

Software AG International Users' Group Newsletter

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Users' Group News

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



Las Vegas Plans Consolidating

With the Innisbrook Conference barely over, plans are underway for the Technical Agenda for the 1982 Users' Conference in Las Vegas. The Tenth International Software AG Users' Conference, themed as "Great Expectations", will provide an even wider range of educational and information activities for attendees. The Conference will be held May 9-13, 1982.

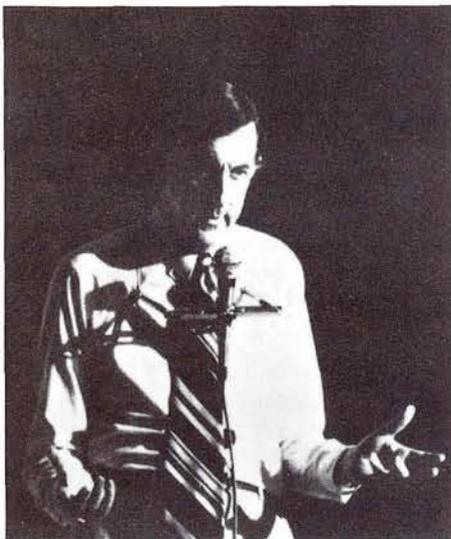
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The Conference will start on Sunday with registration and continue with technical sessions scheduled through 5:00 p.m. Thursday afternoon. There will be many concurrent sessions. In fact, only two or three general sessions will be scheduled during the entire Conference week. As is typical of Software AG Conferences, Software AG product status and future goals will be discussed, Change/Enhancement sessions for each product will be scheduled, tutorials, "SAGNA presents", user presentations and user workshops will be included on the agenda.

Guest Speakers Enrich Agenda

Our guest speaker program provides a firm basis for all attendees "expectations" being met.

Software AG is pleased to announce that James Martin will be a guest speaker at the Tenth International Users' Conference.



James Martin

Mr. Martin is generally acknowledged to be the computer industry's most widely read author, best attended lecturer and foremost authority on the

social and commercial impact of computers. He will present his views on the end user in a data processing environment. A graduate of Oxford University, Mr. Martin spent 19 years with IBM, both in the field and in development laboratories. Since 1977 he has conducted the "James Martin World Seminar" on all six continents. He is an independent consultant, a visiting fellow at Lancaster University in England, Board Chairman of the DMW Group, Inc. and Data Base Design, Inc. Mr. Martin has appeared on radio and TV around the world and his latest book, *THE WIRED SOCIETY*, was nominated for a Pulitzer Prize.

Mr. Martin will address Conference attendees in a general session on Tuesday, May 11.

His presentation will be followed by a separate question and answer session.

The second speaker to address conference attendees will be Captain Grace Hopper, USNR. A graduate of Vassar and Yale, Captain Hopper has made her mark in the data processing industry. Her credentials are extensive in both the engineering and data processing fields. Captain Hopper is best known for her interest in the development of COBOL. She has served on the ANSI Committee for the

(Continued on page 4)

Table of Contents

Users' Group News	1
Las Vegas Plans Consolidating	1
President's Message	2
Conference: Charles Dickens Novel	5
Now You've Gone And Done It	7
Change/Enhancement Process Reviewed	8
Regional Reports	11
ADABAS News	21
Scheduling ADABAS Batch Jobs	22
ADABAS Technical Notes	24
SAGTIPS - ADAMINT Usage Within A CISC Environment	00
Controlling Your Dictionary NATURAL-LY	28
ADABAS Special Interest Group Reports	30
DOS Special Interest Group Reports	31
ADABAS Product Rep's Report	32
COM-PLETE News	33
COM-PLETE Special Interest Group Reports	33
COM-PLETE User-Written Procedures	33
COM-PLETE Product Rep's Report	35
NATURAL News	36
NATURAL Technical Notes	36
SAGTIP - NATURAL In A CISC Environment	00
Referencing Occurrences Of A Multi-Value or Periodic Group	00
Correction	38
NATURAL Special Interest Group Reports	39
NATURAL Product Rep's Report	40
ADABAS-M News	41
University Computer Center Reduces Programming Workload	41
Nuclear Chemists Use ADABAS-M	43
1981 SAGGROUP Conference	44
ADABAS-M Technical Support	44
Software AG At DECUS	45
ADABAS-M Recognized Within the Users' Group	45
Software AG News	46
Record Earnings	46
Corporate Headquarters Gets A Facelift	46
New Newsletter Mailing Policy	46
Current Release Levels	47
Latest Early Warnings	47
SM Levels	47
Software AG Class Schedule	48
Regional Map	50
Software AG Contacts	50
Regional Representatives	51
Dates To Remember	52



President's Message

President's Message

*Alan Routhier
County of Sacramento*

In beginning my series on the workings of the Users' Group, I have decided to take the 'bottom-up' approach and discuss individual users' responsibilities first. There are two reasons for this. First, there are many more individual users than there are office holders. Second, your grass roots concern and enthusiasm provides the energy which makes this whole organization go.

The membership of the Software AG International Users' Group is defined in the constitution as any organization which has acquired and is using a Software AG Product. This definition is adequate for constitutional matters such as voting rights and representation, but it does not address the real membership of the Users' Group which consists of active and interested individuals within these organizations. Some organizations have many such people, while some, unfortunately, have none. Installation and use of a Software AG Product is good, but those who actively participate in the Users' Group go beyond this by helping to promote the continued enhancement and growth of these products so that their organizations are better served by them.

Your primary responsibility as a data processing professional who is using a Software AG Product is to the organization you are working for. You should use the product in the best manner possible as a tool to promote your organization's goals. This is obvious, and can be said of

every software product. However, the International Software AG Users' Group has evolved to the point where you now have several more opportunities and responsibilities, if you choose to utilize them.

1. The Change/Enhancement Procedure

You are encouraged to submit Change/Enhancement suggestions for any Software AG Product to the Change/Enhancement Coordinator. These are important because they are based upon your experiences and your organization's needs. They can be as specific or as general as you see fit. A form which helps you simplify this process is mailed annually to your organization and appears frequently in the newsletter.

Submitting a suggestion is only half of your responsibility. You also should participate within your organization each February when it receives the official ballot which each organization uses to vote for its highest priority Change/Enhancement items. By participating in the voting and by making sure that the ballot is completed and returned, you are again communicating your experiences and organization's needs to Software AG as well as other users.

2. The Newsletter

First of all, read it. Make sure that you are on a route slip for one of the several copies which your organization receives quarterly. The Newsletter has much information which can be helpful to you. It also gives you the names, addresses, and phone numbers of many other users like yourself with whom you can communicate and exchange

valuable information. It is a reference document which you should keep in an accessible place.

Secondly, you should contribute to the Newsletter. Any of the people listed on the back cover of the newsletter can help you out. If an article is too much for you, write a letter to the editor. As a vehicle for communication, the newsletter is very powerful. An article presenting the reasons behind your favorite Change/Enhancement is a great way to lobby for it. If you are proud about something that you have done with a Software AG product, then tell us about it in the newsletter. It was developed as a benefit for you, not just for the Users' Group officers.

3. Regional Meetings

No matter where you are, you belong to a Region. A Region is no more than a geographical area which has been organized by the Users' Group members within it to promote local communication through regular periodic meetings. You should get to know other Users' Group members and find out what they are doing. Intercommunication will help you solve problems faster and may keep you from reinventing an existing solution to a problem. New users should especially be interested in meeting older, more experienced users.

Each Region elects one person within their group to represent them within the Users' Group hierarchy, and in fact this Regional Representative is the basis of the hierarchy. The Regional Representative is the best person for you to contact about regional meetings and ac-

(Continued)

(President's Message Cont.)

tivities, and that person is listed in your useful reference, the newsletter. If existing regional meetings are not convenient enough for you, then talk with your Regional Representative about you organizing additional meetings in your area.

4. The Annual Conference

You definitely owe it to yourself and your organization to attend the annual conference. This is a superior educational opportunity for any user of a Software AG product. It combines

the opportunities of the first three items listed above with the additional benefit of personal contact with Software AG support, development, educational, and administrative personnel. User presentations, technical seminars, and well known keynote speakers add to your opportunities.

Once you have attended the annual conference, you should begin participating in them. Besides giving formal papers which can help boost your professional standing, there are many opportunities for you to

participate in more informal discussion groups or panel presentations. It is much easier than you think, and we give much help to each other.

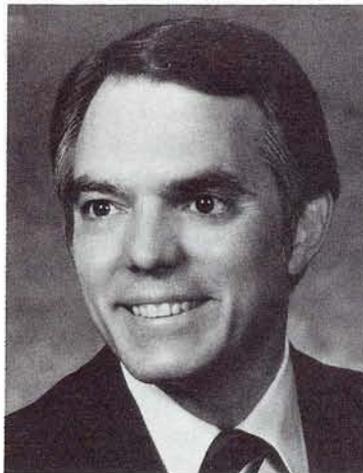
As you can see, there is much for you to do as a member of the Users' Group. It is up to you to take the opportunity to participate in the group, and to accept the responsibility for keeping it going. The benefits of this organization are great not only for the development of quality software products, but also for the professional growth of individuals like yourself.

(Las Vegas Cont.)

standardization of computer languages and currently serves on the Codasyl Executive Committee. Captain Hopper's excellence has been universally recognized. She has received many outstanding awards. Among them are: Data Processing Management Association, (Computer Sciences)—"Man" of the year award; Fellowship in the Association of Computer Programmers and Analysts, 1972; and Distinguished Fellow of the British Computer Society.

Captain Hopper will address Software AG in concurrent sessions on Wednesday, May 12. She will present timely information and comments on the computer industry.

Dr. Merrill Douglas, Director of Time Management Center and Publisher of TIME TALK, will provide information on professional growth by presenting a one and one-half hour session on Time Management. One of the nation's leading experts in time management, he has conducted exten-



Dr. Merrill E. Douglas

sive research into people's time habits . . . discovering what's effective and what isn't. He brings this wealth of knowledge and background to each of his programs. Fortune Magazine recently called him a ". . . top expert."

Dr. Douglas has addressed audiences from varied backgrounds: managers, executives and professionals in industry, government, education and other organizations. Drawing upon his

experiences with a wide variety of people and situations, he presents his concepts about time concisely, skillfully and effectively. His tested and proven techniques get results. Audiences have universally praised his straight-forward, pragmatic approach to solving tough time problems successfully.

Dr. Douglas contributes regularly to leading journals and has authored several cassette tape albums. His next book, SUCCESSFUL TIME TECHNIQUES, will be published soon. His Doctor of Business Administration degree in Management and Organizational Behavior was earned from Indiana University. Dr. Douglas is listed in American Men and Women of Science and Who's Who in Finance and Industry.

Dr. Douglas' presentation will be offered in concurrent sessions on Thursday, May 12. It will be repeated three times that day.

(Continued)

Tutorials "Re-Tuned"

Tutorials were so successful in Innisbrook they will be continued this year in Las Vegas. Due to popular demand and frequent request by the user community, the tutorials will be categorized as addressing the needs of the new user (less than 18 months) or the more experienced user (over 18 months of product use.) Users have been asked to suggest Conference tutorial topics and appropriate emphasis. Once again Software AG looks forward to the positive input given by its users so that we may provide them with the best services possible.

User Participation Continues

Software AG users have received a "Call for Papers", a notification that papers are being solicited for the 1982 Conference. User presentation categories are ADABAS, COM-LETE, NATURAL and ADABAS-M. Users will share their experiences in product use, describe interesting applications and present their approach to responding to their organizations data processing and data administration needs. User workshops will also continue and, once again, the Special Interest Group Chairpeople will be responsible for coordinating the details for those. User "coordinators" will participate actively in defining and coordinating all aspects of the user participation in the Conference agenda.



**Great
Expectations**

Charles Dickens Novel Sets Tone for Conference

"Great Expectations", the theme for the Tenth International Software AG Users' Conference will be carried out in all planned events during the week of May 9-13, 1982 at the Dunes Hotel and Country Club in Las Vegas, Nevada.

Characters and events from Charles Dickens novel of the same title will come to life at the opening general session on Monday morning in a multimedia presentation. They will remain an ever-present fixture at social events and sessions during the four-day educational conference.

The first pre-conference briefing with registration materials is expected to be mailed shortly. With no increase in the general registration fee, it is anticipated that attendance figures will readily top last year's record attendance of 876. More than 1200 rooms have been reserved at the Dunes Hotel. Current interest indicates that more than 1300 people will attend the workshops, tutorial sessions, and companion program events already scheduled.

HIGHLIGHTS

The conference will feature a Sunday evening President's Reception; the Software AG banquet, which promises to rival last year's fete; the annual closing wine and cheese tasting with a preview of the following year conference site; and a full schedule for the companion's program.

In response to the evaluation forms of the 1981 conference, full American breakfasts will be served daily and will also be available to all companions as well. In keeping with a belief that fresh air stimulates mental activity, many of the meal functions will be served outdoors on the grounds of the hotel, contrary to most peoples concept of Las Vegas as a hirise city. The desert landscape, although quite a contrast from Innisbrook's palm trees is quite beautiful.

NEW FEATURES

For the first time, an official conference airline and car rental company have been selected to assist in making arrangements easier and more economical for the attendee.

United Airlines will have a conference 800 telephone number to handle all ticketing at the most economical airfare available.

National car rental will offer special daily and weekly rates to any attendee electing to drive during their stay. Complete information will be included with the registration materials.

SCHEDULE CHANGES

Due to the nature of Las Vegas, the daily conference schedule has been modified. As we see it now, the typical day will run as follows:

8:30-9:15 a.m. User meetings
& adhoc terminal
demonstrations
9:15-10:00 a.m. Breakfast
10:00-11:30 a.m. First session
11:30-12:00 p.m. Coffee break
12:00-1:30 p.m. Second session
1:30-2:30 p.m. Lunch
2:30-4:00 p.m. Third session
4:00-4:30 p.m. Coffee break
4:30-6:00 p.m. Fourth session

(Continued)

Evening activities will vary day to day.

POST CONFERENCE TRIP

For the first time, a post conference trip will be offered to all attendees. The four day trip will depart Friday, May 14 for a two night stay at the Grand Canyon National Park. The trip will include an air tour of the Grand Canyon, road trip transfers to the Park, two nights accommodations, a western steak fry on the rim of the Canyon, a bus tour of Sedona, Arizona and Oak Creek Canyon, and two nights at one of Phoenix's most beautiful resorts—Pointe Tapitilo where continental breakfast and evening cocktail parties are included. At the Grand Canyon, optional bus trips and a burro trip down the Canyon will be available on a first come, first served basis. Specific details and price will be included in the pre-conference briefing.

"Great Expectations" promises to be the most timely and educational conference of its kind. Make plans now to attend this unprecedented event.



Great Expectations

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

“Now You’ve Gone and Done It!”

Dan Nolan
Computer Sciences Corporation

I can't believe you! First, you got your boss' OK, then the users' group voted you in without anybody bursting through the doors at the back with some dark secret from your dim and shameful past. Now, you're the new Regional Representative and you feel like clutching at your throat, falling to the floor with one arm outstretched as you call pathetically for a doctor! Just take a few moments to survey the situation:

Chances are that your predecessor has done a fine job, and left for one of three reasons: His time was up, and you rotate officers; His job changed; or, it got to be too much for him. If it was for either of the first two, you're in good shape. All you need to do is compare what he was doing with what you can do, and adjust accordingly. If it was for the last reason, however, you now have official cause for concern. You need a checklist *fast* before you find yourself in the same predicament, so here's a starter:

Mailing List (for labels, queries, change) for individuals, companies
Meeting location (hall, meals, accommodations)
Purpose of Group
Delegation of workload
Agenda and Minutes

Get a mailing list together if one hasn't already been established. Decide whether you will be posting invitations and corres-

pondence to individuals or organizations, existing users or interested parties. Some regions have doubled in size between meetings, so a small group is no guarantee that you won't find yourself with writers' cramp at 3 AM someday.

While you're at it, decide whether to send to individuals or companies. With the problems we've been having with postal service lately, a scattergun effect is helpful. Your first mailing will probably be for a meeting, so give an idea of what's to be covered. Ask for an RSVP and phone those who don't a week before. Jot down topics of interest from those who cannot make it, to bring up at the General sessions. The first phoning will be more than subsequent ones, as your group realizes you are serious and will begin responding.

You were probably left with a tentative agenda, but if not, take your best shot at one and get as much help as you can. The first meeting will resolve a number of issues, as the focus or intent of the group, whether it is to serve primarily as a forum for International presentations, a series of workshops or will concentrate on single issues. Whatever, you had best get it out front and agreed to early, before you find yourself a Representative of one.

Also at that first meeting, you can see about distributing the workload. Most regions are organized with a division of labor along procedural (facilities, refreshments, agenda, minutes, etc.) or product (ADABAS, NATURAL, COM-LETE, etc.) lines, but leeway exists for many other breakdowns such as special interests or application areas. However it is set up, delegation will provide better

coverage of all issues than if you attempt to run a one-man show.

Determine at that first meeting whether the meetings will 'float' from city to city, or will always be at the same place. It may be easier to have a single site, as the establishment you patronize will be less likely to treat your members as though they just came in for the citrus harvest. (If such arrangements have not been made, get on it! Three months notice is not an uncommon request.)

You can get volunteers for every aspect of your activities, save one: taking the minutes. This is regarded as such an extraneous task that you will either have to slip it into another office or do it yourself. May I offer a solution: secure the services of an outsider, part-timer or progeny, student or spouse. Remuneration can be handled at the barter level, experience is good and all your users will benefit from being able to participate as users. Your minutes will also be more objective, and will give the flavor of each presentation, rather than reading like a football scorecard. Each issue does not have to be reported verbatim, but the reader who wasn't there should be able to tell whether or not it is worthwhile to call for more information. Just give them enough grist so they can get the jist.

This was less than a complete checklist, but it should get you started. Hopefully, we can get together and formulate a more comprehensive formula for success, but it is beginning to appear as if that is as complex a task as any systems our client users have dreamed up. Then again, who is better qualified to do it?

Change/ Enhancement Process Reviewed

*Peter MacRoberts
Pennzoil Company*

Any user of a Software AG product can submit an Enhancement Request.

Requests can be submitted for ALL Software AG products. In order to have time to process your requests, for the Product Representatives to consolidate them, to allow the ballots to be counted, and for Software AG to respond, the following schedule has been set:

10 December 1981

Last day Change/Enhancement requests will be accepted.

8 January 1982

Consolidation of like requests completed by Product Representative.

25 January 1982

Requests and ballots distributed to all users.

8 March 1982

Last day ballots will be accepted.

26 April, 1982

Results of vote and Software AG's responses distributed to all users.

I know it's hard to begin thinking now of the Conference in May, but the sooner the requests are received, the better. The direction taken by ADABAS, COM-PLETE NATURAL and ADABAS-M can be influenced by your participation.

The only change in the system this year is an acknowledgement that voting by groups, which has existed de facto for several years, will become an official method of voting for Change/Enhancements. This is particularly effective for international regions who may vote by group and telex the group ballot to me. Details will be provided when ballots are sent.

Each user has already received a Change/Enhancement Request form in the mail; another copy of this form is in this Newsletter. Although these forms have not changed, this is a good opportunity to review this process for new users. Here is a brief overview of the information requested:

1. (Product Name)—ADABAS, COM-PLETE, NATURAL, and/or ADABAS-M.
2. (Title of Request)—A very short title that describes request; e.g., "AT BREAK" processing, UTIL09 generation of DDM, etc.
3. (Category)—The general area in which this request can be classified; e.g., MPM, Performance, ADAMINT, Mapping, etc.
4. A succinct description of the request giving enough detail to fully describe it; emphasize major goals for the product rather than solutions or short-range fixes.
5. List benefits expected from the request.
6. Supply date, name, company, address, and telephone number.

Send all completed Change/Enhancements Requests to:

Peter R. MacRoberts
Change/Enhancement
Coordinator
Pennzoil Company
P.O. Box 2967
Houston, TX 77001
(713) 236-7774

CHANGE/ENHANCEMENT REQUEST FORM

Please forward completed requests to:

Mr. Peter R. MacRoberts
Pennzoil Company
Pennzoil Place
P.O. Box 2967
Houston, Texas 77001

Product _____

Category _____

Title of Request _____

Complete Description of Change/Enhancement (please type):

Identify Benefits:

Date: _____

Submitted by:

Name: _____

Company: _____

Address: _____

Telephone: _____

For Users' Group Use Only:

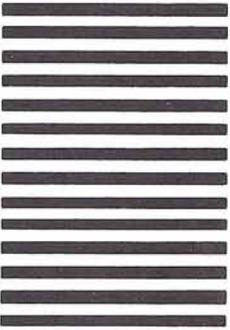
Request Number: _____

Date Received: _____

Received by: _____

Consolidated with Request Number: _____

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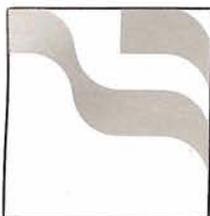


Peter R. MacRoberts
Pennzoil Company
P.O. Box 2967
Houston, TX 77001

PLACE
STAMP
HERE



FOLD



Regional Reports

Rocky Mountain Region

*Dave Johnson
State of Utah*

The Rocky Mountain Users' Group met June 19, 1981 in Denver at the Stouffer Inn. Nineteen persons representing thirteen installations were in attendance.

A welcome was given by President Dave Johnson of the State of Utah and a discussion followed regarding training. A questionnaire is to be sent to each user within the region to determine training requirements. The Users' Group will make arrangements for the training and the individuals who participate will pay the Users' Group.

It was proposed that the meeting format be modified to become more of an open forum where problems could be discussed and perhaps resolved as well as discussions of how the products are being used within the region, rather than formal presentation. It was also suggested that the users bring designs to the meetings for review, comment, and help from the rest of the group. Software AG also stated that they would like to participate more; this participation might possibly expand the conference to two days.

The first formal presentation was made by Steve Greaves of Software AG to familiarize the group with the Data Base Machine currently being marketed by Software AG. He suggested an upgrade to current equipment, as it becomes necessary, is expensive and time consuming, and the alternative to the larger dual machines is the

Data Base Machine which off loads the data base function to a separate piece of hardware. This is an IBM/370 compatible main-frame computer with proven channel-to-channel software interface. He then presented a very thorough discussion of the hardware components and the software required as well as the interfacing mechanisms.

After lunch, Bob Nydegger of the University of Utah led a group on "What we didn't know about ADAMINT" or problems users were having in the use of ADAMINT. Bob had a very worthwhile talk with Peter Schnell regarding problems with ADAMINT use and shared his discussions with the group. The design of programs using ADAMINT is extremely important.

Dan Filkins, Software AG, gave a presentation on new products of Software AG and stated there are about 8-10 new products being made available. He then gave a detailed discussion on NATURAL Advanced Functions which will be a separate stand-alone product. The Rocky Mountain Users' Group voiced a formal complaint to those present from Software AG. They stated that CICS users do not want to buy new software to provide facilities that should be included in software of current NATURAL products.

A discussion was then led by Leon Miller of the State of Utah on performance problems. He stated project managers new to ADABAS and NATURAL tend to design files as VSAM applications and NATURAL tends to be written with COBOL logic. Instead guidelines and methodologies should be established to insure efficient code. It was stated that some review of NATURAL code has reduced pro-

duction runs by 80% or more. Also, care should be taken in storage arrangements of files. The work, associator, and data should be placed on separate packs. The University of Utah has created a program to capture online statistics to monitor performance under CICS.

Finally, a review of the International Users' Conference resulted in several suggestions. It was felt that the Conference was geared more to the first-time attendee. Software AG personnel stated, however, there was a greater percentage of new users than ever before at the Conference. Some felt it is because "old-timers" do not gain much valuable information so they cease to attend. It was also suggested that the conference have a greater emphasis on the practical side or how to do things rather than so much devoted to product changes and enhancements, especially new bells and whistles. It was a consensus of the group there should be more workshop oriented sessions and some presented more than once. Long time users and Software AG knowledgeable staff should be asked to conduct these workshops.

It was emphasized that the Conference agenda is directed and planned by the Users' Group Executive Committee. Any recommendations as to format or agenda items should be made in writing to Dave Johnson of the State of Utah. He will then compile all the recommendations and submit them to the Executive Committee. Change/Enhancements should still be sent to Jerry Shade of the State of Colorado.

Iberia Region

*D. Angel Jerez
Dragados y Construcciones*

The first meeting of the Spanish and Portuguese Software AG users was held in Madrid, Spain on July 11, 1981.

It was attended by representatives from six user organizations; Software AG (Darmstadt), Gabinete Tecnico de Informatica and Fraser Espanola.

Our business meeting included the official formation of the Spanish and Portuguese Group (Iberic Region).

The following persons were elected as regional officers:
President—D. Angel Jerez
Vice-President—Sr. Correia da Costa
Vocal—D. Pedro Patron
Secretary—It was agreed that Rafael Gomez will act as secretary.

A technical interchange between the users has started. We each should describe our use of Software AG products. We expressed an interest in the following items:

- Documentation about error handling;
- Documentation for tuning ADABAS and COM-LETE;
- Descriptive Manual of all the Software AG products and their specific functions;
- Recommendations design for the applications DB/DC based on Software AG's products;
- Recommendations on how to organize the support and development of ADABAS functions.

Peter Pagé reviewed major topics of interest from the International Users' Group Meeting held in Florida.

Sierra Pacific Region

*Alan Routhier
County of Sacramento*

The Sierra Pacific Region held a meeting on September 15, 1981, at the Sunnyvale Hilton in Sunnyvale, California. The meeting was hosted by Castle and Cook, and we wish to thank Ms. Colette Farabaugh for her effort in arranging for the meeting facilities. Thirty-four people attended the meeting and they represented nine of the fourteen licensed organizations in the Region, plus Software AG and MSP Corporation.

The main purpose of the meeting was to discuss the data dictionary and its role in an organization. Mr. Steve Carter of Software AG reviewed the history of the Software AG dictionary, discussed its current status, and previewed its proposed future development. Because of current limitations, several people were anxious for continued development of the Software AG data dictionary, and wanted to know specifics about which features would be implemented first and when they might be available. However, because of the large scope of the project and its early status, specifics are not yet available.

Mr. Larry Hogg of MSP spoke next about the independent, non-integrated data dictionary which they market called Data Manager. He described many of the impressive facilities which Data Manager currently provides, and how they may be used by a company to organize and control data. On line access to the dictionary is essential and

is now provided through several teleprocessing monitors including COM-LETE. The COM-LETE on line Data Manager update facility is still under development, however.

After lunch we held a discussion of data dictionaries which was led by Mr. Steve Clark of the County of Sacramento. The County first tried Software AG's data dictionary, but because of its limitations is now using Data Manager.

During the discussion several important points were made. The data dictionary tool can be easily misused by an organization if it does not plan what it wishes to accomplish. Without planning and control, the dictionary cannot impose company wide data information and sharing, which Steve feels is an important goal for the cost effective use of data base management systems. An integrated data dictionary system requires that such a commitment must be made and implemented before its use; otherwise it will inhibit data base development rather than promote it because of all the front end input it requires and verification it performs.

At the completion of the data dictionary discussion, individuals brought up problems they were having in various areas and the group shared its knowledge with them. There were more questions than answers but everyone enjoyed the exchange.

The next Sierra Pacific meeting will be hosted by the County of Sacramento in Sacramento on Tuesday, December 8, 1981. The theme of this meeting will be NATURAL. Mr. Jim Reiner and I (both at [916] 440-6301) will be working on the arrangements for this meeting.

Australian Region

John Palmer

Australian Bureau of Statistics

The Australian Region met on 16 July at the CSIRO in Melbourne. Attendance was 22 and included representatives from 11 user installations and 4 staff from SPL (SAG agents). Mr. John McAra from Software AG (Seattle Development Centre), who was on holiday in Australia, was a most welcome additional attendee. Those present were pleased to meet John—an Australian now working for Software AG—and listened with interest to his address on Software AG developments. Other sessions at the meeting included a presentation, given by John Shortridge, on ADABAS-M and its use by CSIRO. This was accompanied by a very good demonstration of the product. John Palmer provided a report on his attendance at the International Conference at Innisbrook. Reports were also received from the FACOM Special Interest Group and from SPL who indicated that they expected the first Australian installation of COM-LETE within 6-8 weeks.

In the general business section of the meeting, elections were held for the Regional Committee. This was for a "short year" as it was recognized to be more appropriate to elect the committee just before the International Conference. The new committee is:

John Palmer (Australian Bureau of Statistics)—Chairman

Ray Rich (Australian National Library)—Deputy Chairman and Canberra Representative

Fred Burns (Dun & Bradstreet)—Melbourne Representative

Russel Clarke (Tooth & Co.)—Sydney Representative

Angus King (WATAB)—Perth Representative

It was also noted that Steve Maxwell (Reserve Bank) has taken over the task of chairing the FACOM (Fujitsu) SIG.

The meeting spent some time discussing two items arising from Software AG statements at the Innisbrook Conference. The first item of concern was that of separate pricing of enhancements. The meeting noted that user interests are very well represented in Alan Routhier's letter to SAG and await Mr. Maguire's reply. (The reply has now been received by Australian users.) The second issue was the policy on release date announcements. Users present expressed considerable concern at the planning problems imposed on users if earlier indications of release cannot be given. Lack of knowledge of even approximate release dates may force users to implement alternative solutions that may be costly and sometimes prove to be unnecessary. Commitment to the alternative development may be such that users are unable to revert to the SAG product or enhancement when available. John Palmer has expressed this concern in writing to Software AG.

The meeting concluded with the regular and valuable "problems and solutions" session. The main problems discussed were:

- ABS and RBA reported that NATURAL V1.1.8 and V1.1.7 are incompatible on their handling of the INPUT state-

ment. NATURAL V1.1.8 does not allow an input field to be more than 79 characters in length. The solution is to redefine the affected field.

- RBA reported that ADALDI still samples the input file even though the sizes of the Main and Normal index were fixed.
- OCAL reported that ADABAS V4.1 under DOS and PL/1 are incompatible. SPL supplied a local fix. This caused us to question how much PL/1 in a DOS environment was tested before the release of the DOS version of ADABAS 4.1.
- Tooth reported problems with use of the EXU option with ADAMINT. The files were not opened correctly. The solution is to use a Mult module to override the open. Also, Tooth discovered a problem of not being able to delete records from a Coupled file under V4.1. This occurred when coupling an unpacked field and is resolved in SM4.

The next meeting will be at the Reserve Bank in Sydney on 12 November, 1981.

New England Region

Bob Meyers

The Boston Company

A meeting of the New England Software AG User's Group was held at Commercial Union, Boston on June 18, 1981.

(Continued)

Following introductions, a presentation was made by Sandra DiPirro, Commercial Union, on a program used at Commercial Union to create fixed format records from unloaded decompressed ADABAS file records.

Since the data base carries only non null occurrences of periodic groups and multiple value fields, the decompressed file may contain varying numbers of actual occurrence of these fields. There is a one byte binary field preceding the group or field to indicate the actual number of occurrences in the record. This makes it difficult to use a copybook on a decompress tape. The programs, written in PL/1, use substrings and concatenation to remove these counters. It adds sufficient null value periodic groups or fields to those actual occurrence on the record to create a file with each record containing the same number of occurrences. The program is driven by a table that contains information as to the actual number of occurrences of the group or field. This table is derived from the file description tables used to compress raw data for loading. A second table is used to give the format of the periodic group to allow proper placement of binary and packed fields in the null occurrences added. The program works for periodic fields and groups, multiple value fields, and multiple value fields within periodic groups.

The next item on the agenda was a round table on data base education chaired by Ann Karpick, Commercial Union. The discussion focused on education of the data base administration and data base application areas. The importance of courses in file design, data base internals,

NATURAL, and COM-LETE was discussed. The feasibility of having an ADABAS internals class in Boston in the fall was brought up. There was a general feeling that this would be a good idea provided the right instructor could be found.

The need for education on NATURAL internals and what ADABAS CALLS NATURAL generates resulted in lively discussion. It was felt that some of this information could be developed by user group members but that much of it must be elicited from Software AG experts. It was suggested and supported by all that we contact Software AG and that we request that someone that have heavy technical expertise in NATURAL attend our meeting.

Since the response to the ADABAS design course (given by Doyle Carter of PDC) was so enthusiastic, a committee to work on future education projects was established. Ann Karpick and Richard Wolverton of Commercial Union, Louis Fuerst of ADC, Alice Schafer of Mitre, and Bob Meyers, of the Boston Company volunteered to serve on the committee.

Bob then mentioned the desirability of creating a mechanism for exchanging DBA tools within the user group. The discussion about a DBA tools exchange that occurred at the DBA tools workshop at Innisbrook was related. It was decided that a list of those tools available for exchange or desired be compiled. Anyone with any needs or tools should contact Bob Meyers.

Alice Schafer, of Mitre, chaired a discussion on security. She began by describing the security used at Mitre. Each ADABAS file is password protected. They do not use field

level security or security by value. They plan to cipher some files; however, she pointed out that ADABAS only ciphers the data storage. Therefore, it is possible for a user without the cipher to obtain access to sensitive information from the index. She also stated ADAMINT snap dumps print out the password and added that there is a zap available from Software AG to eliminate that. Passwords also can be found in a core dump. Ms. Schafer mentioned that some ADABAS utilities require a password while others do not. It is also possible to run some functions of the security program without the use of the password. People were reminded to keep their security module in a secure location. At Mitre, they have created an ADABAS file with security password information cyphered on it.

Their NATURAL programs have imbedded passwords. It was pointed out that it is possible to access NATURAL programs without any password. The NATURAL security password package will be available following the release of NATURAL 1.2.

Peter McDermott discussed the NATURAL security system implemented at Boston University. They currently have an assembler routine zapped into NATURAL which is being rewritten as a COBOL routine.

NATURAL security was discussed. Several shops have two different versions of NATURAL. The first version for users has the data base update commands removed. The second for programmers has all the NATURAL features. There is also a version of NATURAL that can be created called NATURAL-X that allows a

(Continued)

user to only execute NATURAL programs but not write his/her own. Mitre has changed the list file command to another name so that a user cannot go shopping in the NATURAL programs already created. Boston Company has modified their logon procedure so that when a user logs on to COM-LETE he is automatically logged on to the appropriate version of NATURAL.

Basically, we agreed that none of the security that has been implemented would prevent the renegade programmer from causing problems. The security was more user oriented.

Problems with Version 4 security by value were pointed out. Since the security by value is not checked until the data record is read some security problems as well as performance problems may result.

The session concluded with a discussion of some of the early reactions to NATURAL SM8 and ADABAS V.4 SM3.

Eastern Canada

*Gene Miklovich
Systemhouse*

The Eastern Canada Users' Group met in Toronto on September 15th. The meeting was hosted by Consumers' Gas and there were 26 people attending.

The meeting began with a review of events of the preceding 3 months which included a successful offering of two courses in Ottawa in July (4.1 Internals and V4 Facilities and Conversion). It was noted the August newsletter was out and had the current product release levels and in addition had a letter from John Maguire which described SAG

policy towards Change/Enhancement vs New Products. The article also indicated that SAG intends to supply a user exit capability to NATURAL in order to allow users to put their own security requirements in NATURAL. The Newsletter also mentioned that the deadline for Change/Enhancement Requests would be December 10th. The final addenda to the conference proceedings should now be in everyone's hands (now that the mail strike is well settled).

The meeting proceeded with some administrative items:

- (i) Copies of proposed changes to the constitution were distributed for feedback and information purposes.
- (ii) A request for volunteers for product coordinators for Las Vegas was discussed and the roles explained.
- (iii) A survey for comments on tutorials for Las Vegas was distributed and collected and will be forwarded to SAG.
- (iv) Another survey was discussed, this one being from SYNOPTICS covering personal productivity and is being done independently of SAG.
- (v) Requests for potential topics for future meetings indicated an interest in ADABAS-M, ADABAS-VM, and the Online Data Dictionary.

Discussions on problem reports involved the following:

- (i) TCPL is having a problem shutting down COM-LETE (they have to do a CANCEL). Bob Nickel indicated that it was due to their modification of VTAM and that DENVER was working on it.

Bob noted further that if we had problems we would normally go to Cliff, but that we shouldn't hesitate calling Denver if necessary (especially if the problem is URGENT and Cliff is not available). When calling Denver, you should, however, obtain a trouble log number.

- (ii) Bob Nickel responded to a question about how long SAG intended to support 3.2.1. by referring to the service contract which stated SAG will notify the users 90 days before terminating support and subsequent to the 90 days provide support reasonable according to the circumstances. Bob indicated that he would clarify this with SAG and find out if SAG currently had plans for terminating 3.2.1 support.
- (iii) Cliff indicated a bug had been located in V3. It seems when ADABAS starts up, it initially tries to open file 1 so that when using security by value with file 1 ADABAS will give a return code of 921. The solution is (while on V3) not to use file 1.

A short discussion on the group newsletter indicated that Lorraine Hodgson of Consumers' Gas would be issuing a newsletter now that the mail strike was over and all contributions would be accepted immediately and should be typed.

Roy McSheffrey and Joyce Sinclair led the next two discussions:

(1) NATURAL

—some guidelines for its use and some problems ITC

(Continued)

encountered. Roy distributed documentation on what they had found.

(2) NATURAL SOURCE EXIT

- ITC has in use a modified version of the JOHNSON & JOHNSON exit and although there is still some more work that should be done on it, they find it of great benefit since they can use TSO/SPF as an editor and the PDS allows considerable flexibility in backups and conversions.
- Leo Mior of TCPL indicated they also had their own source exit which indicated features like renumbering and less structured procedure for inserts, etc. He indicated they still had some TSO screen handling problems. Leo also indicated that they were using the IBM graphics package GDDM under NATURAL via a PL/1 call.

Ted Hillis led an interesting discussion of the skills required of a DBA. Because of their commitment and the size of their data base they have a single DA/DBA role supported by a group in which the responsibilities are rotated. Ted also requested any comments or concerns of large data base users (greater than 4 3350's) be forwarded to him so that they could be addressed by the SIG.

A format of the meetings was discussed and it was agreed that a rotation was fair for hosting and that the host would also be called on to lead a presentation/discussion. It was also announced that Doug Kirkland of the PSC would be presenting the results of his 4.1 conversion

study at the next meeting (November 17th at the PSC in Ottawa). Doug indicated he would be willing to discuss the study in the meantime or their version of SMART START. Doug can be reached at 613-996-7645.

Far East Region

*Yasuo Shimizu
Fuji Photo Film Company*

The 25th ASSIGN (ADABAS Special Interest Group of Nippon) meeting was held in Tokyo on July 14, 1981. Of all ADABAS users, 35 persons from 22 companies attended the meeting which was chaired by Mr. Kawamura of Nippon Kokan K.K. Various presentations and discussion were given. From Software AG of Far East, Inc., Mr. Ishii, Senior Managing Director, Mr. Yokota, and Ms. Yoshiki participated.

1. "Using ADASCRIP + with a Light Pen"

Mr. Okoba of JGC Corporation gave a presentation with slides on their system called JACS-IR, the same subject discussed at the Innisbrook International Users' Conference in May.

The JACS-IR was developed to facilitate the use of the ADASCRIP + functions, using a light pen.

JACS-IR works in the following manner: When you choose one of the files displayed on the screen, key names will be displayed. You just touch the key names required with the light pen, then the values corresponding to each chosen key will be displayed. Then you will select the search criteria. According to

the criteria, the required file will be retrieved and the result will be reported on the screen. The search criteria can be input manually.

2. SOAR (Set Oriented Architecture of Request)

Mr. Yokota of Software AG gave a presentation on SOAR.

SOAR is an information retrieval system which was designed based on ADABAS. It comprises a SOAR conversational language used at terminals which includes ADASCRIP +, and SOAR commands activated by SOAR calls in the user programs which are harmoniously used with ADABAS calls. SOAR is provided with particular functions required for literature information retrieval such as Initial, Floating, and Terminal Match. SOAR allows the user to retrieve sets of records out of the data base to meet search criteria, further to create subsets, specifying the search criteria to save or activate the sets, or to process the set operations. Some SOAR users are now on the production run for customer information management.

3. Technical Information

Mr. Ishii of Software AG explained the pieces of technical information which is usually mailed to the users.

4. Next meeting

Next ASSIGN meeting is planned on September 21, 1981. The presentations will be:

- Utilization of NATURAL (Kyodo Oil Company);
- Data Base Machine (Software AG of Far East, Inc.).

Midwestern Region Users' Group Meeting

Ron Eggar
NAVCO

The Midwestern Region User Group met in Bloomington, Minnesota on September 10, 1981. West Publishing Company hosted the meeting. The general tone of the meeting was characterized by expanded participation with input solicited from all of the attendees. In addition, three papers were also presented.

Paul Meier from Verex Assurance Corporation presented a paper on his company's use of the CMPEXIT in NATURAL. With the use of this exit, Verex is capable of storing both source and object for NATURAL programs in VSAM data sets. The use of this approach provides added security for their programs since both test and production libraries can be maintained. Updating to the production library is available only with batch. Verex is making the routines and documentation available to other users through Software AG.

Ron Egger of NAVCO Corporation delivered a paper on programmer productivity for Steve Keeney, who was unable to attend. In general, the approach was to use program stubs consisting of basic modules of a COBOL program, each performing a specific function such as issuing an S1 command. These modules are then concatenated as needed to produce a skeleton COBOL program. In addition, the programmers are given the internal details of all ADABAS calls, format buffers, record buffers,

etc. The programmer is then only able to enter the move and edit statements necessary to create an online program. Use of the approach has resulted in the completion of an average of 2.5 online programs per week by each programmer over the last 13 months.

Dan Filkens of Software AG gave a short talk on NATURAL Advanced Facilities, which include remote job entry, print spooling, independent storage management and dynamic cataloging. No release date has been set for the product.

Randy Guyer of the City of Milwaukee talked about the problems associated with being a user with limited resources. The primary problem is that only one person is assigned the maintenance and design of the data base, maintaining NATURAL and all other ADABAS related products. In this environment, it becomes necessary to be able to plan for long range changes. Unfortunately, the planning is made more difficult since Software AG's long range product plans are not available. In general, the discussion gave the group an insight into the problems of the small user with a large set of problems.

An open session in which all attendees shared experiences with Version 4.1 followed. In general, the comments were that the installation and use of Version 4.1 was very smooth. Conversion of existing systems provided some problems, but were in most cases unique to a specific installation (e.g., inability to use ADAMINT with INTERCOMM, some weakness in DOS programming, etc.).

The meeting then turned to the Version 4 utilities and the Users' reactions to the output from the

utilities. A list of Change/Enhancement requests were prepared for submission to Software AG as a result of the discussion.

The next meeting will be in Madison, Wisconsin, on a date to be determined later.

Pacific Southwest Region

David Berg
Hughes Aircraft

The June meeting was held at Aerospace Corporation and hosted by Jennifer Lee.

Ken Ng made an appeal for future meeting locations and new topics. It was agreed to try to decide on the locale of the meetings with further advance notice.

Jennifer Lee discussed the Executive Committee Report. Topics discussed were the possibility of mid-year conferences, educational concerns, technical support, Change/Enhancements, status of the user profile system and the amendments to the SAG User's Constitution. The new executive committee officers were notably mentioned.

A volunteer was requested for the position of a regional DBA tools chairperson. DBA tools were understood to be user-written programs not maintained by SAG but distributed through user requests. The responsibilities of this position would involve insuring that the documentation was thorough and clear, to catalog/organize the programs and the documentation in an easily transportable manner. A PDS (partitioned data set) was discussed as a possible solution.

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Volunteers would be taken in a subsequent meeting.

Ray Newell spoke of Nissan Motors' ADABAS V4.1 conversion plans. They anticipate converting to production use of V4.1 by August 1981. Their design philosophy will be to define on-line users from 5:00-17:00 to be access only, exclusive, or ET/BT logic users. After 17:00, only exclusive users would be allowed. Since programs are serially executed, no competition would exist between users.

Some recommendations offered to take advantage of ADABAS V4.1:

- a) When issuing open/close in a TP environment, Peter Schnell recommends replacing the close with ET command.

The first OP will issue a buffer flush. Thereafter, the User-ID is in the UQE and a buffer-flush does not take place.

- b) Modify application programs to be responsive to response code 9.
- c) Hold Queue - each installation must delete entries from check-point file.
- d) Take note that for exclusive users in ADAMINT, hold logic will automatically be ignored.

Linda Simon of UCSB discussed their general ADABAS V4.1 conversion philosophy. They have identified general topics such as:

- a) Detailed conversion plan
- b) Batch updates will be specified as exclusive users
- c) Billing program for new log format
- d) Recovery/Restart
- e) Procedural Areas

The July meeting was hosted by Software AG.

A letter by John Maguire, President of SAG, addressed to Software AG product users was discussed. It addressed the concern users have experienced over creation of separate pricing for new products which perhaps should be implementations of high-vote Change/Enhancements. This letter was published in the July newsletter.

Concerning the new online Data Dictionary, SAG is willing to make enhancements but user input is necessary and therefore they are soliciting responses. Several negative comments received thus far are no auditing, no logging and limited comments lines.

A status report of planned user group coordinated education was given by Jennifer Lee. Two subjects that have been discussed are NATURAL techniques and ADABAS performance/tuning. Gary Bowers, Education/Consulting Vice-President of SAG, was contacted with regards to the ADABAS performance/tuning. He indicated that arrangements for such a class could be made. Our dialogue with him is continuing.

Walt Hopkins of Nissan Motor Corp. presented V4.1 Smartstart. Smartstart is a collection of software developed at the University of Washington and published at the 1978 Users' Conference Proceedings. Its purpose is to eliminate computer operator intervention. It consists of four COBOL programs. It requires a one record flag file to signal normal ADABAS termination.

Smartstart is divided into two separate OS jobs. Of the first job, the copy step always executes when condition codes indicate an abnormal MPM termination because a failure would

produce a Siba protection tape without trailer labels. Manual intervention might then be required to determine if a backout is necessary. One back out would be required for every ADABAS update program executing. The second job (submitted with typrun = hold JCL parameter) opens Siba and Adalog data sets, sets the work-file switch to indicate that MPM is active, saves space, and brings up the MPM. Finally, upon normal completion it resets the work-file switch to indicate a normal completion.

JCL samples and source programs are available from Nissan. Samples were distributed at the meeting.

Clola Ferris of Aerospace Corp. presented a proposed Data Base Suitability document. The intention is to provide documented guidelines for the purpose of screening prospective data base users and to expose users to problem areas in the eventuality that an application system's performance is not acceptable. Clola solicited opinions from the group and was given suggestions such as:

1. Consider need or volume of online queries;
2. Who will be viewing the data? (At times a political decision must be made in order to benefit relations.)
3. Impact on Network by application; (Substantial increase of number of CRT's accessing file(s), would require an expansion of the network.)
4. Discourage online sorting of data.

Northwestern Region

Dian Odell
Evans Products Company

Twenty four persons from 16 installations, plus 4 persons from Software AG attended our September 11, 1981 meeting. Each person was asked to indicate on the attendance sheet their job position or interest area in attending these regional meetings. Entries and frequency were:

- 14 technical support (performance, maintenance)
- 12 design, applications (DBA, DA, etc.)

This shows future meetings should continue to have a balanced content between the technical and the application-related topics.

Agenda items and discussions were as follows:

1. Logical Database Design—Why Bother?; Charles West, NOVA.

An overview of logical database design—what is it, what is it good for, and how should we use it. This was a good introduction to the topic for someone who had not heard of these concepts and a good review/reminder for the others, with enough specifics and techniques discussed to give the information value for practical application, not just conceptual. Topics discussed were physical vs. logical design, data structure diagrams, definitions and benefits of various levels of normalization, elimination of many-to-many relationships. (Copies of Charles' foils are

available.)

2. Software AG Conference Wrap-Up

Persons who had attended the conference at Innisbrook made comments like:

"The tutorial format is valuable and should be refined and continued; it improves on the problem of having questions but not being familiar enough with other users and SAG personnel to know who to ask."

"It seems everybody is reinventing the same wheels; too bad we cannot develop a scheme for better sharing and exchange. At least it is reassuring to see that my wheels are about the same shape as everybody else's."

"Earlier notice of general session contents and schedule would facilitate the travel plans for arrival and departure to avoid missing something relevant to my installation."

Of the 16 installations present, 12 indicated there was a "likely" chance that someone from their site would attend this year's conference, although the Las Vegas location would make the convincing of management more difficult.

Alan Shue and Paul Barbuto offered to help with the conference as 'product coordinators' assisting Jennifer Lee, ADABAS Product Rep, with scheduling, paper review, etc.

3. SAG Vendor Report Product Status—

VTAM Link — in beta test at Johnson and Johnson

Natural 1.2 — development

DOS COM-LETE — late alpha testing

Online Data Dictionary — available (user comments are that it has some problems of inconsistency between it and other utilities and it is a little clumsy for the user).

The Western Sales Region is moving toward having 5 technical persons within sales to support sales efforts and to work as liaison/ombudsmen for users who are not getting solutions/satisfaction through other SAG channels.

User comments and questions were generally variations of "Give us more information!!"—early warnings, details of known problems, contents of maintenance levels and fixes, true status of DOS releases compared to OS levels, etc. The more we know the less trouble we will have using the product and the fewer calls we will make to Technical Support.

Suggestion—put the current user profile data on each SM tape as an extra file; leave it to us to write programs to extract it as we need it. The hard-copy form has limited value.

4. User Free-for-all

A time to ask for advice, solutions, explanations; or to give warning or new information. Items brought up were:

- ADAMINT/DMS/CICS problems with generated command IDs;
- NATURAL deterioration under TSO so not recognize full command words;
- 1st byte of file number field is not 'unused' but = database ID in V4;
- Full database dumps by ADAFIX should be done in single user mode, in-

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- dividual file dumps/
restores ok with MPM;
- User queue elements not being cleared after system time limits, response code 9 handling problems;
- ET information may be bad if MPM ends any way other than ADAEND command;
- A file with 5 full extents of index must be unloaded/reloaded. Delete of records does not make it useable;
- ADAREP does not list all checkpoints;
- NATURAL 'AT BREAK' causes unexpected output—suggest using 'IF BREAK' response code 81 in system with no cluster users (?);
- Full HOLD queue ties up system if one big user holding them all;
- Number of commands shown on MPM statistics at end of session is larger than the number of commands on the log because of the extra commands which MPM does for himself but which are not logged.

This session appeared very valuable and so will be continued as a means for us to benefit from each other's trials and successes.

5. Concerns and Techniques for Dual Logging; Keith Newsom, WDPSC.

A summary and drawing-together of the bits and pieces of information about logging and dual logging spread around the various SAG reference manuals. Points of recommendation and personal discovery for

the use and operation of logs in the day-to-day operating environment. (Copies of Keith's handouts are available.)

6. Informal Discussion of Other Installation's Use of Logs and Log-related Exits
 - a. Modifications done to ADALNK to put user account number in ADABAS control block for later use in billing system;
 - b. Use of exit 4 to write billing records to SMF at WDPSC;
 - d. Use of IEFACTRT in a billing system at Dept. of Transportation.
7. National and Regional SAGGROUP Business
 - a. A resolution was approved for changing the time of the selection of our Regional Representative to our Spring meeting each year, with the new representative's term to begin at the end of the annual International SAG Conference. This will allow more persons to participate in the selection, eliminate some of the hassle of meeting at the conference, and give the new representative some time to think about and get organized for their term.
 - b. The proposed amendments to the SAGGROUP constitution were outlined in general and draft copies were available.
 - c. Copies of a NATURAL-Productivity Aids survey from Synoptics, Inc. was given to persons willing to participate.
 - d. Content and direction of future meetings was discussed. One preference

was given to keeping the group strictly Software AG oriented, and not having other vendors/consultants as participants at meetings. No other suggestions were made for direction or scope.

Specific topics requested to be addressed by future meetings were:

- ADARUN parm values and meanings
- Conversion of V3 to V4 — tips and techniques;
- Handling the NATURAL environment.

The next meeting will be December 4 at the Software AG Bellevue offices.

ADABAS News

Data Base System Suitability

*Clola Ferris
Aerospace Corporation*

The Aerospace Corporation acquired ADABAS in October 1980 for business data processing performed by the Administrative Data Systems Department. The data base management system is a first for the Corporation. An IBM 4341-2, ADABAS, NATURAL, and COM-LETE are being acquired primarily to support new business data base processing systems. Existing systems will continue to run on an IBM 370-3033 until the new systems have been implemented on the dedicated 4341. The phase out of the existing systems will free the 3033 for scientific and engineering applications. The Personnel, Financial, and Purchase/Payment Systems are scheduled for modernization in the next five years. An on-line/batch common entry/edit system, utilizing ADABAS, also will be implemented for transaction inputting to the new systems.

Frequently, the Data Base Administration Section receives requests to evaluate potential data base applications under the premise stated in the Software AG DBA Reference Manual,

“... Every new application suddenly seems to require DBMS technology.” In the R & D environment of Aerospace, the scientific and engineering staff use computer resources as research tools and perceive the data base as simply a higher level access method that serves to support research efforts. Because data base resources have been long-range planned for the modern business systems only, there is the concern of running out of disk space and of degrading the existing data base systems. In order to provide the best service possible to both engineering and administrative users and gain a favorable impression within the Corporation, the DBA Section is interested in establishing DBA suitability guidelines to decide the most satisfactory systems for ADABAS at the Aerospace Corporation. Obtaining answers to the criteria, hopefully will give us enough information to make a judgement about the best design for a system.

In a first-cut draft of suitability guidelines taken from several sources, our criteria consists of:

- All levels of management must support the development of a data base system for their organization;
- The system must meet the Corporate goal;
- Data must be a corporate resource and be made available to

authorized users and information systems;

- The data should be non-redundant;
- The end-users must be willing and have time to devote to the design phase;
- The end-users need to be knowledgeable of the present system and the new system requirements;
- Management must be willing to accept a phased conversion plan;
- End-users need to be willing to be educated about the DBMS;
- End-users must understand tradeoffs;
- End-users must be willing to compromise;
- Will management acquire the necessary equipment?
- Will management establish training programs?
- Is standards file information available?
- Are hardcopy reporting information needs identified?
- Does the data include large amounts of lengthy, variable text?
- What are the cost constraints of the system?
- What are the processing time limitations?
- What is the anticipated amount of the initial data?
- What is the growth expectancy of the data?
- Does the system require multiple access paths?

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- Will data age and be purged from the system?
- What is the average production life of the data?
- What are the currency requirements of the system?
- What are the estimated processing functions?

During the Pacific Southwest SAGGROUP meeting held July 1981, data base suitability criteria was discussed. No one had created a guideline document but certain criteria was employed to decide suitability. The following comments were made about data base suitability:

- Assume the posture that all systems should go on the DBMS, with few exceptions. This is to maintain a favorable impression of the DBA section. Establish a suitability level-of-concern index. If the proposed system is limited in disk I/D, amount of data, descriptors, activity volume, and number of access terminals allow it to be put on the DBMS; otherwise, do a suitability study.
- Consider an expansion of resources to accommodate a proposed new system.
- Research guidelines used at other companies to get exposure to other suitability philosophies.
- Make cost effectiveness reporting of existing DBMS systems visible to management, and use as justification in determining the suitability of new systems.
- Have an experimental data base, nucleus, and buffers for short-term or questionable systems.
- Have different data base administrators to deal with different data bases: experimental, engineering, administrative. This will reduce conflict of interest between different environments.

- If upper management wants a system on the data base, put it on regardless of suitability.
- Question how many terminals and files will be accessing the data base. Excessiveness would degrade all systems.
- Determine the characteristic of a file. Static files and volatile files will have different impacts.
- Determine the number of report programs that will utilize FIND/SORT commands. On-line sorting should be used only for small amounts of data. If possible, enforce exits to DS sorts.
- Use a Gant chart or similar method to project space usage based on length of time files will stay in the system.
- Develop criteria and a mechanism for purging files. Frequency of currency and legal requirements must be part of the historical file scheme.
- Check for appropriate accessing of the data. Question who will be viewing the data and why.
- Don't reveal the guideline criteria to the potential data base user since, in order to use the data base, they may design their system to meet the criteria.

The SAGGROUP Users gave many fine suggestions for suitability considerations. I would be interested in receiving comments on data base suitability from other data base analysts; criteria for inclusion in the Aerospace guideline document; and, copies of guideline documents from other companies.

And, I have questions. Has any installation developed and used a guideline document? What have been the responses to the document? Is it a good tool and why? Does it carry any weight for decision making?

Please respond by writing to:

The Aerospace Corporation
Administrative Data Systems
Department
P.O. Box 92957
Los Angeles, CA 90009
Attn: Clola Ferris, A3/2013

Scheduling of ADABAS Batch Jobs in a Production Environment

Gordon W. Cox
I.A.E.A.

At I.A.E.A., Vienna, we run an IBM 3032 mainframe under MVSE2. Approximately 35% of the workload is related to ADABAS or NATURAL, and this is run under two quite separate data bases and ADABAS Nucleus programs. We currently still use Version 3 of ADABAS but plan to complete the change-over to Version 4 soon. Extensive use of the data bases are made from both batch and TSO environments.

A problem with scheduling was first identified during the time when data base usage was building up and no specific job-class restrictions were placed on batch jobs communicating with ADABAS. The situation often arose where an ADABAS-communicating batch job would land on every available batch initiator, placing a bottleneck in the data base systems, while keeping the CPU only 30-40% busy. At the same time, other work capable

(Continued)

of better utilizing the CPU was in input queues but unable to get an initiator. Because the individual demands of the jobs on the data base were effectively served in a round-robin fashion by the ADABAS nucleus the elapsed time for each was roughly proportional to the number of simultaneous jobs, leading to an extremely unstable turnaround situation. In many cases, a badly-performing ADABAS requestor (e.g. one updating a file with many descriptors, or searching with a bad combination of descriptors) would cause the elapsed time performance of the others to be much worse than proportional.

To overcome this problem, exclusive ADABAS job-classes were defined for each ADABAS copy, and then the number of initiators serving each could then be controlled. For each copy of ADABAS, a further split of job-classes was made into "Long" and "Short" (or "overnight" and "prime-time") jobs, the definition of which was left to the DBA for each data base to work out with his users. The use of the correct job-classes for each copy was enforced by front-ending the SVC routine with a small test, denying access (and giving a response code of 255) if the wrong job-class is used.

The effect of this change in job-classes was exactly as predicted: the "well behaved" ADABAS jobs showed a turnaround and throughput improve-

ment while non-ADABAS jobs showed a dramatic improvement. In addition, the frequent prime-time periods of low CPU utilization with full input queues disappeared. A further result was that it enabled the DBA's and users of each data base to identify more clearly the badly performing jobs (identified now almost solely on the basis of long elapsed time), and to work together to improve these.

With Version 3 ADABAS it has been found that there is no performance advantage in exceeding on initiator for each copy of the nucleus. It will be interesting to see if in Version 4, two or three could be used to advantage.

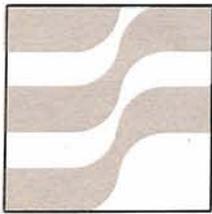
Another problem we have addressed is how to handle the situation arising when an ADABAS nucleus is down for one reason or another and there are batch jobs trying to run against this nucleus in the system. This problem is mentioned by Jim Neal in the Software AG International Users' Group Newsletter April 1981 edition. Its worst feature, as he well describes, is that if a nucleus goes down for some unforeseen reason, a large number of production batch jobs can very quickly follow it "down the drain". Usually a main console operator cannot take action quickly enough to prevent this and the users who have lost their jobs are never quite sure who is to blame.

This problem has been very ef-

fectively solved at I.A.E.A. by front-ending (or more correctly rear-ending) the ADABAS SVC routine. If the rear-end routine detects a "nucleus not present" return code (148), it does not return to the user immediately but informs the operator that the nucleus is down and asks him to take action. At this point he can either start the nucleus up again and reply 'GO' (when the SVC call will be retried) or close the initiator and requeue the job until the nucleus can be restarted. In either case, the request(s) for operator action jams the ADABAS initiator(s), preventing many jobs from failing. In addition, the job which first encounters the problem is fully recovered.

Thus the operator gets notification of the problem, has time to take action, and the users never lose jobs because of scheduled or unscheduled failures of the nucleus. For an environment where unattended operation of the mainframe is common, code could easily be inserted to automatically shut down the initiator and requeue the job.

The front/rear-end SVC routine is quite isolated from the Software AG supplied routine and should be reasonably independent of minor changes within it. Listing of the routine can be obtained by writing to G.W. Cox, P.O. Box 100, A-1400, Vienna, Austria.



ADABAS

Technical Notes

SAGTIPS

ADAMINT Usage Within the CICS Environment

As part of the effort to provide better product understanding, Software AG product support has published, and will continue to publish, SAGTIPS. These technical information papers respond to frequently asked questions and allow us to provide greater detail on technical topics which are unclear and sometimes misunderstood by the user community. To date, these papers relate to ADABAS Version 4.1 and NATURAL 1.1; they are being distributed in hardcopy form with the ADABAS SM 3 tape.

The following discussion is intended to assist in the understanding of the ADAMINT/CICS environments. Basic CICS terms and some internal CICS processing is explained (where it is pertinent to ADAMINT). This discussion is separated into 4 main segments. They are:

1. ADAMINT/CICS components
2. Control transfer
3. Relocatable programs within the CICS environment
4. CICS conversational versus psuedo-conversational

1. ADAMINT/CICS Components

CICS is a table driven teleprocessing system. All terminals, programs, files, transactions, etc., are defined to CICS by assembling the appropriate entries into internal load modules

(referred to as "tables"). The CICS executable code is broken into functional areas that receive and process work from applications, terminals, etc., based on the contents of the control tables. The status of the CICS system is internally represented by a multitude of control blocks that are dynamically managed by the "management modules". The control blocks and tables that are applicable to this discussion will be described in further detail as they are encountered. Almost all multitasking achieved within CICS is totally controlled by CICS and not the operating system. CICS executes in the operating system as a single task (one TCB), which is why "task dispatching" must be handled internally.

CSA

The CICS CSA (Common System Area) is the central anchor point for all other processing chains used internally. The CSA also contains the addresses of the various management routines and is used in almost all CICS macro expansions (requests for work) to get the address of a routine to transfer control to. It is a CICS convention that R13 should always point at the beginning of the CSA. It is interesting to note that there is a standard 18 fullword save area at the beginning of the CSA (for OS routines that require it). The CSA is positioned in memory during CICS initialization and is not moved for the entire execution.

NOTE: There is only one CSA for each CICS monitor executing in a system.

TCA

The CICS TCA (Task Control Area) is the primary control block for a single transaction to request work from CICS (where transaction is defined as a processing request from a single terminal). It is possible for a transaction not to be associated with a terminal, but this is not the normal case. The basic CICS structure does not allow more than one transaction (TCA) to be associated with a single terminal at one time.

The TCA is built dynamically by CICS when a request for work (transaction) is detected. This is typically done when input from a terminal defined in the TCT (Terminal Control Table) is received and no transaction is currently attached to the sending terminal. The TCA is normally pointed to by R12 and the chain of TCAs in the system is maintained indirectly off the CSA.

The TCA indicates the status of the transaction at any point in time and is utilized by almost all CICS macro expansions to "SET" request bits indicating what type of work is needed. The TCA also contains general register save areas used by CICS to restore the application environment upon completion of requested work. At any given point in the processing day it can be assumed there will be multiple TCAs in existence within the CICS system.

NOTE: There is one TCA for every transaction active at any point in the processing day.

(Continued)

The inclusion of the ADAMINT macro "CICSCOPY" causes the inclusion of the DSECTS describing these CICS control blocks in the ADAMINT assembly.

TWA

The TWA (Transaction Work Area) is the name assigned to the location immediately after the TCA in contiguous memory. Because there is one TCA per transaction, there is also one TWA per transaction. This TWA is managed by CICS in exactly the same manner as the TCA. The TWA is normally used by the application programs for storage of intermediate processing data that is only needed for the life of the transaction. The size of the TWA is determined by CICS ATTACH logic (where ATTACH means task creation) based on the value supplied on the TWASIZE parameter in the control table named the PCT (Program Control Table).

PCT

The PCT defines all transaction codes that CICS can accept. The transaction code is the first 4 bytes entered on a CICS terminal when no transaction is active. CICS scans the PCT looking for a match on the first 4 bytes of the input. When the TRANSID (PCT transaction ID) is located, the TWASIZE associated with the TRANSID and the initial program name is available.

If the TWASIZE parameter is too small and the application does not realize it, it is entirely likely the application attempting to use the TWA will overlay some other sensitive information and cause unpredictable results (even CICS abends). This overlay is known to CICS as a "storage violation" and may be recoverable (depending on the CICS

generation at the individual site) by internal CICS logic. It is important to point out that these "storage violations" are the primary cause of CICS system abends and should be avoided at all times.

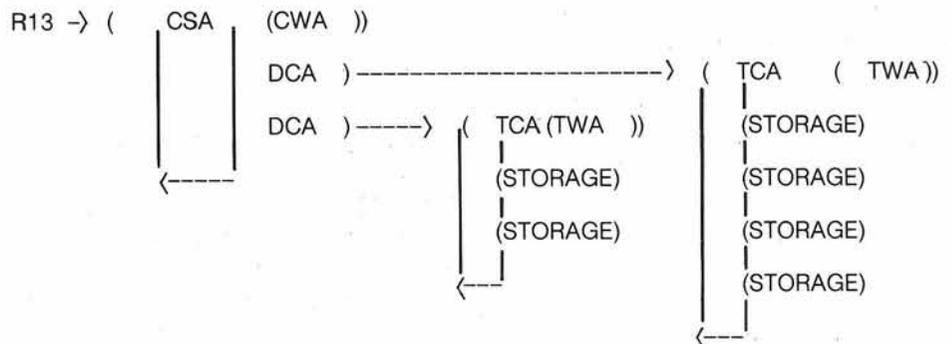
PPT

Once a transaction is active (the initial program in the PCT is in control) the application may (and usually does) transfer control to other programs within CICS to accomplish various pieces of work. All programs eligible to be invoked within CICS are described in the PPT (Processing Program Table). The ADAMINT load modules require entries on a one for one basis in the PPT. CICS transactions attempting to use a program not specified in the PPT will generally abend with an abend code of

"APCT". All CICS transaction abends are 4 byte codes indicating the problem area. "APCT" identifies the fact that the application has asked to use a program not in the PPT or not on the load library.

All CICS transaction storage is managed through calls to DFHSCP (the CICS Storage Control Program). Storage GETMAINED or FREEMAINED is placed on or removed from the transaction storage chain. The transaction storage chain is a linked list based off of the beginning of the TCA. Each piece of transaction storage can be of different lengths and different types (determined by the application).

The overall transaction control block/storage structure for a CICS system looks like this:



(Continued)

Each piece of transaction storage is framed by a "Storage Accounting Area". This SAA identifies the type of storage, the length of storage, and the forward link pointer. There is also a duplicate SAA at the back of the piece of storage. Whenever SCP (Storage Control Program) is running chains the leading and trailing SAAs are continually matched. A "storage violation" results if they do not match exactly. Typically, an application program will overlay the SAA at the end of storage and will overwrite whatever storage area is after it. It is unpredictable what storage will be there (which is why the results are unpredictable).

ADAMINT DWA

The ADAMINT DWA (Dynamic Work Area) is simply another piece of storage on the transaction storage chain. It is the calling application program's responsibility to provide enough room (based on the MNOTES printed at the end of the ADAMINT assemblies). If enough space is not provided, ADAMINT will not format the DWA and any subsequent calls to ADAMINT will receive unpredictable results.

2. Control Transfer

Arguments required by ADAMINT are passed as an address list contained in the first 5 fullwords of the TWA. It is the application's responsibility to place the addresses in the TWA. Programming languages that cannot easily manipulate addresses have available a simple program named "ADASTWA" that is callable and will place the parameter list it receives into the TWA (pointed to by the first argu-

ment). The use of this program is optional but the application must insure that the argument addresses are placed in the TWA.

Up to this point in the discussion, all references to CICS have been applicable to any CICS/VS release. In the recent CICS/VS releases, there has been an expansion of the facilities available to the application programmer. The extended facilities will be identified and explained as they are encountered.

A specific ADAMINT executable module is entered in CICS after a calling program requests the action. This request is typically in the form:

```
DFHPC TYPE = LINK, PGRMID = VIEW1
```

where VIEW1 is the ADAMINT load module name and the name entered in the CICS PPT.

CICS/VS 1.3 and higher allows the application programmer to specify:

```
EXEC CICS LINK PROGRAM(VIEW1)
```

Both of those environments require that the TWA contain the ADAMINT parameter list. Both statements are actually embedded in the midst of the application program (which requires a pre-compiler pass of the source). The versions that allow the "EXEC CICS" approach also allow the DFHPC approach (the opposite is not true).

The EXEC CICS syntax is known to CICS users as "CICS command level coding". It provides an easier to use application interface and is beginning to provide additional functions (in CICS 1.4 and 1.5). Applications using "EXEC CICS" to communicate with CICS are identified as

"command level users". Applications using DFHxx macros are known as "macro level users".

ADAMINT is itself a macro-level user and utilizes CICS facilities to transfer control to the module "ADABAS" after having replaced its argument list in the TWA with the arguments required by ADABAS (the various ADABAS buffer addresses).

3. Relocatable Programs

CICS attempts to maintain in virtual memory a single copy of individual load modules. This is done in an attempt to limit the amount of memory required to run CICS. Because of this design approach, it is entirely possible that multiple transactions will be using the same load module concurrently.

The CICS term "quasi-re-entrant" can be defined as a program that is serially-reusable between CICS calls. CICS generally does not interrupt a transaction while it is executing code. If an interruption does occur no other application will be dispatched before control is returned to the interrupted program. This implies that programs may modify themselves as long as they reverse the modifications before calling CICS. This is a true condition, but a poor programming practice.

ADAMINT 1.3 SM1 level and above does not modify itself in the CICS environment. All modifications, variables, etc., are maintained in the DWA. As long as the DWA is not altered by the application, ADAMINT will be capable of resuming operation where it left off.

CICS has associated with each program a "use count" (maintained in the PPT). As long as the

(Continued)

use count is greater than zero the program is not eligible for deletion or relocation within virtual memory. Even if the use count is zero CICS will attempt to maintain the load module in memory (anticipating that it will probably be used again). When the CICS managed memory is completely full, CICS will (at that point in time) purge all programs with a use count equal to zero to free up space for general usage. This purging can occur while transactions are executing and can cause the deletion of programs that were previously used by the application (like the ADAMINT executable module). If the application references the program again, CICS will reload the load module from disk and will probably place it at a different virtual address than it was at previously. This requires that the program being loaded and its function be "relocatable" within transaction. ADAMINT 1.3 and up can exist successfully within this environment.

4. Conversational Versus Psuedo-Conversational

Within many CICS environments over the past few years, there has been heavy discussion of the pros and cons of writing what is known as "conversational" transactions. A conversational transaction is simply defined as a CICS application program that issues a "READ" to the terminal it is attached to and then "WAITS" for the reply. The common complaint about conversational transactions is that the program(s) associated with the READ cannot be "purged" by CICS (the use count is greater than zero) and tie up valuable resources (virtual memory).

To resolve this problem, "psuedo-conversational" transactions become the most used and discussed alternative. This indicates an application that issues no "READ" functions inside CICS but appears to the terminal operator as if it does. This is accomplished by storing information necessary for the application to proceed in some location where it can be retrieved at a later time and "telling" CICS to return control to a specific program regardless of what is entered at the terminal.

The control mechanism for returning control to a specific location (transaction) is specified on the CICS transaction termination request. DFHPC TYPE = RETURN or EXEC CICS RETURN causes the transaction to return to the next highest "level" of control and decrements the use count of the current program. If this "level" is CICS itself, the transaction is "detached" (the TCA and associated storage chain is "FREEMAINed") and the terminal will have no transaction active. Typically, the next transaction is determined by the first 4 bytes coming from the terminal but this can be controlled by the TRANSID operand of the previous return. Examples are:

```
DFHPC TYPE= RETURN, TRANSID=XXXX
EXEC CICS RETURN TRANSID(XXXX)
```

This causes the very next input received from the terminal to invoke the transaction named XXXX regardless of the content of the transmission. The application XXXX needs to have an internal mechanism to recognize the re-entry and respond accordingly. Usually, the action is to retrieve the information stored by the previous transaction and

return to the position in the program that would have issued the READ if the transaction was conversational.

As CICS systems and operating systems became larger this controversy has become less important but some CICS sites still believe very strongly about the matter. Because of this, it is important to note that ADAMINT can and does work in both conversational and psuedo-conversational modes.

The key to the ADAMINT environment is the DWA. It has already been demonstrated that the ADAMINT executable code is relocatable within transaction. The next item to address is the DWA's relocation abilities and to suggest approaches for psuedo-conversational modes.

The DWA address is always passed as the first argument to ADAMINT and ADAMINT always uses this information (there is no "memory" scheme internal to ADAMINT). As long as the contents of the DWA are not altered and the correct address is passed, ADAMINT will never be aware that the DWA has been moved.

Since this relocation of the DWA is allowable, the only item necessary to write psuedo-conversational transactions is a storage vehicle for the DWA across transaction. The DWA cannot be left on the transaction storage chain because the chain is FREEMAINed by CICS' detach logic. There are several alternatives available to the CICS user. The most obvious is the usage of CICS temporary storage. This is a location where variable length information can be stored temporarily (but across transactions) under some unique

(Continued)

ID. The TSID (Temporary Storage ID) must be unique and is typically constructed of the CICS TRANSID and the terminal ID associated with the data. The DWA is then placed in Temporary Storage with either the DFHTS TYPE = PUT. .

or
EXEC CICS WRITEO. .

statements before the CICS RETURN macro (with the TRANSID operand).

The data is retrieved in the next transaction through usage of the

DFHTS TYPE = GET. .

or
EXEC CICS READO. .

statements. Care should be exercised not to attempt to write a

larger DWA than the maximum Temporary Storage will allow. If this occurs the application will have to "break" the DWA up and "re-build" it upon the reinvocation of the transaction. For highly active applications where response time is critical, CICS Temporary Storage offers the option of placing the information into virtual memory instead of the usual default disk data set.

Command level users (CICS 1.3 and up) can make use of a facility identified as the "COMMAREA". This COMMAREA is a piece of storage the application would like CICS to keep intact (and separate from the transaction storage chain) until the next transaction. The COMMAREA is maintained as a variable length

storage area chained off of the TCT until the next transaction when it is moved back onto the transaction storage chain. This facility can be utilized by specifying it on the EXEC CICS RETURN statement. The syntax is:

```
EXEC CICS RETURN TRANSID(XXXX)
      COMMAREA(DWA) LENGTH(DWA-SIZE)
```

This approach will generally involve less overhead but the information (the DWA) will be stored in main memory.

The approaches presented above have successfully been used by ASSEMBLER, COBOL, and PL/1 applications running in various levels of CICS. There are other approaches possible, but the intent here is to identify the most commonly used approaches.

Controlling Your Dictionary NATURAL-LY

*Thomas R. Bradbury
Hay-Huggins Data Services*

One of the least understood but most important parts of ADABAS is its dictionary. It is hard to imagine using a DBMS without a dictionary but some shops do. This is because they do not understand the capabilities and benefits of the dictionary. A histogram reveals that the file contains a variety of record types. Each type uses a different set of fields. Every file in the data base is defined using

two record types; the 'B' type record and the 'C' type record. I would like to discuss these two types in detail and suggest how to access them using NATURAL.

The first type, the 'B' record,

describes an entire file. Every file within your data base should have at least one 'B' type record. Exhibit A is an example of how one might obtain this file information using NATURAL:

EXHIBIT A

```
0010 * THIS PROGRAM WILL LIST ALL FILES AND USERVIEWS.
0020 FIND IN DICTIONARY WITH AA EQ 'B' SORTED BY CC
0040 DISPLAY CC CA CB CE
0050 END
```

(Continued)

For every 'B' type record there is a set of 'C' type records. Each of these records represents a field within the file. Exhibit B is a NATURAL program which lists each of these fields given the file name:

tionary, copy codes, reports, and dictionary documentation. When a change is made to this master set, each item in the above list should be checked to insure it has been changed to reflect the true file.

There are other record types within the dictionary but these two are the most important. The use of NATURAL as a tool to control the dictionary has become invaluable to us. I hope others will find this to be true.

EXHIBIT B

```

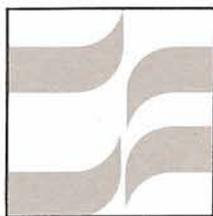
0010 * DISPLAY OF FIELDS WITHIN A FILE OF THE DICTIONARY. LSTFILOL
0020 SET GLOBALS PS=23 ASSIGN #FILE(A30) = ' '
0030 REPEAT UNTIL #FILE = 'END' MAP /// 10X 'TYPE FILE NAME:' #FILE
0040 FIND IN DICTIONARY WITH CC = #FILE AND AA = 'C' SORTED BY BH
0050 RESET #BO(A3) #C1(A1) #C2(A1) #C3(A1) #LP(A1) #RP(A1) #OPT(A13) #C4(A1)
0060 RESET #SL1(A1) #SL2(A1) #BV(A1) #BL3(A1) REDEFINE BL(#BL1(A1) #BL2(A1) )
0070 IF BO> O DO ASSIGN #BO = BO ASSIGN #LP = '(' ASSIGN #RP = '(' DOEND
0080 IF BN ɿ = ' ' AND BM ɿ = ' ' ASSIGN #C1 = ','
0090 IF BP ɿ = ' ' AND (BN ɿ = ' ' OR BM ɿ = ' ') ASSIGN #C2 = ','
0100 IF LH ɿ = ' ' AND (BN ɿ = ' ' OR BM ɿ = ' ') ASSIGN #C3 = ','
0110 IF BW ɿ = ' ' AND (BN ɿ = ' ' OR BM ɿ = ' ') ASSIGN #C3 = ','
0120 COMPRESS BN #LP #BO #RP #C1 BM #C2 BP #C3 BW LH #BL2 INTO #OPT
0130 LEAVING NO SPACE ASSIGN #BL3 = #BL1
0140 IF #BL3 = 'U' ASSIGN #BL3 = 'N' IF #BL3 = ' ' ASSIGN #BL3 = 'A'
0150 IF BX(2) ɿ = ' ' AND BX(1) ɿ = ' ' ASSIGN #SL1 = '/'
0160 IF BX(3) ɿ = ' ' AND #SL1 = '/' ASSIGN #SL2 = '/'
0170 IF BV O DO ASSIGN #C4 = '.' ASSIGN #BV = BV DOEND
0180 COMPRESS BX(1) #SL1 BX(2) #SL2 BX(3) INTO #BX (A25) LEAVING NO SPACE
0190 COMPRESS #BL3 BK #C4 #BV INTO #BK(A6) LEAVING NO SPACE
0200 AT TOP OF PAGE WRITE 30X CC
0210 / ' SEQ L NAME' 19X 'FORMAT OPTIONS TITLES'
0220 WRITE BH (N5) BI (N1) BB (A19) BJ (A2) #BK #OPT #BX
0230 LOOP (0030) END

```

It is the responsibility of the Dictionary Analyst or DBA to keep one 'B' type record for each file in the data base, called the ADABAS view record. Corresponding to this 'B' type record should be a complete set of 'C' type records describing each field. These ADABAS view records become a master set, around which all ADABAS activities evolve. Included in this list is the loading of the file, all user views, both ADAMINT and NATURAL, the NATURAL dic-

In many cases it is essential that programmers be able to access this dictionary within a program for such things as field length and format. They may also need a list of the fields within a file. The two NATURAL programs above can be altered to fit these programmer needs.

It will also become necessary to protect the dictionary from unauthorized access and/or updating. This can be accomplished through security by value in the latest version of ADABAS.



ADABAS Special Interest Group Reports

Data Administration Special Interest Group Report

*Carole Schermer
Chemical Abstracts Service*

I would like to thank everyone who has completed the Data Administration Special Interest Group Survey in the August newsletter—and remind those who haven't gotten around to it that your input and participation is encouraged. The most interest from the SAG user community is in the establishment of the Data Administration/Data Base Administration function, the definition of roles and relationships to other technical support areas, and the establishment of tools and utilities for use by the DA/DBA and others. SAGGROUP members who have any of these issues well in hand, or are on the way to resolving them, please contact me!

Large Data Base Special Interest Group

*Eric Siefert
CCSI*

The response to my request for users wishing to participate in this Users' Group has been great. I will be getting out a letter to all installations responding, in the next couple of weeks. The question that I have been getting

most frequently is, "What is a large Data Base User?" As is beauty, a large Data Base User is in the eye of the beholder.

If your installation has problems with down time because of file sizes, or not enough time in the day to restore necessary files in the case of a "crash," or

problems with transaction volumes, or any problem that might relate to the size of the shop, then I want to hear from you.

I hope once this group gets going we can assist each other with possible solutions to our specific or generic problems.

ADABAS Special Interest Group Chairpersons

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RETRIEVALS/INTERFACES

Vacant

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LARGE DATA BASES

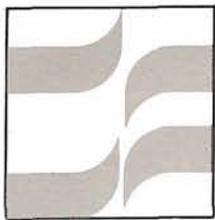
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DOS Special Interest Group Report

DOS STATUS REPORT

Edward J. Forman
Software AG

At the 1981 Conference, the DOS Special Interest Group expressed concern over Software AG's involvement in the DOS community. At that time, we indicated our ongoing commitment is to address both "product" and support" services for DOS users. We will use this column as a vehicle for keeping you advised of Software AG's direction and progress actions in these areas.

We are currently beta testing our solution to the proper invocation of the internal COBOL sort and PL/1 usage. Modules ADAUPLS and ADAUPLS1 resolve this conflict by getting space from a partition's GETVIS area when dynamically loading an ADABAS module (e.g., ADARUN, ADAIOR) or acquiring ADABAS buffers. Since ADAUPLS and ADAUPLS1 operate in a DOS/VSE and DOS/VS Advanced Functions environment, use of PL/1 or the

COBOL sort will be transparent to a large majority of DOS users. These modules will be distributed with SM4.

As we mentioned at the Innisbrook Conference, we are aware of the need for increased expertise for DOS Technical Support. A variety of means have been initiated which address the support services available for DOS users. We are developing a product support specialist for DOS. Staff have already been assigned this responsibility and are being immersed in DOS technology.

Our internal DOS education program—which was initiated last May—is continuing to provide a better general awareness of the DOS operating systems to all field support, technical representatives and product support personnel. The current offering focuses on DOS/VSE, operator commands (including POWER commands), Internals and installation of ADABAS and NATURAL. This training will be reinforced and supplemented by daily interaction with the DOS community. We will be continuing these sessions as new personnel join our ranks and provide more detailed information for current personnel.

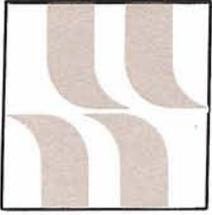
Finally, recruiting requirements will place additional emphasis on DOS expertise.

We are in the process of improving our Early Warning system by providing DOS-specific zaps/fixes. Historically our Early Warnings have provided zaps in the same format for both OS and DOS environments. We recognize that this has caused some problems and we are therefore responding to suggestions in that area.

These are part of our overall plans in our responding more completely to your concerns. We are committed to more thorough support services for DOS users.

DOS

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ADABAS Product Rep's Report

ADABAS Product Representative's Report

*Jennifer Lee
Aerospace Corporation*

Those of us that work in a data base organization have experienced a gradual expansion of our responsibilities. The Data Base Administrator is being called on to support not only the DBMS, but also the major software components that interface with the data base. Many data base organizations, who are Software AG users, install and maintain not only ADABAS, but NATURAL and COM-LETE as well. This is one of the reasons there is such a great demand for the integration of these products.

It has long been assumed that Data Administration is a natural progression of Data Base Administration; however, the DBA is increasingly expected to provide



Jennifer Lee

technical services for users who access the data base. Typical user requests encompass NATURAL education and program debugging, on-line methodology and performance

techniques, system design trade-offs, and security facilities. Moreover, users are now interested in interfacing the data base with statistical analysis tools, graphics display systems, word processing equipment, and any number of software application packages. It appears as though the DBA organization is evolving into an information service center that will work in close coordination with systems programming, operations, and system applications departments to satisfy user requests for data storage and retrieval. Data Base Interfaces/Retrievals then becomes an extremely significant function of Data Base Administration.

How the DBA will cope with these areas of responsibility within the organizational structure is a major issue. Those users who have insight as to alternatives are urged to share their ideas with the user community along with their experience.

COM-PLETE News



COM-PLETE Special Interest Group Reports

COM-PLETE User-Written Procedures

*T. L. Nikodem
Foremost Insurance Company*

Harry Harassed:

Ge e Larry, I wish I could determine which programs are consuming the most resources on our network. I don't know where to begin.

Larry Leisure:

Software AG is developing an Accounting and Tuning package. If you wait a while, their package might be what you need.

Harry Harassed:

Their package will probably help answer most of my questions, but I need something now.

Larry Leisure:

I received a group of user-written programs from Software AG. On the distribution tape was

a group of programs to report usage from SMF data. The programs were not immediately useful at our shop; I had to replace a date conversion subroutine and change some sorts and control breaks to match the structure of the COM-PLETE accounting field at our shop. Within a week I could determine usage by USERID, by TID number or by program name.

Harry Harassed:

Sounds good Larry, but our programs have many different types of transactions. We would need to measure the resource usage of each transaction type.

Larry Leisure:

On the same distribution tape is UTLACT, a program written by Alan Routhier of Sacramento County. UTLACT can be used to measure resource usage for specific transactions on specific terminals. Once we knew which programs were using large amounts of resources at our shop, we used UTLACT on one

terminal to benchmark transactions on another terminal. We found that, within one program, five percent of the transactions were using fifty percent of the CPU time charged to that program.

Harry Harassed:

You've convinced me. How do I get a copy of these programs and how much do they cost?

Larry Leisure:

It's simple. Contact the Users' Group Liaison at Software AG in Reston; the phone number is (703) 860-5050. The only cost is a \$15.00 fee for duplicating and shipping. Software AG distributes the programs as a service to their users; they do **NOT** support or guarantee the programs. If you have any problems or questions, you should contact the author or the COM-PLETE Tools Chairman.

Harry Harassed:

Is there anything else on the distribution tape I might use?

(Continued)

Larry Leisure:

Well we use a routine (UBROD) to update an SD file. The contents of the SD file are appended to the normal logon message by an example of the ULGEX1 exit which is also on the tape. Since we installed these two modules, we can display messages whenever someone logs onto the network. Our users appreciate the additional advance notice if we need to bring down the network before the normal time. Our computer operators have also used this feature to do things such as asking our programmers to purge output jobs when our JES2 spool was getting full. I use this feature to give additional notice whenever I make a change to the network which requires users to change their procedures.

Harry Harassed:

What else?

Larry Leisure:

The JCLGEN routines developed by PRC and described at the 1981 Users' Conference are on the tape. All of the routines described on page 26 of the November 1980 Newsletter are on the tape, as are routines to process CAPTUR tapes, to send messages to the console operator and many other tasks.

Harry Harassed:

Are there any precautions I should be aware of when I install the routines?

Larry Leisure:

Read any documentation carefully and be ready to modify the routines to work correctly in your environment. To prevent any unnecessary use of the system, I have kept all the games off our system. This was easy because all the games are in a separate dataset on the distribution tape.

Harry Harassed:

I have a few modules which other users might want. Can I get them included in the tape?

Larry Leisure:

Yes, put them on a tape and send them to the current COM-LETE Tools Chairman. His name and address are below. He will accept almost any format but prefers that the source be unloaded with CUPOUNLD. All documentation should be machine readable; many contributors place documentation at the beginning of source code as comments.

Harry Harassed:

Thanks Larry, I'm going to order my copy of the tape right now.

COM-LETE Special Interest Group Chairpersons

PERFORMANCE AND TUNING

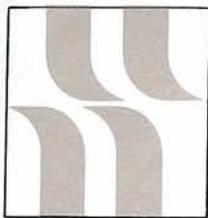
Mr. Peter Kim
Boston University
881 Commonwealth Avenue
Boston, MA 02215
(617) 353-2282

Integration

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

COM-LETE TOOLS

Mr. Ted Nikodem
Foremost Insurance Company
5800 Foremost Drive S.E.
Grand Rapids, Michigan 49501
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COM-LETE

Product Rep's Report

COM-LETE Product Representative Report

Bob Becker

Foremost Insurance Company

The COM-LETE Version 4 release has now become a reality. Many of you are probably considering the evaluation of the product to convert from various releases of COM-LETE under Version 3 to the new release of Version 4. We too have started preliminary research of Version 4 COM-LETE. One of the first steps that we decided to perform was to contact several users of Version 4 running under the same operating system that we are currently executing on our machine. Of the four users we contacted, the general consensus was a more stable product than under our current release of COM-LETE Version 3.

Certainly there are technical advancements with Version 4 COM-LETE which have been labeled either in documentation or at the International Software AG Users' Conference.

It may be worthwhile to discuss for a moment some of the advantages that I perceive in using COM-LETE Version 4 over COM-LETE Version 3. Certainly the major advancement, as far as performance and total throughput would be concerned, is the increase in the number of threads. Currently we are running a COM-LETE system with approximately 160 terminals and 6 threads. Some of the threads are larger in size than others; that is they are not all the same size. The smaller programs such as UQ, UEDIT, UPDS then migrate to the smaller threads. Our

larger programs, which are our COBOL written inquiry and update programs to ADABAS, can migrate to the larger threads—so we tend to get some separation between program development and our insurance-related ADABAS inquiry and/or update teleprocessing systems. Under Version 4, we may find that more appropriately it would be to our advantage to run multiple COM-LETES. This too is an advancement of Version 4 over Version 3. Therefore, we may run many threads, perhaps even more than 6 to execute our inquiry or update systems while, at the same time, we may run a separate COM-LETE to run our program development threads. These are thoughts or considerations that we are going through presently and certainly are not finalized in any detail whatsoever. Another enhancement of Version 4 is certainly VTAM support and that, too, will be looked upon, although probably not converted to immediately under Version 4 COM-LETE. Threadlocking seems to be another performance improvement that I find most interesting. I learned about it at the International Users' Conference in which several threads could be grouped together to execute a given program. This would allow Program A to run perhaps in Threads 0 or 1, while Program B could run in Threads 2 or 3. In this case, applications that tend to interfere with each other for a common thread could be separated into a group of threads. Under Version 3, one could only lock a program to a given thread, but not a group of threads. It has been told to me by Software AG that the lower the thread number, the higher priority of the thread within the set of threads. So, your higher-

priority programs may be threadlocked to your lower numbered threads while your less important programs could be threadlocked to a group of threads with a higher value. Priority from the point of view of CPU selection or utilization is obtained through the lower thread number. These are some thoughts that you may want to research in your conversion from Version 3 COM-LETE to Version 4.

As many of you may know, Ted Nikodem, of Foremost Insurance, is the chairperson for consolidation of user-written programs so that they may be contained in one central location and distributed by Software AG for a nominal charge. Ted has consolidated many user-written programs for the user community's benefit and has produced the tape which Software AG can distribute to your organization. Many of these programs will become very valuable under Version 4 of COM-LETE.

I would once again like to ask all readers of this article to consider contacting me by mail or telephone about their experiences using COM-LETE. These experiences may be your conversion efforts to Version 4 of COM-LETE, performance ramifications in the use of COM-LETE, or general experiences that you have with the product compared to other teleprocessing products on the market today. I wish to discuss these in a subsequent article. Please contact me with your experiences or observations in the use of COM-LETE in the various areas stated above.

In closing, I hope to hear from you with your experiences or observations in the use of COM-LETE and looking forward to meeting you at the next International Users' Conference.

NATURAL News



NATURAL Technical Notes

NATURAL V1.1 in a CICS Environment Software AG

Current Relationship

At this point in NATURAL's history (Version 1.1), NATURAL runs within CICS as a fully conversational transaction. The entire NATURAL session (from CICS TRANSID to NATURAL 'FIN') is considered by CICS to be one long transaction. The TWA is utilized as space for the TP workarea.

NATURAL is currently what is known as a CICS macro-level using program. This is in contrast to command-level programs which use a "higher level" interface to CICS. NATURAL will continue to be a macro-level user to provide support for as many CICS systems as reasonable

(CICS/OS as well as CICS/VS). There are currently no real incentives presented by command-level coding that justify converting the NATCICS code. When command-level provides additional function (or it becomes necessary for other reasons) NATURAL can be converted easily.

CICS's architecture demands that programs that will run in CICS must be quasi-reentrant. This is primarily a result of CICS's intention to use a single copy of the load module within the DSA for any number of transactions. This means that multiple transactions executing the same program at the same time will use the same in-core image of the load module. NATURAL is fully reentrant and does not clash with this CICS requirement. This point is being made to emphasize that there is and will continue to be one and only one copy of NATURAL's load module in virtual memory regardless of the number of terminals actively

engaged in NATURAL sessions.

Each NATURAL session (an active CICS terminal) will also have a unique TCA and associated storage chain. Since this storage chain is unique for each transaction, the NATURAL 'working set' within the CICS DSA will be repeated for each terminal. This working set has typically ranged between 20 and 70k per terminal for Version 1.1 CICS users.

NATURAL does make an effort not to dominate the CICS system by periodically relinquishing control during large compilations through utilization of the CMROLL entry point within the driver. This causes a DFHKC WAIT, DCI = DISPATCH to allow CICS to dispatch another transaction if it so chooses.

During installation, the using site will generate the NATURAL parm (macro NTPRM) specifying NATURAL operational characteristics. It is not uncommon for the USIZE and FSIZE values them-

(Continued)

selves to reach 40-50K. PCT and PPT entries will be made to 'inform' CICS about the new "transaction." The user will then invoke NATURAL from a terminal. When NATURAL is first invoked, GETMAINS are issued (to CICS thru the driver) to obtain the working set (the USIZE and FSIZE areas, etc.). The NATURAL environment is then set up, each storage area (the working set) being chained in the standard manner on the CICS storage chain by CICS. This working set will remain allocated until NATURAL terminates.

Potential CICS Aids

There are several items that should be investigated and can be used immediately to aid in various aspects of the NATURAL/CICS environment. Each of the following items are totally within the domain of the CICS environment and should therefore be carefully coordinated with the using site's CICS system programmer(s).

1. SPURGE, TPURGE

These are macro operands on the DFHPCT macro that specify whether or not the transaction (in this case - NATURAL) may or may not be purged (abended) in the event of system stress (SOS condition). The proper utilization of this operand should allow the TP system to continue, but at the expense of dynamically abending one or more NATURAL sessions.

2. TRNPRTY

Also an entry in the PCT. This is the CICS transaction priority that may be used to favor one transaction over another. This could be utilized to get better NATURAL response time or allow

NATURAL to dispatch only after other CICS transactions. This can be useful if NATURAL is "dominating" the CICS system's CPU resources.

3. RES = YES

This is a PPT entry that will cause the NATURAL load module to be made resident at CICS initialization time. This is useful in reducing the amount of time and EXCPS involved in getting NATURAL into the CICS DSA. Of course, this will decrease the DSA by the NATURAL load module size, but should be considered in high performance or heavy use situations. Alternatively this can be achieved by utilization of the CICS ALT (Application Load Table) which offers slightly better packaging options to the entire CICS system. The CICS system programmer should definitely be involved in this decision.

4. CLASS = LONG

Again, a parameter on the PCT macro to indicate that the associated transaction is relatively "long" running and CICS should assign the transaction's working set to a storage sub-pool (isolated) that will page neatly (CICS/VS systems only). This should reduce possible thrashing activity and improve total CICS throughput.

It is important to note that the above parameters are not available in all versions of CICS. Most of them are available in the CICS/VS environment. All are available in CICS/VS 1.4 and higher. There is no intent here to

instruct any using site on which combinations of possibilities are best for their site; however, it is suggested that each site seriously examine the PCT entries CLASS = LONG and the impact of SPURGE = YES. TRNPRTY can also be utilized quite effectively. Future releases of NATURAL will contain enhancements to the NATURAL/CICS environment (e.g., pseudo-conversational capabilities and facilities to reduce the NATURAL working set required for each transaction).

Referencing Occurrences of a Multi-Value or Periodic Group In NATURAL Without Using a GET SAME

*Jack Reitz
Software AG*

Many NATURAL applications need to search through all the occurrences of a multi-value or periodic group but using the "GET SAME" creates a great deal of overhead. The example in the NATURAL documentation is used to locate a desired occurrence and update it. The same results can be accomplished by using a simple technique which I will demonstrate. The method is to obtain the desired occurrences of the multi-value or periodic groups and treat them as a table. This technique will cut the execution time of the NATURAL program in proportion

(Continued)

to the number of "GET SAME" commands that were executed. However, it will require that a set number of occurrences be read in every time. The following commands are all that are required:

OBTAIN Field (SS-EE)

REDEFINE Field (1) (#FIELD(XXX))

SS = Starting Occurrence

EE = Ending Occurrence

XXX = Normal Field Definition

MOVE INDEXED #Field<Sub>To #Field2

The "OBTAIN" retrieves the fields in order as a table and the "REDEFINE" gives the "MOVE INDEXED" a beginning address to calculate the offset to the desired occurrence. The "REDEFINE" is used so that NATURAL will not confuse the "<SUB>" with an occurrence number " (SUB) " or a reference number. Some people have tried using the OBTAIN and mak-

ing the occurrence number a variable, (i.e., MOVE INDEXED field (SUB) ; but this will result in a NAT1006. The NAT1006 can be rectified by assigning a value to "SUB" before the FIND or READ. This will result in only that occurrence for the field to be read by ADABAS. The following

is an example of a program to list the NATURAL source lines for a program.

Ignoring the first part of the program, the most important lines are 60, 70, and 90. These lines cause the database to read the fields as a table and then can be processed as such.

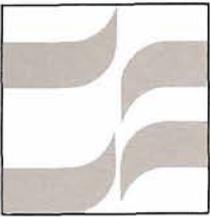
```
0010 INPUT LOGON-ID(A8) PROGRAM-ID(A8)
0020 COMPRESS LOGON-ID PROGRAM-ID H'0000' INTO PROG1(A18) NO SPACE
0030 COMPRESS LOGON-ID PROGRAM-ID H'9999' INTO PROG2(A18) NO SPACE
0040 FIND DICTIONARY WITH ACMNAT-PROGRAM-ID GE PROG1 AND
0050   ACMNAT-PROGRAM-ID LE PROG2 SORTED BY ACMNAT-PROGRAM-ID
0060 OBTAIN ACMNAT-SOURCE-LINE (1-30)
0070 REDEFINE ACMNAT-SOURCE-LINE (1) (#SOURCE(A82))
0080 FOR #SUB 1 THRU 30
0090   MOVE INDEXED #SOURCE <#SUB> TO HOLD-LINE(A82)
0100   REDEFINE HOLD-LINE (SEQ(B2) SOURCE-CODE (A80))
0110   DISPLAY SEQ (ES = ON) SOURCE-CODE (ES = ON)
0120 LOOP (0080)
0130 LOOP (0040)
0140 END
```

CORRECTION

TO: "How to Screen Your Users"

Dan Nolan (August 1981)

This article was to present a variety of comments on NATURAL use which users shared with Mr. Nolan. Since quotation marks were erroneously omitted from the published text, the definition of these distinct comments was lost. The Editor assumes full responsibility for this oversight and extends apologies to Mr. Nolan and Newsletter readers for any misinterpretation of Mr. Nolan's article caused by this error.



NATURAL Special Interest Group Reports

Natural Features

*Jim Reiner
County of Sacramento*

Every issue of the newsletter brings an updated list of NATURAL V1.2 Enhancements or NATURAL Version 1.2 Features. Many of these features are in direct response to Change/Enhancement requests. Now that we know Software AG can meet the generalized needs of the NATURAL programmer, let's consider the needs of the end-user.

First a description of a typical end-user:

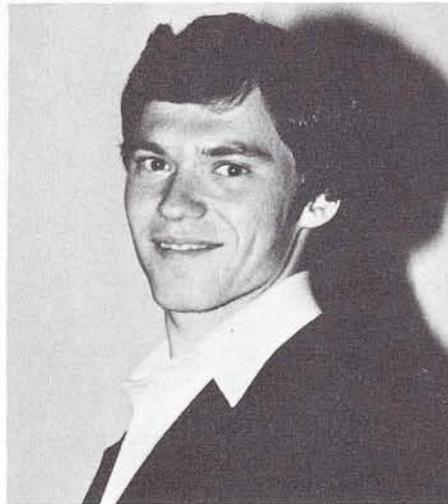
- Unconcerned with data structure and flow;
- Transaction oriented;
- Works best with specific elements of data;
- Uses a limited number of commands;
- Has diverse views of data.

And now the features an end-user facility must include:

- Freedom to construct a query in whatever manner seems most natural; that is, in any order the user likes. This requires a highly non-procedural language that is capable of supporting several different ways of thinking about a problem, a language that would not mold the user's thought process. Related to this is the clarity and ease with which the user may formulate his request. The naturalness and human engineering of the language for user interrogation is significant. It may be difficult for a non-procedural language to make certain that what the

user wanted was what he received. However, the easier the specification of selection criteria, the greater the chance the user will correctly specify the proper data selection criteria;

- The communication interface between the end-user and his data in a file must be understandable, flexible, and simple. Some means for the end-user to understand the nature of terminal input data and how to "get at it" is needed.



Jim Reiner

The end-user features tend to be more abstract than the programming features that are being added to NATURAL V1.2; however, if the end-user in a data base environment is going to really achieve the maximum benefit from his environment, he needs a high level language that is *not* procedural.

Let us keep in mind the end-user needs when preparing for the upcoming NATURAL Change/Enhancements.

NATURAL Special Interest Group Chairperson

Features

Mr. Jim Reiner
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NATURAL Product Rep's Report

NATURAL Product Representative's Report

*Steve Froneberger
Duke Power Company*

I would like to congratulate Software AG for the Million-In-One Award received for NATURAL. This is an award presented by International Computer Programs, Inc. for products having over one million dollars of sales in their first year on the market. This is a good indication of the acceptance and value NATURAL has acquired among ADABAS users in a short time period.

Jim Reiner and Dan Nolan submitted excellent articles for the last Newsletter. Everyone is encouraged to submit articles and to share their experiences with NATURAL with other Soft-

ware AG users. Any techniques or standards you have developed, experiences (good or bad) you have had, or applications you have developed using NATURAL will be valuable to others using NATURAL and also to those evaluating NATURAL. With your companies spending over one million dollars on NATURAL, there has to be some interesting and exciting things happening. Please share them.

Also, do not forget the NATURAL Features Special Interest Group chaired by Jim Reiner. Jim is very interested in hearing from anyone who has ideas or desires concerning NATURAL Features.

Future releases of Software AG in the NATURAL area are NATURAL 1.2, NATURAL Advanced Facilities, and the NATURAL Security Package. NATURAL 1.2 is going to include many additional features and performance enhancements as outlined in the last Newsletter.

Many of these are the direct results of the Change/Enhancement requests submitted by NATURAL users. Now is the time to get your Change/Enhancement requests submitted if you want these included on the 1982 ballot. These must be received by Peter MacRoberts by December 10, 1981.

The NATURAL Security Package and NATURAL Advanced Facilities are packages which should be available in 1982. Software AG is in the process of developing these now and more information concerning the facilities of these and release dates will be provided by Software AG when more definite plans are available.

ADABAS-M News

University Computer Center Reduces Programming Workload Via ADABAS-M on VAX

*Leeland G. Davis
Data Base Administrator
Central Washington University*

In addition to wanting maximum flexibility in information systems being developed on our Digital Equipment Corporation VAX-11/780, our 5 year plan calls for a 40 - 50% production effort reduction. We intend to accomplish this ambitious goal through the use of systems software tools such as:

- Screen/forms manager;
- Ad hoc query and report writer;
- Data base management.

Prior to acquiring our DEC VAX-11/780 system, the university has used its own PDP-11/45 under the RSTS/E operating system and the remote services of an Amdahl 470 V8. Central Washington University is converting various batch OS COBOL packages to the VAX system including accounting and payroll.

The PDP-11/45 will continue to be used for various online student information systems including admission, class and grades. Plans call for the PDP and VAX systems to be loosely tied together and to pass files between themselves until a redesigned system can be developed on the VAX.

CWU's VAX-11/780 system includes 4.5 MB memory, in excess of 600 MB disk including RM03 and RM80 drives, and 96 ports which are used with Visual 100 terminals (VT100 compatibles). The major systems software includes the VMS virtual operating system, Digital's Forms Management System-11 (FMS-11) screen manager, VAX COBOL 79 and ADABAS-M data base manager.

The various data management combinations we considered included DEC's Datatrieve query and report language with RMS-11K multi-keyed ISAM, TOTAL DBMS with TASK query and ORACLE DBMS. The major evaluation criteria were maximum flexibility, full DBMS facilities and proven vendor track record. A full facility DBMS was preferred over file management, thus ruling out Datatrieve with RMS-11K. There were many packages that were not from major vendors or sufficiently new and could not be counted on in terms of breadth of support. The only fairly com-

plete DBMS from major vendors on VAX were TOTAL and ADABAS-M. Ultimately we knew from experience that inverted systems are much more flexible than pointer-based systems (i.e., we don't know everything we're going to do and therefore cannot afford to hardwire our data structures to current requirements), especially considering that as a university we annually receive all kinds of new reporting requirements both at the federal and state level. And finally, heavily influencing our decision towards ADABAS-M was the eminent availability of NATURAL.

Some of the details of our information systems based on ADABAS-M are that we identified 1000+ data elements describing CWU's 9,000+ student population. We desired maximum end-user participation in ad hoc query and report generation. To this end, there are some trade-offs given that NATURAL will not be made available until 1982. Since ADASCRIP-T-M query supports retrieval based on keyed fields only and we wanted end-users to have maximum retrieval capability, we quickly used up the maximum of 32 descriptor keys per file. And since retrievals under ADASCRIP-T-M query and report writer are limited to one file at time in scope, we would have preferred to put alot of data

(Continued)

elements in each file. Even ADABAS-M with its 3000 byte record size limit could not accommodate such monolithic records however. We are definitely looking forward to the file coupling capability that NATURAL will give us. Meanwhile, we are making maximum use of repeating groups and descriptors within each of 30+ files to provide maximum query and report access to our users.

Our data base activity is a happy medium between retrievals and updates with the add/drop period of student class admissions being our heaviest ten days of updates. We plan on keeping two data bases; one each on the PDP-11/45 and the VAX-11/780. On the PDP-11 we wrote our own single-keyed random access method. The online systems on the PDP-11 will continue to be used for daily updates, i.e. the equivalent of data entry with immediate validation. The data will be passed to the VAX-11/780 on a daily basis where it will be merged into ADABAS-M files. The majority of our information processing will take place on the VAX as users retrieve and massage the data using ADASCRIP-T-M now and NATURAL later on.

In fact we've taken a hard line with respect to data on the VAX—all files must be data base files under ADABAS-M, even sequential files. This is because we want our maintenance costs reduced. What allows us to reduce maintenance efforts is the data independence afforded by ADABAS-M.

Our computer center is also intending to meet our stated goals of a 40 - 50% effort reduction in the 5 year plan with the current development staff of 10 programmer/analysts. We intend

to accomplish this via a number of methods including:

- Less programming due to the ad hoc query and report writing features of ADABAS-M. Allowing the users to produce their own information frees up programmer resources;
- Maximize programmer productivity through minimizing maintenance workloads, and less coding because they will be using the ADASCRIP-T-M query and report writer language instead of COBOL.

One additional benefit of acquiring ADABAS-M was not immediately discovered until we went shopping for application packages. One such package we would like to buy is financial aid management software. Most packages available on IBM use VSAM and COBOL while on VAX its COBOL and RMS-11K. To convert these systems to use ADABAS-M as their access method on a VAX is simplified by the fact that these multi-key ISAM access methods are a clean subset of the ADABAS-M capabilities. This widens the choices available to us and fits our requirements that all files be ADABAS-M files. And we will gain ADASCRIP-T-M query and report writing access to these canned systems!

Further productivity is expected from the data dictionary/directory concept we are developing in-house. We store in an ADABAS-M file programmer information such as edit formats and validation routines. This copybook facility is not fully automated yet as it is the programmers' responsibility to query the data base file and extract the

relevant information for data elements they will be using in their programs. However, it does provide a centralized facility for data validation formats and procedures and as such is quite a productivity aid.

Our experience with ADABAS-M to date has been extremely satisfactory. Technical support from Software AG has been timely in response to the bugs we report and development seems to be responsive to our enhancements requests. Some of the features we would like to see enhanced are primarily for our end-user environment and would be satisfied by NATURAL, such as (a) ADD RECORD and ADD MEMBER commands in ADASCRIP-T-M and (b) file coupling. We are very happy with the basic flexibility of ADABAS-M and its fast performance. The on-site training class was good with adequate hands-on participation conducted at a good pace.

We especially welcome other ADABAS-M users to actively participate in regional meetings of SAGGROU-P now instead of waiting until 1982 and the User Conference in Las Vegas.

Nuclear Chemists Use ADABAS-M To Manage Nuclear Measurement Data

Guy McMillan

Lawrence Livermore National Labs

Livermore, California

Among the many applications for automated data base management within any laboratory environment is the need to manage large amounts of data reliably while allowing end-users to pull data out in a multitude of different ways. In the management of data for nuclear experiments performed for various government agencies, certain data base characteristics require attention:

- The immense amount of data involved;
- Diverse groups require diverse access to that data;
- Data is derived from a diverse number of analytical sources;
- Some information derived is calculations, other is historical;
- The users are nuclear chemists, not programmers;
- The data base must be secure.

Previously, Lawrence Livermore National Labs (LLNL) has had specialized data base managers written in-house. One such example is the PROPHET data base manager written for the CDC 7600 series. Such a specialized DBMS provided maximum use under difficult time-shared conditions where the machine also was being used for serious number crunching. Thus

one of the goals with data base on our PDP-11/70 was to provide reasonable response to data base users while not inhibiting the data analysis programs of other users. A further impetus was provided by the phasing out of our CDC mainframes and the move into distributed processing using PDP-11s and VAXes.

The Nuclear Chemistry Counting Facilities Network (NCCF-NET) consists of 70+ LSI-11/02 microprocessors programmed in Pascal to control diverse nuclear instrumentation at the site of nuclear experiments such as gamma spectrometers, alpha and beta particle counters, etc. The LSI-11s pass their data on to a network of ten PDP-11/23 minicomputers under RSX-11M that act as workstations where end-users can set up process and control instructions and monitor the work flow of the system. The 11/23s upload data files via DECNET to the PDP-11/70 which is running under IAS. Our 11/70 is configured with one MB memory, two Century Data 300 MB drives, a Western Dynex 10 MB, one 256 KB RL01 disk, 16+ VT100 terminals and an assorted lot of terminals including graphics.

Because our experiments' data occurs in bursts, the calibration of monitoring instruments needs to be accurately maintained. This raw data reflects the performance of various nuclear phenomena and must be measured precisely. In the past, inaccuracies from improperly calibrated equipment caused delays or even errors in analytical methods used in the interpretation of the data. Regretfully, we can't go back and recount the samples for an expensive experiment due to failure of some monitor—i.e., we needed to

bring quality assurance into our lab. The NCCF network is used to provide calibration standards among the devices. This information will be logged to a histogram data base to audit the state of counters and detect shifts in calibration.

Measurements may be accurate but how that data is interpreted is not an exact science. A nuclear chemist may have a new theory that can only be tested by comparing the results from past experiments with those predicted by the new theory. Thus, we have the need to maintain the historical raw data itself in order to see how new theories bear out against past experiments results. On the CDC data base we maintained neither intermediate produce nor original counts—only the distillation of data from tests.

With our ADABAS-M data bases the intent is to archive the historical data so as to allow the users to design experiments based on previous tests' data. Add to this further quality control by putting all data in the data base such as where it came from, which scientist or experiment generated it, statistical validation performed, etc. There also exists the need for ancillary data bases such as lab and environmental surveys. Security reasons further dictate that we decouple classified data bases.

Our previous experience with chain-pointer DBMS on our machine lead us to search for more flexible and easier to use data base management software. We are however very pleased with the potential ADABAS-M offers through its inherent flexibility. In addition, scientists must have reliability in their data and ADABAS-M's recovery/restart

(Continued)

facilities provide for comprehensive integrity of our data bases. Also with ADABAS-M it's a little more obvious of how to structure data for optimum performance than with pointer based systems. The value-based data model allows a wide range of versatility in defining your data and access paths. Like most organizations, we too face an ever increasing demand for information services. With ADABAS-M's easy to use CALL-level programming interface we can bring up applications faster. We are not a division of professional programmers—we are nuclear chemists.

The DBMS facilities must be easy to use and relatively foolproof. The FORTRAN programs we are writing allow users to have flexible access to their data. For example, to exclude certain values in a search to look across multiple experiments or even to compare results from different analytical methods within the same experiment.

Our group believes that ADABAS-M gives us considerable more flexibility than pointer-based DBMS we have used in the past. The onsite training gave us the information we needed to feel basically confident enough

to do the tasks we've set out to. Since ours is a secure site, we are looking forward to sending staff to the ADABAS-M internals class tentatively scheduled for the user group meeting in Las Vegas next May. Such skills will allow us to become relatively self-sufficient. We have had nothing but very positive feelings about the technical support. When we've had problems we are very pleased to report that the response has been timely and the communication good. And as for our future, ADABAS-M allows portability to the next generation of super-minis.

1982 SAGGROUP Conference

The 1982 Users' Conference will be the first to have a full program for ADABAS-M users. The program planned, includes two days of user and Software AG presentations, a Change/Enhancement session, general sessions and a two day ADABAS-M internals course. You should have received a questionnaire regarding planned activities for ADABAS-M. Please return the questionnaire as soon as possible so that planning maybe completed. If you have not received this information, please contact your local support office to obtain one.

The Users' Conference is for your benefit so feel free to make suggestions and constructive criticism regarding its format and content.

ADABAS-M Technical Support for North American Customers

The ADABAS-M Product Support Group is based in Reston, Virginia. To report a problem or to request assistance regarding ADABAS-M usage, telephone (703) 860-5050, ask for the ADABAS-M Support Group and then identify yourself and state your problem.

The telephone support center in Denver, Colorado is for mainframe products only. They do not handle ADABAS-M calls.

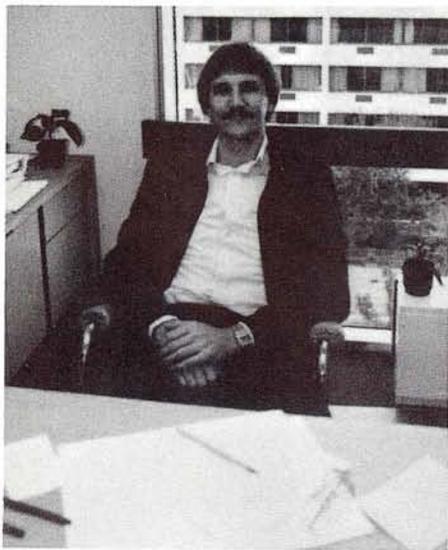
A full description of the ADABAS-M support and development organization and their support procedures will be included in a future Newsletter.

Software AG at DECUS

Software AG was present at the Canadian DECUS Symposium, September 13-16, 1981, in Banff, Alberta, along with over 300 other DEC users. DECUS is the Digital Equipment Computer Users' Society which is a forum for information exchange between DEC and users of their hardware and software.

Rex Jaeschke, ADABAS-M Technical Support Manager, presented a technical paper entitled 'Data Base Management Systems - Features, Benefits and Tradeoffs' which was favorably received. Copies of this paper are available from Mr. Jaeschke at the Reston, Virginia office.

The next North American DECUS symposia are to be held in Los Angeles, California December 7-11, 1981 and Toronto, Ontario February 9-12, 1982.



Rex Jaeschke

ADABAS-M Recognized Within Users' Group

At the mid-year Executive Committee meeting, ADABAS-M was "granted" product status. With this recognition, ADABAS-M users will participate as a distinct group in the Change/Enhancement process, the Newsletter and Conference Activities.

Alan Routhier, SAGGROUP President, was pleased to name Dick Gemoetz of OMEX as ADABAS-M Product Representative and Contributing Editor to the Newsletter. Mr. Gemoetz, one of the first ADABAS-M users in the United States, will serve as the focal point for all "business" regarding this product. He may be reached at (408) 727-5801.

Software AG

OF NORTH AMERICA, INC.

News

Software AG International, Inc. Reports Record Earnings

John Okulski, Senior Vice President of Finance for Software AG of North America, Inc., announced record revenues for fiscal year ending May 31, 1981. Mr. Okulski noted that revenues increased 74% to \$18,875,070 from \$10,863,319 for fiscal 1980, that net income for fiscal 1981 experienced a five-fold increase to \$2.3 million.

Commenting on the first release of earnings after a successful initial public offering of stock, Chairman of the Board and President John Norris Maguire stated, "Earnings for the year are as planned and mark the beginning of an era of growth made possible by a general awareness of the need for superior system software and programming aids."

Software AG Corporate Headquarters Gets a Facelift

To accommodate the rapid expansion of Software AG personnel, the Software AG of North America, Inc. Corporate Headquarters in Reston, Virginia has been undergoing extensive renovation.

Software AG has more than doubled its floor space in the Reston International Center since July 1981.

Major structural changes have been made in the Marketing area, now located on the ninth floor. Conference facilities have been improved thereby providing a more comfortable environment for visitors. Additionally, each functional group operating from SAGNA headquarters has expanded to accommodate this dramatic personnel growth.



Sally Boldman, Greets Reston visitors

With the exception of Education and Consulting Services which continues to operate from the Town Center Building, all Corporate functions at Software AG are located in the International Center.

New Newsletter Mailing Policy

Starting with the next issue of the Users' Group Newsletter, the following procedure will be in effect:

One copy will be sent to each individual currently on the Software AG Customer Information System. If you wish to modify this mailing procedure in any way or to verify who will receive the Newsletter for your organization, please contact Ann Todd at (703) 860-5050.

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 4
- ADAMINT Version 1.4
 - SM Level 4
- ADACOM Version 1.2
 - OS Zap Level 8
 - DOS Zap Level 8
- ADASCRIP+ Version 1.1
 - SM Level 4
- Data Dictionary Version 1.1 OS and DOS
 - SM Level 4

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 1.1.5

NATURAL:

- Version 1.1
 - OS Zap Level 8
 - DOS Zap Level 8

COM-LETE: Version 4.1

- All operating systems

Early Warning

The Early Warning System was instituted to provide timely technical information (and whenever possible, fixes) for items relating to data base and system integrity, severe operational problems with the software, and security.

The most current Early Warnings are:

- EW083 - COM-LETE V3.2
- EW084 - NATURAL V1.1

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:** 6-9 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

SOFTWARE AG CLASS SCHEDULE Oct - December 1981

Class Month	Using ADABAS	ADABAS design workshop	ADACOM	ADABAS direct calls	ADABAS internals	Data Base administra- tion	NATURAL workshop
October		RESTON Software AG October 1 SEATTLE Software AG October 1	SEATTLE Software AG October 2	RESTON Software AG October 5 SEATTLE Software AG October 5 NEW JERSEY Software AG October 19	RESTON Software AG October 6-7 SEATTLE Software AG October 6-7 NEW JERSEY Software AG October 20-21	RESTON Software AG October 8-9 SEATTLE Software AG October 8-9 NEW JERSEY Software AG October 22-23	RESTON Software AG October 14-15 SEATTLE Software AG October 14-16
November	RESTON Software AG November 2-4 HOUSTON Software AG November 2-4 SEATTLE Software AG November 30	RESTON Software AG November 5 HOUSTON Software AG November 5					RESTON Software AG November 30 December 2
December	SEATTLE Software AG December 2	SEATTLE Software AG December 3		RESTON Software AG December 7 HOUSTON Software AG December 14 SEATTLE Software AG December 7	RESTON Software AG December 8-9 HOUSTON Software AG December 15-16 SEATTLE Software AG December 8-9	RESTON Software AG December 10-11 HOUSTON Software AG December 17-18 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
	SEATTLE Software AG October 19-20	SEATTLE Software AG October 21-23	RESTON Software AG October 19-23 <hr/> SEATTLE Software AG October 26-30		RESTON Software AG October 27-29
RESTON Software AG November 17-20			RESTON Software AG November 16-20 <hr/> 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 JERSEY Software AG December 8-10	

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Conference Information	David Schmidt
Consulting Services (Sales)	Gary Bowers
Documentation Orders	Geri Keydash, Kathleen Boushek
Education Scheduling and Reservations	Felicia Wallace, Sheri Gotay, Education Registrars
Marketing Inquiries and Product Literature	Marketing Services
Product Security Features Documentation	Written request to Gordon Perrins
SAGNA Software Distribution Requests	Pat Stroud, Pam Tompkins, Technical Services Coordinators, Product Support Group, Reston
Technical Questions Hotline Support	Field Support (800) 525-7859
User-Written Software Distribution Requests	Users' Group Liaison

DENVER SUPPORT NUMBERS:

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

(303) 233-6500
Emergency "after hours"
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Software AG Users' Group Regions in the United States



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

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January Newsletter copy due
December 11, 1981
Change/Enhancement Requests
December 10, 1981

Conference Papers
Abstracts due December 18,
1981

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