and Dan provided insight as to whether the "fix" was appropriate to 1.2 or whether the problem was solved and the fix would have to be "backed out."

The session concluded with a general discussion of problem-generating "situations" with Software AG staff present to assist where other users could not.



## New England Region

Timothy J. McGovern  
Massachusetts Institute of  
Technology

The September 16, 1982 meeting of NE SAGGROUP was hosted by Mel Bemis of Northeast Utilities at their offices near Hartford, Connecticut.

### Report Job Submission using ADABAS and TSOISPF

Phil Castro of Northeast Utilities discussed N.E. Utilities' use of TSO/SPF in conjunction with ADABAS. N.E. Utilities has implemented software in which end users engage in an SPF dialogue to define their report requirements.

The software:

- conducts the dialogue;
- checks the user specifications for errors;
- constructs a valid batch job; and,
- submits the job to the internal reader.

When completed, the report is returned to the user or printed at a location of the user's choice.

This type of user involvement relieves the traditional data processing group of many requests, and, significantly, does not require that the end user become a JCL expert in the process. Phil expects dramatic productivity improvements (and a happier clientele) as a result of this approach.

### Dual Protection Logging

Richard Wolverton of Commercial Union discussed Dual Protection Logging as implemented at CU. An analysis of their requirements showed that vanilla ADABAS facilities would not be adequate in achieving their goals of:

- Applications Independence: 24-hour data base operations, 6 days per week, and non-interdependent application recovery procedures; and,
- Operations Independence: the Operations section handling (with automated procedures) recovery from system crashes and application abends.

CU has now implemented a Recovery protocol based on ADABAS Dual Protection Logging, and a very sophisticated MPM UEXIT 2 and online log file of Protection Log information. These additions to the Software AG-supplied facilities would appear to reduce their exposure to near nil.

These additional components:

- ensure that no Protection Logs are left uncopied because of a system crash or ADABAS utility failure;
- submit jobs which run ADARES PLCOPY and IEBGENER to copy the output of the ADABAS PLCOPY function to ensure a good copy operation;
- update the external log file when all copy operations have been performed satisfactorily.

Further, the DBA group has supplied Operations with TSO CLISTS which assist in the selection of appropriate Protection Logs and creation and submission of jobs which backout a particular application.

### Performance

We led off the afternoon session with Bob Myers' discussion of Performance problems at The Boston Company. Bob has spent a considerable amount of time in recent months examining and attacking performance and response time problems at TBC. Since TBC is a very heavy NATURAL applications shop, he focused his attention on NATURAL applications.

Using a set of NATURAL programs he wrote, Bob ana-

lyzed Command Logs which had been loaded into a data base. Further analysis using SAS was also performed against NATURAL work files of similar Command Log data. Bob discussed his analytical techniques and briefly discussed the programs he had written to support his efforts.

Finally, Bob discussed some considerations for NATURAL-based applications:

- Heavily modular NATURAL systems (with heavy FETCH usage) introduce a load on the data base merely to retrieve NATURAL object code. (Part of this load should be reduced with V 1.2.) For now, at least, this load needs to be factored into any evaluation of MPM-loading.

- Use of the FIND FIRST and FIND NUMBER constructs were a major bottleneck in their systems when done with one descriptor or sub-/super-descriptor, where the ISN QUANTITY exceeds Normal Index Size, roughly 500. The substitution of READ FILE and HISTOGRAM constructs, respectively, eased this bottleneck. Bob cautions, however, that the degree to which an improvement might be possible through this substitution depends on the logic in the rest of the program.

NOTE: Since our meeting, Bob has joined Software AG's Boston Office. Therefore, this would appear to be Bob's farewell address to NE SAGGROUP as a member representative. On behalf of the group, we wish Bob well in his new duties and thank him for his major contributions to the NE SAGGROUP. We look forward to his remaining an important force in the New England ADABAS scene and welcome his participation in the group in the future.

## NATURAL Roundtable

We concluded the meeting with a Roundtable discussion of NATURAL problems and techniques. Several attendees discussed their NATURAL problems, and solutions or suggestions for new debugging approaches were offered. Rodger Matlidge of TBC presented an ambitious mini-presentation of NATURAL screen design and subprogram technique. Rodger used his slide presentation of an online dialogue of a problem NATURAL application at TBC to structure his comments on screen design techniques, his theory of NATURAL program clusters and NATURAL argument passing protocols.

## Northwestern Region

*Dian Odell  
Evans Products*

The most recent meeting was held at the Thunderbird Inn in Bellevue, Washington, on September 17 and attended by 47 persons from 27 installations.

The highlight of the day was a presentation by Jeff Walker of Walker Interactive Products about the design philosophy and implementation approach his company uses for their financial systems (general ledger, accounts payable, accounts receivable, purchasing, inventory control) and some of the specifics of features such a technique gives—dynamic documentation generation,

ease of local tailoring, extensive HELP facility, transportability, minimum to nonexistent conversion effort when switching TP monitors, etc., (all I/O and interface functions are centralized and isolated). These products are currently installed in several ADABAS installations and soon to be installed with a COM-LETE interface.

Other presentations were:

- DATA MANAGER with ADABAS—a new user discussion of installation, features, and limited interface to ADABAS of this dictionary package;
- PROLOG – An Audit Trail Utility—a package written by a user and now for sale to extract and decompress records from the ADABAS protection log (before and after images of updated records) for handing to some report writer so that audits can be done on what occurred;
- Pseudo-conversational NATURAL with CICS—description of modifications required, performance improvements, problems, and other observations by two installations who use this facility;
- Planning for and Using NETWORK—description by a user of the plans and implementation of a separately priced package ADA-VTAM which allows for the accessing of ADABAS software and data base installed on separate and remote CPU(s) in the communication network;
- Update from Software AG on the most recent company reorganization, focus, product status; some good information from Sue Karlin, Denver Tech Support;
- Free-for-all open session for any questions, advice, warnings, etc.

## Sierra Pacific Region

*Sheldon E. Brown  
State of California*

Sacramento County hosted the Sierra Pacific Users' Group meeting on September 21.

Stan Rose of Sacramento County described their online arrest warrants system. It took two years to develop and uses COBOL, ADAMINT, and COM-LETE. It has six ADABAS files. It features user-maintained tables (for edits, etc.) and requests for batch reports. It uses a SOUNDEX system that is within the application programs instead of the ADABAS phonetic descriptor capability for phonetic retrieval.

Jim Becker and Gary Bowers described the many organizational changes that are taking place within Software AG. It was our first opportunity to meet Jim Becker, who is the new sales representative for the Mountain View office.

In the afternoon, Gary Bowers gave a well-received presentation on the new features in NATURAL 1.2. The users liked most of the features. It is apparent that NATURAL is becoming a richly featured, full-scale programming language and not an end-user query language.

The next Sierra Pacific meeting will be hosted by ATAC on December 14.



## Southwestern Region

Bob Holub  
Superior Oil

The Southwestern Users Group met on September 17, 1982, at the AMFAC hotel in the Dallas-Fort Worth area.

The basic agenda for this meeting was as follows:

- Regional group announcements;
- Round table discussion where every user present discussed current problems, solutions, and accomplishments;
- Technical Presentation by Bob Galley of Santa Fe Energy concerning ADARUN parameter interrelationships and related response codes;
- Presentation by Pat Thomas of Software AG concerning the differences between NATURAL 1.1 and 1.2.

Thanks go to both Bob Galley and Pat Thomas for their excellent presentations. Each presentation was informative and of interest to the group.

The next regional meeting will be held on January 14, 1982, at the AMFAC Hotel at the Dallas-Fort Worth Airport.

### ROUND TABLE DISCUSSION

#### University of Texas at Austin

Running ADABAS 4.1 SM-05, COM-PLETE 4.1 SM-01, NATURAL 1.1 ZL-09, and beta testing NATURAL 1.2. Recently converted from MVS 3.8 to MVS/SP1.3 with no problems running any Software AG product. However, there are some zaps available for ADABAS and COM-PLETE that may be applied.

Interested in running ADABAS on 3380 disks. To

convert from 3350s to 3380s, must all files be unloaded and reloaded individually?

Concerned about the potential problems with reorder data on large data bases.

Recently installed:—Job termination notification system; —Systemwide security system for batch jobs which associates updates/accesses to the data base with the COM-PLETE LOGON ID of the user who submitted the batch job.

Have experienced problems with having both plogs uncopied under SM-05 and ADABAS in a wait related to IBM BDAM check module IGG019LI.

#### Pennzoil

Noticed that ADABAS comes down with S075—common storage area when NATURAL programs that are in ADABAS doing a command are 'PA1'. When ADABAS comes back, it can't find the user and issues S075.

Using user EXIT 2 and issuing a 'CL' before each open. After open, the user is established as an ET user where he issues a 'C5' for each new file stating what access level (update or not).

Using user EXIT 4 to look at the I/O to command ratio to see if the program is an efficient user or not. Have not fully implemented a procedure to abend those users which are inefficient. The ratios range from over 10 to .001. Update commands range around .1 to .2 or more due to the number of associator updates. Would like to abend those users where the ratio is greater than 3. Pennzoil keeps statistics thru SAS which has helped cut down ratios by changing commands to do the same function.

#### Ethyl Corporation

Currently converting to ADABAS 4.1.; is interested in learning more about user EXIT 4.

#### Texas Highway Department

Experiencing a problem in finding records through a particular superdescriptor, but the same records are available when searched for by three (3) individual descriptors.

Beginning to make NATURAL under CICS available. However, the names of the update commands have been changed.

#### Santa Fe Energy

Has implemented the OPRB parameter in NATURAL on the NATURAL system file only and has reduced online I/O by 10 percent and elapsed time by 8 percent.

Obtains the NATURAL logon and program ID when a 'FETCH' is done (A FETCH accesses the associator of the NATURAL system file).

Implementing a NATURAL transaction measurement facility via ADABAS user EXIT 4 by trapping FETCHES out of the dictionary.

Has implemented regression testing procedures and is now able to reduce the size of the test data base from 1600 cylinders to 300 cylinders. Currently working with Software AG to do a 'decrease' on the test data base.

Watch the 'LP' size on single user mode utilities.

#### Getty Oil Company

Configuration upgrading to 3081 with 3350s/3380s. Currently running SP1.3, TSO, COM-PLETE 4.1, ADABAS 3.2.1 with NATURAL SM-08, ADABAS 4.1 with NATURAL SM-09, ADASCRIP +, Direct Calls and ADAMINT. Using dual logging for command and protection logs. Using user EXIT 2 provided by Jim Schulze of Aminoil.

Having problems with a Direct Call PL1 program testing for Response Code 049 (compressed record too long). ADABAS looped repeatedly re-

quiring an OS cancel to terminate. Needed to restore the data base once because auto-restart could not find the RABN required for the function (RSP code 170). This was caused by the new record area located right before the data protection area in core. ADABAS compresses the record field by field into the new record area and then checks for excessive length. Therefore, before Response Code 049 is ever reached, the data protection area could be overlaid by an excessive length record thus compromising data base integrity. Temporary zap TEM6384 increases new compressed record buffer by 980 bytes to a total size of 3936 bytes.

#### **Coastal Corporation**

Coastal continuing with normal data base development and looking at a distributed processing environment.

Installed ADABAS SM-05 and received Response Code 62. Had to back off zaps V4M6674 and V4M66742.

The utility on the DBA TOOLS tape for unloading files from an ADAFIX dump tape is missing two modules: ADABAS and HRKFILES. Link edit 'REP'ing out these two modules and everything will work fine.

#### **MIDMAC Information Services**

DOS shop using NATURAL exclusively. Cannot get NAT-MAINT to run under DOS at this time.

#### **Quintana Petroleum**

Had a problem with a file going into five (5) extents and determined that either a re-order associator had to be done in that file or the file had to be unloaded and reloaded.

#### **Sun Company**

Using user EXIT 4 to write SMF data for accounting and statistical purposes. User EXIT 4 is summarizing the information by user.

#### **Oschner Medical Center**

Users of the current release of ADABAS, COM-LETE and NATURAL. All development is being done in NATURAL with extensive use of COBOL sub-routines for editing and COM-LETE spooling.

Developed a NATURAL program security system which will limit access to NATURAL programs by user based on their terminal ID and authorization level.

Looking for information on CMPEXIT for placing NATURAL programs in a PDS.

#### **Dallas County Community College**

Has recently gone to ADABAS SM-05. Experienced a problem with the date and time on the checkpoint list and the protection log. It was invalid the first time and resulted in protection log information being unavailable.

Has been looking at the COM-LETE parameter of ADACALLS and has set it at 32,000. The default is 10. Found out that the user was rolled out when this max was reached.

#### **Gulf Oil**

Currently testing ADABAS SM-05 with no problems.

A well index system is currently being used with ADABAS.

#### **Shell Oil Company**

Shell Oil is now fully on ADABAS 4.1.1.

#### **FAA**

Running ADABAS on a 4341 Group-2 machine.

Currently working with ADABAS user EXIT 4.

#### **Computer Language Research**

Will be installing ADABAS VTAM in October.

Testing 3380s on a test MPM now. Planning the installation of a large data base on 3380s for January 1983.

Developing a user EXIT 1 to TRAP users who fill up the hold queue.

#### **Superior Oil**

Has experienced a problem with a work overflow on the data base. The most likely cause is too many updates without ETs or closes, but an examination of the command log shows no updates for the previous 20 minutes.

Currently writing a user EXIT 1 to 'PSEUDO' lock files and will be writing a user EXIT 4 for chargeback and statistics purposes. Will be implementing SM-05 shortly and afterwards will be testing ADABAS on 3380 disks.

Superior Oil has been studying the performance of ADABAS and looking at all of the variables which affect ADABAS performance. The means to measure, monitor, and control ADABAS performance are being identified also.

#### **Lockheed**

Currently using ADABAS in an experimental stage; running it under VM/CMS.

#### **Austin American-Statesman**

Currently running ADABAS under SM-05. Converted directly from SM-03 to SM-05 and in the process had to unload and reload all files individually.

Has experienced a problem with the ADABAS MPM looping and only taking one command. It turned out to be a hardware problem on a 3370 device.

Currently developing a circulation system to run on ADABAS.

#### **Southland Royalty**

Uses a module called ADALINKD instead of ADAUSER. Be aware that ADALINKD has changed.

Currently experimenting with the ADABAS parameters. Has written a program which will validate memory sizes.

#### **North Texas State University**

Currently converting from CICS to COM-LETE.

Is looking for a full-blown student registration system.



## ADABAS Product Rep's Report

*Robert Galley  
Santa Fe Energy*

This year we look forward to strengthening and extending productivity within each ADABAS Special Interest Group (SIG). The SIG serves as an information clearinghouse and corporate user voice for the group of Software AG users sharing a particular area of interest. SIGs conduct business through the year on an informal basis via telephone. The SIG also conducts a workshop during the Software AG International Annual Users' Group Conference. Each SIG Chairperson coordinates issues, concerns, problems, information, and solutions. The Chairperson also administers the annual workshop.

In order for an SIG to maintain continuing effectiveness, it must be supported by your active participation. This takes the form of direct contact with SIG chairpersons to relate interest, suggestions, concerns, SAG or product problems/commendations, experiences, newsletter articles, and annual Conference papers.

SAG listens when spoken to collectively. It is our responsibility as product users to involve ourselves constructively in the SIG process. This will enable coordinated presentation and support for requirements and problems that directly affect your environment. All of us have benefited from the time, effort, and information contributed by a few others. We can each add to SIG effectiveness by communicating, contributing information, and sharing in the SIG workload. *Pitch in!* Your level of involvement need not be exceeded by your level of expertise.

I am pleased to announce the formation of a VM Special Interest Group. Timothy McGovern has assumed the formal position of VM Chairperson and brings with him in-depth experience with ADABAS/VM. Timothy has already been instrumental in coordinating ADABAS/VM user interface, problem definition, and Software AG commitment/support. If you are a current or prospective ADABAS/VM user, it would be in your best interest to establish contact with the VM SIG to acquire information and lend active support.

Three SIGs now have new Chairpersons. Each person has committed valuable time to assure the viability of an SIG. The Data Dictionary SIG is now chaired by Alan Florence. Galen Hansen is coordinating DBA Tools. The new Restart/Recovery Chairperson is Alexandro Manaila. These SIGs are of particular interest and value to data base administrators because of the direct involvement in data base description, manipulation/control, and data integrity.

The other active groups are: Data Administration, DOS, Education/Documentation, Large Data Base, Performance, and Recovery/Restart. Each SIG supports an area of vital interest to a significant number of ADABAS users. The Chairperson of each group has done an admirable job of coordinating information and administering the annual workshop. They are to be commended for their efforts. However, their efforts in the areas of eliciting information, participation in SIG tasks, and workshop involvement have been fruitless in many instances. Please establish contact and communicate with the SIG(s) where it is felt that you can be most helpful.

Change/Enhancement requests are due November 30. Please take the time to document and forward requests that you have recognized as requirements, needs, or suggestions for ADABAS, ADAMINT, ADASCRIP+, Data Dictionary, or ADABAS Utility enhancement.

## ADABAS Technical Notes

### ADARUN Parameter Functions and Relationships

*Robert Galley  
Santa Fe Energy*

The initial formulation or subsequent tuning of ADARUN parameters can be a cumbersome task. This is because the particular character and nature of processing for each DB/DC environment is different and must be reflected in order to function efficiently.

Tuning is made more difficult because there is, at present, no concise documentation of the intereffects of ADARUN parameters and common error conditions associated with each.

The parameter descriptions that follow are those ADARUN values that affect MPM/Nucleus/Work sizes, volumes, and limits. All values and comments are current through ADABAS V4 SM5.

Sources:  
ADABAS Operations and  
Internals Manuals  
SAGUTILS and SAGTIPS  
ADABAS V4.1.1 Release Notes  
and Frequently Encountered  
Problems  
Version 4 Conversion  
Experiences and Hardknocks

KEY WORD	DEFAULT VALUE	PARAM NAME AND DESCRIPTION
CT	60	<p><u>COMMAND TIME LIMIT</u></p> <p>Max seconds permitted before the results of an ADABAS CMD must be returned to user by the ADABAS interface routine.</p> <p>Designed to prevent 'CQE' from being held due to excessive internal machine or operating system overhead activity <u>in an MVS, TSO, or COM-LETE environment only.</u></p> <p>Not related to user activity time limits.</p> <p>If exceeded:  'BT' issued  CQE released  RSPCD 254 returned</p>
LBP	80000	<p><u>ADABAS BUFFER POOL SIZE</u></p> <p>Max ADABAS buffer pool size in bytes.  Min of 80000 (80K) RQD.</p> <p>This buffer pool is used to store the most frequently used associator and data storage blocks.</p> <p>'DSTAT' oper CMD checks buffer, efficiency.  Figure is number of buffer I/O's per physical I/O.  1—bad, 10—good, 20/30—better</p> <p>RSPCD 88—INCR buffer pool size with 'LWP'</p>
LFP	4000	<p><u>INTERNAL FORMAT BUFFER POOL SIZE</u></p> <p>Internal format buffer pool size in bytes.</p> <p>This buffer pool is used to store 'IFB's used with ADABAS read and update commands.</p> <p>If excessive format-translations, increase size. But primary savings should come from application use of CID.</p> <p>If excessive format-overwrites, increase size.</p> <p>RSPCD 42—increase IFB size with 'LFP'.</p>
LI	1500	<p><u>ISN LIST IDENTIFIER TABLE SIZE</u></p> <p>CID table size in bytes.  Min size is 580 bytes.</p> <p>This table stores 'CID's used to identify ISN overflow and saved lists.</p> <p>Each CID requires 58 bytes.</p> <p>RSPCD 71—INCR ISN list ID table with 'LI'.</p>



LP	1000	<p><u>DATE PROTECTION AREA SIZE</u></p> <p>Max data protection area size in blocks. Min size is 200 blocks. Max size is 65000 blocks.</p> <p>This area must accommodate data protection info (including 'ET' data) for the current transaction for all ET logic users. ADABAS maintains 50% freespace within this area.</p> <p>Batch updates w/o intervening 'ET' CMDS will fill this area and take MPM down.</p> <p>Directly affects the size of ADABAS work data set.</p> <p><u>Do not change if previous MPM ended abnormally</u> Even utilities executed between abended MPM sessions must use same 'LP' size (i.e., SMART-SMART).</p>
LQ	1500	<p><u>SEQUENTIAL COMMAND TABLE SIZE</u></p> <p>Table of sequential commands size in bytes. Min size of 1000 RQD.</p> <p>Each concurrent sequential pass of a file requires one entry in this table.</p> <p>Each entry requires appx. 60 bytes.</p> <p>V3 ADAMINT (1.3)—Each LOKATE/LOKVAL (L2/L3/L9) causes new CID creating new table entry and probable table overflow. V4 ADAMINT (1.4)—Same but auto ADAMINT insert of RELCID (RC) eliminates V3 ADAMINT table overflow.</p> <p>RSPCD 70—INCR SEQ CMD TBL size with 'LQ'. —RSPCD 40's may also be initiated by and occur after RSPCD 70.</p>
LS	20000	<p><u>SORT WORK SPACE</u></p> <p>Sort work area size in bytes. Min size of 4096. Max size of (LWP—20000).</p> <p>This area is used to process 'S2' (find and sort) and 'S9' (sort ISN list) commands. Complex find commands also use this area.</p> <p>Directly affects 'LWP'.</p>
LU	4000	<p><u>INTERMEDIATE USER BUFFER SIZE</u></p> <p>Intermediate user buffer size in bytes. Min size of 8000 for NATURAL and Data Dictionary. Min size of 12000 for unload.</p> <p>This buffer is used by ADABAS to store control information and buffers for a given user.</p> <p>Utility error 10 can occur if too small even though no file conflicts exist.</p> <p>Directly affects 'LWP'.</p>
LWP	60000	<p><u>ADABAS WORK POOL LENGTH</u></p> <p>ADABAS work pool length in bytes. Min size of 20000 bytes.</p> <p>This work pool must be large enough to contain:</p> <ol style="list-style-type: none"> <li>1) DVT (descriptor value table);</li> <li>2) IUB area (see 'LU');</li> <li>3) Sort work space (see 'LS');</li> <li>4) I/O areas during command execution.</li> </ol> <p>Excessive throw-backs indicate 'LWP' too small.</p>



NAB	3	<p><u>NUMBER OF ATTACHED BUFFERS</u></p> <p>Attached buffer pool size is (NAB × 4096). Min size of (LU × NC).</p> <p>An attached buffer is an extra internal buffer used in conjunction with an internal user buffer (see 'LU') in order to minimize the number of internal SVC calls required for a given command.</p> <p>Affected by (LU &amp; NC) or 'NT'.</p> <p>Can cause RSPCD '254' if set too low.</p> <p>See MVS/TSO considerations in ADABAS operations manual.</p>
NC	20	<p><u>COMMAND QUEUE SIZE</u></p> <p>Command queue size is (NC × 64). Max value is 'NU'. Min value is 2.</p> <p>This value indicates the max number of command queue elements. This number determines the max number of ADABAS commands which may be queued and/or be in process at any one time. The CQE is released when the command has been processed.</p> <p>Affected by 'NU'.</p>
NH	100	<p><u>HOLD QUEUE SIZE</u></p> <p>Hold queue size is (NH × 24). Min value is 10.</p> <p>This value indicates the max number of hold queue elements. The number of hold queue elements is the max number of ISNs which can be placed in hold status at the same time by all users. The HQE is released when the record is released.</p> <p>If the hold queue is full at the time an attempt to hold an ISN is made, the command will be placed in a wait. The user is then subject to all applicable timing parameters.</p>
NT	3	<p><u>NUMBER OF THREADS</u></p> <p>Combined MPM thread size is (NT × 4096). Max value of 20 threads. Min value of 3 threads.</p> <p>Number of threads for the ADABAS session. The following commands run in the update thread: A1,A4,BT,CL,C1,C2,C3,C5,ET,E1,E4,N1,N2,OP.</p> <p>All other commands run in an access thread.</p> <p>Last thread should process no more than 10% of non-update thread commands.</p> <p>Affects 'NAB'.</p>
NU	20	<p><u>USER QUEUE SIZE</u></p> <p>Use queue size in bytes is approximately (NU × 96). Min value may not be less than 'NC'.</p> <p>Indicates the max number of concurrently active users. Each active user is assigned a UQE. It is assigned at issuance of an 'OP' cmd or at the time the first ADABAS cmd is issued. The UQE is released with a 'CL' cmd or when certain time limits are exceeded.</p> <p>Batch users are identified by the reader start time and TP users by terminal ID.</p> <p>Affected by 'NC'.</p>



RSPCD 72—indicates need to increase 'NU'.

RSPCD 72 during AUTORESTART can occur if previous MPM session ended abnormally and 'NU' smaller than all 'UQE's active during last MPM session. Increase 'NU' (for 1 MPM session) to hold required 'UQE's. (Each UQE at 'ET' status is deleted at the end of AUTORESTART).

TNA

900 NON-ACTIVITY TIME LIMIT—ACCESS ONLY USERS

Max time in seconds that an ACCESS-only user may be active without issuing an ADABAS command.

System time-out action:  
UQE is deleted.

TNAE

900 NON-ACTIVITY TIME LIMIT—ET USERS

Max time in seconds that an 'ET' user may be active without issuing an ADABAS command.

System time-out action:  
UQE file list purged;  
'BT' is issued;  
All held records are released;  
All CIDs are released;  
UQE deleted if at 'ET' status;  
RSPCD 9 returned on next ADABAS call if user is not at ET status.

Only TP users will receive RSPCD 9 if a timeout occurred due to an ADABAS abend or system failure.

RSPCD 21—indicates possible need to increase 'TNAE'.

TNAX

900 NON-ACTIVITY TIME LIMIT—EXCLUSIVE USERS

Max time in seconds that an EXCLUSIVE file user may be active without issuing an ADABAS command.

System time-out action:  
UQE file list purged;  
User type changed to ACCESS-only;  
All CIDs are released;  
RSPCD 19 returned on any subsequent hold cmd;  
RSPCD 22 returned on any subsequent update cmd;  
RSPCD 0 returned on all other cmds.

Only TP users will receive RSPCD 9 if a timeout occurred due to an ADABAS abend or system failure.

TT

300 TRANSACTION TIME LIMIT FOR ET USERS

Max time in seconds for a logical transaction to be completed. Does not apply to non-ET users.

Time measurement starts when the first cmd that results in a record being placed in hold status is issued. Measurement terminates when an 'ET', 'BT' or 'CL' is issued.

System time-out action:  
'BT' is issued;  
All held records are released;  
All CIDs are released;  
UQE file list is purged;  
RSPCD 9 is returned on the next ADABAS cmd.

The value of 'TT' directly influences the required size of the ADABAS work data set.



# Saving Time in Data Base Recovery

Edward Mueller  
Citicorp Credit Services

Following a catastrophic DASD failure on a data base, formatting of ADABAS data sets must be done before restore and regenerate steps can begin.

At Citibank Bankcards, where our multiple data bases would typically span 6-10 volumes each, formatting would require unacceptable delays in our efforts to get data base systems back online. Therefore, we standardized 'zapping' the VTOC of the replacement DASD volume to minimize ADABAS formatting to just that volume. Below is a brief description of that procedure.

damaged data set (spanning four volumes) must be deleted and all four packs must be reformatted as a single OS data set. This procedure limits the formatting to the replacement volume ADA005.

First, run the ADABAS format job(s) to specifically address the 'new' volume (bypassing catalog reference) and format the data set(s) as if it is a single volume data set. Second, by running an IEHLIST with the DUMP option on the VTOC of the 'new' volume, verify the CCHHR of the data set control block (format 1 DSCB) to be zapped. Also, identify the volume sequence count and end-of-file values for change in the subsequent superzap execution.

Refer to the attached partial printout of a VTOC dump of the newly formatted ADA005 pack

changed to x'02C0' to turn the high order bit off. The volume sequence number is at offset hex 33. The x'0001' would be altered to x'0003' in this example.

Next, setup a superzap (AMASPZAP) job to alter the Format 1 DSCB. Sample of the job control would be:

```
//SUPERZAP EXEC
  PGM=AMASPZAP, REGION=128K
//SYSLIB DD DSN=FORMAT4.DSCB,DCB=(KEYLEN=44),
//VOL=SER=ADA005,UNIT=3350,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN DD *          control cards
                        follow
```

Using the offsets gotten from the IEHLIST printout into that entry, zap the volume sequence count to the correct number (if the volume is not the first for the data set) and take the EOF bit off *only* if it is not the last volume for the data set. In this case, ADA005 is not the first nor last volume.

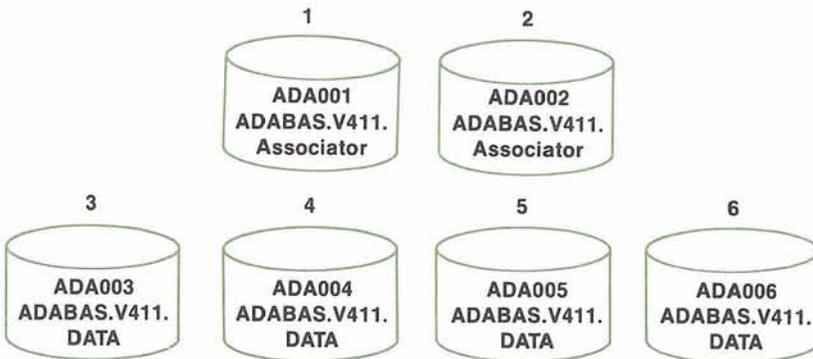
Below are the control cards to the superzap program to make those changes described above.

```
CCHHR 0000000103
VER 0033 0001
REP 0033 0003
VER 005D 82C0
REP 005D 02C0
```

Following the zap, recovery procedures may proceed for the file(s) by referencing the ADABAS V4.1.1 data set through the existing catalog entry.

The explicit time saved was in avoiding formatting the other three volumes containing the data set. At 15-20 minutes a volume, that's about an hour. Additionally, only the files that had resided on the damaged volume need be recovered thereby reducing restore and regenerate times as well.

## 3350 DISKS:



Assume a data base with ASSO and DATA spanning six 3350s and in which the DATA portion crosses four of those volumes. A hardware error occurs that makes ADA005 unreadable. To recover the file (or files) to the condition just prior to the DASD failure, a different volume must be initialized and clipped to ADA005. Then the new ADA005 must be formatted using the ADABAS format utility ADAFRM before ADABAS recovery utilities can run against it. Under the present use of the ADAFRM utility, the

as an example. At the right side of the second line of the printout is the five-byte DSCB addr in hexadecimal. The first control card for superzap should have this value after the keyword CCHHR. The VER and REP control cards for the EOF bit have an offset at hex 5D. In this example, the x'82C0' is





The project goals we set were as follows:

- initiate more user involvement in system planning and development;
- identify known and suspected data redundancy;
- eliminate mystery data fields;
- understand the attributes, values, and meanings of the fields with which we would be working;
- provide a procedure which would eventually result in a full-fledged data dictionary for student data upon project completion.

The basic concept was to establish a "global" file on the dictionary and open it up online for each end-user system representative to key in a specified set of information. By putting the dictionary online, we were satisfying our goal to initiate more user involvement and felt that such involvement in the early stages of system analysis would ensure their support for the duration of the project. Upon completion of data entry, the pool of information we needed would have been provided to allow us to begin our system and file design.

We established an actual file named GLOBAL on our dictionary to record the information we wanted since at that time we were on Data Dictionary 1.0 and the STANDARD file facility was not available. (Maybe we could have claimed proprietary rights if Software AG had chosen to use GLOBAL instead of STANDARD when they released Data Dictionary 1.1?). Because we had not yet acquired NATURAL, an online COBOL program was written to

update the dictionary (plus our data entry screens were certainly more end-user-friendly than NATURAL's Data Dictionary update!).

The main Data Dictionary information we sought from the users initially was the Field-level data for the Data Entry section of the dictionary. In particular, we were most interested in the Field Comments entries which would describe what each field actually was, plus the Synonyms, Owner/User ID, and Verification Name. Also of interest was the information in the Usage Entry dictionary section (Reports, Modules, Owners, etc.), but that was not our primary concern at this point.

To help the users get started in their data entry, skeleton records were drawn from *all* fields of the current batch master files to establish Field-level Field Name entries on the GLOBAL file. Not only did it give the users a good idea of what data was presently recorded in their systems but also provided visibility for such terrifically descriptive COBOL-named fields as UNKNOWN1, ONE-TIME-ETHNIC-SWITCH, and TEST-BLOWUP5. The users could then scan the skeleton records and fill in Field Comments and other Field-level variables as they saw fit. Certain fields such as FMT, format, and LGTH, length, etc., were suppressed to user viewing for obvious reasons. New Field Names could be added, Field Names could be changed, and original skeleton records could be marked for deletion.

To keep things straight while updating so users would not step on each other's toes (or egos when it came to entering Owner/User ID data), we assigned an arbitrary key in the first Synonym field of each record to identify the batch master file source and limited updating to master file "owners" initially. After the first update pass on the dictionary by the users, that restriction was removed.

Once the first pass through all the Field Names was completed, reports were generated using the Data Dictionary report generators and COBOL programs, and the data was reviewed by users and data base personnel. Update, report, and review then became an iterative process as knowledge of the data became greater and refinements occurred. Through this procedure we were able to satisfy almost all our data-related goals: mystery fields such as UNKNOWN1 quickly were deleted; redundant data such as student name and address obviously would not have to be carried on five different master files; and although ethnic code seemed like a straightforward field, the fact that one master file carried nineteen two-byte ethnic codes, another had eight one-byte codes, and a third carried five categories made us very wary of certain field attributes and their meanings to the end user. When all these matters were either resolved or at least identified through the iterative process, we could begin our logical and physical ADABAS system design.

In addition to all the benefits derived through user project involvement and knowledge of system data gained, reaching the final goal mentioned earlier, a resultant full-fledged dictionary upon project completion, was envisioned as a real plus. Having users record data descriptions and information on their system online is hardly a revolutionary idea—a simple partitioned data set member and text editor can provide an immediate means to that end. But by choosing to use ADABAS's Data Dictionary, we could take the user-recorded information, add to it Field-level data entered by our data base group

and then "roll" that information up or down to STANDARD, USERVIEW, and ADABAS dictionary files in the same manner as the STANDARD file can "pull forward" or "ripple down" field attributes. A COBOL program was designed to accomplish the "GLOBAL rolling" so that our Data Dictionary could be right in step with our student data base development.

Although the procedure was originally developed to convert an existing set of system files into a student data base, there really is no reason it could not be used for new system development with the users entering new data fields rather than working against preloaded skeleton records. That is one of the future uses we plan for the process. Additionally, we want to expand the Usage Entry capabilities of the process so we can identify system reporting needs in the early stages of system design. Establishment of a set of "global" files in which to record all School District data fields, not just ADABAS fields, is also a possibility.

I wish I could conclude with a great success story replete with contented users and James Martin-type Data Models. Unfortunately, the explosive advent of microcomputers within the School District has placed an extreme pressure on our data processing department—kind of a "deliver our system or we'll talk to Dick Cavett's Apple" attitude. Our student data base project was tabled shortly after it had gotten started in order to respond to a user who was about to put data of districtwide importance on a micro system. Further system development demands and limited staff have prevented our return to the project. However, the mechanism is basically in place and the users have become more and more appreciative of data base capabilities. We are about to relaunch the student data base project in the next few months. This time we'll be ready for them.

## ADABAS Internal Sort Timings

*Kenneth R. Atwell*  
*Chemical Abstracts*

A common problem associated with the processing of a set of records from an ADABAS file is that in many instances the applications need to process the records in a different order than the order in which ADABAS returns the records to the application. The applications must somehow sort the records in order to rearrange them into correct processing order. Several methods exist for performing this sort in the ADABAS environment. One of the methods is the ADABAS internal sort. However, this method is discouraged because of its large CPU and elapsed-time overheads. Chemical Abstracts Service has run a simple assembler-language program which executes multiple ADABAS internal sorts against several files of varying sizes in order to determine the elapsed time associated with the internal sort. The purposes of this article are to discuss the amount of overhead involved in the ADABAS internal sort by informing you of the results of the timing tests and to discuss the feasibility of the internal sort as an ordering tool. For additional information, please feel free to contact Dennis Thomas or me at Chemical Abstracts Service at (614) 421-6940.

Strange as it may seem, the number of records sorted by the ADABAS internal sort has only a minor affect on the amount of resources required. Our testing revealed that the sorting of 10 records is not appreciably faster than the sorting of 1,000 records although the elapsed times varied more widely when a larger number of records were sorted. The major factor on resources used is the number of descriptor values present on the file for the sorted field. That is, if records are sorted on a descriptor which has only a few values within a file, the sort is relatively fast. However, if records are sorted on a descriptor which has many values within a file, the sort is relatively slow.

The table below shows the typical elapsed times encountered by the timing tests run on files with varying sizes of descriptor lists. These timing tests were run on an IBM 370/168 system which was supporting multiple batch and online applications (both ADABAS and non-ADABAS) at the times of the runs. The tests were run in multiuser mode on a 3350 data base with ADABAS V.4.1.1 SM03. The tests were run as batch jobs. The tests were run several times in order to determine the typical elapsed times (i.e., elapsed times vary depending on the total 370 load, and 'typical' times reported here were determined by omitting

**ADABAS Internal Sort Elapsed Times (IMB 370/168)**

Approximate Number of Descriptors in the Sort Field	Internal Sort Elapsed Time in Seconds
1,000	0.04
10,000	0.3
20,000	0.3
30,000	1.3
40,000	2.0
70,000	8.0
170,000	18.0

elapsed times which were unusually small or large). The following table shows that the elapsed times for the ADABAS internal sort are relatively short for descriptor lists of 20,000 or fewer entries. It also shows that for more than 20,000 entries, the elapsed times increase sharply (i.e., sorting on a descriptor field with 30,000 entries requires four times as much elapsed time as a field with 20,000 entries). The conclusion which can be reached from these timing results is that the internal sort becomes quite expensive if used on descriptor lists with more than 20,000 entries, and that if a file is being designed to be used in a situation where the internal sort will be necessary, the file should be designed so that the descriptor list involved in the internal sort has fewer than 20,000 entries.

## Data Administration/ Data Base Administration SIG Report

Carole Schermer  
Chemical Abstracts Service

The SAG Users' Group created the Data Administration/Data Base Administration Special Interest Group to offer a centralized resource for questions and concerns about establishing and carrying out DA/DBA functions. Unlike other SIGs, it is not specifically product directed; good DA/DBA practices can work within the framework of any DBMS. A DBMS is unlike other software packages in that it requires some degree of administrative support for truly successful operation. This SIG attempts to address the administrative needs to support a DBMS (Data Base Administration) and more general information management and planning needs as well (Data Administration).

If you would like to share your DA/DBA experiences with

other ADABAS users, please give me a call. I would be happy to hear from users who are successfully dealing with data definition and control, file definition and consultation, user education and coordination, and can offer guidance to the new user. Also, new ADABAS users can use this SIG to make contacts with others who have well-established DA/DBA functions.

It is not too early to start thinking about the 1983 International Users' Group Conference! Please consider preparing and submitting papers dealing with approaches to DA/DBA and the effects on your organization. If you have suggestions or would like to participate in the Special Interest Group meeting, please let me know.

## DBA Tools SIG Report

Galen R. Hansen  
State of Alaska

As the new Chairman of the DBA Tools Special Interest Group, I would like to take this opportunity to thank Jeff Schutzer for the time and effort he put into the DBA Tools area. I would also like to cover once again the method to obtain copies of the DBA Tools tape and to contribute tools.

To submit DBA Tools, please adhere to the following:

- Submit in machine-readable format;
- Send source modules only;
- Describe the methods required to restore the data sets to 3330 or 3350 disk devices;
- Specify the purpose of the routine and the language in which it is written;
- Provide the name and telephone number of the author so that any queries can be answered prior to distribution;
- Provide full documentation either instream or as a separate data set or PDS member.

I will be collecting the tools as Jeff did and periodically forwarding a new release to Larry Jayne. All ADABAS and

NATURAL Tools should be sent to:

Galen R. Hansen  
State of Alaska  
Anchorage Data Center  
3300 Fairbanks Street  
Anchorage, Alaska 99503

The distributing agent for obtaining copies of the DBA Tools tape is:

Larry Jayne  
Users' Group Liaison  
Software AG of North America, Inc.  
11800 Sunrise Valley Drive  
Reston, Virginia 22091

A new release of the DBA Tools is now available. The price of the tape is still \$15 to help defray the costs of tape and postage.

If any problems are encountered with the use of any of the tools, please document the problem and send it to me. I will try to obtain a fix and have it sent to the users that have the DBA Tools tape and fix the current distribution tape.

I would like to encourage all of you who have tools you have developed that may be beneficial to the rest of us to send them to me. If there is not a similar tool already on the tape or if your DBA Tool is an enhancement of an existing tool, I will include it in the next version of the tape. We can all benefit from the time we save by not having to reinvent tools.

This is the glossary of user-contributed DBA Tools. The naming standard used is DBAXXXNN where XXX is the number of the tool starting with 1 and incrementing with each contribution, and NN is the module number within that tool. DBAXXX00 will always be the contributed documentation that is provided. Since modules are being renamed, the users documentation may refer to module names not on this PDS. The following glossary will try to relate these names where possible by providing them in parentheses at the end of the function line.



All routines are distributed on an as is basis without warranty of any kind expressed or implied.

All contributions are in source form. This allows for debugging and modifications by each user. If user documentation specifies load modules, they have not been included. We of the DBA Tools Committee have decided not to accept or distribute any load modules.

Some user documentation will indicate that macros or include code is provided. Since the name of the modules has been changed to conform to standards, all macros and include code have been put within the appropriate modules.

If there are any problems with missing modules, macros or include code or if there are any modules that do not as-

semble or compile, please write up the problem and send it to:

Galen R. Hansen  
State of Alaska  
Anchorage Data Center  
3300 Fairbanks Street  
Anchorage, Alaska 99503

I will obtain the necessary fix, have it sent to the users that currently have a DBA Tools tape, and fix the distribution tape.

Name	Function	User Name
DBA001	These routines are used for billing by using SMF Type 150 records and maintaining dual command and protection logs. Assembler routines as well as jobstreams and procs are included. Updates to the SVC are required. This routine was supplied for ADABAS 4.1 at SM02.	(5/82)
DBA00100	Documentation for SMF billing routines using user exits 2 and 4.	
	01 Source for user exit 2 to submit dual log copy jobs.	(ADAEX2)
	02 Source for user exit 4 which calculates CPU time.	(ADAEX4)
	03 Source for user exit 4 which writes to SMF.	(ADAEX4SM)
	04 Jobstream to copy dual command log to tape.	(CMDTAPE)
	05 Procedure executed by CMDTAPE job.	(DBICPYCL)
	06 Procedure executed by PROTAPE job.	(DBICPYPL)
	07 IEBUPDTE/ASMFCL jobstream for CICS interface (ADALNC).	(LNCMODS)
	08 IEBUPDTE/ASMFCL jobstream for intercomm interface (ADALNI).	(LNIMODS)
	09 IEBUPDTE/ASMFCL jobstream for batch/TSO interface (ADALNK).	(LNKMODS)
	10 Jobstream to copy dual protection log to tape.	(PROTAPE)
	11 IEBUPDTE/ASMFCL jobstream for MPM SVC.	(SVCMODS)
	12 Layout of type 150 SMF records.	(SMF150)
	13 Jobstream to copy dual command log to GDG disk data set.	(CMDDISK)
	14 Procedure executed by CMDDISK job.	(DBICPYCD)
	15 Procedure executed by disk-to-tape job submitted by CMDDISK job.	(DBICPYCT)
	16 Procedure executed by PRODISK job.	(DBICPYPD)
	17 Procedure executed by disk-to-tape job submitted by PRODISK job.	(DBICPYPT)
	18 Procedure executed by MPM statistics job submitted by disk-to-tape job.	(DBISTATS)
	19 Jobstream to copy dual protection log to GDG disk data set.	(PRODISK)
	20 DYL-280 program which creates command log disk-to-tape copy jobstream.	(V4CDT763)
	21 SAS program which reads command log, summarizes thread counts, and writes noteworthy commands to a temporary file.	(V4LG1763)
	22 SAS program which reads temporary file and produces reports for all users, CICS users, and intercomm users; reports and charts for critical commands; a report of noteworthy commands; and a report of slow commands.	(V4LG2763)
	23 DYL-260 program which creates statistics jobstream.	(V4STS763)



DBA002	One assembler module with inline documentation for copying command and protection log. There is no JCL or examples provided.	
DBA00201	Source code with inline documentation for user exit 2.	(CCSIEX2)
DBA003	This routine allows for the storing of source and object NATURAL programs in an OS PDS instead of in an ADABAS file. Assembler code as well as JCL and clists are provided. Members DBA00302, DBA00303 and DBA00312 contain very useful documentation. This routine has been updated for rescue and NATURAL SM08. This routine has been updated to include dynamic allocation if the DSN is not specified at initialization.	(5/82)
DBA00300	Documentation for CMPEXIT.	(HELPIINST)
01	Assembler language source code for CMPEXIT.	(CMPEXIT)
02	Reasons for using this exit and limitations.	(HELP2)
03	Operating HELP.	(HELP3)
04	Sample JCL to assemble and link.	(INSTALL2)
05	Sample link edit using NATURAL TSO driver and CMPEXIT.	(INSTALL3)
06	Sample link edit using NATURAL batch driver and CMPEXIT.	(INSTALL4)
07	Sample clist to execute NATURAL (interactive).	(NAT)
08	Sample clist to execute NATURAL (batch or online).	(NATB)
09	Sample link edit for NATURAL with no DB (batch mode TSO driver).	(NATNO DB)
10	Sample link edit for NAT with no DB (batch mode batch driver).	(NATNO DBB)
11	Sample JCL for running NATURAL batch with CMPEXIT.	(NATURAL)
12	Information on 'rescue' module used for recovery from X37 type abends or accidental member deletion.	(HELP4)
DBA004	This is an assembler module with complete inline documentation. This routine will print an ADABAS file (generalized print program) controlled by control cards. The control cards are described in the code.	
DBA00401	Assembler module for generalized print program.	(HIPRINT)
DBA005	These routines allow for the processing of the ADABAS log to monitor and evaluate various aspects of the ADABAS environment. The routines are written in assembler and COBOL. JCL examples are also provided.	
DBA00500	This is an index to what is provided.	
01	Documentation on how to use programs SE01PADA and SE02PADA.	(SE01DOC)
02	Sample JCL for SE01PADA and SE02PADA.	(SE01JCL)
03	Source code for SE01PADA MPM log selection routine written in COBOL.	(SE01PADA)
04	Source code for subroutine SE01P001 MPM log reader written in assembler.	(SE01P001)
05	Source code for SE02PADA report print program written in COBOL.	(SE02PADA)
06	Documentation on how to use program SE04PADA.	(SE04DOC).
07	Sample JCL for SE04PADA.	(SE04JCL)
08	Source code for SE04PADA data base analysis routine written in assembler.	(SE04PADA)
09	Subroutine in object form (text deck) for above programs.	(PERPDATE)
10	Subroutine in object form (text deck) for above programs.	(CENTER)



DBA006	The assembler routines will submit a job to automatically reload a file when that file has gone into too many extents. The PLI optimizer program will create control cards from a compressed file (ADAWAN or ADAULD output) for ADALD1. Procs are also provided.	
DBA00600	This is a narrative of what is provided. All the routines have extensive inline documentation.	(10/81)
01	The assembler routine for determining the device type of the associator.	(WHICHDEV)
02	Assembler routine to scan the associator for number of each extent and submit job if necessary.	(DBSCAN)
03	PLI optimizer source for ADALD0.	(ADALD0)
04	Proc for reload of a file used by DBSCAN.	(CSG419)
05	Proc to run DBSCAN.	(CSG425)
DBA007	This routine allows for the storing of source and object NATURAL programs in an VSAM file instead of in an ADABAS file. These routines are written in assembler and COBOL for the DOS environment. All the routines contain inline documentation as control card formats. Note—the sample program supplied has not been included because it is VB with 110 byte records and 114 byte blocks. We only supply one PDS which consists of 80 byte records.	
DBA00700	Documentation for these routines.	
01	Assembler routine for batch processing.	(CMPEXIT)
02	Assembler routine for CICS.	(CMPEXIT)
03	COBOL copy for VSAM record layout.	(NATVSAM)
04	Assembler routine to read 80 character records.	(PS201R)
05	COBOL Gregorian to Julian conversion.	(V1909R)
06	COBOL utility to list all programs.	(NATUTIL1)
07	COBOL utility to backup, restore or delete programs or libraries.	(NATUTIL2)
08	COBOL utility to delete programs not used within a time frame.	(NATUTIL3)
09	Sample DOS JCL.	(JCL)
DBA008	These are a diversified group of routines. They consist of assembler and COBOL programs. There are two routines. DBA00815 is an ADAULD which selects and DBA00817 which creates and unload tape from an ADAFIX tape. The first routine has most of the comments in English with a few in German. The second routine has its comments almost exclusively in German.	
DBA00800	Documentation for these routines.	
01	Multi data base access document.	(\$\$DOC)
02	Assembler routine to abend COBOL programs.	(ABORT)
03	Assembler routine modified ADALINK to talk to many data bases at the same time.	(ADALNKT)
04	Assembler macro used in programs.	(BLANK)
05	Assembler routine to print an ADABAS log for any program calling ADABAS.	(BTCHLOG)
06	Assembler routine to obtain today's date in Gregorian.	(CDATERIN)
07	Assembler macro—register equates.	(EQUIREGS)
08	Assembler routine to determine if a DD is present.	(FINDD)
09	Assembler macro exit from a module.	(GOBACK)
10	Assembler macro for module entry.	(KEEP)
11	Assembler routine to pass information from COM-PLETE to ADAEX4.	(KK00PCOM)
12	COBOL routine used in batch programs to call ADABAS and process response codes.	(KK09PSUP)
13	COBOL routine used in batch programs for multiple data base support.	(KK36PSUP)



14 Assembler routine converts update opens to EXU opens in batch.	(KK52PSUP)
15 ADAULD utility which can select records from an unload run assembler.	(KK53PSUP)
16 Assembler routine ADAEX4 for COM-LETE ABD batch ADABAS users.	(KK54PSUP)
17 ADAFIX unload from a ADABAS dump tape given file that is tape to tape unload assembler.	(KK55PSUP)
18 Assembler routine to read variable length files in NATURAL.	(KK57PSUP)
19 JCL used to link ADALINK for multi data base support.	(LINKBAST)
20 JCL used to link ADALINK for BTCHLOG etc.	(LINKKK09)
21 Text deck routine used by other PGMS above.	(WAIT)

## DOS SIG Report

Bernie Conner  
RAY-O-VAC Corporation

The DOS Special Interest Group was formed to provide a unified voice for DOS users in requesting support from Software AG.

The DOS SIG has been instrumental in helping to bring about changes that have been very beneficial for the entire DOS community including ADAUPLS and ADAUPLS1 for COBOL sorts and PL1 programs, increasing the internal SAG expertise for DOS Technical Support, and DOS dual logging.

The SIG can continue to lobby effectively for DOS specific solutions to problems if you are active in the DOS SIG. We can avoid the situation of believing you are the only user with the problem by *communicating* with each other through the DOS SIG when problems do occur.

The exchange of ideas between DOS users in their approach to all facets of the Data Base environment is another area in which the DOS SIG can be beneficial for you and your company.

In summary, the purpose of the DOS SIG is twofold. First, to act as an additional conduit to SAG for DOS users to resolve problems specific to DOS; and, secondly, to exchange ideas on approach to the DOS environment.

The importance of your active participation cannot be understated. Write or call me to help make the DOS SIG an effective tool for the DOS community.

Bernie Conner  
RAY-O-VAC CORP.  
101 E. Washington Ave.  
Madison, WI 53703  
(608) 252-7557

## Education/Documentation SIG Report

John A. Kaye  
Foremost Insurance Company

The Education/Documentation Special Interest Group was established at the Third International ADABAS Users' Conference held in 1976. At the time, those of us present voiced our concerns over the number and quality of courses available for ADABAS and expressed dissatisfaction with the documentation furnished with the system at that time. It has been a most interesting six years since then.

For openers, we set up a documentation review procedure by which a select group of users of Software AG products would receive advance copies of documentation being prepared for release. We would comment on both the format and content and offer any suggestions which we felt would improve readability, understanding, and organization, and the Software AG documentation group would combine our suggestions into the finished product. This same procedure is in effect today, and I feel has contributed in at least a small way to the generally improved state of Software AG's product documentation.

Unfortunately, we as a user community have not shown anywhere near as much coordinated effort toward suggesting improvements for the educational system which Software AG has developed. I have been the Chairman of this joint SIG for the past four years, and in that time, I have sent out questionnaires, conducted telephone surveys, and tried to spur interest in an educational review board. My efforts have been met, by and large, with indifference. Only 13 users were willing to spend the two minutes required to fill out and return a five-question mail-in survey conducted in 1979. Twenty-six users completed a



comprehensive questionnaire at the 1980 Conference, despite the fact that it was made available both online as a NATURAL system and in hard-copy form to be taken along at the end of the Conference and filled out at the user's convenience. The most telling indication of all is the fact that less than 10 users attended the Education/Documentation SIG Session at any of the past four Conferences.

I would appreciate any suggestions which you, the users, have for making the Education half of this SIG as significant a force for change as the Documentation half. If we do not make our wishes, desires, and recommendations known to Software AG in a coordinated fashion, we have no right to grumble and complain about the courses we get.

## ADABAS Performance SIG Report

*Bob Becker  
Foremost Insurance*

I would like to introduce myself once again to those who may not be familiar with me or with this particular Special Interest Group. I'm Bob Becker from Foremost Insurance Company in Grand Rapids, Michigan. We've had ADABAS since 1974, and I have been Special Interest Group Chairperson for the performance of ADABAS for the past four years. This particular Group meets at the International Software AG Users' Conference each year, and on an informal basis, we receive

written inquiries and information from users all over the world which we will relay to you in this article in the Newsletter from time to time. Our interest is the improvement of performance within ADABAS whether it be ADABAS applications or ADABAS software in general.

One of the most interesting communications that I have received over the past summer has been from several users who have gone to MVS/SP3 from normal MVS operating systems. It may be interesting for those of you who are anticipating this or who already have gone to this operating system that several items should be taken care of within your environment to improve the dumping of your entire data base at its most optimal speed.

With Version 3 of ADABAS, it was a well-known fact that adding buff numbers, that is, the number of buffers to the JCL statements of DDSIBA, DDASSOS and DDDATAS, would provide increased throughput and lower the running execution time of the ADAFIX dump facility of the entire data base.

However, that is not the case with Version 4 of ADABAS. A zap which was developed at Foremost Insurance Company in the early portion of the summer was given to Software AG which will allow you to once again add the buff number statements to your JCL. Without this particular zap, you will run at the constant number of buffers within ADAFIX. I believe that they are set to five per DD statement.

Under the MVS operating systems, besides applying this zap and overriding the buff

numbers to allow for 44 buffers for the associator, 22 buffers for data and 13 buffers for the tape data set, other items must be done for optimal performance. They are: relinking ADARUN with an authority code of 1 and placing the ADABAS library in the authority table of the operating system. Also, running address space equals real and allowing ADAFIX to run outside of the APG. To give you an idea of the speed at which we dump our data base on a daily basis, we can dump 15 3350's onto 23 reels of tape in 110 minutes each day, in a non-stand-alone environment.

At the time of dump, we have a read-only copy of ADABAS up; however, if processing requirements require update, we will allow for dumping with the ADABAS data base being appropriately updated. Also, because of the speed at which the tapes are moving, we oscillate between two tape drives so that while one tape is rewinding and requiring a new tape mount, the other tape will be approximately three quarters of the way through the tape before the process of rewind and new tape mount has completed on the other tape drive. Therefore, no wait time is required for the tape mounting/dismounting and rewind procedure.

Please feel free to contact me at (616) 942-3364 with any questions or findings that you have regarding increased throughput and performance using the ADABAS system.

## Restart/Recovery SIG Report

Alexandro Manaila  
DATACOM Systems

The Restart/Recovery Special Interest Group exists in order to promote the identification, development, and documentation of restart/recovery capabilities and information. To this end, your participation within this SIG can help achieve an increased level of data integrity within your organization and others who share the same needs and concerns.

This year the Restart/Recovery SIG will again address the vital issue of usable, integrated restart/recovery documentation and guidelines. We must develop recommendations on specific requirements in order to assure that Software AG meets the majority of restart/recovery needs—especially those of the large data base environment.

I urge those of you who would benefit from this type of product to participate in its development. Contact me so that we can better coordinate our activities and effectively apprise Software AG of user requirements.

## ADABAS Special Interest Group Chairpersons

### Data Administration

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## NATURAL Product Rep's Report

*Richard Judd  
State of Alaska*

All Users' Groups have great potential. The fulfillment of that potential is dependent upon the users' participation as well as the software company's willingness to listen and act. It is in the software company's best interest to listen to the users; Software AG is aware of this and has shown that it listens. However, the main power of a Users' Group rests with its users. How interested, willing to participate and vocal a user community is will tell whether or not a users' group is going to be effective.

The segment of Software AG's user community that uses NATURAL is probably the most interested, willing to participate, and vocal of all Software AG's users. Its voice has been raised to Software AG and Software AG has responded with many innovations and changes to NATURAL. The users participation in the Special Interest Group's activities has strengthened the whole user community through a better understanding of the intricacies of NATURAL. The vocalness and active participation by the community concerning NATURAL and its Special Interest Group will move NATURAL forward into a more encompassing product.

Two individuals who have moved and directed the NATURAL user community are Steve Froneberger (past NATURAL Product Representative) and Jim Reiner (past chairman of the NATURAL Special Interest Group). These two men have done an excellent job by showing a willingness to give their time to organizing the NATURAL user community as well as

acting as a liaison to Software AG. A thanks needs to be extended to them for the countless hours they have spent in keeping NATURAL's Users' Group going.

With the resignation of Jim Reiner, there is now a vacancy at the head of the Special Interest Group. The participation in the last Conference indicated a strong interest in the Group. In order to keep the Group going, a Chairperson will have to be appointed as soon as possible. If anyone would like to donate his/her time as Chairperson, please don't hesitate to contact me. The NATURAL Special Interest Group has filled a need of the user, and if that need is still there, let us not let the Group disappear.

## NATURAL Technical Notes

### A Library Machine for NATURAL and CMPEXIT in ADABAS/VM

*Stanley J. Michalak  
Massachusetts Institute of Technology*

#### Library Machine Structure

The library system was written to meet a need created by the implementation of CMPEXIT, which stores NATURAL source and object code on CMS minidisks. Since only one virtual machine should have write access to a minidisk at any one time, it became necessary to provide a central storage location which could be modified by many users on an as-needed basis. This was the impetus for creating a service machine running disconnected to act as a sink for NATURAL programs. The library system accepts requests and pro-

grams in its virtual reader and processes them according to rules established by the library administrator (also referred to as "the librarian").

The virtual machine which runs the library system under CMS requires five minidisks. The standard A-disk is used to store the library system software, to store system logs, etc., and as a general work area. The four other minidisks comprise the actual "library" which is split into two distinct parts:

- Staging Area;
- Production Library.

Each of these parts uses two minidisks: one each for source and object code. Since the staging area and production library are totally separate entities, modifications done to one are totally independent of the other.

#### Naming Conventions

When a NATURAL program is stored in the library, the following conventions are used for the three-part CMS fileid:

- Filename: NATURAL library (system) name (from LOGON command);
- Filetype: NATURAL program name;
- Filemode: Distinct for staging, production, source, and object.

As stated above, four separate CMS minidisks are used for Staging Area source code, Staging Area object code, Production Library source code, and Production Library object code. An EXEC contains the filemodes for each of these categories and is used to dynamically store the programs on the proper minidisk(s).

#### File Modification Technique

The major theoretical problem which had to be overcome to implement the library system involves the repercussions of changing the contents of one of the library's disks while someone is linked to it. When an update is made, the CMS file directory is changed and

the user must reaccess the disk. If he does not, he will be unable to read the updated file and may experience CMS file system errors.

To circumvent this crippling limitation, no files are physically changed or deleted during normal hours of use. Any changes result in the "virtual deletion" of the old version of the file and the addition of the new, updated code. The "virtual deletion" is accomplished by renaming the old file. Specifically, the filetype is changed from the program name to the delete tag (a pound sign- "#") followed by the current time (HHMMSS). By renaming the old file instead of deleting it, the CMS file directory in the user's virtual machine remains valid since the address for the old program still points to it. For the user to use the new version of the program, he must create a new file directory by reaccessing the library disk. Until he does so, he will still be using the old version of the program.

Since no files are deleted when requests are processed, a specific procedure must be performed to physically remove the virtually deleted files from the disks. This is done by the COMPRESS EXEC, which is intended to be run daily for each library. The proper use of COMPRESS coupled with using the current time in the renaming operation eliminate any chance of duplication of filetypes when a virtual deletion is made.

### **Job Submittal and Processing**

User requests are submitted to the library machine for processing with an interactive EXEC which displays a DMS panel to receive input. The command which the user describes on this screen is converted into a file (called a command packet) containing all information necessary for processing, and this packet (PACKET EXEC) is DISK DUMPed to the library. Upon submittal, any programs re-

quired as input to a library command are also DISK DUMPed to the library. The PACKET EXEC is exactly that, i.e., a syntactically valid EXEC procedure which invokes other EXECs to perform security checking, logging, spooling, and the appropriate library command.

A command packet may perform only one library function. Furthermore, only one system and one library may be specified. Its only flexibility is that many program names may be provided as input to the library command.

Each packet is further qualified as to its submittal mode, i.e., whether the request should be processed immediately or deferred. If the packet is submitted in deferred mode, it will be processed at the next time specified in the WAKEUP control file. For versatility, there are four submittal modes, each uniquely identified by the spool class of the packet. There are different classes for Staging Area immediate commands, Staging Area deferred commands, Production Library immediate commands, and Production Library deferred commands. These classes are specified in the LIBCLASS EXEC, which acts as a control file for any procedure accessing the spool.

### **Special Processing Considerations**

NATURAL programs are stored in two forms: source files and object modules. To maintain the integrity of the library, it is therefore necessary to prevent an out-of-sync condition from arising. To do this, the library will not allow the update of only source or object if both source and object are already stored. The end user need not concern himself with this issue, however, as all EXECs are written to deal with both forms simultaneously.

A situation may arise in which both an immediate and a deferred request are submitted against the same program.

Assume that the deferred request is submitted first. This implies that the immediate request, submitted last, involves the most up-to-date version of the program. The library will process the deferred request, presumably, later in the day. The immediate request, however, will be processed when it is received. Under these circumstances, processing the deferred request at all would appear a mistake as it would overwrite the latest version of the program with an older one which was "held up in transit". Indeed, the library system will not commit this error. Before any files are changed, a comparison is made between the submittal time of the request and the latest update time of the files concerned. If the request was not made after the last file update, an error results and the command is rejected.

### **Security**

A comprehensive, adaptable security system is used to protect the library from unauthorized access and tampering. The security system checks user ID, password, system name (same as CMS filename), request submittal mode (immediate or deferred processing), and command. This diversity of parameters permits the librarian to grant to his users a variety of limited, specific privileges, or global access, or anything in between. The control files for the security system are actually CMS EXECs (PASSWORD EXEC and SECURITY EXEC) and are easily modifiable to meet changing requirements. These EXECs are stored on the library machine's A-disk with filemode number zero (0) and are, therefore, unreadable by general class users who link to this disk.



### Automatic Functions

One of the more intriguing aspects of the library system is its ability to automatically schedule and perform functions at certain times on certain days. This alleviates the librarian the tedious task of logging on at odd hours to perform simple maintenance. Furthermore, since automatic functions will be performed regularly and without fail, and always at the specified time, the reliability and controlability of the library is enhanced.

This functionality is achieved through the use of the WAKEUP MODULE and its control file, LIBRARY TIMES. The control file contains functions and the days of the week and times at which they are to be executed. Regardless of the number of times it is invoked, WAKEUP performs a function only at the correct time and only once. Also, whenever the module is invoked, any functions which should have been performed, but were not, will be executed in sequence regardless of the actual time of day. Some examples of automatic library functions are library compression and the backup of the libraries to tape.

WAKEUP also permits automatic job scheduling. The control file is programmed with the times at which different job classes are to be run and the proper library command to initiate processing of this class. This allows the library to run deferred requests to the Staging Area perhaps every hour and deferred requests to the Production Library only at midnight.

The WAKEUP MODULE is also the means by which the library detects jobs in its reader and operator requests from the console. Basically, WAKEUP handles the library's interaction with the outside world.

## NATURAL Version 1.2

NATURAL Version 1.2 has been released! Shipments of the release tape together with a completely new set of documentation began during the week of October 11, 1982. All existing NATURAL users will automatically receive Version 1.2 together with the new manual set(s). Version 1.2 will be the installation release for all new users.

The release of NATURAL Version 1.2 was delayed so that additional features, which were originally planned for later releases of the product, could be included in this Version. As a result, 45 percent of the 1982 change/enhancement requests are satisfied by NATURAL 1.2 facilities.

Initial feedback from the beta test sites has been very enthusiastic about the many exciting new features provided in NATURAL 1.2. The most significant of these are as follows:

### PERFORMANCE

#### Elimination of Unnecessary ADABAS Commands

In Version 1.1 the following sequence of commands was generated to access a uniquely selected record: S1 (to evaluate criterion); S1 (to transfer ISN list); L1 (to read record). This sequence now is reduced to one S1 command which performs all functions described above.

In online applications it is often necessary to access unique data from multiple files; this improvement will result in considerable performance increase.

### NEW PROGRAMMING FACILITIES

#### Global Variables

In application systems, it is often necessary to transfer certain key data across all transactions. Before this had to be done with parameters supplied in the FETCH statement. Global variables now allow to define

certain fields to be globally available across all transactions. No transfer operations need to be programmed for this type of variables and they may be referenced in all or certain transactions for access and modification. This new technique should greatly facilitate the implementation of transaction networks.

#### UPDATE/STORE with Reference to Read Record

UPDATE/STORE statement in Version 1.1 required individual values to be assigned to each individual field to be updated which often resulted in assignments like:

NAME = NAME

SALARY = SALARY etc.

Frequently when a record is to be updated, the same fields that had been read from the data base are to be written back. The new SUNTAX UPDATE SAME RECORD will shorten the programming required. This will also allow for more flexible handling of multiple fields and periodic groups as ranges of fields may be obtained with OBTAIN MF (1-10) PGMF (1-5, 1-6) and then used in the UPDATE SAME to update the record.

#### Elimination of References in Multifile Data Access

In Version 1.1, it was always necessary to provide a specific reference to data fields that were to be accessed from a data base reference other than the most recently defined.

#### Blocking of Object Modules/Source Text

With NATURAL Version 1.1, object programs were blocked in 1K blocks. With Version 1.2, blocking has been increased to 2K blocks and less data is written out when a program is catalogued. This new blocking will result in a performance increase when loading a transaction module. For frequently

used NATURAL transactions, it is possible to generate a standard load module from the NATURAL program and to link the NATURAL transactions to the NATURAL nucleus as resident modules. This approach will eliminate all I/O for loading the object transactions and will increase performance even further.

A number of NATURAL commands are now implemented as NATURAL programs and may be linked to the NATURAL nucleus. Source programs are now blocked up to 60 lines per record instead of 30 in Version 1.1.

### **Improved Screen Communication**

The screen buffer that has to be transmitted across the line for each NATURAL transaction has been optimized and this should, especially for remote devices, result in considerable performance improvements. In particular, only modified data fields will be transmitted back to the host.

With Version 1.2, references in these cases are no longer needed and NATURAL will always automatically try all possible references to locate a data field in the sequence of the hierarchy. In the future, the user must make sure to use unique names for data elements in multiple files so that NATURAL is able to locate the proper field.

References are still allowed in future versions of NATURAL and will be required if multiple accesses exist to the same file to qualify the desired reference.

### **Mapping Independent of Program**

NATURAL maps may now be created interactively on the screen and may then be cataloged independently of the program. In the program, an external map is referenced with the INPUT USING MAP statement which links the data stream from the program with the map definition. If a map already exists when the pro-

gram is created or checked, NATURAL will at that time already load the map and compare the data definition in the program with that in the map, producing a syntax error if a discrepancy is found. Maps external to the program allow to use the same map for multiple transactions and to easily translate the maps of an application into another language if the application is to be transferred to another country. INPUT USING MAP has the consequence that the map has to be dynamically loaded when it is used.

### **Function Key Support**

NATURAL 1.2 supports function keys on two levels: command level and program execution level. Independent function assignments may be defined on both levels.

During program execution, function keys may be used to invoke specific transactions or function keys may be made sensitive to the program for interrogation which function key was depressed.

Function key support allows setting up of user-friendly transaction systems that allow for an operation with minimal key input.

### **Store/Retrieve ET Data**

The END TRANSACTION statement now allows user data to be specified which may be retrieved with the GET TRANSACTION data statement. Transaction data is stored in the system under the user's logical identification so that a user is automatically informed about the last transaction he executed independently of where he resumes operation.

### **Transaction Mode as Default**

The SET GLOBALS TR=ON statement which in Version 1.1 indicated that the user wanted to operate in transaction mode is now a noop operation as all users now by default work in transaction mode.

A user may work in a different mode by specifying an

appropriate OPRB (open record buffer content) like CLU= or EXU=.

### **ON ERROR Processing**

ON ERROR processing allows the user program to react to execution time errors in a controlled way. In Version 1.1, any execution time error would result in the termination of the program execution. With the ON ERROR clause of Version 1.2, the user may react to an error condition by writing out a message and then transferring control to an appropriate transaction.

Global variables may be used to transfer data across error condition to the invoked transaction.

### **TERMINATE Statement**

As startup parameters in Version 1.2 now allow to invoke NATURAL for a specific transaction without the user having to enter the transaction name, NATURAL transactions may transparently be incorporated into existing native TP-transaction systems.

The TERMINATE statement allows to terminate the NATURAL system from a NATURAL transaction and return to the invoking TP-transaction.

### **RUN Statement**

With NATURAL Version 1.1, it was only possible to invoke other transactions in object form via the FETCH statement. The new RUN statement allows transactions to be invoked for execution that only exist in source form and are to be compiled when they are invoked. Together with the dynamic source creation facility, this feature now allows a program to be created dynamically from a NATURAL program and invoke it for execution with the RUN statement.

### **Dynamic Program Creation**

As described earlier, global variables may be used to transfer data from one program to another.



The content of global variables may be used in a program as data or may be read as source data. In a program invoked via a RUN statement, the program to be compiled and executed may hence be created from a previously executed NATURAL program.

This feature is extremely useful for setting up applications where the end user defines the selection criteria, fields to be displayed or operations to be performed on fields.

### **Set Processing**

In the area of end-user communication, set processing may be used to allow a user to select records with an initial criteria, retain the result as a set and then dynamically refine the resulting set of records by trying additional criteria on the initial set.

### **Online ABEND Trapping**

ABENDS of user programs in an online environment which allow for abend trapping (like COM-PLETE and CICS) will be trapped.

### **Dynamic ADABAS Password and Cipher Code**

ADABAS passwords and cipher codes may with Version 1.2 be specified as the content of variables which allows requesting them from the user at execution time via a formatted screen in non-displayable input fields. Different passwords may be specified for each individual ADABAS file.

### **Multiple Online Printers**

In certain environments that allow for spooled output online, like COM-PLETE, multiple reports may be created online. This feature is useful in applications where written output results on multiple forms is to be created during the execution of the application.

### **User Buffer Size Extension**

The limitation of the user buffer containing source and object programs for a user session has been extended such that

the source program is now contained in a separate buffer which in effect doubles the size of programs that can be written as one transaction. Although this extension does not totally resolve the program size restriction, it should be considered also in the future as the limit for the size of one online NATURAL transaction because otherwise the amount of data to be loaded for the execution of a transaction would go out of size.

### **INPUT NO ERASE**

The INPUT NO ERASE statement allows to build a new INPUT map on top of a screen map that has been written to the screen in a previous WRITE or INPUT statement. NATURAL will automatically transform all input fields from a previous INPUT statement to protected fields to avoid user confusion. New fields may overlap already existing fields.

### **Online Workfiles**

In the COM-PLETE environment, workfiles may be used online to store intermediate data. Online workfiles may be processed from batch.

### **EXAMINE**

The EXAMINE statement allows to check field contents for specific text and to replace this text with another text string.

This feature is useful for creating job control with the possibility to exchange parameters with current data. The replacing text string may be longer or shorter than the original text.

### **Extended Masking**

The extended masking allows for the checking of:

- alphanumeric characters;
- numeric characters;
- hexadecimal characters;
- printable characters;
- special characters;
- value ranges;
- data notations.

### **Extended Attribute Definition**

The extended attribute definition allows attributes for data fields in WRITE/INPUT statements to be defined as de-

faults on the FORMAT or statement level and with each individual field.

- Attributes are available for:
- intensified (I), blinking (B), nondisplay (N);
  - left justified numeric (L), right justified (R);
  - expected data (E);
  - filling character for empty field positions.

### **Elimination of Statement Restrictions**

Many restrictions that previously existed for the usage of certain statements in certain conditions have been lifted.

### **New System Variables**

A set of new system variables allow the user to access all kind of important information about the NATURAL environment.

### **Access to Multiple Data Bases**

It is possible now to define a data base identification in a DDM. All reference to that DDM within a NATURAL program will cause NATURAL to access that data base. Up to eight different data bases may be used in one NATURAL program.

## **NEW COMMANDS**

### **Full Screen Editor**

A new full screen editor has been implemented (as a NATURAL program with assembler subroutines) that provides the following new functions:

- full screen modify;
- insertion at top in insert "windows";
- scan for values with identification of all references;
- scan and replace with identification of all replace references;
- setting of temporary labels;
- identification subcommands for better source structuring;
- line splitting command.

The editor commands have been defined such that they represent a superset of NATURAL line editor and COM-PLETE full screen editor commands.

### **Enhanced LIST Command**

- listing of programs not in work area;
- listing with intensified lines containing specific text;
- cross referencing of words or variables;
- selective listing of word occurrences.

### **Interactive Map Generation**

Maps can be composed with all fields attributed directly on the screen and may be edited, cataloged for use in INPUT USING MAP statements or generated as source INPUT statements. Maps may be saved and called up later for full screen update.

### **Online Dictionary Creation**

The DDM for NATURAL may be created online from an existing DDM or the ADABAS file definition online in an interactive editing process. Different user views with subsets of the fields contained in the physical file implementation may easily be created by the NATURAL administrator.

### **Online Logging of ADABAS Commands**

Sequences of ADABAS commands may be logged for performance tracing or individual commands may be snapped to display all generated control blocks.

### **User Created Commands**

As parameters may now be transferred to a transaction that is invoked in the command line, additional user created commands may be inserted into the system that accepts input parameters from the command line as standard system commands.

### **Activity Tracing and Screen Paging**

In certain environments like COM-LETE, a paging facility is available to the user to write screen contents with output and input data to a page data set for later redisplay. Using this facility, a user at a terminal may trace his activity to be able to verify at any time what data had been displayed in previous screens or entered by the user.

### **NATURAL Stacking**

The NATURAL stacking allows setting up command sequences together with data for INPUT operations in the NATURAL stack. These command sequences will be read from the stack whenever new commands would be requested by NATURAL. The command sequences may also include user transactions.

### **Dynamic Parameter Setup**

All parameters that in Version 1.1 had to be generated in the NTPARM macro may now be specified dynamically when NATURAL is called up for execution.

For each user, a different set of parameters may be defined in the TP-transaction that to him is known as NATURAL. The dynamic parameter setup also includes the possibility of setting up a command stack when NATURAL is called.

### **Utilities for the NATURAL Administrator**

Utility functions are provided for the NATURAL administrator to:

- move/copy source/object programs and libraries between different system files and even different data bases;
- ABEND analysis;
- list all libraries defined in the system;
- locate an individual program in a library;
- scan a library for a character string and replace it with another character string;
- batch utilities;
- generate sequential file containing NATURAL objects to be loaded via INPL;
- generate os load modules of NATURAL object programs;
- generate a sequential file containing NATURAL source programs.

### **Possibility To Run NATURAL in Execute Only Mode**

If you submit a parameter to the parameter module or via dynamic set up the same NATURAL nucleus runs in execute only mode for this user.

### **Online Help Facility**

The online help facility allows to request help information on:

- statement syntax;
- command syntax;
- general system facilities.

### **Online Error Detail Explanation**

After an error has occurred during the compilation of a program, the user may request detailed information on the error message.

Existing NATURAL 1.1 programs will be upwardly compatible with Version 1.2 at the object level, and therefore can be executed without change. However, to take advantage of improved blocking and other 1.2 features, program must be recataloged. Version 1.1 source programs might require modification to incorporate and be compatible with Version 1.2 features.

A full discussion of installation and compatibility considerations is provided in the NATURAL Version 1.2 Implementation Guide.

## **NATURAL Special Interest Group Chairperson**

### **Features**

Vacant



## COM-PLETE Product Rep's Report

*David Little  
Boston Safe Deposit & Trust*

This Newsletter is my first opportunity to write to the COM-PLETE users after being elected COM-PLETE Product Representative. I would like to tell those of you who didn't attend the Tenth International Software AG Users' Conference about one of the developments that was announced concerning COM-PLETE.

COMPASS, the COM-PLETE Parallel Activity and Security System, extends the powers of COM-PLETE and makes it easier to use and easier to control. Parallel activity allows the user to process up to 10 activities concurrently and to switch back and forth among them through the use of PF keys. When a transaction or utility is suspended, that thread is written out to the roll file, and it can be resumed later in the same state. This cuts down on keystrokes and improves productivity for the programmer or user who depends on several different functions. It would be easy to have several UEDIT sessions, a UQ, and a UDUMP for program development and not lose your place when switching back and forth. A user might have several COBOL transactions and several NATURAL systems to switch between.

Another enhancement is that the utilities now have standard formats: front end menus with default values which can be defined in a user profile system. The security system defines programs to which each user can have access, and these options are automatically presented in the initial COMPASS menu. Restricted users are not allowed to run any other

transactions. These definitions are easily entered with the new ULOGM utility. Since these changes are based on the current architecture of the roll data sets, there are some important implications. The size of the roll data sets will have to be increased for COMPASS users. Those of us who have experienced performance problems with the roll data sets will have to contend with even higher levels of activity. In addition, COMPASS userids are limited to five characters; the sixth position keeps track of the different suspended transactions. Some of the other features include a mailbox and message switching system and a help function for utilities that can be extended to provide information specific to each installation. There are also major improvements to UEDIT which give it many of the capabilities of SPF.

There was some confusion at the Conference as to when and how these new features would be released—whether they would be chargeable or be released momentarily in SM2 or eventually as part of Version 4.3. Hopefully this issue will be resolved soon and these things will be made available to COM-PLETE users. I, for one, am impatient to begin using the multiplexing of COMPASS and the power of the new editor.

There is another aspect of being a Software AG user that is just as important to all of us as new product development and that is the technical support we receive when we call Denver with a problem. Different users have varying levels of satisfaction with the support they receive. My own experience has included both extremes: sometimes my problem gets solved right away, especially if I use the right "descriptor values" in describing the problem, and other times I have been quite frustrated. It is important to let Software AG know what improvements the users would like to see in this area. I would

like to hear about your experiences and what you can suggest to improve the situation. The trouble log data base of reported problems and solutions that is distributed with the ADABAS SM Tapes has been one positive step. I have been directed to several zaps or tidbits of information that way. But what if you aren't an ADABAS/NATURAL user? Should there be more frequent SM tapes or published hot sheets? Let me know what you favor so that I can represent your views.

## COM-PLETE Special Interest Group Chairpersons

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**Performance and Tuning**  
Vacant

**Product Integration**  
Vacant

# ADABAS-M Product Rep's Report

Dick Gemoets  
OMEX

Here it is October already and I'm not in Paris. The injustice of it all. Realizing that many of us cannot attend Users' Conferences, I am reserving this Newsletter article to discuss one of the technical highlights of the last conference in Las Vegas. Rex Jaeschke, Manager of Small Systems Development, provided us with some useful insights to backup and recovery for ADABAS-M.

**1. Utilities**—You must use ARCHive if your SYSLOG file fills. You may use SAVE (and subsequently RESTore and REGenerate) to backup (and recover) a data base. Some users use, or plan to use, operating system utilities (i.e., BRU, DSC) instead of SAVE and RESTore. **BEWARE**—If you recover a data base that was saved by an operating system utility, that data base CANNOT be rolled forward using REGenerate because it was not recovered with RESTore. REGenerate can only be used on a data base that has been RESTored.

**2.** Consider the case where you run ADAGEN to create all the ADABAS-M system files, do some updates to various files, take an ARCHive, and continue processing. You may expect that you can restore the data base from the start (by rerunning ADAGEN) and REGENERating using the first ARCHive file. This is not so. A

new set of system files cannot be rolled forward using REGENERate as they do not have the RESTored attribute set. Therefore, you should take a SAVE of the data base soon after you have created it so that you have a RESTorable point.

**3.** SAVE requires all files to be closed. The data base need not be in read-only mode (log buffer = 0).

**4.** You can only REGenerate complete ARCHive files. Partial and/or selective REGeneration is not possible.

**5.** You cannot SAVE/RESTore individual data base files. You must SAVE/RESTore the complete data base.

**6.** SAVE creates \*.SAL files. A user file ABC causes SAVE to create a file ABC.SAV which contains ABC.AS1 + ABC.DT1 + . . . + ABC.DTn. The file ABC.SAV is slightly larger than the sum of the file extents as it contains ABC's SYSDIC records as well.

**7.** Don't use ADAGEN to create a new SYSLOG file for a production data base. SYSLOG headers contain ARCHive version number history. If this information is destroyed by creating a new SYSLOG file, you will not be able to RESTore to a point prior to that time AND REGenerate past that point. Use PIP or COPY to extend the SYSLOG file.

**8.** The status of the SYSLOG file displayed by ARCH indicates the number of archives taken. This number is in octal and matches the ARCHive file version number of PDP-11 systems. VAX/VMS systems use decimal version numbers. All ADABAS-M utilities use octal version numbers—VAX users beware.

**9.** An ARCHive file's version number must match its internal header. Therefore, you must preserve the version number when copying it or moving it from one device to another.

**10.** Name ARCHive files YYM-MDDnnn.ARC rather than use the default ADABAS.ARC. This gives you a built-in identifier to the file's origin.

**11.** ARCHive files are compressed versions of the SYSLOG file; therefore, they are smaller than the SYSLOG file they came from.

**12.** Don't ARCHive or SAVE directly to tape as that medium is less reliable than disk and ARCHive and SAVE have no verify pass. These utilities use a blocksize of 512 bytes on tape. If you must use tape directly, label all volumes of a multivolume set before starting the operation. VAX users must run ADABAS-M interactively to access magtapes directly from utilities. ARCHiving and SAVing to disk is also faster. You could then use operating system utilities to copy the ARCHive or SAVE files to tape, thus making multiple copies as desired (with verify passes).

**13.** If you want to RESTore and/or REGEnerate directly from tape, make sure the files are placed on the tape in the appropriate order. This will be done automatically if you ARCHived and SAVEd directly to that tape.

**14.** SAVE forces an ARCHive if necessary. After the ARCHive, you try SAVE again only to find a file is still open. In closing it, you create a SYSLOG record and therefore must ARCHive again before SAVing.

**15.** SYSLOG is a fixed length file. If it fills, update transactions are rejected. This can cause application programs real problems. Beware.

**16.** Running multiple data bases, each with their own nucleus, minimizes the impact of backup and recovery as only one data base is affected at a time.

**17.** To RESTore a data base, you must have a runnable nucleus. If you don't have one, create a new set of ADABAS-M system files with ADAGEN and run RESTore. The newly created system dictionary will be overwritten by the one being restored. The SYSWRK and SYSDMP file will not be written to. SYSLOG will be reset to indicate it is empty. Any information in SYSLOG before the RESTore is lost.

**18.** Consider the case where autorestart fails. This means there is potentially (and most likely) illogical data in the data base. Autorestart failed because of a discrepancy between SYSLOG and a data base file. If you run ADAGEN and create a new SYSLOG file, autorestart will now work and the data base can be started. HOWEVER, you have only fooled autorestart by removing the offending log transactions. YOU HAVE NOT resolved the problem with the illogical data. In fact, you have destroyed the evidence of it in SYSLOG and have compounded the problem. NEVER create a new SYSLOG to rectify an autorestart failure on a production data base—always call Software AG Support Staff. The SYSLOG file is critical in resolving such a problem and must be preserved.



Larry Jayne

## Software AG Introduces Larry Jayne

Larry Jayne is the new Users' Group Liaison. He joined Software AG in February 1980 as a Senior Training Consultant and since September 1980 has been Manager of Education.

He transferred to his new position in October with responsibilities that include Users' Group Newsletter Editor, development of the technical agenda for the International Users' Conference, and support of regional meetings as required.

Many of you have already had an opportunity to talk with Larry on the phone or met him at one of the International Users' Conferences.

With a degree in Business Administration and 21 years working with data processing systems, Larry has been primarily involved in applications development and computer management. He came to Software AG from the State of California. Welcome aboard, Larry!

## Advanced Markets Update

Edward J. Forman

In the last Newsletter, we mentioned Software AG's goal to allow for ADABAS compatibility with various application software packages. Since the publication of this article, there has been continuing activity in this behalf. In response to the many questions we have received regarding the ADABAS/MSA Capabilities and SAS Interface, we are presenting this 'status' report.

### The ADABAS/MSA Capabilities

As we stated in the last Newsletter, Software AG is developing interface capabilities with batch and CICS online options for some of MSA's application systems. Here is a summary of these systems and the status of the development of the interface capabilities:

General Ledger (Release 21.6 Batch); available now.

Human Resource (Release 174 Batch); beta testing November.

Accounts Receivable (Release 3.3 Batch); beta testing December.

Accounts Payable (Release 4.0 Batch); alpha testing December.

We are currently looking for beta sites for the CICS online capabilities. We anticipate that they will be ready for production distribution during the first quarter of 1983.

Preliminary documentation and marketing information are available through your marketing representative.

### SAS Interface

As stated previously, Software AG is interested in ensuring that ADABAS is compatible with SAS. In considering the various means to accomplish this, we will either continue to develop the interface ourselves or work with another vendor who specializes in SAS and DBMS compatibility. As we finalize our plans for this, we will advise you on our decision.

### Directions

Since the August Newsletter, we have started dialogue with vendors representing various applications. These application areas include Land Exploration, Oil and Gas Accounting, Banking, Education, Project Management, Construction Maintenance, Fleet Management and additional General Accounting applications. We are most interested in hearing from users who are or will be evaluating products in these or other application areas.

Should you have any suggestions or comments regarding these application areas or are interested in pursuing other applications, please do not hesitate to call me. I may be reached at Software AG in Reston (703) 860-5050.

Stan Maring, Manager, SAGNA Education Department

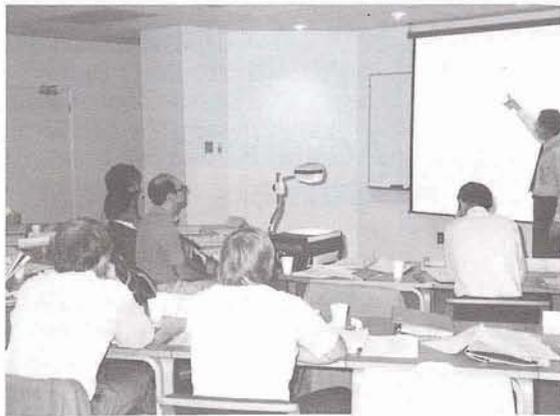
New courses and a new training center are the most recent highlights of the SAGNA Education Department. We are now offering two new NATURAL courses, NATURAL APPLICATIONS WORKSHOP and NATURAL ADVANCED TECHNIQUES



SAGNA President John N. Maguire dedicates the new Reston Training Center on Nov. 5.



Users attend the first NATURAL Applications Workshop held in the Reston Training Center.



WORKSHOP, as well as two new ADABAS courses, ADABAS PERFORMANCE & TUNING and DATA BASE DESIGN. In addition, the Reston Education Facility has been relocated to the Reston International Center which also houses the SAGNA Corporate Headquarters.

The new NATURAL courses utilize the recently released NATURAL Version 1.2 features and heavily stress student participation during the class. The NATURAL APPLICATIONS WORKSHOP has replaced the NATURAL PROGRAMMING class and is intended to be an introduction to the world of NATURAL. The NATURAL ADVANCED TECHNIQUES WORKSHOP, a totally new offering, has been developed for the user that has a very good working knowledge of NATURAL and is now ready for the more advanced NATURAL TECHNIQUES. The majority of these advanced techniques uti-

lize NATURAL Version 1.2 features.

The new ADABAS PERFORMANCE & TUNING class will take a user several steps beyond our ADABAS INTERNALS course. The class stresses the relationships between ADABAS components with emphasis on key factors to be considered in optimizing the performance of an ADABAS system.

Another new addition to our ADABAS course lineup is actually the return of a popular class from the past. The class is entitled DATA BASE DESIGN and has been developed and will be instructed by Learmonth & Burchett Management Systems, Ltd. of London, England. SAGNA sponsored this class several years ago and received rave reviews from all who attended. Due to many requests from the user community, we are once again offering the course. Only a limited number of classes will be held, so please register early.

The most recent improvement to the SAGNA Education Department is the opening of our new Reston Training Center. The first class held in this facility was most appropriately our new NATURAL APPLICATIONS WORKSHOP class which was held on November 3. This Training Center replaces the facility formerly in the Reston Town Center Building. Featuring a classroom capable of seating thirty students, an increased number of available terminals, and a totally dedicated printer, the new facility is located on the 10th floor of the Reston International Center.

For more information on any of our courses or to register for a class, please contact our Education Registrar at (703) 860-5050.

# Class Schedule

## January–June 1983

Course	Date	Location
<b>ADABAS Concepts &amp; Facilities</b>	January 10–11	Reston
	January 17–18	Houston
	February 7–8	New Jersey
	March 7–8	Reston
	March 14–15	Chicago
	March 21–22	New Jersey
	April 4–5	Seattle
	April 11–12	Reston
	May 23–24	New Jersey
June 20–21	Reston	
<b>ADABAS Direct Call Programming</b>	January 17	Reston
	January 24	Houston
	January 31	New Jersey
	February 14	Reston
	March 14	Reston
	March 21	Chicago
	March 28	New Jersey
	April 11	Seattle
	April 18	Reston
	April 25	Houston
	June 13	New Jersey
June 27	Reston	
<b>ADABAS Internals</b>	January 18–19	Reston
	January 25–26	Houston
	February 1–2	New Jersey
	February 15–16	Reston
	March 15–16	Reston
	March 22–23	Chicago
	March 29–30	New Jersey
	April 12–13	Seattle
	April 19–20	Reston
	April 26–27	Houston
	June 14–15	New Jersey
June 28–29	Reston	
<b>ADABAS Performance &amp; Tuning</b>	February 3–4	Reston
	February 17–18	Seattle
	March 10–11	Houston
	March 24–25	Reston
	April 7–8	New Jersey
	May 19–20	Chicago
	May 26–27	Reston
June 23–24	New Jersey	
<b>Data Base Design Methodology (LBMS)</b>	February 2–4	Chicago
	February 7–9	Reston
	March 16–18	New Jersey
	March 21–23	Houston
	June 1–3	Reston
	June 6–8	Houston
<b>Data Base Administration</b>	January 20–21	Reston
	January 27–28	Houston
	February 3–4	New Jersey
	February 17–18	Reston
	March 17–18	Reston
	March 24–25	Chicago
	March 31–April 1	New Jersey
	April 14–15	Seattle
	April 21–22	Reston
	April 28–29	Houston
	June 16–17	New Jersey
June 30–July 1	Reston	



<b>Course</b>	<b>Date</b>	<b>Location</b>
<b>DBA Skills Workshop</b>	January 10–14	New Jersey
	January 24–28	Reston
	January 31–February 4	Houston
	February 7–11	Seattle
	February 14–18	New Jersey
	February 28–April 4	Reston
	April 4–8	Reston
	April 11–15	Houston
	May 2–6	Reston
	May 9–13	Chicago
	May 16–20	New Jersey
	June 13–17	Reston
	June 20–24	Houston
June 27–July 1	New Jersey	
<b>COM-LETE Applications Workshop</b>	February 22–25	Reston
	April 18–21	Houston
<b>COM-LETE Systems Control</b>	January 17–18	Seattle
	March 28–29	Reston
	June 27–28	Houston
<b>COM-LETE Internals</b>	January 19–21	Seattle
	March 30–April 1	Reston
	June 29–July 1	Houston
<b>NATURAL Applications Workshop</b>	January 12–14	Reston
	January 19–21	Houston
	February 9–11	New Jersey
	March 9–11	Reston
	March 16–18	Chicago
	April 6–8	Seattle
	April 13–15	Reston
	May 25–27	New Jersey
June 22–24	Reston	
<b>NATURAL Advanced Techniques Workshop</b>	January 17–19	New Jersey
	January 31–February 2	Reston
	February 14–16	Seattle
	March 7–9	Houston
	March 21–23	Reston
	April 4–6	New Jersey
	April 25–27	Reston
	May 16–18	Chicago
May 23–25	Reston	
June 20–22	New Jersey	



## Current Release Levels

The following is a list of current System Modifications that are available. Please contact Gordon Perrins, product support group manager, if you need current SMs.

### ADABAS V4:

ADABAS Nucleus & Utilities—  
—SM Level 5

ADAMINT Version 1.4  
—SM Level 5

ADACOM Version 1.2  
—OS Zap Level 8  
—DOS Zap Level 8

ADASCRIP + Version 1.1  
—SM Level 5

Data Dictionary Version 1.1 OS  
and DOS  
—SM Level 5

### ADABOMP:

—OS Version 2.0.0  
—DOS Version 2.0.0

### ADABAS/VM: Version 1.1.6

### COM-PLETE: Version 4.1

—All OS operating systems—  
SM1

### \*NATURAL:

Version 1.1  
—OS Zap Level 9  
—DOS Zap Level 9

\*Please note that the NATURAL/  
CICS pseudo conversational driver  
is generally available to all inter-  
ested NATURAL users. Please  
contact the Product Support  
Group.

Version 1.2 Zap Level 0  
—OS  
—DOS  
—CMS

### ADABAS-M V1.2

—SM2 for all operating sys-  
tems

## SAGUTILS

(Software AG Technical Infor-  
mation Logs System)  
The current distribution level of  
SAGUTILS is Release 3 Update  
series 8210.

### ADABAS V4.1

**Status:** OS—Available  
DOS—Available

### NATURAL V1.2

**Status:** Available

### ADABAS-M V1.2

**Status:** RSX-11M—Avail-  
able  
RSX-11M + —Avail-  
able  
IAS—Available  
VMS—Available

### ADABAS/VM

**Status:** Available

### Channel-to-Channel Software

**Status:** Available

### COM-PLETE DOS

**Status:** Available

### COM-PLETE VTAM SUPPORT

**General Availability:** Release  
4.1

### COM-PLETE V4.1

**Status:** Available

### DATA BASE MACHINE

**Status:** Available with 60-day  
delivery

### Online Data Dictionary

**Status:** Available for NATURAL  
Users

### COM-PLETE V4.3 (OS)

**Status:** Beta Testing  
Includes COM-PASS  
3375/3380 support, etc.

## Early Warning

The Early Warning System was  
instituted to provide timely  
technical information (and,  
whenever possible, fixes) for  
items, problems with the soft-  
ware, and security.

The most current Early Warn-  
ing distributed at press time  
(as of 9/10/82) is EW124 -  
DOS ADABAS V4.1.1.

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(800) 525-7859

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After hours and weekends  
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Notice: The product information  
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official release dates/levels for  
all products currently commit-  
ted to by Software AG of North  
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## Dates to Remember

February Newsletter copy due  
December 17, 1982.

May Newsletter copy due  
March 18, 1983.

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June 17, 1983.

November Newsletter copy due  
September 16, 1983.

Change/Enhancement  
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due November 30, 1982.

'83 Conference Abstracts due  
December 10, 1982.

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