

# Software AG International Users' Group Newsletter

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## Users' Group News

### 900 Participate In Users' Conference

The Ninth International Software AG Users' Conference was the largest, most active annual conference Software AG users have ever known. Nine hundred conference attendees, companions and Software AG staff and guests participated in four days of a very active, intense technical agenda. The Olympics of Education, as the Conference was themed, provided various

approaches to the learning experience. A major factor in the technical agenda was the specially-designed tutorials, mini-classes focusing on areas of greatest user interest and concern. These were presented by the Software AG Education and Consulting Staff. Dr. Dixon Doll, authority and noted lecturer in Data Base/Data Communications, Harold Uhrbach, consultant and specialist in organizational implications of data base management, and David Yoho, motivationalist, participated in the Olympics of Education as

guest speakers. User presentations, as well as Software AG presentations, added a special dimension to the educational theme. Group Special Interest workshops also provided an excellent vehicle for the exchange of information on product use and techniques. As is typical of the Users' Conference, one of the most valuable aspects is the informal dialogue and exchange that pervades the Conference environment. Valuable technical contacts are made, information is distributed and exchanged, and product knowledge

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enhanced by this informal interaction. Software AG intends to continue its emphasis on education at each Conference and asks its users to provide helpful suggestions on content of greatest interest to the user community.

The Conference Users' Group sessions were chaired by Ms. Jennifer Lee of Aerospace Corporation, who serves the user community as ADABAS Product Representative. She was substituting for Michael Berman, President of the Group, who could not attend. Ms. Lee guided the user community ably in her presiding over the week's events and was a significant factor in the new directions that the Users' Group will take in the 1981-82 year. Among the significant developments within the user community are a Product Review Committee for the accounting and tuning package currently in design stages, new special interest groups focusing on data base administration, problems of large shops and large data bases, and data base standards. In addition, three new Users' Group regions were established: Argentina, France, and New England. The Executive Committee and Ms. Lee sought to define some additional areas of user concern and are considering constitutional changes to make the group more responsive to the Users' needs. The method of electing Users' Group officers is one consideration.

### **New Leadership Announced**

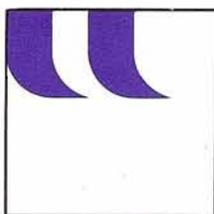
Final Users' Group business was the election of Users' Group officers. Newly-elected Regional Representatives gathered to elect the 1981-82 Executive Committee:

**President:** Alan Routhier  
**Vice President:** David Berg  
**Secretary:** Patrick Gilbert  
**ADABAS Product Representative:** Jennifer Lee  
**NATURAL Product Representative:** Steve Froneberger  
**COM-LETE Product Representative:** Bob Becker

**Change/Enhancement Coordinator:** Peter MacRoberts  
**Past President:** Michael Berman  
**Area Representatives:**  
 S. Dian Odell, Roger Martin,  
 Peter Feasey, Mary Ozawa, John  
 Palmer, Yasuo Shimizu

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# President's Message

## President's Message

*Alan Routhier  
County of Sacramento*

Many things were accomplished at the Ninth International Software AG Users' Conference at Innisbrook, Florida. The theme was 'The Olympics of Education' and it was carried out well. Over eight hundred people attended the conference, and each person was able to choose from among ninety-six presentations which were given over a four day period. Everyone learned something, and equally important, was able to meet and talk with many other users. This was the most successful annual conference we have ever held.

At Innisbrook I was selected from among the Regional Representatives to be President of the International Users' Group. I succeed Michael Berman, who oversaw the evolution of all Software AG product users into a single, cohesive Users' Group. I will work hard to continue Michael's excellent leadership. Having served on the Executive Committee as the COM-LETE newsletter editor and as the COM-LETE Product Representative, I have a reasonable knowledge of the workings of the Users' Group. The County of Sacramento is a user of ADABAS, COM-LETE, and NATURAL, which also gives me knowledge of some of your problems and concerns.

My primary goal for the coming year is to document the workings of the Users' Group. Many do not know the specific function of each member of the Executive Committee. They probably are more familiar with the



Alan Routhier, 1981-82 Users' Group President

role of the Regional Representative, with whom they most frequently come in contact. At this time, the Users' Group constitution is the only document which lists some of the officer's functions. However, at Innisbrook we found that several areas which came up regarding the functioning of the Users' Group were not addressed in the constitution. These will be resolved by a subcommittee consisting of three members of the Executive Committee: Dian Odell, David Berg, and Cathy Vivona. Any changes which are made to the constitution will be voted on by all Users' Group members later this year.

Updating the constitution is not enough, however. You need a more detailed description of the specific workings of our organization so that you may more readily participate in it. Using a less formal method than the constitution, will allow us to maintain flexibility as the Users'

Group matures. Therefore, I will talk with former and present Users' Group participants, and publish a series of articles in the upcoming newsletters which detail our cumulative knowledge. Please respond to these articles and give me your ideas also. The culmination of this effort will be a manual of Users' Group information which will be distributed to you, and specifically given to anyone who is elected to any office within the Users' Group. Thus, you can more confidently volunteer to fill these offices when the opportunity presents itself.

Dian Odell has offered many positive ideas regarding educating users about the Users' Group. Among other things she suggested that Users' Group officers and active participants become more visible during the Conference. They deserve recognition for their efforts, and you need to know who they are so that you may easily recognize and approach them in order to readily communicate with them. Thus, special ribbons will adorn their name tags at the Las Vegas Conference. In addition, the Executive Committee will be formally introduced to you at the beginning of the conference, and at other appropriate times.

I will be busy during the coming months handling many interesting items of Users' Group business. You will be kept informed about them in this column. Please call me or write to me anytime you wish. The Executive Committee can best represent your interests when we know what you are thinking.

## Maguire, Rardin Outline SAGNA Direction

Opening remarks at the Ninth International Users' Conference left very little doubt in attendees' minds what direction Software AG of North America will take in the coming years.

### Software AG Becomes a Public Company

John Norris Maguire, President of Software AG of North America, was first to address Conference attendees. Mr. Maguire informed users and their guests of Software AG's intent to become a publicly held company. In describing the process of "going public", Mr. Maguire detailed the growth of the software industry and of Software AG of North America, and indicated the strong position of leadership which Software AG enjoys within the data processing community. Mr. Maguire concluded his remarks by suggesting how the user community will benefit as clients of a public company.

Kenneth D. Rardin, Executive Vice President of Software AG of North America, continued the general discussion, pointing with firm conviction to the many positive advances that the Company has made during the past year, outlining both short and long range goals of Software AG. He reviewed the significant enhancements of existing Software AG products: the release of ADABAS Version 4.1, the ADABAS/VM interface, COM-LETE Version 4.1, NATURAL/VM Interface, and development of an interface with

COMSERV's AMAPS system. Mr. Rardin highlighted a Program Development Machine which provides the capability to off-load all program development from the host machine to an inexpensive IBM-compatible development machine. This allows development, editing, testing, and debugging to be separated from the production environment.

### Rardin Reviews Year; Highlights Future

Mr. Rardin continued by outlining a number of these significant enhancements to existing products as well as brief outlines of new products which are currently under development. Among the enhancements to the data base management products line are a remote computer-to-computer network facility through VTAM, a comprehensive, fully-integrated Data Dictionary, full ET/BT support for ADABAS-M, and an accounting and tuning system. Enhancements to NATURAL include a graphics capability for 3279 terminals (using an IBM product GDDM), a help facility and numerous other functions. In addition to NATURAL enhancements, new products for NATURAL include an Advanced Functions products option and a comprehensive online security package. COM-LETE enhancements include graphics support (once again using IBM's GDDM on 3279 terminals), support for color terminals, command stacking, DOS operating system support, and a comprehensive VSAM restart/recovery system including ET/BT logic. Work is also being done on an APL interface to COM-LETE. CICS-EASE, a product currently under development, will extend the full com-

plement of COM-LETE utilities to CICS users, thereby providing the user with facilities such as remote job entry from the application program, VSAM transparency, dynamic DASD file support, and online printout spooling with full restart/recovery capabilities.

### Support Areas Grow, Strengthen

Mr. Rardin did not limit his comments on Software AG growth to the area of product development; he highlighted the developments in all areas of product support, mentioning the dramatic growth in various support staffs. Mr. Rardin first focused on technical services. The 24-hour, Denver-based hotline service was a major addition to the Technical Support Services offered by Software AG. The Technical Support Center is staffed with personnel trained in all products and is available via a toll-free number. An online trouble log system has helped internal problem monitoring and problem resolution, and has contributed to the improved turnaround and problem response for Software AG users. A subset of this system is currently available to users. This will provide a meaningful troubleshooting mechanism. Additional support services include growth and diversification of the Education Centers within the Software AG network. A second Education Center was opened in Seattle in 1980, fully equipped for workshop environment. Five courses have been added to the education program in the past year; other courses are planned for the coming year. The staff of the Education and Consulting Divi-

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sion has doubled so that Software AG can better respond to the growing demands and needs of the user community.

Documentation and publication services also took significant steps forward as major efforts on new and updated documentation were successfully realized. Mr. Rardin clearly stated that continued excellence in all support areas is an ongoing corporate commitment.

### General Corporate Goals

While the accomplishments of the past years have been significant and the product plans for the future exciting, they're all part of Software AG's plan to become, as Mr. Rardin explained, the largest systems software company in the world. Mr. Rardin distinguished the emphases that Software AG will address. He believes that within the next decade, organizations will become more concerned with solving business problems with computers; they will be concerned in people productivity and ease of use. These factors will be Software AG's major concerns as product enhancements and future products are developed. ADABAS and NATURAL have established Software AG as leaders in this area. Software AG is determined to continue in this position of strength so that it can continue to respond to the major needs of the data processing and business community.

## Technical Support Committee Report

*Bob Taylor  
Evans Products*

After an abortive startup attempt to collect information on this vital issue (i.e., the technical support incident log), a much more successful method was tried. Most of you have received the support questionnaire and an amazing number of returns have been received. As of May 8, 231 questionnaires had been returned. These break down approximately as follows: 150 for ADABAS, 59 for NATURAL, and 30 for COM-LETE (some duplicates received). In a preliminary presentation to the SAGGROUP Executive Committee and members at the annual Conference, the following results were discussed. Rated as to overall satisfaction with the quality of technical support, the replies were as follows: 75% of ADABAS users are satisfied or better, 70% of NATURAL users are satisfied or better, and 40% of COM-LETE users are satisfied or better. This is only a quick analysis of the survey. The next step will be to take the results and proceed to analyze them in depth. Both Software AG and the Technical Support Committee will spend the next two months doing exactly that. It is hoped that by August 1, we will be finished with our analysis and have proceeded to discuss the results and recommendations. Progress will be reported in the Newsletter.

NOTE: The 40% level for COM-LETE was not a surprise to Software AG. They were already aware of this and have spent considerable time this year in improving the quality of the product which will be evident in the newest release. This satisfaction level reflects opinions on the older releases of COM-LETE.

## Datapro Survey Is Distributed

The annual Datapro survey of computer software products has been mailed to potential participants. Software AG requests that those organizations receiving the survey form respond promptly so that Software AG products are well-represented in the results. Furthermore, we ask that NATURAL users treat NATURAL as a separate product by submitting an individual survey response for this product. We thank you in advance for your participation in this survey.

## Conference Proceedings Available

Proceedings from the Ninth International Users' Conference are available for purchase through the Software AG Publications Department. The Proceedings contain papers presented at the recent Conference. Cost for this publication is \$35.00.

## SAGUTILS (Software AG User Technical Information Logs)

*Gordon Perrins  
Software AG*

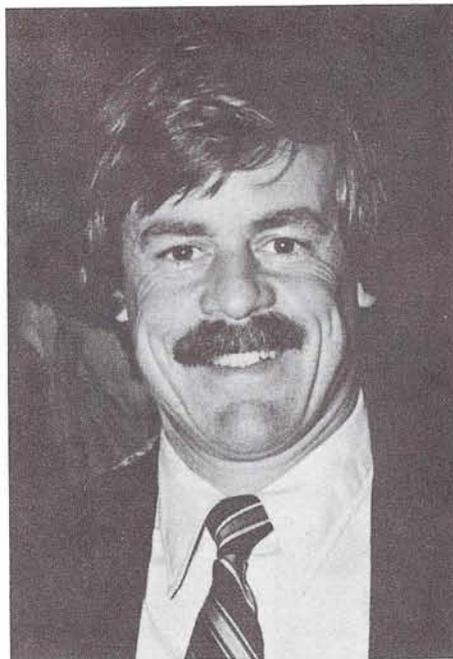
Software AG technical personnel use various tools to assist in the support of our user community. One of these tools is an online technical support system which is used to log and track software problems and questions. This system has provided us with a significant base of information—a resource that can be tapped by many different areas within Software AG. We recognize that much of this information is directly applicable to the user community and that distribution of these logs provides a level of "preventive" support; therefore, we have culled from this system an initial subset of these logs for distribution as part of ADABAS SM3.

In this first release of trouble logs, we selected those logs which were pertinent to our current software releases and of general interest to all our users for a particular product and related to questions and problems which tend to occur most frequently.

As described in the last Newsletter, the information will relate to all products and will include: documentation errors or clarifications, restatement of distributed Early Warnings, known or potential problems, helpful tips and techniques, and product/SM status information.

Although current technical log distribution will be combined with regular system modification distribution, the technical support log should be considered distinct from the System Modification system. Official product zaps and source fixes will still be distributed via a System Modification tape (released approximately every three months). Hard copy Early Warnings, in their present form, will still be used to provide any critical zaps/fixes which occur between system modifications. Technical support log data will supplement product knowledge by addressing areas not within the definition of System Modification or Early Warning information.

Our intent is to continue to extract relevant logs from our system and provide them to the user community on a regular basis.



Gordon Perrins  
Manager, Product Support

## USING THE SAGUTILS

The SAGUTIL system will allow you to:

- Print out the individual logs in hard copy form
- Load the data into your data base so that the logs may be queried online. If you have NATURAL installed, you will be able to use Software AG-provided NATURAL programs to facilitate the online querying.

The first distribution contains the following NATURAL source programs:

**LISTLOGS:** A Batch Program for listing the trouble logs file  
**INDEXA:** A Batch Program to print a Master Summary Index listing  
**NATXREFA:** A Batch Program to print a NATURAL logs summary listing in NATURAL syntax statement sequence  
**NATERRS:** A Batch Program to print out NATURAL logs which relate to specific NATURAL error message codes  
**SEARCH:** An Online generalized search program for querying the file online. The search program allows you to query the trouble logs on the basis of PRODUCT and/or MODULE, ERROR-CODE, STATEMENT, KEYWORD, Scan-string.

The above fields and sample values are described later in this article. The Scan-string capability allows you to search for any trouble logs which contain a certain character string in the SUBJECT field.

**UPDATLOG:** An Online program for updating logs

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The primary elements of information in the initial set of trouble logs are as follows:

- **TROUBLE-LOG:** This is a sequential number which uniquely identifies each trouble log.
- **PRODUCT:** This field identifies the product. Sample values for this field are:

VALUE	PRODUCT
'ACM'	ADACOM
'ADA'	ADABAS V411
'ADD'	DATA DICTIONARY
'NAT'	NATURAL

- **VERSION:** This field identifies the version of the product. Sample values for this field are:

PRODUCT	VERSION
ADABAS	4.1.1
ADAMINT	1.4
ADASCRIP +	1.1

- **MODULE:** This field (when applicable) identifies the Software AG module. For example, trouble logs that relate to ADABAS V4.1.1 may have appropriate module values present; e.g., ADALD1, ADARES, ADAVUS, etc. ADAMINT may have module values such as FINDSET, READSET, UPDATER, etc.
- **ERROR-CODE:** This field identifies logs where a specific response code, abend or other error is being reported. For example, if you were looking for any trouble logs which describe reasons why ADABAS response code 42 is being returned to an application program, then you would look for 'RSP042' in the ERROR-CODE field. If you were looking for any trouble logs relating to operation exceptions, then you would look for 'ABENDS0C1' in the ERROR-

CODE field.

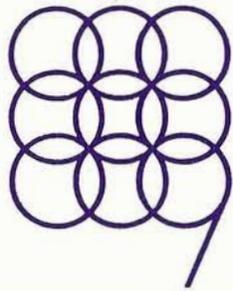
- **SUBJECT:** This field provides a short description of the reason for the trouble log.
- **PROBLEM:** This field is a periodic group and contains the detail problem lines.
- **SOLUTION:** This field is a periodic group and contains the detail solution lines.
- **STATEMENT:** This field is currently only used for NATURAL logs and is used wherever a log can be directly related to a NATURAL syntax statement. (For example, if a particular problem was related to usage of the CALL statement, then the value 'CALL' would appear in this field. Other examples: 'READ WORK', 'SET GLOBALS'; 'PERFORM BREAK', etc.)
- **KEYWORD:** This is a multiple value field which is used to identify further the related area of trouble logs contained in the file. For example, if you wanted to scan all the trouble logs which were related to PE groups, you would look for a Keyword value of 'PE'. If you wanted to look at all trouble logs which describe situations relating to the ADARUN parm LWP, then you would look for a KEYWORD value of 'LWP'.

A full description of these fields and their usage is included in the installation document provided with the distribution tape.

As a parallel activity, we are working toward providing the same information via a dial-up facility into our own computer at Reston. We will be announcing the availability of this shortly.

## USER COMMENTS REQUESTED

One of the primary objectives of the initial release is to receive your comments regarding the approach taken and any additional facilities, etc., that would be of benefit to the user community as a whole. If you have any suggestions or criticisms, please direct them to Gordon Perrins or Mike DiBacco at the Reston office. (703) 860-5050.



The Olympics of Education



Pat Dryden helps in the Registration area



Eric Siefert addresses ADABAS Users



John Norris Maguire and Carol Lawrence pose after her performance

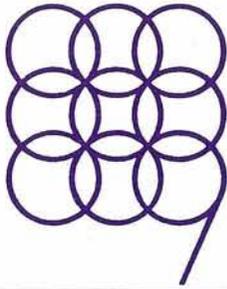


Software AG Consultant/Educator Chuck Starkey gives design advice to conferee



Informal terminal demos offer insight into product use





Helmut Thommet presents his findings to ADABAS users



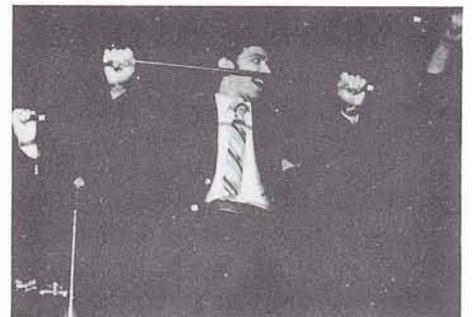
Attendees relax after a full day of technical sessions



David Yoho, Motivationalist, gets full attention of conferees



Jennifer Lee, Acting President, presides over Users' Group meeting



Multi-talented user partakes in Olympics of Broadway



Best Speakers: Jim Reiner



Tom Bradbury



Bob Becker

"The Olympics of Education", the Ninth International Software AG Users' Conference, provided a full and extensive technical agenda. All Software AG technical staff personnel were on hand to participate in tutorials, presentations, workshops and informal discussions with users.

Attendees were able to tailor their own agenda by selecting from the variety of educational offerings.

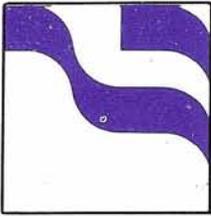
A Greek festival, Busch Gardens and the "Olympics of Broadway" provided attendees and their companions the much needed chance to relax.

Software AG and users are already looking ahead to next year's conference—fully confident that it will fulfill their Great Expectations.

Tenth International Software AG Users' Conference May 9-13, 1982 Las Vegas



Great Expectations



# Regional Reports

## Northwestern Region

*Doug Hart  
Weyerhaeuser Corporation*

The spring conference for the Northwest Region was held on March 6, 1981 at the new Software AG Education and Consulting facilities in Bellevue, Washington. Thirty-one individuals from 17 organizations were in attendance.

The first speaker of the day was Pete Pleger of Multnomah County, DPA, on their experiences in converting to ADABAS Version 4. Pete stated that one of the biggest problems was converting batch update programs from Version 3 to Version 4 processing logic. Factors which contributed to this were: (1) lack of a central DBA function; (2) different personnel were doing the conversion code changes from the original authors; (3) a lack of adequate knowledge on the proper use of ET logic. There were approximately 20 programs to convert. Initial system testing showed no significant response time differences with the exception of removal of the poor response time periods, which occurred at 11:00 a.m. and 3:00 p.m. Queue depths of up to 18 would be experienced during these time periods under Version 3.

Memory requirements for ADABAS jumped significantly from 340k under 3.2.1 to 800 for Version 4.1 with 48 attached buffers. Up to five threads have been in use. They also make use of COM-LETE as a TP monitor currently using three threads, with 78k being the largest.

Dian Odell, of Evans Products, spoke next about implementing security for ADABAS access. An analysis of security requirements for ADABAS at Evans Products eliminated the use of both SAG's normal security and also the use of the ADABAS user exit 1. Because they currently had ACF2 in-house, they decided to interface it through additional code changes to ADASVC.

Its implementation is at a point common to all access to ADABAS, just before ADASVC code receives control. Thus, one module will handle all requests, consistently across subsystems (batch COM-LETE, NATURAL, CID, CICS, etc.). The interface runs in the user address space, giving the ability to extract characteristics of the request (user, program, subsystem) and to issue messages about violations and resultant system action. Standard ACF2 dataset validation processing is used. A pseudo dataset name is generated from the user's ADABAS request. The specific ADABAS command will be inspected to determine if it is a 'READ' or 'update' type command, and the type of access requested will also be handed to ACF2. Commands BT, ET, CL, C1, C3, C5 and OP are allowed through with no security checking; commands LF, L1/L4, L2/L5, L3/L, L9, RC, RE, S1/S2/S4, S5, S8, and S9 are set as 'access' (READ) commands; all others are set as WRITE (update) commands.

Hans Stoker, The Administrator for the Courts, gave an update on continued enhancements to the ADABAS performance monitoring tools he has developed at the courts. Those areas include: (1) measurement of waits in the command queue

before the command was selected by the MPM for execution; (2) request prioritizing based on command code; (3) multiple ADABAS region support from 1 CICS region; (4) descriptor logging; (5) online ADALOG analyzer support, which analyzes the ADALOG buffers dynamically and issues a return code to indicate an exception to be printed. In this way, full logging is no longer required, which uses a lot of disk space. The results of the ADABAS monitoring and enhancements have been: (1) the isolation of problem areas such as algorithm 4 S1's on large files, S2's, impact of N1 type buffer flushes and dynamic environment changes; (2) determination of the effect of file size on various commands performance; (3) fairly accurate ADABAS capacity predictions; (4) determination of work load distribution to determine whether to split files, or balancing I/O between drives, or to measure the effect of batch and TP running together on one MPM; (5) monitoring descriptor usage to identify those that are used infrequently or not at all, and possibly eliminate them and provide an alternate means to access the required records.

NATURAL experiences at the State of Idaho was the next presentation by Henry Van Hooser. SAG products currently in use are ADABAS, ADAMINT, and NATURAL for application development. Initial teething problems have been to learn how to code NATURAL applications and avoid using excessive resources. Walt Kapica and Dan Nolan were credited with providing experience during this period. Henry has used the prototype approach to develop application

(Continued)

examples for his programming staff and give demonstrations to the users. Current use in production is for query primarily.

Keith Tipton, of Software AG, gave an update on the reorganization of the marketing structure for the Western Region. Jon Schmidt gave an overview on ADABAS/VM and the upcoming features of NATURAL Version 1.2.

Final presentation of the day was by Keith Newsom of the Washington State Data Processing Service Center #1. Keith described an approach charge out of ADABAS Version 4 usage. It was still in its planning stages at this time. It involved changes to the SVC and two user interfaces to establish a user record of ADABAS usage.

Future Northwestern Region Users' Group meetings will be held at the Bellevue Education Center. Tentative dates for the next three meetings are September 11 and December 4, 1981, and March 5, 1982.

## Far Eastern Region

*Yasuo Shimizu  
Fuji Photo Film Company, Ltd.*

ADABAS, COM-PLETE, and A-AUTO users participated in our newly-consolidated group as 87 people from 39 installations attended our recent meeting.

At the General Session, the new By-laws were approved unanimously by the attendees, and the Board Members were selected. I was honored to be selected President. The budget for the activities for the 1981 fiscal year was also approved,

as well as the schedule for the year.

Mr. Kano Takeuchi, of Kyodo Oil Company, reported briefly on the Innisbrook Conference and encouraged many more people to attend as it will widen their knowledge for better usage of the products through communication with users all over the world.

Guest speaker, Mr. Soichiro Tahara, a freelance journalist, gave a very interesting speech on current trends and topics in Japan.

In the afternoon, each group of product users had a meeting separately.

ADABAS: Three users who participated in the Innisbrook Conference reported their experiences and interesting topics. SAGFE explained new products, such as ADABAS/VM, NATURAL 1.2, and the Programming Machine. Also, activities for the year were discussed.

COM-PLETE: SAGFE explained Version 4.1, its new facilities, release date, and future plans, such as performance tuning. After a report from one user on his usage of COM-PLETE, the attendees agreed to share the COM-PLETE technique at the coming meetings during the year.

A-AUTO: SAGFE explained the release schedule of Version 3.4 as well as its new functions, and then reported the successful A-AUTO presentation at the Innisbrook Conference, using some of the slides.

The attendees discussed activities during the year, meeting 8 times (6 in Tokyo, 2 in Osaka), and once each year for Change/Enhancement requests. The data on the users' operation environ-

ment will be collected and put into a file for future access by new users.

We hope this newly-formed group will grow to become a positive factor in obtaining more reliable and easy-to-use products.

## Sierra Pacific Region

*Alan Routhier  
County of Sacramento*

The Sierra Pacific Region held a meeting on June 16, 1981, at the Concord Inn in Concord, California. The meeting was hosted by R.J. Reynolds Foods (Del Monte Corp.) and we wish to thank Mr. Ron Case for his effort in arranging for the meeting facilities. Twenty-four people attended the meeting and they represented nine of the fourteen licensed organizations in the region, plus Software AG.

The meeting was basically a business meeting with three main goals: to inform the members of the region about the Users' Group and its activities, to learn about some of the things which occurred at the annual conference at Innisbrook, and to plan what we wish to accomplish at upcoming meetings. At the beginning of the meeting, immediately after I introduced myself as the new Regional Representative, the group selected a recording secretary to serve for one year. Mr. Orville Mason, of R.J. Reynolds Foods, will transcribe the minutes of each meeting, and I will see that each person on our regional mailing list receives a copy.

*(Continued)*

Twelve of the people at this meeting had also attended the Innisbrook conference. However, because of the large number of sessions which were given, their experiences were all different. Therefore, we spent several hours discussing what we had seen and heard. During the conversation it was discovered that two organizations in the region, the County of Sacramento and R.J. Reynolds Foods, have been saving copies of newsletters and the annual conference proceedings for many years. Anyone wishing to reference these materials is welcome to visit these users.

After lunch we held a discussion on Software AG's new policy to not give release dates until a product is in beta test. This was contrasted with the old policy of establishing release dates up to a year in advance; these early projections for release dates were frequently missed. It was generally felt that some sort of 'middle ground' could be reached so that users can know the progress or status of a product as it is being worked on. I will draft a letter to Software AG expressing our ideas, which will be reviewed and commented upon by people in the region before it is finalized and mailed to Software AG.

The following idea was also suggested: Software AG could update the annual conference proceedings with the many handouts which were available at the conference and send one copy to all using organizations. Therefore, those organizations which attended the conference would have a complete copy of the proceedings, and those organizations which did not attend would

be able to learn what went on at the conference.

The next regional meeting will be hosted by Castle and Cook in San Jose on Tuesday, September 15, 1981. Colette Farabaugh, (408) 279-8750 ext. 4444, and I will be working on the arrangements for this meeting.

## Eastern Canada Region

*Gene Miklovich  
Systemhouse*

The Eastern Canada users met in Hull, Quebec on May 26, with the Secretary of State acting as host.

The meeting started with a review of the Innisbrook Conference. One of the topics discussed was the new products and releases coming out and their features. In addition, the new Executive Committee and Product Representatives were announced, and copies of the new education schedule were distributed. As a concensus indicated sufficient interest in an internals course, we are attempting to schedule one in Ottawa this summer (July 22-24).

The next subject of discussion was our objectives and how we might meet them. It was agreed that hosting and presentations should be rotated separately. It was also suggested that Cliff Wetzel keep track of problems solved between meetings and discuss them at the next meeting. This was followed by Lorraine Hodgeson of Consumers' Gas volunteering to keep a problem log and, with Cliff, help circulate a newsletter (approxim-

ately monthly). This would give a more timely notice of problems, solutions, news, etc. This information could then be passed on by all of us and still be detailed later if necessary.

Mathew Templer, of Royal Trust, gave an excellent presentation of a system they developed using NATURAL. He discussed how they proceeded in developing a successful user accepted system. An interesting feature of this system was its own security system which prevented anyone from entering from any point except the logon screen. Another interesting part of the presentation was the comparison of the NATURAL development time against the projected CICS/COBOL time, a factor less than 1 to 5.

Tom Friske, of the RCMP, discussed their experiences in converting to Version 4.1. He noted items to watch for, including a 2-1/2 times increase in the work dataset, a lot more attention to MPM parameters as they apply to your installation's requirements (Lorraine indicated that these are well explained in the internals course), and that Recovery/Restart logic must be examined (RCMP wrote an application conversion paper for their installation).

Before concluding, it was agreed that our next meeting would be held September 15 in Toronto. The details and agenda will follow.

## Eastern Region

*Rob Collins*

*Computer Sciences Corporation*

The June 1981 meeting was held in the Crystal City Holiday Inn located near D.C. National Airport. More than 35 companies were represented by over 70 users, including Software AG.

The meeting kicked off with Rob Collins reviewing the agenda and calling for volunteers for two unfilled positions (Vice President and COM-LETE Program Director). Wes Jenkins, of the Congressional Budget Office (CBO), presented his paper, "Program Documentation: A 'NATURAL' Solution." According to Wes, documentation's biggest problem is obtaining management commitment. Today's needs are different than before. With emphasis on productivity, development, and flexibility, Wes' presentation addressed a new approach, using the facilities of ADABAS and NATURAL. The CBO created a program entity file on ADABAS, populated it with information derived automatically from data stored in each NATURAL program, maintained it with a small menu-driven NATURAL system and produced documentation from this information source. Documentation, produced by the system, consists of a one page overview of each program containing typical identification data, programmer's name, relationship, and functional summary. Additional reports display cross-reference information and a network report which shows all call relationships. Copies of Wes' paper can be obtained from either Wes or

from the Innisbrook Proceedings.

The second speaker, Tom Bradbury, of Hay Huggins Data Services, Inc., presented a paper entitled "Using the Data Dictionary for USERVIEWS, Documentation, and ADAMINT Macros." Tom advocated full and effective use of the data dictionary. He believes that a "passive" dictionary becomes an outdated piece of documentation. DBA should activate the dictionary to control as many of their products as possible. Tom stated that reports generated by SAG (D020-D051) are generally discarded because the dictionary was not fully utilized. Tom's paper gave a step-by-step procedure on how to utilize more fully the dictionary. A copy of his paper is included in the Innisbrook Proceedings, or call Jean Cole (703-533-8877, Ext. 239) to obtain a copy.

The third speaker of the morning session was Steve Robinson, of S. L. Robinson Associates. Steve gave an interesting tutorial on how not to select a consultant. Steve began his talk with three fallacies: 1) You do not get ahead in a consulting firm by bringing in projects on time and under cost. The objective of a company is to maximize profit and increase revenue. 2) Consultants will go out of business if projects fail. Wrong! There are always more clients. 3) Small consultants can exist with a poor record because clients do not check references. Steve's suggested remedies: Check references, interview consultant employees, and do not over or under manage the project. Finally, contract with a clear set of objectives, and state your concerns (i.e., space, size, etc.).

Our afternoon session began with a presentation on ADABAS/VM by Bruce Barcome, Software AG. Presently, ADABAS/VM is currently at 15 sites, installation takes one hour, 100 cylinders (3330) and does not support batch NATURAL. Cathy Vivona, Software AG Users' Group Liaison, discussed Software AG support services. She briefly reviewed the technical trouble log, which is available on SM3. When documentation services were discussed, Cathy indicated that users might volunteer to "beta test" new documentation. Anyone interested in doing so should contact Rick Josephs at Software AG in Reston.

Mike Davies, from Planning Research Corporation, presented the problems of converting a service bureau's time sharing system from Version 3.2.1 to Version 4.1. Mike presently supports 20 clients, 90 files, 7 databases on an IBM 370/168 with CICS, TSO, and NATURAL. Mike's approach was first to define his users, then formulate a conversion approach for each (Non-DP oriented, semi-DP oriented, and heavy-DP oriented). He stressed the need for training, i.e., clients, production control, operation. Mike requests SAGGROUP support in the following areas:

1. Code for user exit for billing purposes
2. Response from SAG on security by value logic
3. DBA tools and software interfaces
4. Solid date for new releases
5. Manuals
6. Version 4 ADAFIX
7. Error 5

Mike can be contacted at (703) 893-4880.

*(Continued)*

We concluded our meeting with a discussion of the Innisbrook Conference. Dan Nolan, Dave Miller, and Carl Tannenbaum hosted the round robin discussion. Carl stressed the need to attend sessions outside your own areas of expertise. Dave Miller gave a great discussion of why managers and not just technical people should attend the Conference. Dan addressed the quality of the meeting (i.e., the lost time at Busch Gardens). Ann Karpick of Commercial Union suggested that the technical papers be reviewed for technical merit prior to acceptance for presentation. Ann also suggested that each session be ranked as to who should attend—new users, 1-2 years of experience, more experience.

The meeting was adjourned at 4:00 p.m. The next meeting is set for September 22, 1981. The original date of September 15 has been changed as the meeting room was already booked by another group.

## United Kingdom Report

*Darrell West  
British United Provident  
Association*

The UK Users met in Knutsford, Cheshire on May 27, 1981 with Barclays Bank as hosts. Mick Wells of Midland Bank took the chair for the meeting attended by 37 users from 26 installations.

As Peter Spooner had left ICI to join the ranks of our UK vendor, ADABAS Software Limited, the position of Secretary for the UK Users' Group had become vacant. Darrell West of BUPA agreed to take the position temporarily until a permanent appointment could be made.

Gerry Gough, Chairman of the Languages/Interface Special Interest Group, gave a report on the SIG Meeting held the day before. Gerry will soon be leaving Allied Breweries; he too will be joining ASL. The Chairman wished both Peter and Gerry much success in their new posts.

Several new users of ADABAS and NATURAL were attending the Group for the first time. Mick Wells welcomed them all and each gave a brief summary of their installations and plans.

Rab Parry of ICI (CMS) gave a presentation on the International Users' Conference, ably assisted by Mick Wells. Rab spoke mainly of enhancements to existing products (e.g., NATURAL Version 1.2) and new announcements (e.g., ADABAS/VM and VTAM).

Mike Hollis of ASL, another Florida attendee, gave more details on those announcements, and other ASL staff also gave presentations. Clive Hutchinson described the Data Base Machine recently announced and Steve Fitches detailed his plans for his new training strategy for the forthcoming year. Len Jenkinson outlined ASL's plans for a software release mechanism.

The next meeting was arranged for September 8, 1981 in Exeter, Devon to be hosted by London and Manchester Assurance.

## Pacific Southwestern Region

*David Berg  
Hughes Aircraft*

Aerospace hosted the March 27, 1981 meeting of the Pacific Southwest Region. Nominations of officers were held.

Jennifer Lee, of Aerospace, discussed the user query handling techniques in Version 4.1, and distributed the documentation on the codes used in operator message responses from ADABAS. Jennifer explained how once the user query table has been filled with user query elements that were not deleted at timeout, the database administrator must purge the UQE by first issuing an operator command DUQA to display all user ID's and then issue a STOPU for each user ID that is to be purged.

Clola Ferris presented the concepts of the Modern Business Systems Plan to be implemented at Aerospace. Aerospace intends to develop a common entry edit system as a front end to all its business applications.

Aerospace will accomplish the move to ADABAS in three separate but parallel paths. One phase will address the financial applications and provide for an interim query data base while the financial systems are being redesigned for integration with ADABAS. The query data base will involve the extraction of data from existing feeder systems and the updating of that data in

*(Continued)*

ADABAS. Maintaining both the conventional master files and the data base information will entail data duplication, but will provide the users with a way to utilize the data base while the applications are being rewritten. The second phase, in simultaneous process with the first phase, does not involve an interim data base step, but rather a straightforward redesign of business systems such as personnel that would not provide any user benefit except as entirely new applications. The third phase pertains to those systems that are not currently in existence at Aerospace and might best be accomplished through the acquisition of vendor software that interfaces with both ADABAS and a proposed teleprocessing monitor. A likely candidate at Aerospace for phase three would be a purchase payment system. Clola explained that these phases were developed for Aerospace by a consulting firm and that the projected completion schedule for the plan is five years.

Andrew Wroblewski addressed the use of a pilot project implemented at Aerospace along the guidelines of the Modern Business Systems Plan. The pilot project was small in scope and was a self-contained Material Control application. Andrew explained how the system was designed and the alternative approaches to updating the data base. The data base update had to take place in parallel with the continued update of the conventional ISAM master file, but the update data was not a pure extract of the feeder systems and the data base file had been formatted much differently than the ISAM master. Therefore, prob-

lems were encountered concerning the ease of update and balancing the two files. Andrew felt that, the file being relatively small in size, two alternatives were viable where the ISAM file was read in its entirety and each record on the data base updated or the entire data base file reloaded.

Andrew pointed out that user feedback reveals that users are responsive to the query data base, becoming accustomed to data base quite rapidly and providing input for enhanced query capabilities that will assist the system's redesign effort.

The April meeting was held at Software AG's Marine Del Rey office. Paul Peterson, Manager of Field Support, was a guest speaker from Software AG's Denver office. Mr. Peterson outlined the procedures for problem reporting in requesting field support. If desired, you may request that a specific person address the problem, but keep in mind this may slow the process because that person may not be immediately available. The caller should ask for the trouble log number, which can be referred to in any subsequent communication with Software AG. Denver generally operates in a call-back mode addressing problems arranged in a queue from oldest to newest. Denver acts as a clearing house for the Western Region, referring specific product support questions to Reston when necessary, and routing those COM-LETE problems, unanswerable by Denver to Seattle. Denver is interested in obtaining feedback from users on performance and can upon request provide users, on the other hand, with a listing of outstanding problems.

Results of the regional election were as follows:

Regional Representative  
David Berg, Hughes Aircraft  
President

Jennifer Lee, Aerospace  
Corporation

Vice President

Ken Ng, Ticor  
Secretary

Lydia Reed, Hughes Aircraft  
Larry Haig, with MSP,  
presented an overview of Data Manager, a Data Dictionary system that interfaces with ADABAS. Mr. Haig described Data Manager's features and capabilities with respect to ADABAS data base.

MSP is looking for SAGGROUP users who would be willing to explore the requirements for a Data Manager/NATURAL interface and an installation site to assist in developing the interface. Interested users should contact MSP and the Retrievals/Interfaces Special Interest Group.

## South American Region

Mary Ozawa  
Dow Quimica S/A

The South America Region meeting was held from April 10 to 14 at Hotel Nacional in Rio de Janeiro. Representatives from 13 Brazilian and Argentinian installations were there. On that occasion we attended ADABAS 4.1 internals and ADABAS direct call classes.

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Tron P. Moraes Filho told us about the development of ADABAS systems in CAEEB (Companhia Auxiliar de Empresas Electricas Brasileiras) and Paulo Otavio de Oliveira of CAEEB spoke about the use of COM-LETE in their installation.

Paulo Mandarinino of Eletrobras presented their experience with ADABAS 4.1 SM2 installation. He told us the difficulties and fixes used.

Information about ADABAS-M for PDP11 and VAX was presented by Joao Carlos Serrano of Consist.

A new Board of Directors was elected, having Mary F. Ozawa of Dow Quimica SA as President, Carlos Eduardo B. Meira of SERPRO-CII (Servico Federal de Processamento de Dados-Centro de Tratamento de Informacoes) as Vice President, and Toshiaki Ogawa of PRODESP (Processamento de Dados do Estado de Sao Paulo) as Coordinator and Secretary.

The Board decided that the regions Brasilia, Rio de Janeiro, Sao Paulo, and Buenos Aires should have monthly users' meetings.

The next South America Region Meeting will be in March, 1982 in Florianopolis, Brazil.

## Rocky Mountain Region

*Dave Johnson  
State of Utah*

Rocky Mountain SAGGROUP meeting was held on March 6, 1981 in Salt Lake City, Utah at the State Information Systems Center (SISC); 17 attendees represented 9 user sites. Of the 17 attendees, only 5 had attended the previous meeting. This indicates the potential for increased participation.

Steve Loveless, of Hewlett Packard, conducted the meeting at the request of the President, Ellen Thompson, who could not attend. After introductions of all the attendees, the election of new officers was conducted. 1981-82 officers for the Rocky Mountain Region include:

Chairperson

David L. Johnson, State of Utah

Program Coordinator

Leon Miller, State of Utah

Education Coordinator

Walt Brooks, University of Utah

Secretary/Treasurer

Ken Schuarts, Salt Lake County

Change/Enhancement Coordinator

Steve Loveless, Hewlett-Packard

For the benefit of newly elected officers, a brief summary of their duties was openly discussed.

Jerry Schade from the State of Colorado had only received 4 Change/Enhancement ballots prior to the meeting. Several

other ballots were submitted at the meeting. We agreed that in the future, ballots should be turned in far enough in advance to allow the Coordinator to accumulate the voting. A general discussion was opened for anyone who wanted to lobby for specific requests. After reviewing the most-voted-for requests, several users redistributed their votes because several of the requests are being included in new releases of the software.

The Change/Enhancements which are being included in new releases caused quite a discussion. It is desirable to know which requests are being included in new releases so that users can cast their votes in a more meaningful way. The Rocky Mountain SAGGROUP requests that Software AG either identify requests which are currently being worked on and scheduled for the next releases of software on the ballots that are distributed to the users, or ensure that a technical representative for each product is present to inform us of which requests are included in the next releases of the software.

Walt Brooks and Mike Quinlin, of the University of Utah, discussed their installation of ADABAS Version 4.1. The implementation had a few problems, but the University is very satisfied with the performance they are getting. Problem areas discussed include:

- ADAMINT generated non-unique command-ID
- ADAEND initiated a hard loop
- Data Dictionary UTIL02 problems
- Group rippling problems from the standard file

*(Continued)*



- SORTON = ISN and READONE = YES doesn't work, must enter FINDSET and READSET
- User queue elements need to be deleted
- ADARUN parameter tuning problems

After installing SM3, the University found that it has fixes which relate to most of the general items discussed.

Paul Peterson, of Software AG in Denver, introduced Mike Ater, who is the Vice President of Sales for this region. Paul explained the role of the Technical Support Staff in Denver. He requested that the users provide the following information for all technical problems:

- Name of caller
- Company
- Severity code as documented in the Software AG International Users' Group Newsletter, February 1981, page 47
- Subject of problem (not to exceed 40 bytes)
- Product (ADABAS, NATURAL, COM-LETE, Dictionary, etc.)

Several requests have been received which involve multiple products or multiple problems with one product. Please document each problem separately. Paul requested that the trouble log number be written on all dumps sent to the Denver office.

After lunch, Dave Johnson and Leon Miller of the State of Utah, discussed the use of ADABAS and NATURAL as modeling tools to assist the system development process. Many tools and methodologies are available to assist in the programming of a designed system, but there is a lack of such tools in the analysis

and design areas of system development. It was theorized that ADABAS and NATURAL could assist in this area by allowing for the quick implementation of a model of the proposed system. The model would be used to answer many questions about the analysis and design as to its adequacy before the system is cast in concrete. The model can be redesigned or modified to satisfy its objectives; therefore, a system evolves with flexible tools instead of being cast in concrete before a line of code is written.

Two systems have been modeled at the State of Utah. The Position Control System was a very small system for controlling the positions within state government, but the Social Services Delivery System was massive in contrast. Both systems were successfully modeled and saved unknown dollars and time in analytical activity while solving some internal problems.

Jerry Schade of the State of Colorado presented his paper for the Florida Conference. He discussed the environment and scope of data base at the State of Colorado. Originally, ADABAS was intentionally (politically) restricted in use. As the role of the DBA evolved from installing and maintaining the software to an active role in the system development (the writing of ADAMINT modules and the control of the Data Dictionary), the use of ADABAS has expanded to eight user departments. The responsibilities of the DBA vs. the development staff was presented, together with the development process:

Phase I --- Study Logical Design  
Phase II --- Physical Design  
Phase III --- Development

Jerry discussed the physical environment and internal procedures to control the data base. He uses NATURAL to 1) generate forms for the users to provide data to the DBA; 2) generate data entry screens for data dictionary; 3) store all NATURAL source code in PANVALET; 4) satisfy internal needs. The conclusion is that NATURAL is an excellent tool to assist the DBA in controlling the data base environment.

## Corrections to April Regional Reports

### Eastern Region

Brian Faux, of Hay-Huggins Data Services, was erroneously reported as being from Merck, Sharp and Dohme in the minutes from March's Eastern Region meeting.

### Australian Region

A variety of typographical errors and proofreading oversights have affected clarity of Luciano Quadraccia's report on NATURAL use at ABS.

In his presentation to the Australian users in March, Mr. Quadraccia noted: detailed tests conducted at the Australian Bureau of Statistics show NATURAL generally incurs an overhead of 10-30% over ADAMINT or low-level calls on the data base component of the work. He continued by reporting that test results indicate NATURAL overhead over COBOL on computational component was dramatic.

# ADABAS News

## Version 4 MPM Billing

*Keith Newsom  
State of Washington DP Service  
Center*

The Washington Data Processing Service Center (WDPSC) is in the process of converting to Version 4. One of our needs is an efficient means of capturing billing information for MPM users. (With 1.5 million commands a day, our old method of processing the Version 3 log is a monster.) We decided to let USER EXIT 4 capture just enough information for billing, accumulate it, and write it as SMF records.

Each SMF record is composed of a root and a number of segments, each of which represents a user. A user is defined as an entity for billing purposes: a combination of type of access (batch, TSO, CICS, or INTERCOMM) and specific accounting information (for batch and TSO, agency, sub-agency, account, and system; for CICS and INTERCOMM, terminal ID and transaction ID, which are

used to enter billing tables). Each user encountered is assigned a segment, in which his user information is recorded plus the resources used: number of commands, calculated CPU, and EXCPs.

An SMF record is written when one of three things occurs: (1) MPM is brought down; (2) all buckets are in use and a new user is detected; or (3) a threshold number of commands is reached. Currently, there are 40 segments per record and a threshold of 1,000 commands.

The user field of the ADABAS control block (bytes 77-80) is used to hold accounting information, the type of access, and a first-call flag for batch and TSO. If you use this field for other purposes or need to carry more accounting information, have fun!

CPU time is calculated by the algorithms in SAGTIP 9. The calculated CPU is stored in the command time field of the control block (bytes 73-76).

The routine contains this EXIT 4 plus the mods needed for ADALNK, ADALNC, and ADALNI. It also contains a USER EXIT 2 which bumps the copy job's job-name and writes very specific WTOs containing the MPM's job-name and the copy job's job-name. This routine is available through Cathy Vivona, Software AG Users' Group Liaison.

## Dictionary Design Review

*Stephen Clark  
Sacramento County*

The Data Dictionary Design Review Committee was established last fall by Software AG. The purpose of this Committee is to provide to Software AG user comments on functional design criteria throughout the development of a new product; i.e. the Data Dictionary.

To meet this objective, Software AG selected the following users to actively participate in the review and act as a measure for the total user community:

David Berg, Hughes Aircraft;  
Mike Ranta, California Dept. of  
Rehabilitation; Bill Belisle,  
California Youth Authority;  
Virginia Sullivan, INCO;  
Stephen Clark, Sacramento  
County; Bob Henly, Gulf Oil;  
Orval Mason, Del Monte; Alice  
Shafer, The Mitre Corp.; John  
Palmer, Australian Bureau of  
Statistics; Marius Rochon,  
EDGARS.

To these users, a very comprehensive analysis of Data Dictionary systems was mailed for review and comment. Following this mailing a summary document was sent to each member. The summary detailed more specifically Software AG's direction.

I agreed to chair this Committee in order to increase comment and interaction between the members of the Design Review Committee. So far, I have contacted each U.S. member by telephone. I also spoke with John Palmer, Australia, shortly after the conference, when he visited our installation. My discussion with Committee members centered around the following points of interest from the summary document.

1. What features of importance are missing from the object statement that was distributed?
2. What feature is most important to them and their installation?
3. Is their preference for the initial cut of the product a simple, limited version, or a more complex, less easy-to-use version of what the Dictionary will grow into?
4. How important do they view copy code and for which languages?
5. What priority does the member place on a JCL generator and for which operating systems?

My initial contact with the Committee members produced the following consensus. Where there are exceptions, I will note them.

### General

There are three major areas of need in a Data Dictionary system. They are definition, impact

assessment, and control. The first cut must address the more complex design of the total planned product, but implementation should be modular and not try to address the total requirements. The initial release must be a readily usable tool that does not require redundant data entry or processing to make it a usable tool. The product should work with Software AG's product line (ADABAS, NATURAL, COMPLETE) first and address total data administration requirements second.

### Definitions

All the members indicated a good starting point would be the use of the Dictionary as a directory for definitions. All members indicated on-line data entry was mandatory. When asked about free format syntax or fixed screen mode, only one member indicated a preference for the fixed screen mode. The others indicated the free format syntax seemed to offer more freedom. Several members indicated that the users' ability to extend the range of entity types was an important missing feature in the summary document. Status, version, and user separation was not discussed specifically in this initial contact; however, several members indicated the need to differentiate between test and production within a single Data Dictionary.

### Impact Assessment

Similar to definitions, all members indicated the need for this phase of Dictionary reporting to be interactive. All agreed a good starting point would be an on-line cross reference of the relation between entities and entity types. Many indicated the need

to narrow down the range of the cross reference to specific sets of entities and/or entity types.

### Control

Two members indicated this aspect of the Dictionary to be the most important. All members expressed the need for it to be there but most were addressing this aspect of the Dictionary independently, outside of the Dictionary. It was agreed that the Dictionary should logically reside on top of the data base or data bases for which it contained data. All felt it important to drive the data base utilities via the Dictionary. Only one member implied a great deal of importance on the generation of copy code out of the Dictionary in the initial release. All agreed it was an important aspect of a Data Dictionary but indicated that its importance was less than the facilities previously discussed. Of the languages supported, COBOL ranked #1 followed by PL1. A number of the members indicated their desire to eliminate the current data definition modules and have NATURAL work directly out of the Dictionary. JCL generation was farther down on their list of priorities. Specific operating system environments were not discussed.

There was a great deal more to discuss beyond what is covered here. This initial contact of the members has started a very worthwhile dialogue between members of the Dictionary Review Committee. My objective is to promote this dialogue and delve into more specific areas of the proposed Dictionary's functions for further input to Software AG.



# ADABAS

## Technical Notes

### ADA-TIDBITS

*Bob Becker*  
*Foremost Insurance Company*

Foremost Insurance Company has been an ADABAS user for over 6 years. As DBA, I have been involved in its implementation and use. Frequently our programmers and analysts ask questions about ADABAS. This article documents answers to many of those questions. It is a collection of unrelated TIDBITS that have been learned over the 6 years of Data Base Administration at Foremost Insurance Company. Some of these are now our Company standards.

1. Keep the number of calls to ADABAS to an absolute minimum. We found that SVC overhead is very expensive and the number of calls to ADABAS adds significantly to the use of the CPU. Extract more data in one call rather than calling ADABAS multiple times with the same L1 command but different format buffer.

2. Order the fields in the format buffer the same way as the file is laid out. This will cut down on CPU use.

3. There is no need to read a record (L1) or (L4) before deleting it if a) the ISN is known, b) the program is not using ADASPAN history or restart facility, c) updated data is known without a read. This cuts down on an extra call to ADABAS.

4. With dynamic format buffers/record buffers, it is nearly impossible to test all possible combinations. Therefore, fixed buffers are encouraged. Do not build buffers variable on input data.

5. Reading a large file physically takes special consideration. In this case, you may want to read with the L2 command and re-read again the same ISN with a L1 command. (This is contrary to point #1, i.e., keep calls to a minimum.)

If you know that only a very small subset of records satisfy the selection criteria you are using as you pass the file, then build a format buffer with only those fields and use it on the L2. Build a second format buffer with the L1 command to extract or report the data. Granted, you are re-reading some records twice, but you are speeding up processing the file as a whole because you have shortened the L2 format buffer.

6. Try to segregate batch processing into categories. For example, if one needed to pass a file physically, update and delete selected records in the process, it would be much wiser to break the job into three steps, if possible. One which simply passes the file physically and creates a data set which contains ISN's and data. This data could be read into one program which simply deletes records (E1) and another program which simply updates records (A1) (for single User Mode). Not only is this process much faster than creating one program, but it also lends itself to very easy restartability.

7. The L3 should not be used to pass a file where one requires more than 20% of the records from the file. L2 (read physical) the whole file instead.

8. Do not use the S2 (sort and find). Our research has shown that this is a very costly command within ADABAS! Syncsort the records in all cases!

9. The use of the super-descriptor for Alpha name searches followed by the L9 (histogram) command has proven to be a very successful means of Alpha Inquiry. This method allows one to know only partial spelling of names and yet retain very fast speeds.

10. Try to segregate batch processing of multi-file updating into several programs rather than oscillating between the files in the update process.

11. Remember, the use of the count field can come in handy for programs which use periodic groups or MU fields. One should first determine, from data analysis, how many occurrences are normally filled in and retrieve that number plus the count field. If there are more than the "normal" amount, then retrieve the remainder with another call. This way only one call to ADABAS will be needed to return the normal amount of occurrences. Some people have coded the maximum number of occurrences in their format buffer, which is very inefficient.

12. MU's within PE's are discouraged as a means of creating a two-dimensional array. They consume large amounts of data storage because there is no suppression of data.

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13. Whenever there is a response code 92 (impossible data conversion) or an ADABAS response which indicates a syntax error within the format buffer, look at bytes 45 and 46 in the control block. They contain the ADABAS field which is in error. In an impossible data conversion, the error means that you are either trying to update a field with garbage (that is, a packed field with non-packed information), or retrieving a field which you have defined as being too small to contain the numeric data—either by default or hard-coded within the program.

14. Remember, ADABAS will always truncate alpha defined fields when you request fewer characters than actually occurs; rightmost characters are truncated. If you ask for more than the number of characters of data, ADABAS will fill with spaces to the right.

15. Truncation works differently for numeric fields than for alpha fields. If you ask for a field smaller than defined, you may receive the field truncated, only if the high order bytes to be truncated are zero. If they are non zero, response code 92 will occur.

16. Refrain from defining unpacked fields to ADABAS. Unpacked fields are stored internally in ADABAS as packed. Therefore, you are causing a conversion each and every time you retrieve or update the field. Also, ADABAS has no way of protecting a one byte unpacked field from containing garbage. If it is packed, it is guaranteed to be technically valid.

17. ADABAS will not store garbage within a packed field. The application program has always

been at fault in all cases where it has been reported that ADABAS passed back garbage within a packed field.

18. Refrain from defining an alpha field which contains several packed fields within it. Several problems have occurred over the years with this approach.

19. Remember what a field defined as DE, NU gives you. A descriptor of this nature will not be updated within the associator when the value is zero for numeric fields and spaces for alpha fields. This can be used to your advantage. For example, if one wanted only to find those records which are in error on the file and never find the valid ones, then by using a flag with 0 being good records and 1 being error records, one can find all records with a value of 1 and 0 type records will take no space in the associator, for that descriptor. Carrying this principle one step further, one can unload a file via this descriptor so that if these error records were to be made into a separate file, they could do so without any programming whatsoever. DE, NU feature is a very powerful design feature of ADABAS that is many times not understood and overlooked.

20. Another feature overlooked is the adding of records to a file which has more than one descriptor. For example, let's say the file contained these fields:

```
01,AA,5,A,DE
01,AB,3,P,DE
01,AC,10,A,DE
```

Note that we are not dealing with descriptors with the NU feature; therefore, zero placed in AB will be stored in the associator. If a record is added (N1) with only the field AA de-

fined, AB and AC will not have values inserted into the associator! This is because ADABAS only inserts empty values up to the last field defined in the format buffer and no further. Be careful of this.

21. Another feature overlooked about data storage suppression follows. Given:

```
01,AA,10,A,NU
01,AB,5,P,NU
01,AC,6,A,NU
01,AD,3,P,NU
```

If one updates or adds a record with just AA, then AB, AC, AD do not take even 1 byte of data storage! On the other hand, if one had a FB of 'AA, AB, AC, AD,' and a RB with an alpha value for AA, zero for AB, spaces for AC, and zero for AD, then suppression will occur—not field truncation. A one byte empty field count will occur to represent AB, AC, AD.

Therefore, you can see that it is far better to end the format buffer for an add or update at the last non-empty field. Also, you can see it would not be wise to define the following:

```
01,AA,10,A,NU
01,AB,5,P,NU
01,AC,6,A,NU
01,AD,3,P
```

OR

```
01,AD,3,P,FI
```

Then this data truncation feature will never occur even if you had a FB of 'AA.'

Actually, there is a three way data shrink feature within ADABAS: Compression, Suppression and Empty Data Truncation.

22. Keep FI and non NU field at the beginning of a field layout. Never embed FI's within NU's. In fact, excluding descriptors, never use a non NU definition; that is,

(Continued)

01,ZZ,5,A. Always assign NU and in some cases, as defined in the ADABAS design class, use FI.

23. Refrain from using MU fields when the file you are designing uses ADASPAN History.

A definition of 01,BB,5,P,NU should be 01,BA,PE

02,BB,5,P,NU

In the above MU example, no suppression occurred, just compression, whereas suppression and compression occurred in the PE layout.

Remember, never use FI on a PE or MU field.

Also, remember that although all of these items refer to saving Data Storage space, some may say disk is cheap but not only do these items save disk but also

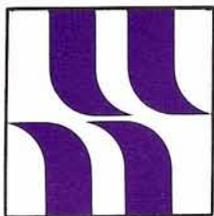
speed up response time because the smaller the record, the less transfer time, the less core space, and the less CPU cost due to needless compression and decompression!

24. Perhaps a file design consideration would be to define an indicator field with zero or space as the most frequently occurring valid value. For example, field AA is a flag field to indicate that an agent is either Casualty or Credit Life. Assuming we have more Casualty agents than Credit Life, the field could have C as a value for Credit Life and blanks as a field for Casualty. Therefore, the field would not even take any disk space when the agent is Casualty, yet still

represent data. We call this concept phantom data.

Of course, if one wanted to use the file (S1) command to retrieve all Casualty agents, then NU would not be used on the field at file definition time.

25. It is very unwise to update a field with a value longer than its default length. It is possible to put out a five byte alpha field for a defined 3 byte field, but all applications that retrieve that field would have to be changed to accommodate the new length. Therefore, refrain from defining the length of a field within the program for update. That is, don't use AA,10,... if AA is only 9 or less bytes in an update program.



# ADABAS

## Product Rep's Report

### Product Representative's Report

*Jennifer Lee  
Aerospace Corporation*

I would like to thank all those who attended the Conference for their support and willingness to serve when called upon. I felt my responsibilities as Acting President were made easier through the sharing of tasks among a large number of users. It was very gratifying to find so many people eager to participate in users' activities.

Special mention should be made of the many contributions Steve Clark has made with regard to the "New" Data Dictionary being developed by Software AG. Mr. Clark has been in close contact with Dr. Richard Meyer, and has provided valuable insight and feedback on behalf of the entire user community. His considerable efforts in the Data Dictionary area are very much appreciated and we can look forward to his continued involvement.

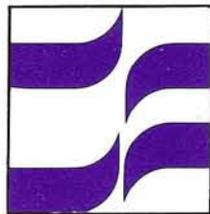
I am pleased to announce the formation of several new Special Interest Groups. Carole Schermer has assumed the position of Chairperson for the Data Administration Special Interest Group. Ms. Schermer's presentation on "Managing Data Base Administration" and her experience as the Data Base and Network Technology Manager at Chemical Abstracts provide the SIG with a strong foundation upon which to expand.

Eric Seifert offered to chair the long and much needed Large Data Base SIG. Mr. Seifert's work with large data base files at Citicorp Credit Services has equipped him with the necessary background to coordinate user efforts in this area. Citicorp Credit Services' requirements for extremely large files and heavy transaction volume processing have led to the concept of utilizing multiple databases, which is an issue that will also be addressed by the Large Data Bases SIG.

The DBA Tools Special Interest Group will become very active in collecting and cataloging Version 4.1 tools. This SIG will be co-chaired by Jim Buckner and Jeffrey Schutzer. Jim Buckner has historically been involved with the DBA Tools SIG and would like to see more involved user efforts in sharing DBA Tools. Upon Jim Buckner's suggestion, it has been decided to organize the DBA Tools SIG at the regional level. Each region should elect or appoint a regional DBA Tools Representative, who will actively pursue the collection of DBA Tools from within the region. The tools should be forwarded to the DBA Tools chairperson, who will catalog them and forward them to Software AG. It would be best to submit the ADABAS and NATURAL tools on either a regional or individual basis to the chairperson in greatest proximity. Jeffrey Schutzer has agreed to oversee the cataloging of tools for the user community as a whole, and will be in communication with Jim Buckner. The DBA Tools SIG is a very valuable asset to the users and

users will be kept informed of its progress through the Newsletter.

Special Interest Groups generally conduct business through the year on an informal basis, utilizing the telephone network as a means of communication. On a more formal level, the Special Interest Group holds a workshop session at the annual International Users' Group Conference. While the chairperson is responsible for overall coordination of activities, delegation of tasks to interested users is encouraged. I highly recommend Special Interest Group participation as a means of staying informed and sharing user experiences. Users are urged to contact the SIG chairpersons and express their desires to assist in SIG efforts.



# ADABAS Special Interest Group Reports

## Data Administration Special Interest Group Newsletter Article

Carole Schermer  
Chemical Abstracts Service

"If we expect to succeed in building a Data Base-oriented environment. . . this is a world of planning, control, management commitment and involvement."

Harold Uhrbach,  
Ninth International SAG  
Users' Conference,  
May, 1981

"Almost universally cited as a problem by the DBA is the lack of top management support and end-user cooperation."

Edward Arvel,  
Performance Development  
Corporation, *Data Base  
Newsletter*, May 1981

In response to users' requests, the Software AG Users' Group established a Data Administration Special Interest Group at the International Users' Conference in Innisbrook. As the observations above indicate, data administration/data base administration involves more than the installation and maintenance of the technical hardware and

software of the data base management system. This Special Interest Group will attempt to focus on some of the administrative issues that the users' community faces in establishing and defining the data administration/data base administration functions within their organizations.

The purposes of this SIG, as I see it, are to:

1. be a source of information on data administration/data base administration management techniques;
2. discuss how users manage and plan within their individual organizations through the use of business systems planning or other strategic planning mechanisms, establishment and reporting structure of the data administration/data base administration functions, size and responsibilities of DBA staff.
3. share administrative tools that others have implemented—committees, education programs, communication, expanded data dictionaries.

We will use the Newsletter to present these topics, and conduct a workshop session at the annual International Conference. Since Data Administration is a topic that lends itself to discussion, we can explore other means of getting together—audio teleconferencing services, for example, provide switching services to link up to twenty sites together, at a cost that is just slightly greater than a long-distance phone call.

Unlike other SIGs, this group does not come under the umbrella of any specific SAG product or service. With ADABAS, NATURAL, and COM-LETE, SAG provides the technical framework for data base management. The responsibility for establishing an administrative framework falls on the users. This SIG will try to provide some guidance, and share experiences and concerns.

I have included a survey in this newsletter to determine a profile of the data administration structure of SAG users and to assess the needs that users would like to see addressed by this Special Interest Group. Thank you in advance for taking the time to complete it. Please contact me if you would like to contribute in any way to establishment of this SIG.



# DATA ADMINISTRATION SPECIAL INTEREST GROUP SURVEY

Name \_\_\_\_\_ Company \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_ Phone \_\_\_\_\_

How many production application systems using ADABAS have been developed at your installation or are currently under development?

How many production files are defined on the ADABAS data base (include those currently under development)?

Has your organization established a Data Administration function? What is the size of its staff?

Has your organization established a Data Base Administration function? What is the size of its staff?

What is the reporting relationship of these functions (where are they located within the overall organizational structure)?

Do you use a Data Dictionary?  
If yes, is it Software AG's or another vendor's?

Do you use the dictionary to define relationships other than field, file, and user views? If so, please describe briefly.

Does your organization use or intend to develop a three to five year data base development plan? If so, how are you carrying it out?

Please rank the following areas according to your interest for the focus of the Data Administration Special Interest Group: ( 1 = highest)

- \_\_\_\_\_ Structure and establishment of Data Administration
- \_\_\_\_\_ Structure and establishment of Data Base Administration
- \_\_\_\_\_ Staffing DA/DBA function
- \_\_\_\_\_ Relationship of DA/DBA to others on DP staff (education, communication, project development, etc.)
- \_\_\_\_\_ Commitment/relationship of DA/DBA to upper management
- \_\_\_\_\_ Use and establishment of Data Base Tools in DA/DBA function (Data Dictionary, utilities, etc.)
- \_\_\_\_\_ Other:

Would you be interested in sharing your experiences on any of these topics or others (in workshops, newsletter articles, etc.)?

Would you be interested in participating in a teleconference to discuss some topics in data administration/data base administration?

Do you have any other suggestions for sharing experiences within this group?

Would you be interested in actively participating in this Special Interest Group?

\*\*\* Please return completed form to address on the other side \*\*\*

FOLD

---

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

Place  
Stamp  
Here

Carole Schermer  
Chemical Abstracts Service  
P.O. Box 3012  
Columbus, Ohio 43210

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FOLD

## DBA Tools Special Interest Group

*Jeff Schutzer*  
INCO

As Co-Chairman of the DBA Tools Special Interest Group, I am most interested in re-establishing the viability of this group for Software AG users. With this in mind, I have worked in conjunction with Jennifer Lee, ADABAS Product Representative, to determine a procedure which we feel is workable and optimal. So, in submitting your DBA Tools, please be mindful of the following procedures:

- All contributions must be in machine-readable format.
- Submit source modules only.
- The method needed for restoring them to a 3330 or 3350 disk device must be provided as part of a cover letter.
- Your cover letter must also specify the language the routine is written in and its purpose.
- The name and telephone number of the author must also be provided so that any questions raised by the DBA Tools Committee can be answered prior to making the routine available for distribution.
- Full documentation (for installation and use) must be provided as instream comments or as a separate dataset or PDS member.

All ADABAS or NATURAL Tools should be sent to:

Jeffrey M. Schutzer  
INCO, LTD.  
1 New York Plaza  
New York, NY 10004

Although I am "collecting" the tools, the appropriate distributing agent is still the Users' Group Liaison at Software AG. As you know, this is Cathy Vivona. She may be contacted at the Reston office (703) 860-5050. Costs for duplicating and mailing the tapes will be \$15.00. The first tape will be ready for distribution by mid-August. Among the routines it will contain are an ADABAS Version 4.1 Performance Analysis Routine, an ADABAS Version 4.1 MPM Billing Routine, and the NATURAL CMPEXIT.

Note: Neither Software AG nor the author will provide any support for these programs. All programs will be distributed on an "as is" basis without warranty of any kind expressed or implied.

Should we find that our procedure is not working as smoothly as possible, we will review it and change it. This column of the Newsletter will be used to keep you advised, not only of changes in procedure, but of any new DBA Tools that are available for distribution. I am looking forward to this year being a significant one in the distribution of highly-applicable user routines to the user community. With your help and ingenious routines, this can indeed become a major benefit to all Software AG users.

## Call for Large Data Base Users

*Eric L. Seifert*  
Citicorp Credit Services, Inc.

The "large" data base user has certain problems related to size that the "smaller" user either does not have or are easily/quickly resolved. I am organizing a Special Interest Group so that we can discuss these problems and possible solutions. If your installation is interested in participating in such a group, please send me the installation name, address, person(s) to contact, and I will put together a list of these users and get the lines of communication open. Also, any suggestions on the organization, operation, etc., of such a group would be appreciated.

Please send all replies to:  
Eric L. Seifert  
Citicorp Credit Services, Inc.  
One Huntington Quadrangle,  
2N06  
Melville, New York 11750

## Restart/Recovery Special Interest Group

*Bob Taylor  
Evans Products*

The attendance at this year's workshop was very good. Approximately 150 people asked a variety of questions that were ably answered by Peter Schnell of Software AG. In an attempt to determine the direction that this Special Interest Group should take, the attendees were asked to identify any worthwhile projects that they felt should be ad-

dressed. After a limited amount of discussion, two projects were identified. The first is "Version 4 Smartstart." This project will be chaired by Walt Hopkins of Nissan Motor Corporation (Nissan already has a working version of Smartstart for Version 4). I would like to take this opportunity to thank Walt for volunteering to lead this project. Please get in touch with him if you have an interest in participating in this project.

The second project is "Documentation Improvement." The purpose of this project will be to review the available Software AG documentation and make specific recommendations for im-

provements in the area of Restart/Recovery. This project is in need of a chairperson; volunteers should contact me. In the interim, I will be looking after it and urge interested parties to contact me if they wish to be part of this project.

Again this year, a questionnaire was distributed on Restart/Recovery. Participation in the survey is the way you become a member of this Special Interest Group. A total of 72 questionnaires was distributed; an increase of 40% over last year. Contact me if you would like one.

## ADABAS Special Interest Group Chairpersons

### **DATA DICTIONARY**

Ms. Virginia Sullivan  
INCO, Ltd.  
1 New York Plaza  
New York, New York 10004  
(212) 742-4165

### **EDUCATION/ DOCUMENTATION**

Mr. John Kaye  
Foremost Insurance Company  
5800 Foremost Drive, S.E.  
Grand Rapids, Michigan 49501  
(616) 942-3364

### **PERFORMANCE**

Mr. Bob Becker  
Foremost Insurance Company  
5800 Foremost Drive, S.E.  
Grand Rapids, Michigan 49501  
(616) 942-3364

### **RESTART/RECOVERY**

Mr. Bob Taylor  
Evans Products Company,  
Homes Group  
1777 Walton Road  
Dublin Hall, Suite 200  
Blue Bell, Pennsylvania 19422  
(215) 628-4800

### **RETRIEVALS/INTERFACES**

Vacant

### **DATA ADMINISTRATION**

Ms. Carole Schermer  
Chemical Abstracts  
P.O. Box 3012  
Columbus, Ohio 43210  
(614) 421-6940

### **LARGE DATA BASES**

Mr. Eric Siefert  
CCSI  
1 Huntington Quadrangle  
Melville, N.Y. 11750  
(516) 752-3208

### **DBA Tools**

Mr. James Buckner  
World Health Organization  
Geneva, Switzerland

**OR**

Mr. Jeff Schutzer  
INCO  
1 New York Plaza  
New York, New York 10018  
(212) 742-4584



# DOS Special Interest Group Report

## DOS

*Bernie Connors  
Ray-O-Vac*

The 1981 DOS Special Interest Group meeting began with Dave Antes reporting on Ray-O-Vac's beta testing for Version 4.1. A group discussion developed where many users shared their experiences. Two problems surfaced which are DOS only: (1) Internal COBOL sorts which use dynamic loading would not work. This can be circumvented by not using dynamic loading. (2) Dual command logging does not work under DOS. As both of these features are desirable, SAG will be working to provide solutions/answers for the problems.

Following the Version 4.1 exchange, a lively discussion occurred which revolved around the DOS community being treated as second-class citizens. Many examples were brought out by DOS users which ranged from a lack of SAG DOS technical depth to the lack of DOS orientation in tutorials at the Conference. Ed Forman informed us that Software AG is anticipating growth in the DOS user base; he assured us that with the growth will come the allocation of the appropriate resources for support. He is enthusiastic about developing and maintaining a

dialogue with the DOS community. He has shown evidence of this by requesting the DOS SIG section of the Newsletter, in which he will address our problems and concerns.

The final portion of the meeting was used to discuss how the DOS users' group could operate more effectively. As Chairman, I emphasized we can only be effective if we receive greater participation from all DOS users. I will act as the focal point for information exchange among DOS users and with SAG, so if you have a DOS problem/solution let me know. We want to take advantage of the Newsletter and Ed Forman's offer.

At next year's Conference, a greater emphasis will be put on the DOS community. Our Special Interest Group will meet earlier in the week and we will try to develop a method for one DOS user to recognize other DOS users. This should aid in the information exchange process.

## DOS

Mr. Bernie Conner  
Ray-O-Vac  
101 East Washington  
Madison, Wisconsin 53703  
(608) 252-7557

## Ray-O-Vac Implements Production DOS V4.1

*David Antes  
Ray-O-Vac*

Ray-O-Vac implemented ADABAS V4.1 into production June 1, 1981. Our current configuration for this new environment consists of DOS/VS, CICS/VS, 158-3, 2Megabytes of memory running two virtual machines under VM, each of which has its own CICS, POWER/VS, ADABAS MPM, and four batch partitions. We have been beta testing DOS ADABAS Version 4.1 for nearly 3 months. Although our conversion to a production system had some significant problems, our system is now stabilizing. Perhaps our experiences will help other users to a smoother implementation of a production system.

The conversion to a production environment seemed to go fairly smoothly. Our procedure was to unload our Version 3 files from 3330 drives to tape and reload into Version 4 utilizing 3350 drives. Four files were converted in this process. Past experiences in "going into production" should have led me to anticipate the problems we were to encounter. Our customer master (File 001), less than 45K records with 33 descriptors, took approximately 30 minutes to load. This

*(Continued)*

was a considerable reduction over the 3 hours, 50 minute file load under Version 3.2. I attributed this to additional space allocated for WORK, SORT and TEMP (45, 8, and 5 cylinders respectively). Testing this file for validity consisted of only simple searches in NATURAL and ADASCRIP + with a GT or LT condition. With valid data elements being displayed in response to these searches, we assumed that everything looked alright. This assumption turned out to be our downfall.

At 8:30 a.m. the first day of production, a user called. She was receiving the message 'NO RECORDS FOUND, PLEASE RETRY' when inquiring into the customer file. The program was CICS, COBOL, MACRO level using ADAMINT. I then tried an on-line NATURAL request, as I had over the weekend. Again, this worked. When I tried a search using an equal condition - no records were found. After running ADAICK, I found only two descriptors loaded, each of whose ISN's equalled the number of records loaded into our dictionary file (FILE 008). ADAREP and the loader reports did not indicate any problems. Not knowing what else to do, and with the suggestion from a member of Software AG technical support staff, I simply unloaded the Version 4 customer file and reloaded. Time to load: a standard 3 hours 50 minutes; results: Perfect file; answer: ?

After having successfully loaded my file, I immediately ran an ADAFIX backup, all of this while the MPM was up. Things looked relatively stable. I was WRONG AGAIN! In the nearly 26 hours the MPM was up, we had done the unload, delete, reload and backup. Nightly batch access and update processing had been completed, the MPM cancelled. The only indication of this was just a dump of the partition the MPM had been in; there were no console messages or SYSLST. Again I called Software AG. (I was able to bring the MPM up again without any problems.) My answer came from SAG the next day; don't use on-line dump. This error is described in EW062 (I received hardcopy notification of this error in late June).

These have been my only problems to date. As mentioned before, I think they were serious, but not disastrous. With experience and hindsight I can suggest the following:

- Thorough testing against the newly loaded production files (ours was somewhat meager);
- Troubleshoot by researching unexpected events (the 30 minute load time was a clue which we did not pursue);
- Troubleshoot by finding out the last early warning applicable to all systems.

If anyone else would like to share experiences, either good or bad, please let me know. I would very much like to hear about them.

# COM-LETE News

## COM-LETE V4.1 Documentation Available

*Rick Josephs*  
Software AG

Software AG is pleased to announce the completion of the Version 4 COM-LETE documentation effort.

The following manuals are now available for COM-LETE Version 4:

- COM-410-001 Installation Manual
- COM-410-002 Release Guide
- COM-410-010 Installation Manual
- COM-410-020 Computer Operator Manual
- COM-410-030 User Utilities Manual
- COM-410-040 System Utilities Manual
- COM-410-042 System Programmer's Manual
- COM-410-050 COBOL-PL/1 Manual

- COM-410-052 Assembler Programmer's Manual
- COM-410-060 Messages & Codes Manual
- COM-410-070 Applications Reference Card
- COM-410-072 System Reference Card
- COM-410-080 Control Blocks

We wish to acknowledge the efforts of the following people who assisted in revising the Version 4 COM-LETE draft documentation:

Alan Routhier, County of Sacramento  
John Kaye and Ted Nikodem, Foremost Insurance Company

Alan, John, and Ted's efforts added significantly to the resultant quality and comprehensiveness of the Version 4 COM-LETE documentation. We feel that the Version 4 COM-LETE documentation is another major milestone in meeting our objective of providing the best documentation for the best software in the data processing industry.

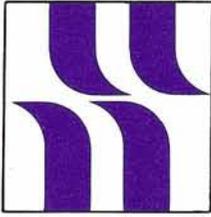
## COM-LETE Tools

*Ted Nikodem*  
Foremost Insurance Company

Just as the DBA Tools for ADABAS/NATURAL are being organized, COM-LETE user routines will continue to be distributed to the COM-LETE user community. The format and procedure, implemented by Jeff Schutzer, for ADABAS/NATURAL will be carried on over into the COM-LETE area. I have agreed to serve as the receiving agent for these tools. Please forward your routines (documented and in machine readable form) to me:

Ted Nikodem  
Foremost Insurance Company  
P. O. Box 2450  
Grand Rapids, MI 49501

Please note that Cathy Vivona, of Software AG, is the official distributing agent, and all requests for routines should be forwarded to her.



# COM-PLETE Product Rep's Report

## Product Representative's Report

*Bob Becker  
Foremost Insurance Company*

This Newsletter is my first opportunity to write to the COM-PLETE users after being elected COM-PLETE Product Representative at the Ninth International Software AG Users' Conference in May. For those who missed the Conference, COM-PLETE Version 4 was discussed in detail. We are expecting, with the increased amount of threads possible, that COM-PLETE will perform at faster speeds than under Version 3. We also met with Software AG and discussed possible areas to provide increased throughput and performance

within COM-PLETE. Perhaps in the future we may see some of these areas addressed. The COM-PLETE Programming CPU which allows multi-communication between two networks on separate machines was addressed. This is a powerful product within the COM-PLETE product line.

In the area of special user groups, Ted Nikodem will assume the responsibilities of the old utilities SIG within COM-PLETE. This group will allow users of COM-PLETE to obtain all the special user-written routines from Software AG on a tape separate from Software AG's SM tapes. Probably the most famous routine in this category is UTLACT, which displays users signed on to COM-PLETE.

Please feel free to write to me about information you would like to see in this column about

COM-PLETE. Perhaps you have some information that can be shared by all users of COM-PLETE. We will be most interested in those users who will be installing or converting to Version 4. Our plans are for a much later conversion some time in 1982.

I must put in a plug for ADABAS Version 4 (even though this is not the proper column). We are fully converted and enjoying a 40% reduction in ADABAS CPU and several hours of elapsed time savings of production run time per night. I attribute this primarily to the ability to set run time parameters within the product as opposed to little parameter adjustment within ADABAS Version 3.

Back to COM-PLETE. If you have any comments whatsoever, I'd like to hear from you.



# COM-PLETE Special Interest Group

## COM-PLETE Special Interest Group Chairpersons

### PERFORMANCE AND TUNING

Mr. Peter Kim  
Boston University  
881 Commonwealth Avenue  
Boston, MA 02215  
(617) 353-2282

### Integration

Mr. Dave Vinson  
Superior Oil Company  
P.O. Box 1521  
914 Main  
Chamber of Commerce Building  
Houston, Texas 77001

### COM-PLETE TOOLS

Mr. Ted Nikodem  
Foremost Insurance Company  
5800 Foremost Drive S.E.  
Grand Rapids, Michigan 49501  
(616) 942-3679



# NATURAL News

## NATURAL Version 1.2 Features

### Software AG

NATURAL Version 1.2 was originally defined to offer operational improvements to the first version of NATURAL. Since then Software AG has decided to include additional features into this release. Many of these enhancements have been published in previous newsletters; others were announced at the recent Users' Conference. The purpose of this article is to review all of these so that NATURAL users will have a complete overview of the facilities which will be available to them.

NATURAL 1.2 will contain:

- A generalized 3270 logical driver providing support for video devices other than 24 x 80;
- Dynamically specified parm options allowing users to have multiple NATURAL environments;
- TP driver enhancements including full screen TSO capabilities;
- The ability to run NATURAL in pseudo-conversational mode in a CICS environment;
- Extended hard copy device support for all TP monitors;

- Modifications to the error messages allowing for clearer diagnostic capabilities;
- An execute only configuration;
- Official support for Task Master and Shadow II;
- Improved integrity for SAVE and CAT operations;
- On-line HELP facility which will allow each user to request syntax information in an interactive fashion. This menu-driven facility allows the user to record questions regarding system thereby providing information to the NATURAL administrator who can modify the system accordingly;
- The NATURAL data stack capability will allow the stack of multiple commands for input statements when calling NATURAL. A practical application of this would be to allow the data stack to become an input stream for the next NATURAL complete request;
- Improved LIST functions will enable the user to list any program while creating or editing another program;
- NATURAL parameter variable will be available for users to pass data from one NATURAL program to another program that is invoked via FETCH or RUN statements. These param-

- eters can be used as either user-defined variables or may be used as source text in a program evoked via the run statement. This feature will add great flexibility to the NATURAL programming environment by allowing the end-user to build a selection criteria dynamically and select display fields or special operations via a pre-formatted screen;
- Multiple new system variables will be accommodated in NATURAL 1.2 system (e.g. line count, User-ID, program-ID, terminal-type, terminal-ID);
- An extended masked function providing numeric check, character check, power check, minute/second check, and date check for valid dates in any form will be provided;
- Elimination of some current restrictions in Special Conditions;
- Optimized ADABAS command usage will streamline internal operations;
- Dynamic password and cipher code for ADABAS command;
- An INPUT WITH NO ERASE option will allow the user additional facilities in screen design and screen manipulation;

(Continued)

- Enhanced attribute definition will also allow the end-user additional flexibility and clarity in entering data;
- An ON ERROR statement permits the user to take action on any execute time error. Certain statements are allowed in this ON ERROR condition;
- A RUN statement will be

- provided allowing source programs to be "FETCHed" in a fashion that catalog programs are done now;
- A limited in-core online sort capabilities is provided;
- Enhanced UPDATE/STORE capabilities refer back to the record of a previous FIND/READ statement for the field to be updated;

- The TERMINATE statement will allow NATURAL to terminate within a NATURAL program, returning to the invoking transaction.

In addition to these stated goals a variety of internal features providing greater programming efficiency in NATURAL will be included in the NATURAL 1.2 system.



# NATURAL

## Product Rep's Report

### Product Rep's Report

*Steve Froneberger  
Duke Power Company*

There was a lot of interest in NATURAL at the Innisbrook Conference with four tutorial sessions conducted by Software AG, nine user presentations, four workshop sessions, and three other sessions presented by Software AG concerning future NATURAL enhancements and additional facilities. I was not able to attend all of these, but the sessions I did attend were well planned and presented. I would like to thank those who were on the program for their time and effort in preparing for these sessions.

One item that received much attention was that of NATURAL DBA Tools and how these could

be made available to NATURAL users. Because there may be a great number of similar NATURAL tools, a distribution procedure is being set up. Briefly, your tools should be forwarded to the DBA Tools Chairperson (Jeff Schutzer of INCO). He will review its applicability to the user community at large and ensure it meets Users' Group standards. Software AG will then distribute the tools to users, on request. Procedures for submission and distribution are outlined in the DBA Tools report in this Newsletter. Please remember that these tools are developed by users and are not supported by Software AG.

Of the 110 NATURAL Change/Enhancements submitted, 45 are to be implemented in NATURAL Version 1.2, 22 are to be in NATURAL Version 2, and 9 are to be in the NATURAL Advanced Facilities package. Several requests were to become available

with SM8 or had already been implemented. Approximately 15 others will be considered at some time in the future. If you have any questions concerning Software AG's response to your request, please give me a call or write me a note explaining your question or concern.

We need your support for articles in this Newsletter. I encourage you to send in articles related to your experiences, DBA Tools you have developed, or any topic related to NATURAL you would like to share with others. Regional meetings are excellent sources of articles. The Regional Representatives should encourage their regional members to send in articles on NATURAL presentations at their meetings. Very little extra work would be needed to prepare these for submission. Please send the articles to Cathy Vivona at Software AG, or me, for Newsletter publication.



# NATURAL Technical Notes

## A User View of NATURAL

*Jim Reiner  
County of Sacramento*

NATURAL has been available to users now for approximately a year and a half. In that time, many of its users have developed techniques for "controlling" NATURAL in their data processing environments. Some sites have approached the users' needs by generating different NATURAL packages—each containing specific NATURAL capabilities. Other sites have written their own exits to store source and object code outside the dictionary, to add security to the environment, or to call NATURAL from a COBOL program. Organizations have spent this time and effort because they see NATURAL as a valuable tool. Also, "how" to train users, from programmers to customers, has been approached from many angles.

With nearly two years of NATURAL experience, we have dealt with these concerns. The following is a brief discussion of our experiences with NATURAL and its effect on our entire environment. Please note that these comments reflect our learning experiences from the alpha system through SM8. Features planned in Version 1.2 will make a new users' experiences different from ours.

### I. INSTALLATION AND OPERATION

#### 1. Installation and the Environment

In this discussion, an 'end-user' defines the customer for which a system is developed and a 'user' defines an installation or site supporting one of the Software AG products.

Our environment consists of the following: IBM 4341 Mainframe 4 Meg of real memory; 3270 type CRT's; COM-PLETE - TP monitor; ADABAS V321 - DBMS; NATURAL; OS/VS1 operating system; and a growing number of on-line users. COM-PLETE has the highest priority in our environment. It is followed by ADABAS and the batch initiators in that order. On-line NATURAL runs in COM-PLETE area, so it is serviced before batch jobs.

Our NATURAL environment is created with several considerations in mind. Each plays a significant role in the effective operation of NATURAL within our computer system. Since the maximum COM-PLETE thread size is currently 100K, the NATURAL package when linked must fit into this 100K. We do this by splitting NATURAL into two pieces:

- A large, reentrant module that resides outside the thread. This is specified in COM-PLETE's SYSPARM as RESIDENTFIXED. Creating the most efficient environment for terminal responses by reducing I/O's. (The NATURAL features article in this newsletter discusses this.)
- A small non-reentrant driver that resides in the thread.

This driver and the security exit use 4K; the work area uses 32K and the file buffer has 16K. The remaining 40K is used to load subroutines invoked with the 'call' statement dynamically.

The security exit, developed by the County of Sacramento, is linked into the small, non-reentrant part of NATURAL. This is done for three reasons. First, each NATURAL user must be tracked independently of all other NATURAL users. Second, a non-reentrant security exit is much easier to write and maintain than a reentrant exit. Third, changes can be implemented by merely relinking a new NATURAL driver so other COM-PLETE users are not affected by this process. (Linking the exit outside the thread requires COM-PLETE to be Yo-Yo'ed.)

The following represents the NATURAL modules and their sizes.

The non-reentrant driver:

\*UNATO (From NATLKDC1) 2,422 bytes  
UTLSNATX (Security Exit) 1,512 bytes

The reentrant portion:

NATCMP (From NATLKDC2) 107,872 bytes

#### 2. Security

Our security exit forces the NATURAL user to log on with the logon command; disallows further logon commands to change the logon ID; defines an execute only mode of operation; allows data to be accessed in different logon ID's only if the ID's begin with the same two characters as the logon ID; forces remote terminals into the execute only

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mode of operation; disallows passwords to be entered in the logon command; and makes the %H (Percent H) command the only terminal control command available to the end-user.

Additional security which may be made available with the exit can identify the NATURAL user by the COM-LETE User ID as well as authorization code; interrogate all source lines as they are entered (however, this would create considerable overhead); expand or restrict the programmer environment by comparing different lengths of the NATURAL logon User ID; restrict logon commands within NATURAL to a select few, based on the COM-LETE authorization code or COM-LETE User ID; create a logon User ID which all programmers can access; provide more descriptive messages for security violations; and, add passwords to the NATURAL logon command based on the COM-LETE authorization code or User ID. This would take advantage of password protecting the ADABAS files to secure production files and would be transparent to all users.

### **3. NATURAL Operation With the Entire Computer System**

NATURAL is designed for use with the data base. Thus, most applications, batch or on-line, interact with ADABAS. So, the design of a NATURAL program is important in the data base environment. "How" data is accessed has a major effect on programming efficiency. Complicated FINDs consisting of sorts or extended search criteria which require management of ISN lists or access of data are

particularly inefficient and time consuming. These program considerations will affect the program implementation itself. The DB/DC environment, as well as the hardware, affects the execution of all NATURAL programs.

Our environment consists of a growing number of on-line users. On-line NATURAL has priority over all batch users. Heavy use of NATURAL can impact response time for all other COM-LETE users as well as the throughput for the batch partitions. If certain functions—mass updates or sorts of large quantities of data—are implemented on-line, the system will degrade noticeably. We limit functions such as these to the batch environment. The user-donated \*UTLACT utility "monitors" for violations of this standard.

Unfamiliarity with—and improper use of—NATURAL's looping structures have caused new NATURAL programmers to write programs which impact the entire NATURAL/ADABAS environment. For example, when handled improperly, ADABAS Version 3.2.1 hold logic fills the ISN hold queue and causes ADABAS to flush the system hold queue in order to handle the abnormal volume required by NATURAL. When this condition occurs, messages are displayed on the system console. This is not a problem under ADABAS Version 4.1 where there is no hold queue, and hold logic is handled differently.

There are three major areas that Sacramento County has addressed: lack of security, lack of data base knowledge in all aspects of data processing, and our system dependence on ADABAS Version 3.2.1 while

using NATURAL which was written for use under ADABAS Version 4.

## **II. USERS**

### **1. Programmers**

NATURAL is currently available to the technical support group and a limited number of programmers. Given a very powerful programming tool, new NATURAL users must attend an internal training class.

The County is implementing a county-wide data base whose systems are being designed as on-line applications. NATURAL meets both our requirements—it is a data base language and it is very good for designing on-line systems. Programmers can design and test at the same time and receive results in a shorter period of time.

NATURAL shines in the area of designing on-line screens and in the area of data access. The screens can be designed and implemented with ease not found in other languages or terminal mapping systems. Data access, too, is "easy". In order to access data, the programmer need only be told the names of the data elements and their formats. Since NATURAL handles all the data access methods itself, the programmer is not concerned with the mechanics of the data base call; however, the programmer must know data base concepts and the structures NATURAL supports. Without this basic understanding, a NATURAL program can "do more" than intended and so place an unnecessary burden on the system.

Programmer acceptance of NATURAL is quite good, but it is qualified as follows:

- Because NATURAL programs do not involve many functions, or complex logic flows are the easiest to write and implement, we encourage many small programs each handling one function. This approach forces a structured, modular programming approach. This means separating functions from each other even if the actual implementation of each involves like codes.
  - NATURAL does not handle PE or MU fields very well. The difficulty in modeling tables and array processing has often caused programmers to rethink or redesign an application. If familiar with COBOL table handling, our programmers sometimes find the transition to NATURAL difficult. Some have resolved this by writing the array processing logic in a COBOL subroutine which NATURAL calls. Training programmers not to "think" in COBOL is an important factor here. They should not view NATURAL as if it were a super COBOL with dictionary resolution for data.
  - NATURAL error messages and the syntax checker need some improvement. Vague messages can confuse programmers and sometimes point to the wrong statement. After working with NATURAL for a while, a programmer gets use to the way NATURAL catches syntax errors. (He must look in the general area of the message and not expect the problem to be exactly where the syntax checker "points".) Another problem is the occurrence of bugs in NATURAL. Sometimes a programmer looks at a program problem and wonders if it is his problem or NATURAL's. This is somewhat frustrating and non-productive.
  - One of the most significant omissions in NATURAL's original design is the programmer's inability to interrogate ADABAS response codes. This has resulted in production systems terminating unexpectedly. It must be considered when designing a NATURAL system so that data lost as a result of abnormal termination is kept to a minimum.
  - A full screen editor is one of the most often requested enhancements to NATURAL. The current line editor is cumbersome, especially for program modification.
  - Before SM8 was released, programs could not perform nested subroutines resulting in much code duplication. We are considering rewriting the pre-SM8 programs to include this programming structure.
  - PF keys are not currently definable to NATURAL. While this is a minor restriction to programmers, it affects end-user use of a system.
  - NATURAL produces no cross reference from its compiler. This does increase debugging time a bit.
  - NATURAL programs cannot currently be called by another programming language. It would be advantageous for complex COBOL systems to call NATURAL for data base access.
  - There is no 'go to' statement in NATURAL, so the programmer needs to learn exactly how the looping structures of NATURAL work. We have found that the novice programmer complains about the lack of the 'go to' statement (largely due to not understanding loops) and that experienced NATURAL programmers responded favorably to keeping a 'go to' out of the language.
- Several of the above items were included as change/enhancement requests for NATURAL. Most changes will be implemented in either NATURAL V1.2 or NATURAL V2.

## 2. End-Users

There are certain functions all end-users must deal with, regardless of the language used for writing the system. These include logging on to the computer, invoking the application system, terminating the application system, and logging off the computer.

NATURAL provides the greatest difficulty in the area of invoking the application system. The end-user must log on to NATURAL and execute a program to invoke his system. The prompts 'NEXT' and 'MORE' must be fully understood. Terminating the on-line session requires not only terminating the application system, but also terminating NATURAL so the end-user has a few extra steps in using an application system.

The end-user must know how to deal with application abends and NATURAL abends and must be aware that the application is running under NATURAL, which

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is running under COM-PLETE. Thus, the end-user must know which level he is at in order to reinvoke the system.

In our environment, the end-user must be aware that there are times when he will not be able to use the application system due to the 'normal' data base downtime.

The application system in NATURAL consists of many object modules that are FETCHed by each other. The end-user often has to type in a command line or move the cursor to a selected position to determine module selection. PF key support will simplify end-user actions.

Since NATURAL can perform validity checking on the data entered, the end-user must be familiar with this method of error checking and know how to respond to each message he may receive while executing the application system.

### 3. The Learning Curve

New NATURAL users require a certain amount of time to adjust to it. They must learn the looping structures, learn about the data base, and learn how to use NATURAL effectively. Even after a training class which describes the data base, the NATURAL environment, and the programming statements including examples, the trainee must learn to use this tool and tailor its features to the application. This is obtained by help from both the DBA staff and programming experiences. Programmers working in teams have advanced the fastest in learning to use NATURAL.

Our programmers went through an initial slow down in productivity while learning

NATURAL. It is best to keep exercises with NATURAL as simple as possible. A major problem is learning the looping structures. Once this concept of data retrieval is grasped, the development of NATURAL programs quickens.

The learning curve is different for batch and on-line NATURAL. There seems to be a direct correlation to the time required for feedback on programming attempts. Learning NATURAL on-line is considerably faster than in batch. The syntax checker produces error messages in batch NATURAL that tend to cascade (the COBOL compiler has this characteristic too).

Once a programmer knows how to select data and look at it, more productive work can begin. This period of time is generally a few days to a few weeks. However, in first learning and using NATURAL, a programmer should use it every day to grow accustomed to the editor and to reinforce this knowledge.

End-users also go through a slow period while they learn to use their NATURAL-written system. For them, NATURAL is a program execution monitor. In addition to the normal requirements of learning to use the hardware and learning the logon/logoff procedure, the end-user must become familiar with the NATURAL error messages he may see (for example, messages produced when entering alpha data in a numeric field). The end-user may also need to become familiar with some of the data base jargon when talking about his application.

Extensive systems analysis work must precede the use of NATURAL, the new easy-to-use tool. In addition to usual analysis

procedures, the analyst must possess a thorough knowledge of data base concepts and must clearly understand how NATURAL in the data base environment works. Without proper analysis, the analyst may find that he must make major changes to the programs and the file structure to make the system meet end-user requirements.

## III. RELATION TO THE DATA BASE

### 1. On-Line Access

Although the data base is easily accessed via an on-line NATURAL program, performance can be affected by "how" data is accessed. ADABAS evaluates the search criteria and uses one of the following algorithms for finding all records that meet the criteria:

1. One key; one value for the key  
Example—Find 53 with XREF EQ 0012
2. One key; two values for the key  
Example—Find 3 with Last EQ Jones thru Smith
3. Two keys; less than 1000 ISNs returned  
Example—Find 1 with name EQ Baker and Age GT 21
4. All Else  
In Version 3.2.1, this requires a minimum of 30 or 40 I/O's; in Version 4, this is not as costly since the nucleus is not rolled out.

Whenever possible, programs should avoid using algorithm four because of the overhead involved. Therefore, constructing the simplest search criteria contributes to ET/BT logic over-all efficiency. NATURAL on-line programs using the 'end of transaction' statement must also be designed with ADABAS hold logic considerations in mind.

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## 2. Batch Access

Batch NATURAL is used for all mass file READs or updates as well as applications requiring work files. Batch NATURAL communicates with the data base through a SVC. End of transaction's in batch, are nothing more than NO-OPS. To insure that batch updates do not get backed out in case of any data base problems, the batch NATURAL program should be followed by a synchronous checkpoint. This can be issued by another program or by the DBA.

Batch NATURAL is also well suited for sorts—it invokes the OS/VS1 sort.

With the exception of a few commands allowed only in batch mode, NATURAL views batch and on-line programs the same so data base considerations for on-line NATURAL hold for batch NATURAL also.

## 3. Security for the Environment

Because NATURAL allows "free" access of the data base, we developed our own security exit (described earlier in this article). Even with this, production files are not secured from the programmers as effectively as we would like. Lack of a generalized mechanism which provides this level of security is another weakness with NATURAL. Because of this NATURAL use is "restricted." Internal procedures require that programmers sign a confidentiality agreement.

## IV. EVALUATION

### 1. Disadvantages

#### A. Programmers

"Disadvantages" of using

NATURAL can be described as program restrictions, system restrictions, and the learning restrictions. They include the following:

1. Program work area limited to 32K,
2. No array processing supported,
3. Cannot call a NATURAL program,
4. NATURAL error messages are misleading at times,
5. Time needed to learn some data base and NATURAL concepts. For example: learning to use NATURAL must be accompanied by awareness of basic data base concepts. The difference between FIND and READ logic and how to process against the inverted lists illustrate this need.

#### B. End-users

The end-user must learn to use NATURAL as a program execution monitor. Initial hurdles are overcome with experience. The end-user is limited to using his NATURAL system in that both the TP system and the data base must be up and running. If the end-user is to construct data base inquiries in an ADHOC manner with NATURAL, he must learn NATURAL just as a programmer would. As a result, at the County, no end-users write ADHOC inquiries.

#### C. Data Center

The County Data Center has suffered from some lengthy response times largely due to inexperienced programmers and their run away applications. However, once this is held in check,

response time does not suffer directly from misuse of NATURAL. While the security exit installed at the County does secure the end-user environment from the programming environment, the production files are still not as secure as they need to be.

## 2. Advantages

### A. Programmers

The programming staff has a unique tool with the NATURAL language. When properly used, NATURAL has decreased development time for on-line data base applications by as much as two-thirds. The transition from batch system development to on-line system has gone quite well. Programmers need not work as closely with the data base staff when using NATURAL as compared to using ADAMINT access methods.

### B. End-Users

The end-user clearly benefits from the shorter development cycle for the NATURAL systems. The heuristic development cycle allows the programmer to get the 'kinks' out of a system without taking it away from the end-user.

In the future, the end-user should be able to construct his own ADHOC queries into the data base. This will happen when NATURAL strengthens its security scheme, becomes more flexible, and supports some type of higher level language system. These items are planned for future development according to Software AG.

### C. Data Center

The County issued a directive that all development be put on

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the data base. Without NATURAL, this would not be realized as soon or as easily. NATURAL lends itself quite well to the environment that the County is trying to create for the data center. The overall satisfaction with NATURAL is evidenced in its use as a public relations tool for the data center and for other county agencies. The on-line NATURAL purchasing system has showcased the type of system NATURAL can support. Voter registration is using NATURAL for development, as is the airport system. These quickly developed systems show that the County Data Center can implement on-line systems for a variety of applications. Once NATURAL matures as a programming language, the data center may be using NATURAL for all development and may be supplying each agency with its own NATURAL on-line system.

### 3. Conclusion

In conclusion, the benefits and the potential which NATURAL exhibits as a data base tool for the County, outweigh the costs. Most programmers, end-users, and managers are satisfied with NATURAL, though they all look forward to newer versions supporting the needed features. NATURAL V1.2 will solve many of the limitations that have been "programmed around" in the past and will lessen the design restrictions for the analyst/programmer. The security package that Software AG is designing will help eliminate security worries. The County of Sacramento will continue to implement new systems with NATURAL where appropriate.

## How to Screen Your Users

*Dan Nolan*

*Computer Sciences Corporation*

"Passed by one of the new electronic games parlors, lately?" A lot of our people apparently have, and it looks as if we're trying to pass on some of the spirit we see there to our customers. We're not trying to make our new systems like games, but we are trying to put some interest into those wooden expressions we put in front of the tubes. Since it's still too early to formulate a manual of Do's and Don't's from speculation, let me instead pass along a few of the things our people are trying with NATURAL, at a cost comparable to the quarter dropped in the arcades.

Arcade games are simple. People can relate to them. Dodge the asteroid. Escape the maze. Before we got ADABAS/NATURAL, we had to work so hard just to make one screen that we tried to load everything we could into it, to avoid having to make another. They weren't simple, they weren't enjoyable, they were hard for the user to work with. Now, we can put out a screen for a single task and when the operator gets that right, he gets to move on to the next. Like getting a free game! As a plus, we can model the screens after existing paper forms so the rules don't have to be explained each time.

People play arcade games armed only with some loose change and their natural talent. They don't carry a rule book or a

master list of players. We can devise maps which let the expert—say, in personnel—sit down prepared with the knowledge of what is to be done, to whom, and simply do it. If they know only the names, or offices, or Social Security numbers, our programs will give them a range to narrow down to the ones they want. They don't have to be precise until they actually start doing their jobs. This takes a lot of pressure off and reduces their mistakes.

There are so many ways to present information that our end users can choose what works best for them, without causing a lot of development work. One may want to see a list of options and select one by typing in the number, while another will prefer to place an "X" by his choice. We apply this to the menu at the beginning of a system (deciding whether to add, change, delete, or report) as well as to actual record selection, giving a list of individuals from which to choose. The only problem (with this last) is to keep the choices to one screen. When the list spans multiple screens, mistakes happen. That's why we keep asking for specifics until we get them down to 20 or so, and then throw them up so they can mark the one they want to process.

Errors should diminish with experience, so the investment should be small and the tone of the message light and direct. An old flyer's saying is, "Any landing you can walk away from is a good one." One of my users sat down, made a mistake, and later said he thought he had died. "It was as if my entire life had flashed before me on the screen!" Every field had lit up

*(Continued)*



with an error of some kind. He never did find the mistake that caused it all, and eventually mucked it up so badly, he wiped it all out and started over.

That same day, I replaced the routines that reprocessed the screen with simple Reinputs that checked and called the errors as they came up in order, and he had no more problems. The first screen? It was according to specifications, and the user was more than happy to change.

Our shop had problems standardizing names and keeping track of which program was fetched by what, until somebody started compressing menu selections into a variable and fetching that. An example is an inventory system which starts with a list of options. If someone wants a list (option 2) of equipment by department (option A), the program compresses the system name, 'INV', the number selected, the letter selected into a field called #NEXT and FETCH #NEXT executes program 'INV2A'. This makes assignment automatic and enforcement unnecessary.

Would somebody mind telling my boss that error messages don't have to read as if they were inscribed in stone? He objects when humor slides in for lack of specifications, as "You couldn't have been born yesterday," in reply to today's date being entered as a birthdate. His standards are good, however, in that each message has to refer to the error from the end-user's perspective rather than the confusion they will cause to the programs ("promotion must follow hiring" rather than "promotion date invalid").

Our group has learned to delay putting a program to bed

until the operator has had a cut at it. Some people work better with field names highlighted, others with data brighter. Some resent the alarm, some want a "bypass" that reinputs only once, then accepts when the enter key is punched again. Getting this out of the way quickly allows the end-users to concentrate on the real issues, such as whether the program operates the way they expected it to or not.

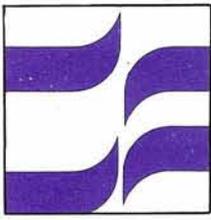
We use the maps for passing parameters between programs, but when no value is entered, logic knows we are in "test mode", avoids the next FETCH and preserves the program we have been writing.

By accommodating the end-users on their preferences up front, we got some concessions on specifications that would have been really messy to implement. Also, by teaching the users the Map, we cut down on the number of query programs in their libraries.

About the only problem we still have is with dates. We can't seem to convince end-users that one format is as good as another, and might be better for computing, although those who concede find little problems in adapting. Edit masks on dates would be helpful, so we could at least give them YY/MM/DD formats on input.

As more and more people begin using the NATURAL screen inputs, it is becoming increasingly apparent that we really know little about the "man-machine" interface, and that there may be no single "best" approach for any given situation. Some of the things we have been doing, however, seem to be

universally unworkable, and might warrant the formation of a Rogues Gallery of no-no's. Then we have the end-users, who alternate between extremes in help and hindrance as they learn to abandon prejudices and embrace new ideas in favor of getting the job done, thoroughly confusing us as to their intentions. If this is any sample, this "man-machine" interface where design meets reality is unexplored territory and deserves some serious attention. We have to be careful, however, and not set up rules so fast that they block innovation. Besides, it might become too much like work and force us back into the arcades, standing shoulder-to-shoulder with our clients, dropping quarter after quarter. . . .



# NATURAL Special Interest Group Reports

## NATURAL Features

*Jim Reiner  
County of Sacramento*

I had the opportunity to talk with quite a few of the NATURAL users at the conference in Innisbrook. This opportunity to share ideas and concerns with you was one of the major highlights of the conference for me. I would like to thank all those who participated in the activities: the speakers, the timers, the session introducers, and those who asked questions from the floor.

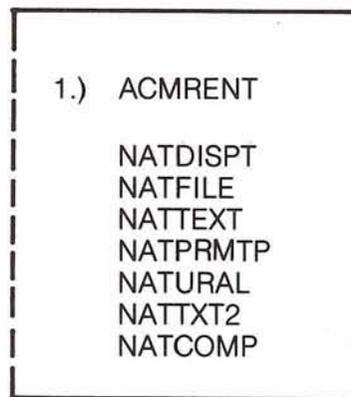
One of the topics of interest among COM-PLETE/NATURAL users dealt with how to best install NATURAL in relation to the whole computer system. Several users who have computers with large quantities of memory, and therefore large thread sizes, link NATURAL as one module. Many of these users have complained about poor response times when using NATURAL. We at Sacramento County believe we have found the optimum method for installing NATURAL under COM-PLETE.

COM-PLETE users have the option of breaking NATURAL into parts and SOFTWARE AG has written the larger of the two in reentrant code. Thus, a site can link NATURAL in two parts: a small non-reentrant driver and a larger reentrant module. The large reentrant module then can be specified in COM-PLETE's start-up SYSPARM as either RESIDENTFIXED or RESIDENTPAGED. By following this procedure the user will realize the following benefits:

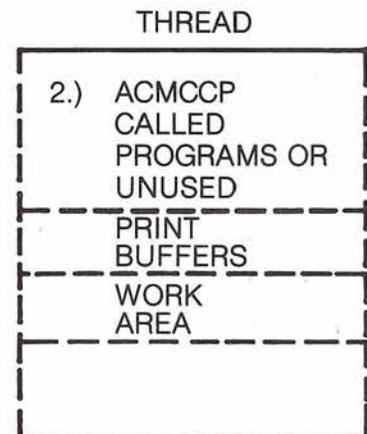
One copy of the NATURAL nucleus will be shared by all users; therefore, only enough memory for this one module in the COM-PLETE region is needed. If NATURAL is linked as one large module at installation time, then each NATURAL user will need to have memory for his

large module and the thread size will need to be at least 180K. We are running with 100K threads due to memory limitations so the linking of NATURAL in two parts was done out in order to better utilize this limited resource.

At the conference, users asked "Why link NATURAL in two parts if we can afford to run with large threads?" The reasons are at least four: 1) No I/O's are required to communicate with a resident module; 2) The less memory used, less I/O overhead needed to roll in and out; 3) With COM-PLETE 4.1, only that portion of the thread which is used is rolled out; thus the smaller that portion is, the less time spent rolling in and out, and response improves again; 4) There will be room to grow when NATURAL grows, and you know it will.



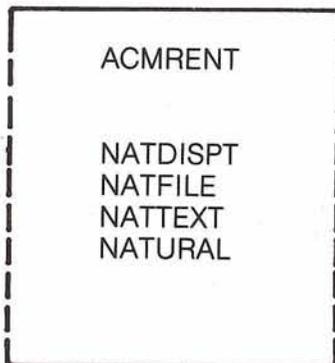
RESIDENTFIXED OR  
RESIDENTPAGED  
NATCMP



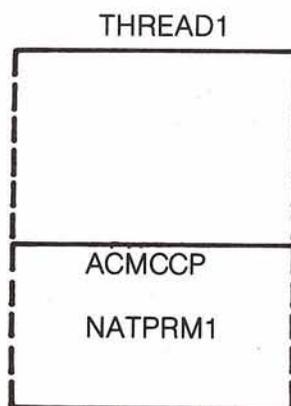
DRIVER: \*NATB

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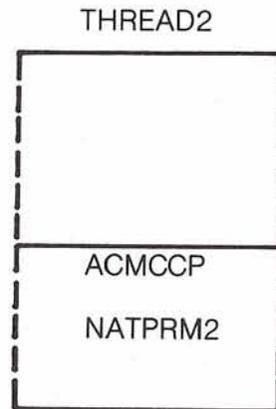
Now taking this concept one step further, the following is proposed as a feature for NATURAL (a change/enhancement request): Software AG should make the linking, such that the NATPRMTP module is in \*NATB (the driver). This allows a computer site to run one NATURAL nucleus and to link NATURAL drivers for particular users dynamically. One user may be restricted to certain files in the OPRB parm, while another user can be restricted to different files in another NATPRM module. For example, the Retirement Department would invoke \*RTRNAT and the Welfare Department would invoke \*WLFNAT, etc. . . .



NATCMP



\*RTRNAT



\*WLFNAT

So, when another user is to be added to the system, he would only need a NATPRM module and another driver could be linked for him. Access to the many drivers can be controlled in the COM-LETE exits by authorization code.

By including NATPRMTP, the NATURAL TP parm module in the driver, software support can dynamically create NATURAL for users and manipulate any of the NATPRMTP parameters for creating a particular user environment. This has another advantage: the same NATURAL nucleus is shared and a savings in I/O's and rollouts will be experienced.

To sum up, the requested feature is this: allow NATURAL to be linked such that the NATPRM module can be specified dynamically for a user and at the same time maintain one NATURAL nucleus.

Now, turning to the end-user and his required features, Software AG should provide a means to terminate a NATURAL session under program control. End-users need to be able to select an option in a menu for terminating the session and then have the program conditionally terminate the session. The end-user

would then be brought from his application, out of NATURAL, and to the TP monitor. End-users must currently respond to 'NEXT' to terminate NATURAL. Currently it is not possible to code 'FIN' in a program. When the syntax checker detects 'FIN' in a program, it will also execute it, taking the programmer out of NATURAL. A NATURAL program must be able to terminate the session under its control.

For those who did not attend the NATURAL Special Interest Group workshop, or for a refresher, here is a list of each topic and its discussion.

### 1. Restart-Recovery

This area must improve so that each end-user view translates the recovery into an addition or subtraction of fields into a file as opposed to a gross, mass recovery. Logical restart-recovery would protect the user and his data. This feature is one that addresses the end-user. This would allow NATURAL to become a high level end-user language.

### 2. SD Support for NATURAL/COM-LETE Users

Several applications could really make use of SD file and message switching. Since this is already built into COM-LETE, NATURAL under COM-LETE should be able to use these features.

### 3. Security

This was probably the most discussed subject during the entire conference. Over 10 change/enhancement requests dealt with

(Continued)

security features. Also, an elaborate security system for NATURAL was demonstrated by Peter Pagé.

For those users not wishing the all encompassing security under a separate package, or for those with immediate needs, support for a security exit was suggested. For each of the drivers, NATCOMP, NATCICS, NATTSO, the skeleton for a security exit should be included: the parameter area, the location for a branch to view the NATURAL commands or statements, and a means to do something if a security violation occurs. The security exit Sacramento County is using is a step in this direction; however, it does require a systems person to install it.

#### 4. **Store Object & Source Code Out of the System File**

As more and more NATURAL applications are developed by more and more programmers, the code must be managed outside the current ADABAS dictionary. Walt Kapica of Johnson and Johnson has developed a means for doing this with TSO. COM-LETE and CICS users need this capability also. Many DBA's at the conference mentioned the need to frequently unload and reload the dictionary file only because the NATURAL program area had increased. Ideally, end-users could execute object modules from outside the dictionary.

#### 5. **Improve Handling of PE & MU Fields**

All users who have written NATURAL programs for files using PE or MU fields know this area needs improvement. One of the most requested change/enhancements specifically asked for a separate verb for adding, updating, and displaying an occurrence. With significant user-backing, this request should have received a more definitive "will be implemented" reply. The handout from the NATURAL Techniques tutorial by Software AG was helpful in dealing with PE & MU fields with the current state of NATURAL.

#### 6. **Floating and Exponential Members**

Several users from the technical and scientific area were very alarmed that nothing has been done for handling members to more than 7 decimal places or more than 15 high order digits. These users are currently calling subroutines to manipulate data of this type. If NATURAL is to be a useful tool for the scientific community, it must be able to handle any size number.

In closing, I think one change request deserved more consideration than it was given. To truly be a user-friendly programming language, NATURAL must display a message in response to all system commands. The response NEXT is sometimes confusing and misleading. For example, if a LIST PROGRAMS command is issued for a logon ID

with no programs, 'NEXT' appears. SAVE and CATALOG should be followed by a message stating what just occurred: 'Program XXXX successfully saved under logon ID YYYY'. PURGE and UNCATALOG commands should have a message responding to the action. This feedback is needed in order for a NATURAL session to flow more easily for novice programmers, as well as for the experienced programmers.

## NATURAL Special Interest Group Chairperson

### Features

Mr. Jim Reiner  
County of Sacramento Data Processing  
700 H Street, Room 0740  
Sacramento, California 95814  
(916) 440-6301

# ADABAS-M News

## California OEM Packages ADABAS-M In The OMEX 1000— A State-of-the-Art Document Management System

*Joe Houde  
Vice President, Software  
OMEX, Inc. — Santa Clara, California*

There are traditionally two kinds of OEMs: (1) the small system OEM who sells turnkey systems for \$100,000 or less and depends on large volumes for profit margin, and (2) systems integrators that build systems selling for \$250,000 or more with the expectation of selling a small quantity. OMEX, Inc. is a hybrid OEM/systems integrator in the sense that its first system to be shipped has a price tag of \$3.5+ million and OMEX expects to sell more than just a few of these systems.

OEMs must position their products where there is a recognized demand for computerized solutions. The vertical market for OMEX's product could generically be labelled "automated document management systems". The OMEX 1000 System is designed for organizations in insurance, banking and government whose business is informa-

tion and who experience difficulties with the storage and retrieval of large quantities of documents. For example, microfilm is difficult to retrieve and update in a reasonable amount of time.

Recognizing the potential market for online, interactive document management systems, OMEX assembled the necessary managerial and technical expertise to carry out product development. A useful automated document storage and retrieval system must perform input, output, display and control functions quickly and easily. The resulting OMEX 1000 System includes devices that:

1. digitally scan paper documents or microfilm and store them onto a laser-based image memory (SlideStore) capable of holding 100 million document pages online;

2. allow an end user to interactively select a set of diverse pages based on multiple criteria . . . and with a response time of seconds;
3. allow the end user to view the documents on a screen (with pan, scroll, "zoom" and reverse video options) and produce hard copy.

Some of the tools/components that were needed:

1. host large scale mini-computer;
2. SlideStore storage device;
3. 300 - 675 MB disk drives with "shadowing" capability;
4. graphic terminals and associated microcomputers to control the complex screen viewing and formatting for document display;
5. electrostatic printer for making hard copy reproduction of images;
6. a local network, to tie all of the above together;
7. software tools including DBMS, query and screen formatting.

For the minicomputer network host, a Digital Equipment Corporation (DEC) 16-bit PDP-11/70 with 2 MB memory was selected for the prototype. This was based on the assumption that any software developed on the 11/70 could also be transported to the faster 32-bit VAX series

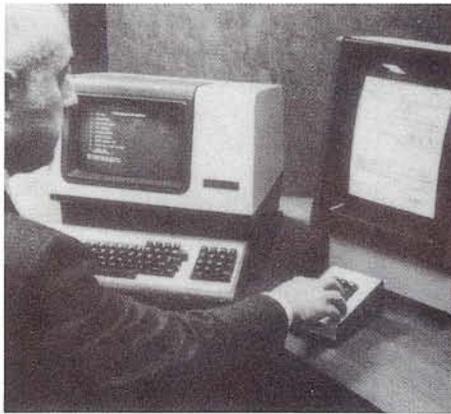
*(Continued)*

or the smaller and cheaper PDP-11/44. The laser-optical SlideStore device for storing facsimile images was developed and built internally. Integrated image/alphanumeric terminals used for document retrieval and display are each controlled by an Intel 8086 microcomputer. The 8086 are 16-bit micros that each will be supporting up to 2 MB memory. The large 300 - 675 MB disk drives are from CDC. The local network to tie all of this together is currently an OMEX-built image bus. It is possible that following testing of Ethernet, the joint Xerox/DEC/Intel 10 mega-bit/second local network product, that it will be used.

With the hardware already determined by the limits of currently available minis and micros, a concurrent software selection process was undertaken. The basic tools required were:

1. event-driven, multi-programming operating system that would facilitate migration across PDP-11s and the VAX series; in this case the RSX-11M, RSX-11M+ and VMS operating systems;
2. structured programming language that would allow "systems-type" programming capability and would run on the minis and micros; in this case Oregon Minicomputer Software Inc.'s (OMSI) Pascal;
3. screen management software for the DEC VT100 terminals slaved to the mini. The package selected was an in-house developed (and Pascal-based) screen manager, the End-user Support Processor;
4. data base software to manage in real-time the

characteristics of the documents. For example, allowing an end user to locate all of the documents characterized by various names, locations and dates. In the evaluation described below, ADABAS-M was selected.



In the search for data base software for our VAX/PDP systems, the major selection criteria were prioritized. The three highest rated criteria were: (a) high system availability to the end users, (b) high performance capabilities, and (c) easy maintenance. These three criteria enable the users to be self-reliant when establishing and using their data base. Other criteria were selected for their effect on system usage. Access to a large data base of information enables marketing the OMEX 1000 to more clients. Easy installation along with good user documentation and training aids allow OMEX 1000 buyers to receive, install and use the product with a minimum of assistance.

The packages currently in use on the PDP-11 and VAX were used as a basis for deriving the alternatives open to us. There were fifteen packages identified as possible candidates. Upon review, nine were rejected for not meeting minimum requirements.

For example, our experience with the currently marketed relational packages was such that we ruled ORACLE out from having experienced a definite lack of performance and reliability. Those two criteria were heavily weighted on our evaluation criteria. After a closer look at the remaining six packages, products such as SEED and TOTAL were recognized as incomplete products that lacked features such as utilities, multi-threading and/or multi-tasking. OMEX then called in two data base consultants to further improve and validate the DBMS selection criteria. As stated earlier, our two top requirements were reliability/recoverability and performance in retrievals. A further unique feature of the OMEX 1000 System would be capability of storing up to 100 million records.

The two products chosen for final consideration and benchmarking were DRS and ADABAS-M. After review and testing of the two systems according to the benchmark plan, the results were compiled and compared. We had concurrently benchmarked them for three months to determine the technical strengths and weaknesses of each. Because DRS used a byte pointer instead of a word internally, the potential size of our data base required a VAX for DRS while ADABAS-M could do the job on a PDP-11/44 or 11/70. Besides price/performance, ADABAS-M was preferred over DRS because of its shorter learning curve and ease of use. The Software AG product documentation is excellent while the DRS manuals were one of its weakest points. One indication of the rela-

*(Continued)*

tive ease of use was demonstrated during our education of the two OMEX teams performing the benchmarks. Our technicians spent the required week at the DRS training facility while the ADABAS-M team elected to start just with the information learned from the manuals and over the phone. ADABAS-M also interfaced with OMSI Pascal easily which was not true of the DRS programmatic interface. ADABAS-M is much simpler to use, possibly by an order of magnitude, and is user-oriented. We couldn't write software to make DRS easier to use.

On the basis of the benchmarks and some soul searching, ADABAS-M was selected. ADABAS-M did win the benchmarks and the service and support from Software AG were outstanding. The bottom line we decided, however, was that with ADABAS-M we were the "masters of our own destiny". In other words, those features desirable in each of the two products were sometimes found lacking in the other. The decision: How could we react to the advantages of the package that was not selected? The answer: DRS would be rather inflexible in reacting to our requirements, while with ADABAS-M we could write some software to cover any features lacking.

The first OMEX 1000 System will be installed in three stages at one of the largest U.S. title insurance companies. Their initial system in California must accommodate an average of 15,000 new documents generated per day relating to real estate property in Los Angeles county. The data base will start with six 300 MB drives and is expected to

grow 300 MB per year. The system will grow to 26+ VT100 terminals tied into a dual PDP-11/70 configuration. Initially the ADABAS-M data base must handle 2.2 million land parcel records, 1.7 million postings per year, 3.7 million general index records concerning individuals and corporations ability to buy and sell property (474 MB disk space) and more. A typical use of the property index data base would require a search of the general index file by buyer/seller and the property index by property ID and document type. A search can be delimited in many ways, such as the opening and closing dates of a title search. To aid in the speed and ease of retrievals, the property index file has seven descriptor keys. Also all general index name fields are phonetic keys. Liberal use of repeating groups helps normalization of data which in turn minimizes redundancy. A typical use of repeating groups helping to keep file size down is seen in deed of trust documents which usually have four names associated with them: husband/wife sellers and husband/wife buyers.

OMEX plans to make extensive use of the announced features for ADABAS-M release 2.0, especially the End Transaction/Backout Transaction feature. We are very happy to see some of our enhancement requests scheduled for inclusion in the next release.

In summary, OMEX and its 95+ employees have a goal similar to Software AG's; wanting to be the world's largest supplier of systems software tools; -OMEX plans on becoming the largest supplier of automated document management systems.

## ADABAS-M Users—

The ADABAS-M community is becoming established within the SAGGROUP community.

It is important that ADABAS-M users have a means of communicating among themselves. Dick Gemoets of OMEX has agreed to act as a product liaison for ADABAS-M users. He'll be glad to share his experiences with you and start the network dialogue among ADABAS-M users. He may be contacted at (408) 727-5801.

# Software AG

## OF NORTH AMERICA, INC.

# News

Dear Software AG User:

During the Innisbrook Users' Conference, several users expressed an interest in Software AG's pricing of its new products. Some people were concerned about the creation of separate pricing for new products which seem to be implementations of high-vote change/enhancements.

Mr. Alan Routhier, President of the International Software AG Users' Group, has subsequently relayed these concerns to us, and we have met with Mr. Routhier several times to discuss this matter. One specific item which has been discussed is the NATURAL security system. Also, Mr. Routhier has requested a policy statement from Software AG, addressing the following issues:

1. When does a popular change/enhancement warrant the development of a new, separately priced product, instead of being added as part of an existing product?
2. When an important change/enhancement is to be addressed by a separate product, can users expect the basic problem also to be addressed within the original product?



John Norris Maguire

After much consideration, deliberation, and communication between Mr. Routhier, Software AG Germany and Software AG of North America, it has been decided that a basic NATURAL security system (hooks where user exits can make security decisions) will be provided, at no charge to existing NATURAL clients. This will provide an alternative for NATURAL clients who do not desire to purchase the full security package, whereby they can write their own exit routines to address their security needs.

Concerning the request for a statement of policy from Software AG, we feel that this is a reasonable concern and something that our users are justified in requesting; however, we are reluctant to make this kind of statement because it is difficult for us to predict the nature and types of products we may be offering. We do not want to commit ourselves to a policy which might cause difficulties later on, and, quite frankly, the criterion which we use to make these decisions is sometimes highly subjective.

We do, however, have guidelines (as opposed to a policy) which we use to determine whether or not a product will be separately priced, and whether or not (when a product is separately priced) the basic problem will be addressed in the original product. These guidelines are as follows:

1. New products will be separately priced. An example of this is the Data Base Machine.
2. Enhancements which do not add a major new direction to a product, do not significantly expand the scope of a product, or which are required due to major changes in the DP industry, will not be separately priced as long as they are items which apply

(Continued)



to a large portion of our users.

Some examples of these types of enhancements are: support for FBA disks, large screen 3270 support and VTAM terminal support for COM-LETE.

Some examples of enhancements which do not fall into this category are: Graphics support for NATURAL (because it significantly expands the scope of NATURAL), NETWORK (because it is an entirely new direction for ADABAS, NATURAL, COM-LETE), ADABAS/VM, and any enhancement which is developed or tailored for a single (or few) client(s).

3. Enhancements which address basic deficiencies in

a product (which inhibit the usage of the product for the purposes for which it was originally sold) will not be separately priced.

An example of this kind of enhancement is NATURAL security (it is difficult to use a DBMS query language which has no security capability).

4. In all cases, Software AG may decide to offer extended facilities as a separately priced item, even if the basic problem is addressed in the original product.

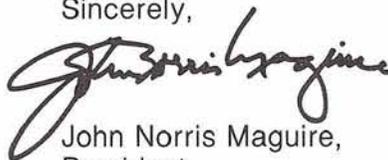
An example of this is NATURAL security. As stated above, a basic security facility (exits) will be available at no charge, and we will be offering an

extended NATURAL security package as a separately priced item.

We trust that this information has been useful in clarifying our position on new product pricing, and we hope that it answers the questions which have arisen relating to this subject.

We feel that Mr. Routhier has been very effective in enlightening us to the concerns and views of our user community, and we are pleased with the frank, open and constructive relationship which Software AG has with its users.

Sincerely,



John Norris Maguire,  
President

## Software AG Receives ICP Awards

International Computer Programs, Inc. hosted its Tenth Annual Awards Ceremony in April of this year. This is a significant event, not only for ICP, but for the entire computer software industry. Larry Welke, President of ICP, noted the overwhelming success and acceptance of the data processing industry within this ten-year period. Mr. Welke noted the increased sophistication and maturity, not only of the software products being offered to the business and government environment, but also the development of sales and management ideas that have been reflected over the years. He

pointed to the achievements of attendees and their respective organizations and indicated their major contribution to the continuing growth of computer software.

Software AG has been well-represented and acknowledged at ICP for a number of years. The 1980 awards were no exception to this trend. NATURAL became the second Software AG product to achieve this honor; COM-LETE was previously recognized in this category. ADABAS was one of four products to achieve the \$50,000,000 sales level in 1980. To date, only 8 products have qualified for this award, so this category allows only the most outstanding products into its membership.

A new category established this year recognizes the individual accomplishments of software salesmen. The award is presented to any salesperson

who has individually sold more than one million dollars in software products within a one-year period. The ICP Society of Super Software Sellers included three representatives from Software AG. They are Ted Charlebois, Vice President of Sales for the Central Region, Jeff Pollack, Vice President of Sales for the Eastern Region, and Bob Nickel, President of R. D. Nickel and Associates in Canada. Truly, these sales people continue to reflect the highest degree of professionalism and so contribute to the success of the software industry in general. Software AG is pleased at its recognition within the software industry and thanks its users for their acceptance of our products, and their continuing support of our development efforts.

## Education Department Continues to Grow

Larry Jayne  
Software AG

The July - December 1981 Education Class Schedule was published and distributed in May; it reflects a significant increase in the number of public classes available. This increase is due to the heavy demand for our DBA Skills Workshop, Using ADABAS, and NATURAL Applications Workshop classes. Even with the increase in numbers of these classes, they are filled to capacity. Thus, a word to the wise: register early! Due to this increase, we will be opening a Training Facility in Houston, Texas during August 1981. This is designed to accommodate our classes currently scheduled for the Galleria Plaza Hotel and also for future classes. In addition, we will be moving our currently

scheduled Denver classes to our new facilities in Houston. Persons registering for these classes will be informed of available hotels and accommodations in Houston.

At the Users' Conference at Innisbrook, several users asked if we were considering the use of video courses as an alternative to our current methods of presenting educational material. After some initial review, we have found two major difficulties with this media: insufficient user requests (currently 3) and a limited number of potential users (estimated at 20-35), and significant development, maintenance; and distribution costs (estimated at \$90,000-\$200,000) per course. One additional drawback, according to one major video course vendor, is that the students need an instructor available when they have questions. Therefore, we are reviewing other possible media for our courses and will present our findings in a future Newsletter.

We have reviewed the Using ADABAS and the ADABAS Design courses, and have decided to revise and restructure them. This will include significant revisions to the Using ADABAS course—the result being a 2-day course with less emphasis on the Data Dictionary and more emphasis on data structures and concepts. ADASCRIP+ will not be included in the Using ADABAS course as it has been, but will become a separate course. The rationale here is most of our users have or are acquiring NATURAL, which will significantly reduce their use of ADASCRIP+ and they have requested this change. Thus, ADASCRIP+ will be offered separately for those users needing this training. Development of a new two or three day ADABAS Design Workshop course will include file structures, alternate file designs, and tradeoffs between the various designs.

### DENVER SUPPORT NUMBERS:

(800) 525-7859  
7:00 a.m.–6:00 p.m. Mountain Time

(303) 233-6500  
Emergency "after hours" support

## New Trade Show Booth Introduced at NCC

NCC marks the first appearance of a specially designed Software AG trade show exhibit. The booth, which is navy blue with a computer sunburst graphic will be at upcoming trade shows. It provides an instant introduction to Software AG by featuring on-line NATURAL demos and an on-line ADABAS-M presentation. Attendees saw the Data Base Machine and listened to a filmed introduction to the Data Base Machine. Response to this instant on-site look at Software AG was excellent.

The Software AG Chicago based personnel were on hand to greet many of our users attending the conference. Software AG looks forward to all users visiting this exhibit at the following upcoming trade shows:

### SOFTWARE INFO

September 15-17, 1981  
Chicago Merchandise Mart

### FCC

September 22-23, 1981  
Washington Sheraton

### INFO '81

October 12-15, 1981  
New York Colosseum.

## Software AG Contacts:

(Unless otherwise specified, call (703) 860-5050)

<b>Accounting and Billing Information</b> .....	Meredith Martin
<b>Computer Services (Sales)</b> .....	Steve Greaves
<b>Conference Information</b> .....	David Schmidt
<b>Consulting Services (Sales)</b> .....	Gary Bowers
<b>Documentation Orders</b> .....	Geri Keydash
<b>Education Scheduling and Reservations</b> .....	Felicia Wallace, Sheri Gotay, Education Registrars
<b>Marketing Inquiries and Product Literature</b> . . .	Marketing Services
<b>Product Security Features Documentation</b> . . . . .	Written request to Gordon Perrins
<b>SAGNA Software Distribution Requests</b> .....	Pat Stroud, Pam Tompkins, Technical Services Coordinators, Product Support Group, Reston
<b>Technical Questions Hotline Support</b> .....	Field Support (800) 525-7859
<b>User-Written Software Distribution Requests</b> .....	Cathy Vivona



Software AG's new trade show booth

# SOFTWARE AG CLASS SCHEDULE

## July - December 1981

Class Month	Using ADABAS	ADABAS design workshop	ADACOM	ADABAS direct calls	ADABAS internals	Data Base administra- tion	NATURAL workshop
<b>July</b>	RESTON Software AG July 7-9	RESTON Software AG July 10		RESTON Software AG July 13	RESTON Software AG July 14-15	RESTON Software AG July 16-17	RESTON Software AG July 20-22
<b>August</b>	RESTON Software AG August 17-19 <hr/> SEATTLE Software AG August 3-5	RESTON Software AG August 20 <hr/> SEATTLE Software AG August 6	RESTON Software AG August 21	RESTON Software AG August 24 <hr/> SEATTLE Software AG August 10	RESTON Software AG August 25-26 <hr/> SEATTLE Software AG August 11-12	RESTON Software AG August 27-28 <hr/> SEATTLE Software AG August 13-14	RESTON Software AG August 31 September 2 <hr/> SEATTLE Software AG August 17-19
<b>September</b>	RESTON Software AG September 28-30 <hr/> NEW YORK Software AG September 14-16 <hr/> SEATTLE Software AG September 28-30	NEW YORK Software AG September 17		RESTON Software AG September 14	RESTON Software AG September 15-16	RESTON Software AG September 17-18	
<b>October</b>		RESTON Software AG October 1 <hr/> SEATTLE Software AG October 1	SEATTLE Software AG October 2	RESTON Software AG October 5 <hr/> SEATTLE Software AG October 5 <hr/> NEW YORK Software AG October 19	RESTON Software AG October 6-7 <hr/> SEATTLE Software AG October 6-7 <hr/> NEW YORK Software AG October 20-21	RESTON Software AG October 8-9 <hr/> SEATTLE Software AG October 8-9 <hr/> NEW YORK Software AG October 22-23	RESTON Software AG October 14-16 <hr/> SEATTLE Software AG October 14-16
<b>November</b>	RESTON Software AG November 2-4 <hr/> HOUSTON Software AG November 2-4 <hr/> SEATTLE Software AG November 30	RESTON Software AG November 5 <hr/> HOUSTON Software AG November 5					RESTON Software AG November 30 December 2
<b>December</b>	SEATTLE Software AG December 2	SEATTLE Software AG December 3		RESTON Software AG December 7 <hr/> HOUSTON Software AG December 14 <hr/> SEATTLE Software AG December 7	RESTON Software AG December 8-9 <hr/> HOUSTON Software AG December 15-16 <hr/> SEATTLE Software AG December 8-9	RESTON Software AG December 10-11 <hr/> HOUSTON Software AG December 17-18 <hr/> SEATTLE Software AG December 10-11	SEATTLE Software AG December 15-17

COM-LETE application	COM-LETE systems control	COM-LETE internals	DBA skills workshop	Service analysis™ requirements methodology for ADABAS (PDC)	Data administration & control
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SEATTLE  
Software AG  
July 20-24

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RESTON  
Software AG  
July 27-31

RESTON  
Software AG  
August 10-14

SEATTLE  
Software AG  
August 24-28

SEATTLE  
Software AG  
September 21-24

HOUSTON  
Software AG  
August 31 September 4

LOS ANGELES  
Marina City Club  
September 9-11

RESTON  
Software AG  
September 21-25

SEATTLE  
Software AG  
October 19-20

SEATTLE  
Software AG  
October 21-23

RESTON  
Software AG  
October 19-23

RESTON  
Software AG  
October 27-29

SEATTLE  
Software AG  
October 26-30

RESTON  
Software AG  
November 17-20

RESTON  
Software AG  
November 16-20

HOUSTON  
Software AG  
November 30-  
December 4

RESTON  
Software AG  
December 7-8

RESTON  
Software AG  
December 9-11

RESTON  
Software AG  
December 14-18

NEW YORK  
Software AG  
December 8-10

## Current Release Levels

The following is a list of current System Modifications that are available. Please contact Gordon Perrins, Manager of Product Support Group, if you need current SMs.

### ADABAS V4:

ADABAS Nucleus & Utilities—  
— SM Level 3

ADAMINT Version 1.4  
— SM Level 3

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

ADASCRIP+ Version 1.1  
— SM Level 3

Data Dictionary Version 1.1 OS and DOS  
— SM Level 3

### ADABAS V3:

ADABAS Nucleus & Utilities—  
— OS SM Level 10  
— DOS SM Level 4

ADAMINT Version 1.3  
— OS SM Level 10  
— DOS SM Level 4

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

ADASCRIP+ Version 1.1  
— OS SM Level 10  
— DOS SM Level 4

Data Dictionary Version 1.1 OS and DOS

### ADABOMP:

- OS Version 2.0.0
- DOS Version 2.0.0

### ADABAS/VM: Version 1.1

### NATURAL:

Version 1.1  
— OS Zap Level 8  
— DOS Zap Level 8

### COM-LETE: Version 4.1

- All operating systems

### Latest Early Warnings

(As of July 24, 1981)

EW071: ALL ADAMINT V1.4  
USERS

EW072: DOS/VS NATURAL ZL8

EW073: TSO NATURAL ZL8

EW074: DOS NATURAL ZL8

### ADABAS V4.1

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

### NATURAL V1.2

**Status:** Development testing

### ADABAS-M V1.2

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

### ADABAS/VM

**Status:** Available

### Channel-to-Channel Software

**Status:** Available

### COM-LETE DOS

**General Availability:** 9-12 months

### COM-LETE VTAM SUPPORT

**General Availability:** Release 4.1

### COM-LETE V4.1

**Status:** Available

### DATA BASE MACHINE

**Status:** Available with 60 day delivery

### Online Data Dictionary

**Status:** Available for NATURAL Users

## Regional Representatives

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This map represents changes made in the United States regional Users' Group boundaries at the International Conference.

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