TI-MIX 1983 International Symposium

AGENDA

A Conference for Users of Texas Instruments Computers and Peripheral Equipment

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TI-MIX (Texas Instruments Mini/Microcomputer Information Exchange) is an organization for users of TI computers and related equipment. The purpose of TI-MIX is to promote the exchange of information between users and TI. Membership in TI-MIX is open to any person with an interest in TI computers or peripheral equipment. The international symposium provides a vehicle for direct interaction and information exchange with other users and with TI personnel. Acceptance of TI-MIX member papers for presentation and of member exhibits for demonstration at TI-MIX 1983 does not constitute an endorsement by TI-MIX or Texas Instruments Incorporated.

TI-MIX, M/S 2200
P.O. Box 2909
Austin, Texas 78769
(512) 250-7151

Symposium Funding: Who pays?
Attendees, exhibitors, speakers, session chairmen, TI personnel, and advertisers all pay for the symposium. The TI-MIX symposium is a self-supporting function of TI-MIX. Income comes directly from fees paid. Other functions that help offset symposium expenses are: TI technical manual sales, Karson Travel and National Car Rental promotions, attendees who room at the Hilton, Convenient Cassette Service tape sales, and session proceedings sales.

GENERAL INFORMATION

Symposium Registration

TI-MIX 1983 registration will take place in the New Orleans Hilton convention registration area located just beyond the elevators on the first floor. The registration fee for TI-MIX 1983 session attendees is $150 per person at the door ($125 without meals). Each registration fee includes entrance to exhibits, four days of sessions, three luncheons, and four informal receptions. Each attendee will receive an agenda, an attendee list, the TI Management Q&A handout, a Competitive Issues Committee questionnaire, a registration gift, four complimentary drink tickets, and three meal tickets (unless purchased without meals). Registration hours are:

Tuesday	April 5	2:00 p.m.–8:00 p.m.
Wednesday	April 6	8:00 a.m.–7:00 p.m.
Thursday	April 7	8:00 a.m.–7:00 p.m.
Friday	April 8	8:00 a.m.–2:00 p.m.

One-Day Registration

TI-MIX is offering a one-day registration rate this year for the first time. One-day registration includes one day of sessions, exhibits, and the luncheon for the specified day. The rate is $65.

Exhibits-Only Registration

Attendees who only want to view the exhibits at TI-MIX 1983 register at the exhibits-only registration booth located outside Grand Ballroom ABC in the foyer area. Exhibits-only registration is free. Exhibits-only registration hours are the same as the exhibit hours.

Reception Hours

Four complimentary bar tickets are included with each full symposium registration. (Note that one ticket is good only at the exhibit room bars.) The remainder of the bar drinks are on a cash basis: $1.50/beer, $1.75/wine, and $2.00/mixed drinks. Reception hours and locations are:

In Grand Ballroom ABC, Grand Ballroom D, and in the Chemin Royale Foyer:

Tuesday	April 5	2:00 p.m.–8:00 p.m.
Wednesday	April 6	3:30 p.m.–7:30 p.m.
Thursday	April 7	3:30 p.m.–7:30 p.m.

In the Versailles Ballroom:

Friday	April 8	4:30 p.m.-5:30 p.m.

A free wine and cheese reception will be held in conjunction with the TI-MIX Membership Meeting in Grand Salon AB beginning at 5:00 p.m. on Tuesday, April 5.

Exhibit Hours

Two exhibit rooms are open to TI-MIX 1983 attendees. The TI-MIX member exhibit room houses hardware, software, services, and literature exhibits supplied by TI-MIX members. The TI-MIX member exhibits are located in Grand Ballroom ABC on the first floor of the New Orleans Hilton. Texas Instruments will exhibit their equipment and services in Grand Ballroom D. The exhibit hours for these two rooms are:

Tuesday	April 5	2:00 p.m.–8:00 p.m.
Wednesday	April 6	1:30 p.m.–7:30 p.m.
Thursday	April 7	1:30 p.m.–7:30 p.m.
Friday	April 8	10:00 a.m.–3:00 p.m.

Discussion Room

The Discussion Room is available to attendees for informal discussions and information exchange. The Discussion Room is located in Grand Salon C and will be open during the following hours:

Tuesday	April 5	2:00 p.m. to midnight
Wednesday	April 6	8:00 a.m. to midnight
Thursday	April 7	8:00 a.m. to midnight
Friday	April 8	8:00 a.m. to 5:30 p.m.

Outside the Discussion Room is a bulletin board with general information posted about the symposium.

Guest Meal Tickets and Information Booth

An information booth in the registration area will be open during symposium registration hours. At the information booth attendees may purchase meal tickets for guests. Extra meal tickets cost $15 each. These prices reflect actual costs and include tax, tip, and service charges. Suggestions for TI-MIX or Texas Instruments may be placed in the appropriate boxes located at this booth.

Advertising and Selling Policies

TI-MIX exists to promote the exchange of information between users and Texas Instruments. A vital area of information exchange is the exhibit rooms. These rooms are used to inform attendees about Texas Instruments products and about suppliers of products directly related to TI computers. Booth exhibitors and literature display exhibitors have paid for the space they occupy in the exhibit rooms. TI-MIX allows no product or service advertising outside of these rooms. Agenda advertisers have paid for space in this agenda. Any advertising distributed during the symposium as handouts or posted on the Message Board or

elsewhere will be removed. TI-MIX is a nonprofit, educational organization. Product sales in the exhibit or session rooms are prohibited. Such sales would jeopardize the nonprofit status of the TI-MIX organization.

Message Board

Phone call messages and other messages for TI-MIX 1983 attendees will be posted on the Message Board located in the first floor registration area. Advertising and hospitality suite notices are not allowed and will be removed.

Birds-of-a-Feather (BOAF) Meetings

BOAF meetings are designed to promote informal and impromptu discussions of specialized interests. Meeting rooms for BOAF sessions will be available Wednesday and Thursday evenings, April 6 and 7. Request space for a BOAF meeting at the information booth in the registration area. BOAF meetings organized before the symposium are printed in the Detailed Schedule and described in the session descriptions. The time and place for BOAF meetings organized at the symposium will be posted on the bulletin board outside the Discussion Room.

Speaker Preparation Room

Near the TI-MIX registration area is the Speaker Preparation Room for symposium speakers. Inside this room audio-visual equipment will be available for speakers to practice their presentations.

Session Tapes

TI-MIX 1983 will be recorded during the symposium by Convenient Cassette Service. Audio cassette tapes of the sessions will be available for purchase at the Convenient Cassette Service counter located in the registration area. The price for each hour-long cassette is $7. Information on purchasing cassettes after the symposium will be published in the *TI-MIX News.*

Session Proceedings

Each session will have a separate bound copy of the written texts of each presentation for that session in a session proceedings document. Proceedings for each session are available at the session proceedings booth located in the registration area during registration hours. It is recommended that you review the agenda, decide which session proceedings you want, complete the session proceedings request form, and then proceed to the session proceedings booth to pick up your copies before the sessions begin.

Each fully registered attendee is entitled to 10 free choices of proceedings (three free copies for one-day registrants). These complimentary copies can only be collected at the session proceedings booth. More copies may be purchased. At the beginning of each session, a few copies of that session's proceedings will be offered for sale at the session monitor's table located outside the session room.

Karson Travel

Karson Travel is the official transportation and tour coordinator for TI-MIX 1983. A Karson Travel representative will be available at the symposium to make any necessary flight changes for attendees and to arrange tours. Karson's booth will be located near the registration area on the first floor of the New Orleans Hilton.

Spouse Reception

A reception for spouses will be held Tuesday, April 5, in the Prince of Wales Room on the second floor. The reception will be from 5:00 to 6:00 p.m. Although no formal spouse program is planned for TI-MIX 1983 spouses, spouses can meet each other at this reception and decide on group activities or tours. A representative from Karson Travel will be present to discuss group tours.

New Orleans Hilton Hotel

Room rates at the Hilton for TI-MIX 1983 attendees are $72 per day for single occupancy and $82 per day for double occupancy. The Tower rooms, VIP rooms with concierge service, are $92 per day for single occupancy and $114 per day for double occupancy. Suites are $240 to $425 per day. Children may stay in the same room free of charge.

The New Orleans Hilton Hotel rises from the banks of the Mississippi River overlooking churning paddleboats and barges. The Hilton is within walking distance of the historic French Quarter. Several restaurants are located within the Hilton for your convenience. The Le Croissant Coffee Shoppe is available for light dining: breakfast, lunch, and dinner from 6:00 a.m. to 2:00 a.m. daily. Le Cafe Bromeliad features a breakfast buffet Monday through Saturday from 11:30 a.m. to 2:30 p.m. and dinner from 6:00 p.m. to 11:00 p.m. The Le Cafe Bromeliad offers a famous Sunday jazz brunch, a Cajun seafood buffet every Friday night, and an Italian fiesta every Saturday night. Winston's, rated as one of the top 15 restaurants in the U.S., serves dinner exclusively from 6:00 p.m. until 11:00 p.m. nightly. Reservations are recommended. The English Bar, adjacent to Winston's, is open for cocktails daily from 5:00 p.m. until midnight. The Rain Forest serves a "computer diet buffet" on weekdays from 11:30 a.m. to 2:30 p.m. The Rain Forest located at the top of the hotel opens for cocktails daily at 11:30 a.m. and offers today's music for your dancing and listening pleasure. The French Garden Bar is also available for cocktails daily beginning at 10:00 a.m. Pete Fountain's Club, located on the third floor of the hotel, features shows Tuesday through Saturday nights.

Recreational facilities are available to guests of the hotel. The Rivercenter Tennis Club is open daily at 7:00 a.m. and closes at

11:00 p.m. on weekdays, 7:00 p.m. on weekends. The facility includes eight climate-controlled indoor tennis courts, eight racquetball courts, three outdoor tennis courts, a health club including saunas and whirlpools, an outdoor jogging track, an observation deck, an indoor Garden Bar, a pro shop, and locker rooms. The outdoor swimming pool is located on the third level of the hotel.

Airport Transportation

Transportation to and from the New Orleans International Airport is provided by Orleans Transportation Service for $6 per person one way. A taxi for one person is approximately $18 one way. TI-MIX 1983 attendees can also rent cars through National Car Rental at special TI-MIX rates.

National Car Rental

National Car Rental has been designated the official car rental company for TI-MIX 1983. National has two locations in New Orleans: at the New Orleans International Airport close to the baggage claim area and at 324 South Rampart Street. The TI-MIX 1983 special convention rates are:

	Type of Car	Weekly Rate	Daily Rate
A	Economy	$204	$30.60
B	Compact	$210	$31.50
C	Mid-Size	$216	$32.40
D	Full Size (2-door)	$222	$33.30
E	Full Size (4-door)	$228	$34.20

These prices include unlimited mileage. To receive these special rates, renters should identify themselves by presenting the TI-MIX 1983 Confirmation Postcard at the National Car Rental counter in New Orleans. Each renter must be able to provide a major credit card or a cash deposit, a valid drivers license, and a passport (if not a U.S. citizen). The renter must be 18 years of age or older. Inquiries in New Orleans should be directed to: 466-4335.

Menus

Wednesday Luncheon
Cold Cucumber Soup
Breast of Chicken Mandarin
Buttered Noodles
Sautéed Green Beans Amandine
French Rolls & Butter
Chocolate Mousse Chantilly
Coffee, Tea or Sanka

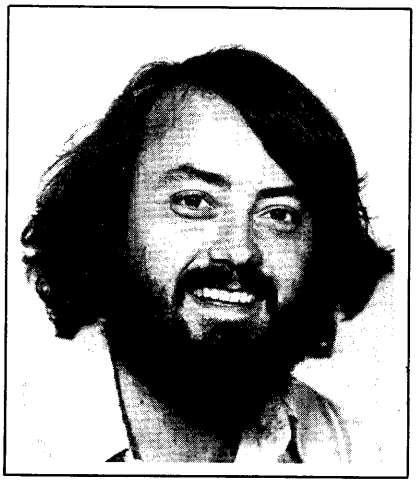
Thursday Luncheon
Tropical Fruit Cup
Roast Prime Rib of Beef Au Jus
Rissole Potatoes
Broiled Tomato Half
French Rolls & Butter
Whiskey Pie
Coffee, Tea or Sanka

Friday Buffet Luncheon
Tossed Green Salad with Choice of Dressing
Assorted Relishes
Jello Salad
Cole Slaw
Braised Beef Printanniere
Shrimp Creole
Broccoli Spears Mimosa
Buttered Rice
Glazed Carrots
French Bread & Butter
Creole Bread Pudding
Pecan Pie
Coffee, Tea or Sanka

St. Louis Cathedral in Jackson Square, New Orleans.

GUEST SPEAKERS

Wednesday Luncheon Speaker
LOREN CARPENTER



***Loren Carpenter of Lucasfilm Ltd., principal architect of the computer-animated "Genesis effect" sequence from* Star Trek II: The Wrath of Khan**

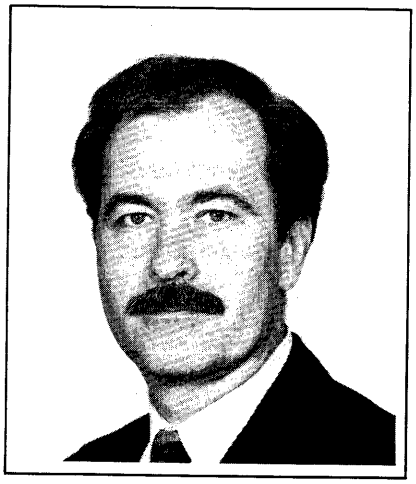
Background

Loren Carpenter of Lucasfilm Ltd. will present "The Making of the Genesis Demo from *Star Trek II: The Wrath of Khan"* at the April 6 luncheon. Loren is a member of the staff of Lucasfilm's Computer Graphics Project and is the principal architect of the computer-animated "Genesis effect" demonstration sequence from last summer's film, *Star Trek II.* Lucasfilm Ltd. is the movie production company set up by George Lucas, who made *Star Wars, The Empire Strikes Back,* and the special effects in *Star Trek, Star Trek II, Poltergeist,* etc. The Computer Graphics Project of Lucasfilm uses computers to produce the actual movie footage; to draw the actual images that are recorded on film. The equipment to produce the Genesis sequence was pioneered by Loren and other staff members at Lucasfilm. The graphics are superior with very high resolution and brilliant colors.

Abstract – "The Making of the Genesis Demo from *Star Trek II*"

The Computer Division of Lucasfilm Ltd. contributed two computer-animated sequences for Paramount's feature film, *Star Trek II: The Wrath of Khan:* a retina identification sequence and a simulated demonstration of the "Genesis effect" around which the plot turned. The "Genesis Demo" was constructed by six people over five months and represents the edge of the art in computer image synthesis. The presentation will describe the history of the project, the artistic and practical decisions made, and the techniques employed. A short documentary including the uncut "Genesis Demo" will be shown.

Thursday Luncheon Speaker
TOM ELLIS



Tom Ellis, vice president of Data Systems Group

Biography

Tom Ellis is the vice-president of TI's Data Systems Group, responsible for U.S. marketing. Tom holds three degrees in electrical engineering. He did his undergraduate work in his hometown of Memphis, Tennessee, at Christian Brothers College (CBC). He received his Masters and Ph.D. degrees from the University of Florida, where he majored in control systems theory.

Tom's TI career began in Dallas in 1967 when he joined the Equipment Group as a member of the technical staff, working on signal processing studies related to pattern recognition. From 1971 to 1975 Tom was involved in a Navy-funded project to study applications of coherent signal processing techniques for sonar in antisubmarine warfare. As department manager for Acoustic Systems from 1976 to 1979, Tom was responsible for sonar and secure speech development programs for the military. In 1979 he established and staffed the Image Processing Systems department to support infrared and radar programs for automated target recognition and tracking.

The Equipment Group sent Tom to Washington, D.C. in 1980 to manage their U.S. field marketing operations, which includes the marketing for all Equipment Group programs – research, development, and production. Tom remained with the Equipment Group until April 1982 when he accepted his present position with Data Systems Group.

Abstract – "Texas Instruments as a Computer Vendor in the 80s"

This presentation will discuss the forces driving the commercial computer marketplace and Texas Instruments' response to the challenge of that market. Primary topics developed will relate to the maturity of the marketplace and requirements of vendors in that marketplace. Examples will show how TI has evolved its marketing posture to the present time. A brief look into the future of both markets and products, with emphasis on addressing the requirements of both the present and changing customer base, will conclude the presentation.

TI-MIX: YOUR USERS GROUP

The international symposium is only one function of the TI-MIX organization. TI-MIX is a worldwide organization composed of three TI-MIX entities: TI-MIX which serves 8,500 TI users, TI-MIX Europe which serves 1,400 members, and TI-MIX Asia with 200 members. Several services are available to members. Stop by the TI-MIX booth in the Texas Instruments exhibit room to learn more about your users group and to talk informally with TI-MIX General Board and staff members. Information about regional groups (RIXs), the TI-MIX library, and other items of interest will be on display.

Below are some TI-MIX-specific activities held in conjunction with the symposium that you are encouraged to attend. Use your users group!

Competitive Issues Committee Survey and Meeting: A newly-formed, issues-oriented committee will meet Wednesday, April 6, at 6:00 p.m. in the Magnolia Room. Larry Briggs of Timberline Systems, Inc. is the committee chairman. At the meeting Larry will review the results of the Competitive Issues survey attendees completed on Tuesday. The meeting will provide a forum for the discussion of competitive issues which will be presented to TI for product planning purposes. Both resellers and end users are welcome to attend. Attendees are encouraged to bring prepared input for the session.

Help Us Help You—A Reverse Q&A Session: Bob Teague of Business Systems Group will conduct a Reverse Q&A session on Friday, April 8, from 1:30 to 2:30 p.m. in the Napoleon Ballroom. At the Reverse Q&A session, you, the audience, will be asked to consider questions posed by TI management. The topics will relate to marketing alternatives, product development, and future direction. At this session you will: have direct input into TI's product and marketing decisions, be put on a contact list so that TI can continue to use your input in their decision-making process, and already have a good seat for the TI Management Q&A session that follows. All registered attendees are welcome to attend.

RIX Meeting: RIX (Regional Information Exchange) officers and other interested parties are invited to attend a meeting Wednesday, April 6, at 6:00 p.m. in the Chequers Room. The purpose of this meeting is to exchange ideas on regional meeting successes, meeting topics, attendance motivators, etc. Richard Max of Synkote Paint Co. is the committee chairman. If you are not a RIX member, but you are interested in joining or helping in the formation of a RIX, please attend.

Systems Committee Meeting: The purpose of the Systems Committee is to provide a concentrated channel of dialogue between TI and its users on matters relating to computer hardware and software product development. Bob Teague of Business Systems Group is the committee chairman. The committee will meet Thursday, April 7, at 6:00 p.m. in the Magnolia Room. The first 15 minutes of the meeting are open to all interested attendees. The remainder of the meeting is a working session with current TI-MIX Systems Committee members and TI representatives.

Technical Contributions Committee Meeting: The Technical Contributions Committee is charged with implementing quality standards for library program contributions and MIX-TIPs. Jim Fisher of I.C. System, Inc. is the committee chairman and will conduct the meeting. All attendees are welcome.

TI Management Q&A Session: On Friday, April 8, from 2:45 to 4:30 p.m. in the Napoleon Ballroom, attendees will have the opportunity to address questions directly to TI's executive management. The panel of TI managers will address questions submitted by TI-MIX members concerning policies, problems, and future developments. Past TI Management Q&A sessions have been of great benefit to TI-MIX members and have resulted in significant improvements in the quality and support of TI computer products. All TI-MIX attendees are encouraged to attend.

TI-MIX Membership Meeting: The annual TI-MIX Membership Meeting will begin with a wine and cheese reception at 5:00 p.m. in Grand Salon AB on Tuesday, April 5. The membership meeting will begin at 5:30 p.m. and will be conducted by Mark Rissmiller of MFA, Inc. TI-MIX 1983 General Board chairman. Your participation is needed in order to compile crucial issues for the board to present to TI management during the symposium. After presenting TI-MIX activities and progress reports, the board will solicit suggestions from the audience to expand and improve TI-MIX services. Future symposia sites will also be discussed. All TI-MIX members are encouraged to attend.

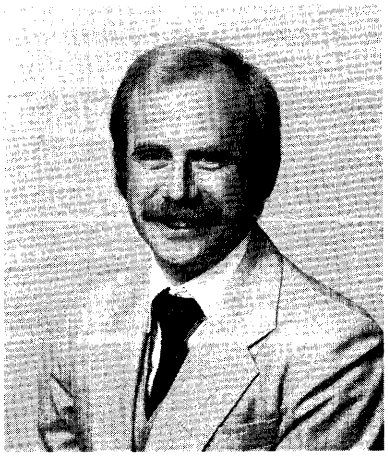
TI-MIX Reception: Winding up the symposium will be a reception hosted by TI-MIX. The reception will be held from 4:30 p.m. to 5:30 p.m. in the Versailles Ballroom. TI-MIX General Board and staff members will be present to meet attendees and to consider suggestions about the symposium and the TI-MIX organization.

WHO'S WHO

TI-MIX General Board

The TI-MIX General Board makes policy decisions and sets guidelines for the functions that TI-MIX performs. These board members are available for comments and can be identified by the ribbon attached to their badges indicating "General Board." All board members pay regular attendee registration fees.

Mark D. Rissmiller (1983 board term)
Board Chairman and Goals, Objectives & Policies Committee Chairman
MFA, Inc.
201 South Seventh
Columbia, MO 65201
(314) 876-5362



Larry R. Briggs (1983–84 board term)
Board Vice-Chairman and Competitive Issues Committee Chairman
Timberline Systems, Inc.
10550 SW Allen Blvd.
Beaverton, OR 97005
(503) 643-9461

Robert Teague (1983–84 board term)
Board Secretary and Systems Committee Chairman
Business Systems Group
3659 Thousand Oaks Blvd.
Westlake Village, CA 91362
(805) 496-9462

C.R. (Rick) King (1983 board term)
Board Treasurer and Promotions Committee Chairman
Plenary Systems Inc.
9669 Wendell Road
Dallas, TX 75243
(214) 343-9901

James R. Fisher (1983 board term)
Technical Contributions Committee Chairman
I.C. System, Inc.
3499 N. Lexington Ave.
St. Paul, MN 55164
(612) 481-1117

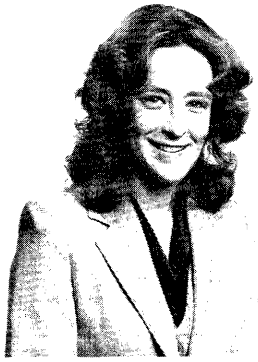
Richard E. Max (1983 board term, nonvoting)
RIX Support Committee Chairman
Synkote Paint Co.
144-160 Van Riper Ave.
Elmwood Park, NJ 07407
(201) 796-4040

Fred W. Powell (1983 board term)
Symposium Committee Chairman
Powell and Associates
P.O. Box 2543
Staunton, VA 24401
(703) 885-4282

Jacqueline White (1983–84 board term)
Membership Committee Chairman
Concord Management Systems, Inc.
6301 Ivy Lane, Suite 500
Greenbelt, MD 20770
(301) 345-5300

TI-MIX Staff

The TI-MIX staff performs the administrative functions of the organization as directed by the General Board. Staff members can be identified by the ribbon attached to their badges indicating "Staff."



Director
Lark Doley

Library Coordinator
Virginia Franklin

Systems Coordinator
Anh Upchurch

Staff Assistant
Patricia Pratt

Publications Coordinator
Dorene Cohen

Publications Assistant
Ellen Ann Gober

TI-MIX Asia TI Liaison
Yoichi Akiba

TI-MIX Europe Director
Mary Koppers

SESSIONS

Session Guidelines

New guidelines have been established for TI-MIX 1983 sessions to improve their content and quality.

- Sessions for TI-MIX 1983 have been categorized into tracks: technical sessions relating to TI operating systems and languages, miscellaneous technical sessions, end-user sessions, business management/marketing-oriented sessions, and sessions of general interest. See page 52 for a list of these tracks.
- The purpose of TI-MIX symposia sessions and presentations is to educate the TI user community in current technical, marketing, and management issues as related to TI products. Presentations will detail concepts and usage techniques. Product sales presentations will be restricted to the exhibit rooms.
- Each session will have a separate bound copy of the written texts of each presentation for that session in a session proceedings document. Proceedings for each session are available at the session proceedings booth located in the registration area during registration hours. It is recommended that you review the agenda, decide which session proceedings you want, complete the session proceedings request form, and then proceed to the session proceedings booth to pick up your copies before the sessions begin. Each fully registered attendee is entitled to 10 free choices of proceedings (three free copies for one-day registrants). These complimentary copies can only be collected at the session proceedings booth. More copies may be purchased. At the beginning of each session, a few copies of that session's proceedings will be offered for sale at the session monitor's table located outside the session room.
- Speaker awards will be presented to the best speaker(s) in each session. A rating form will be distributed to session attendees. Speakers will be rated on content, delivery, and supporting materials. Speakers from each session with the highest composite totals will become Encore Speakers. They will receive an award from TI-MIX, recognition through articles in the *TI-MIX News,* and identification at future TI-MIX symposia.

Special Sessions

Help Us Help You: A Reverse Q&A in the Napoleon Ballroom from 1:30 p.m. to 2:30 p.m. on Friday, April 8 *(Session Chairman Bob Teague, Business Systems Group, Westlake Village, CA)* — This session is basically a reverse question and answer session. That is, it is primarily intended for TI managers (marketing, contracts, software, hardware, service, etc.) to solicit TI-MIX member opinions concerning problems, policies, marketing alternatives, and future directions. Attendees will be polled on alternative actions (e.g., Should a section in the contracts be changed?) or uses of resources (e.g., BASIC versus Pascal, CP/M versus p-System). The decision to include BASIC and RPG II under DNOS, for example, was made based on input at the 1982 symposium TI Management Q&A session. "Help Us Help You" will allow the expression of opinion and quantification of the results. Questions brought to the session will be put to the TI-MIX membership in attendance for an opinion vote. The results will be used, but there is no obligation on the part of the membership, TI-MIX, or TI to act on the outcome of any question.

The session will consist of a short keynote address, questions to be submitted to the membership by TI-MIX members, questions from TI, additional questions from attendees, and final questions from TI. Submit written questions for this session by completing a Q&A form and placing it in the Q&A box in the registration area.

Texas Instruments Management Question and Answer (TI Q&A) Session in the Napoleon Ballroom from 2:45 p.m. to 4:30 p.m. on Friday, April 8 — The TI Management Q&A session has been established as a permanent feature of TI-MIX symposia to give attendees the opportunity to address questions directly to TI's executive management. The panel of TI managers will answer questions submitted by TI-MIX members concerning policies, problems, and future developments. Past TI Management Q&A sessions have been of great benefit to TI-MIX members and have resulted in significant improvements in the quality and support of TI computer products. Submit questions in advance at the Q&A box in the TI-MIX registration area.

TI Products Review in Grand Salon AB from 6:30 p.m. to 7:30 p.m. on Tuesday, April 5 — During this session TI marketing personnel will describe and answer questions regarding TI products announced in the six months prior to the symposium and answer questions regarding these products.

TI-MIX Membership Meeting — The annual TI-MIX Membership Meeting will begin with a wine and cheese reception at 5:00 p.m. in Grand Salon AB on Tuesday, April 5. The Membership Meeting will begin at 5:30 p.m. and will be conducted by Mark Rissmiller of MFA, Inc., TI-MIX 1983 General Board chairman. Your participation is needed in order to compile crucial issues for the board to present to TI management during the symposium. After presenting TI-MIX activities and progress reports, the board will solicit suggestions from the audience to expand and improve TI-MIX services. Future symposia sites will also be discussed. All TI-MIX members are encouraged to attend.

Sessions and Chairmen

Session chairmen are instrumental to a successful symposium. Their responsibilities include: reviewing submitted abstracts for acceptance or rejection; contacting additional speakers if necessary; deciding the order of presentations; meeting with presenters to prepare introductions; and acting as emcee for the session by introducing each speaker, leading any discussion period, and keeping the session on schedule. Session chairmen and speakers pay regular attendee registration fees and receive a personal gift from TI-MIX for their contribution.

BASIC LANGUAGE
Bruce E. Murtha, Shepard Steel Co., Hartford, CT

BUSINESS MANAGEMENT CONCEPTS
Dick Moeller, ProfitMaster Computer Systems, Inc., Austin,TX

COBOL
Don McGonigal, Hospital Corporation of America, Nashville, TN

COMMUNICATIONS & NETWORKING
James R. Fisher, I.C. System, Inc., St. Paul, MN

DATA MANAGEMENT (DBMS, DD-990, QUERY)
David Teagarden, Moore Business Forms, Inc., Denton, TX

DISTRIBUTED TERMINAL SYSTEMS
John Martin, Houston Computer Services, Houston, TX

EDUCATIONAL SIIX
Bill Walker, The University of Oklahoma, Norman, OK

END-USER SIIX
Richard E. Max, Synkote Paint Co., Elmwood Park, NJ

FORTRAN
Fred W. Powell, Powell and Associates, Staunton, VA

HARDWARE CONCEPTS
Michael Roginsky, Lockheed-Georgia Co., Marietta, GA

HELP US HELP YOU: A REVERSE Q&A
Bob Teague, Business Systems Group, Westlake Village, CA

MANAGEMENT INFORMATION SYSTEMS
Ashok K. Nagrani, Antech, Inc., Roswell, GA

MARKETING & SALES TECHNIQUES
Larry R. Briggs, Timberline Systems, Inc., Beaverton, OR

MICROPROCESSOR APPLICATIONS
John McMullen, R.V. Weatherford Co., Glendale, CA

OFFICE AUTOMATION TECHNOLOGY
Susan Raff, Owens-Corning Fiberglas, Toledo, OH

OPERATING SYSTEMS
Fred W. Powell, Powell and Associates, Staunton, VA

p-SYSTEM
Michael Hadjioannou, TICOM Systems, Marina Del Ray, CA

PROFESSIONAL WORKSTATIONS
Art Miller, Texas Instruments, Austin, TX

RESELLER SIIX
W.J. Kiely, KPS, Inc., Westlake Village, CA

SOFTWARE & SYSTEMS ENGINEERING
Michael H. Tarnowski, Johnson Controls, Inc., Milwaukee, WI

SUPPORT SERVICES
Mark D. Rissmiller, MFA, Inc., Columbia, MO

SYSTEM MAINTENANCE
Jerry L. Pyles, Texas Instruments, Lubbock, TX

SYSTEM PERFORMANCE & ANALYSIS
Charles F. Phillips, III, Concord Management Systems, Greenbelt, MD

TECHNIQUES & CONCEPTS FOR THE NONTECHNICAL OR NEW USER
John R. Hall, DIGATEX, Austin, TX

TI MANAGEMENT QUESTION & ANSWER SESSION

TI PRODUCTS REVIEW
Art Miller, Texas Instruments, Austin, TX

TIFORM
Lars Greninger, Texas Instruments, Austin, TX

TIPS & TECHNIQUES FOR THE TECHNICAL USER
James D. Gordon, Ford Motor Co., Detroit, MI

Sessions and Presentation Abstracts

The sessions planned for TI-MIX 1983 will benefit the entire cross section of TI users: the technical, nontechnical, manager, marketer, end user, and reseller. Session chairmen are instrumental to the success of symposium sessions. The sessions and their respective presentations are as follows:

BASIC LANGUAGE — Session Chairman Bruce E. Murtha, Shepard Steel Co., Hartford, CT
Thursday, April 7, from 3:45 p.m. to 6:00 p.m. in the Melrose Room

Blair, David *(Texas Instruments, Austin, TX)*

TI BASIC 4.0 External Subprograms

A limitation particularly inherent to the BASIC programming language is that of program size. Release 4.0 of TI BASIC provides the capability of writing programs of a total size which is larger than the available free space on the system. This is done by using external BASIC subprograms which are loaded off of disk when called by a BASIC program. This presentation will address the creation, modification, and use of external subprograms as well as methods of converting current applications for their use.

Murtha, Bruce E. *(Shepard Steel Co., Hartford, CT)*

Comparison of Relative Execution Speeds of TI BASIC Statements

This presentation will describe a series of programs developed by the author to demonstrate the execution speed of each statement in TI BASIC. It is intended that the results will be used by programmers for optimization and by TI for improvement of performance speed. Performance results for the current BASIC version 3.2 and the new release of translated BASIC will be distributed.

Schiemenz, Robert L. *(Texas Instruments, Austin, TX)*

TI BASIC — Release 4.0

The 4.0 release of TI BASIC contains a number of new features including a faster execution mode, better program security, more user memory, overlaid interpreter modules, external BASIC subprograms, and support under the DX10 Micro, DX10, DNOS operating systems. This presentation will describe the enhancements in detail and provide information on how to use them optimally.

Sealy, Walt *(Texas Instruments, Austin, TX)*

Comparison of TI BASIC with Microsoft BASIC

Microsoft BASIC is popular on a variety of microcomputers. The TI BASIC project is frequently asked to compare TI BASIC to Microsoft BASIC. This presentation will describe the strengths and weaknesses of each BASIC. Also, compatible and incompatible features of each will be shown.

Smith, Presley *(Texas Instruments, Austin, TX)*

p-System BASIC

This presentation will detail the differences between TI BASIC and p-System BASIC. User experience in converting from SBC BASIC to p-System BASIC will be discussed.

Valorose, Richard C. *(Interactive Management Systems Corp., Colorado Springs, CO)*

Guidelines to Structured Programming in TI BASIC

Structured programming is a relatively new programming technique within the data processing industry. Its use has shown that programmers are more productive, there are fewer testing problems, and the programs have increased clarity and readability.

BASIC has been a language that has been difficult to use under this new technique because it did not have a great many of the characteristics built into it necessary to build well-structured programs. Therefore, the four basic constructs of structured programming were not easily implemented within the framework of BASIC. These four constructs: sequence, selection, iteration (Do While-Do Until), and case, now either exist or can be constructed within BASIC.

The purpose of this presentation is to present these four structured constructs and to show how they can be built within TI BASIC. Examples of BASIC code illustrating each of the constructs will be shown. Special emphasis will be made on selection and iteration because of the restraints within BASIC on these two constructs. Also, techniques in modularity will be illustrated through global parameters and the use of the CALL function.

BUSINESS MANAGEMENT CONCEPTS — Session Chairman Dick Moeller, ProfitMaster Computer Systems, Inc., Austin, TX
Thursday, April 7, from 8:30 a.m. to noon in Grand Salon D

McMullen, Terry *(Texas Instruments, Austin, TX)*

Industry Specific Solutions — The Key to Serving the Market Opportunities for Small Computers in the 80s

Where are the most significant market opportunities for small computers as the industry enters the last half of the 1980s? A more detailed look at the market defines this opportunity in terms of industry subsegments and size class of enterprises. This level of detail allows a more precise measurement of those firms which have adopted computer systems and the rate at which the remaining population is expected to consider the use of computers.

The purpose of this presentation is to identify the importance of subsegmentation in the marketplace to gain insight as to the opportunities for industry specific solutions as an approach to serving the market needs.

Moeller, Dick *(ProfitMaster Computer Systems, Inc., Austin, TX)*

Selling to User Needs

Success for the reseller depends on how well his products and services are meeting the needs of his users. This presentation will explore the ways in which the reseller can improve both the pre- and post-sales contacts with prospects/customers to insure that the product strengths are properly communicated.

Nagrani, Ashok K. *(Antech, Inc., Roswell, GA)*

The Formulation of a Strategic Plan — A Cookbook Approach

This presentation will discuss the differences between strategic planning and business planning, and why both are necessary to increase the chances of survival in our industry. The session will present a step-by-step approach toward the preparation of a plan, its execution, and monitoring. A simple case study will be discussed to illustrate the steps.

White, Jacqueline *(Concord Management Systems, Inc., Greenbelt, MD)*

Hiring, Motivating, and Keeping Competent Technical Personnel

The problems of hiring, motivating, and keeping a competent technical staff are particularly acute in an industry often marked by a glut of jobs, high turnover rates, and low morale. How do small companies compete with the computer giants who have seemingly endless resources to recruit, train, and offer high salaries, attractive benefits, and company name prestige?

This presentation will outline effective recruiting methods, screening and interviewing procedures, and entry-level compensation plans; then review what to use to analyze your staff's motivators. What personality surveys are on the market and who should use them? Are they accurate or just a fad? What are the legal ramifications?

Last, how do companies, particularly ones small to medium in size, keep a competent technical staff? Employee gatherings, effective management techniques, and/or stock option plans—what makes people stay? What smaller companies do have that big ones almost never offer is impact on the growth and direction of a company.

Reference material will be included in the handout material citing survey results on motivational factors and a list of commonly administered personality surveys.

COBOL — Session Chairman Don McGonigal, Hospital Corporation of America, Nashville, TN
Thursday, April 7, from 8:30 a.m. to noon in Marlborough AB

Cobb, Gary W. *(Texas Instruments, Austin, TX)*

Methodologically Sound Tools for the Integration and Testing of Large COBOL Programs

This paper introduces a set of tools and techniques, that, when used together, provide a software staff with a sound methodology to modify COBOL subprograms within very large COBOL systems. The ideas presented herein were discovered while developing a 480 module COBOL program which was migrated from a mainframe environment, where it occupied 2 megabytes of main memory, to a DS990 Model 30, running under DNOS using segmentation. This paper seeks to develop answers to the following questions:

- Can one design a COBOL program that services all of the terminals on a DS990 system?
- How can a COBOL program share a large number of files across a set of terminals inquiring and changing sets of records across one or more files without conflict?
- How do DX10's multitasking services perform compared to DNOS's segmentation services?
- How can a totally interactive COBOL program using TIFORM be timed without an operator in the loop?
- How can regression testing be accomplished for a release of a large COBOL application program?
- What does Configuration Management add to the maintenance of a large COBOL application?

Good methodology can be added to most development and maintenance projects without increasing the direct costs when accomplished with automated programmer productivity tools, as were used or developed in the project described in this presentation.

Denton, Paul *(Texas Instruments, Richardson, TX)*

COBOL Development Considerations for Multiple Target Computers

COBOL is considered to be an easily transportable language; however, there are differences which must be taken into consideration when developing programs which will be run on different computers. When developing COBOL programs targeted for "compatible" machines, you may encounter different operating systems such as multitasking versus single-task systems and different file access methods. Development strategy will be affected by different hardware configurations, such as memory size, printer features, and execution speed. Also, the use of specialized software utilities available on your development computer may not be available on all target machines. The differences encountered when developing COBOL programs to be run on computers which are "noncompatible" are even more numerous.

This discussion will address COBOL program development strategy with the objective of alleviating or minimizing the effects of these differences in order to facilitate the program's transportability to multiple machine types.

McGonigal, Don *(Hospital Corporation of America, Nashville, TN)*

Design Methodology for Vendor Independent COBOL Applications

In these days of high inflation and unstable economy, many Original Equipment Manufacturers (OEMs) and end users are forced to develop COBOL applications not only for Texas Instruments computers but for a variety of other hardware. This presentation will address some techniques and design methodology to ensure COBOL compatibility across these systems or at least recognize differences to minimize any conversion effort.

A case study will be discussed to show how hospital application packages (pharmacy, material management business office, personnel, nursing, etc.) were developed primarily for the TI Business System 672 computer but also executable on the Digital Equipment Corporation PDP-11/70 and Motorola 68000 based systems. Subsets of these applications were packaged for execution on the TI Business System 200, Radio Shack Model II, Tandy Model 16, the IBM Personal Computer, and other soon to be announced computers.

These topics will be addressed: functional modularization, software standards, ad hoc report generators, print spoolers, maintainable software, automated quality assurance testing, automated load simulation testing, tangible benefits, operating system dependencies, and local area communication networks.

Tepe, Martin *(TCC Systems, Ft. Mitchell, KY)*

Use of Report Writers in COBOL Systems

Use of report writers is beneficial in COBOL shops. During development, quick reporting helps in debugging and listing test files and data fields not shown on normal reports, as well as substituting for COBOL programs. On installed systems, report writers allow the quick development of reports which meet unexpected or temporary needs. An awareness of report writer limitations is important for effective utilization.

COMMUNICATIONS AND NETWORKING — Session Chairman James R. Fisher, I.C. System, Inc., St. Paul, MN
Thursday, April 7, from 8:30 a.m. to 3:30 p.m. in the Napoleon Ballroom

Barnett, William B. *(Texas Instruments, Dallas, TX)*

Integrating Professional Workstations into a Communicative Network

Information Systems & Services (IS&S) is the internal computing facility for Texas Instruments. The IS&S facilities support TI business worldwide by maintaining a central facility of IBM mainframes, a large private data communications network, and an extensive array of distributed systems that use TI Data Systems Group products. These distributed systems (terminal controllers, network-connected TI DS990 computers, and workstations) are the primary user interface to the IS&S facility.

The traditional user has shared computer resources through network-connected terminals or through distributed processor terminals. The advent of dedicated computer resources on personal workstations presents both and opportunity and a challenge to use this capability effectively within an existing computer network.

Dierks, Herman *(Texas Instruments, Austin, TX)*

Local Area Networks

This presentation will be an overview of current Local Area Network (LAN) technology and its current uses. The key features of LANs will be highlighted. The concept of shared access to expensive resources such as disks, printers, and network gateways will be discussed. The characteristics of LANs will be presented, listing advantages, disadvantages, and current vendors. A brief summary of LAN installations at TI will be covered.

Eagle, C. David *(Texas Instruments, Austin, TX)*

Remote Resource Access — Including Terminals

This paper describes how a single set of communicating tasks, functioning as the presentation service layer of the International Organization for Standardization — Open Systems Interconnection (ISO-OSI) Model, may achieve two distinct and desirable goals. The first goal is to make remote resources (associated with other systems attached to the X.25 network) accessible to local applications through their normal access method. The second is to allow users to log onto remote systems. A supervisor call specific implementation of layer 6, the presentation service of the Open Systems Interconnection Model, will be described.

Gallio, Joe *(Texas Instruments, Austin, TX)*

Datacomm-Man: Challenge of the 80s

Communications is one of the fastest growing fields in today's digital technology. It was not thought feasible to communicate over a pair of wires prior to the invention of the telegraph in 1837 by Sir William Cooke. It took another half century for Alexander Bell to place the first long distance telephone call in 1892. In light of the rapid advances of today's technology, these museum pieces seem to be ancient history.

Where is today's data communications headed? What is 3780, 3270, SNA, HDLC, X.25, and Packet Switching? These are a few of the subjects that this presentation will address. Today's communications is becoming more accurate and capable of handling increased volumes of information traffic. The simple protocols of past decades however, are giving way to increased complexity and sophistication. Today's "Datacomm-man" must evolve with his tools to meet the communications challenges of the 80s.

Goebel, Peter *(UIMC International Management Consultant, Hamburg, Germany)*

Distributed Data Processing Strategy at Unilever

This presentation gives an overview of the DDP strategy of the Dutch British-owned Unilever concern which is number one in the consumer product area worlwide. Presently there are 130 DX10-based 990 systems installed for different applications. Three Business System 300 and 600 communication-based projects are currently in the developmental phase. All installations are following a strategy which was defined by the Unilever international consultant (UIMC). This strategy describes the use of: distributed data bases, software utilities, communication protocols, languages, and application software.

Laffitte, David S. *(Texas Instruments, Houston, TX)*

An Architecture for VLSI Support of Token Ring Local Area Networks

The requirements for a Local Area Network (LAN) can be met through an architecture known as a token ring. Implementation of a token ring LAN can be facilitated through correct application of Very Large Scale Integrating (VLSI) circuits. Architectural requirements of VLSI circuits to support a token ring LAN are examined. Specific issues examined are the performance, integrity, testability, and ease-of-use architectures. A functional partitioning of the circuit types needed to meet the architectural requirements is proposed.

Mallory, R. Patrick *(IFG Leasing Co., Great Falls, MT)*

Virtual Terminal Software Enables Turnkey Distributive Processing Network

In 1982 IFG Leasing Company created four regional service and processing offices. Each office was to be given all of the advantages of having a local multiuser computer but without the overhead of development or a systems maintenance staff.

The systems approach selected utilizes a DS990 Model 29 and four DS990 Model 9s with a "virtual terminal" communications capability. This presentation discusses the performance of the network with multiple virtual terminal ports and 3780 in simultaneous use. Observations on file transfer techniques, remote systems maintenance, some alternatives, and problems or pitfalls will also be presented.

Plamondon, Rejean *(Ecole Polytechnique de Montreal, Montreal, Quebec, Canada)*

Remote Communication Between a TI Microcomputer and a Host Computer (IBM 4341) Via an Asynchronous Link (RS-232C)

A TI microcomputer (FS 990/4) has been integrated in the host network of Ecole Polytechnique. This means that the microcomputer works like any node in a network retaining its own capabilities and using the host's services on request. The link is asynchronous, based on the RS-232C standard, and the protocol used was the simple XON-XOFF protocol. A TI TTY/EIA interface module was provided as an interface between the TMS 9900 CPU and the modem. The physical link is a dedicated telephone line.

A software package has been developed to support XON-XOFF protocol between the two processors and to support redirection (or redefinition) of the input/output paths for the different commands. Consequently, it allows the output to be directed toward the screen and/or the printer and/or files; input can be from the keyboard or files. Via a host facility, messages can be sent to other nodes in the network. This approach offers the availability of a vast mass storage system and of a powerful computing machine to a microcomputer and avoids the disadvantages of using shared peripherals.

Rissmiller, Mark *(MFA, Inc., Columbia, MO)*

Providing TI DS990 Transactions Real-Time to an IBM Host

This presentation will consist of discussing two strategies in providing real-time information (or near real-time) from a series of TI DS990 systems to an IBM 4341 computer system. Each strategy has been tested and evaluated for possible full implementation on eight TI Model 20 systems all located at the agri-business home office computer center. These TI systems provide remote service for nearly 80 locations located within a 300-mile radius of the home office.

The investigation and need for transmission of the transactions to the IBM host was brought about by a company requirement for up-to-the-minute consolidated information. With data needed for reports and consolidated inquiries spanning multiple TI DS990 systems, logistical problems became immediately apparent.

This presentation will begin with an overview of the computer equipment setting and the system software involved both on the TI systems and the IBM system. Included in that will be a look at TI's 3270 Interactive Communications Software (ICS) software package and, in particular, the powerful Programmed Station Control (PSC) feature which is the basis for the communication of the transactions. After a brief discussion of the application software functions, which are written in COBOL, time will be spent discussing changes that were required to the application to provide the data transmission to the IBM host. Finally, the "remote disk I/O" strategy and the "single-thread queuing" strategy will be discussed in light of their effect on system utilization and system performance.

Rowin, Milt *(Texas Instruments, Austin, TX)*

The Open Systems Interconnection Model for Communications

The computer and communications industries are moving toward the elusive goal of standard communication protocols. The objective of all this work is connectability; that is, the ability to connect equipment from various vendors through a variety of communication media. The master plan under which all this will work is the Open Systems Interconnection Reference Model. This model is being developed by the International Organization for Standardization (ISO).

The first communication product from TI which conforms to this model is the Remote File Transfer (RFT) package. Additional products are planned. This presentation will introduce the audience to the concepts involved and illustrate them with RFT examples.

Wood, Gary L. *(Texas Instruments, Houston, TX)*

A Systems View of Token Ring Local Networks

Local Area Networks (LANs) provide opportunities to enhance data processing capabilities through interconnection of equipment within a defined geographic area or establishment. This "interconnection" function is established by a local network that provides a comprehensive wiring plan allowing ease-of-flexibility and extensibility of the network; a flexible architecture which provides for migration of existing products into the network, yet allows the potential communications of all forms of information (voice, data, video) on the network through a single transmission media; performance to meet the functional needs of the user's bandwidth consumption requirements; and intrinsic reliability, availability, and serviceability which are key to a long-term cost effective price/performance solution.

This presentation will describe the principal elements of the IEEE-802 baseband, token ring standard and will illustrate how the topology (star-wired ring), transmission media (twisted-pair and fiber optics), and access method (token ring) satisfy the interconnection functional requirements.

DATA MANAGEMENT (DBMS, DD-990, QUERY) — Session Chairman David Teagarden, Moore Business Forms, Inc., Denton, TX
Friday, April 8, from 10:30 a.m. to 12:30 p.m. in Marlborough AB

King, John W. *(Texas Instruments, Austin, TX)*

Application Systems Without Programming

Using Texas Instruments data management tools, it is possible to create entire application systems without writing a single line of code. Such codeless systems greatly reduce development time and provide flexibility in responding to the changing requirements of the user. This presentation will demonstrate a system used for file manipulation and report generation using only DBMS, DD-990, Query, and SCI.

Ledbetter, Jim *(Texas Instruments, Austin, TX)*

Data Base Documentation: Considerations and Controls

Development of large data bases is often visible only as specifications or documentation during a large part of the development cycle. Many considerations arise when planning this documentation and its controls. Some of these considerations include: trade-offs between online and hard copy documentation; problems involved when making post-deadline revisions, consistency of data structures, editing specifications produced by many writers, documentation involving feedback from users, difficulties that erratic job flow produces, and other problems.

Wells, Kathy *(Texas Instruments, Austin, TX)*

An Overview of DD-990

A cartoon will be used to point out the chaos in a data processing shop that needs a data dictionary. From the explanation of the cartoon will come a sequential file that clearly needs central definition and control of its data. It will be explained that data descriptions can be stored in DD-990 using the Interactive Data Librarian (IDL) or Batch Data Librarian (BDL). Output from the Data Dictionary Report (DDR), List File (LSTFIL), and Data Dictionary Status (DDSTAT) utilities will be shown. COBOL record descriptions can be generated using Generate Copybook (GCB). The copybook generated from the sequential file will be shown. Since the Data Dictionary Cross-Reference (DDXREF) utility shows data interrelationships, a DDXREF report indicating that the sequential file is used in three programs will be shown. The Automatic File Definition (AFD) utility that can take COBOL source to produce BDL input will be mentioned. Output from a sample query will be shown to demonstrate that non-DBMS files can be queried with Query-990.

DISTRIBUTED TERMINAL SYSTEMS — Session Chairman John Martin, Houston Computer Services, Houston, TX
Wednesday, April 6, from 8:30 a.m. to noon in Grand Salon D

Gillen, Daniel *(Texas Instruments, Austin, TX)*

The 931 VDT and Its Support Story

New asynchronous hardware and supporting software will be discussed in this presentation. The discussion centers around the 931 VDT and asynchronous communication controllers. The 931 VDT is an FCC/EMI compliant VDT. New S600/S800 packaged systems will be added incorporating the 931. Two models of the 931 exist: one is an EIA RS-232 VDT capable of remote or "short distance" local connection, and the second model is capable of EIA or fiber optic connection to the CPU. The fiber optic version can be located up to one kilometer from the CPU. The 931 gives TI one terminal which operates local or remote.

The support for the 931 includes new asynchronous communication controllers, cables, DX10 and DNOS releases. This presentation is intended to provide additional technical information for the 931 and its support hardware/software announced at the TI-MIX symposium. This will not be detailed technical information but will concentrate on the features of the hardware, problems it solves, and how it is integrated into the TI product line.

Lefavi, Geoffrey *(Texas Instruments, Irvine, CA)*

Creating Electronic Mail Systems Through TI Utilities

Electronic Mail Systems (EMS) varying in degree of difficulty may be created using the utilities available from TI and some easily written programs. How to implement these utilities and some sample programs will be presented. An example of cost justification showing the break-even point and the potential savings of an EMS will also be presented.

Starke, Stephen E. *(Houston Computer Services, Inc.)*

Automated Message System

The Automated Message System is a TI DS990 based network designed to transmit urgent information to over 200 terminals in a period of less than one hour. This presentation will detail the equipment used to implement the system and present problems encountered during the implementation.

EDUCATIONAL SIIX* — Session Chairman Bill Walker, The University of Oklahoma, Norman, OK
Wednesday, April 6, from 3:45 p.m. to 6:00 p.m. in the Melrose Room

*Special Interest Information Exchange

Ledbetter, Jim *(Texas Instruments, Austin, TX)*

A Conversation Program: Design and Implementation

This paper follows the evolution of a conversation program from analysis of needs (questionnaire-interview) through choice of language, choice of machine, input/output design, system programming, application programming, documentation, and use.

Riccomi, Alfred *(Texas Instruments, Dallas, TX)*

LOGO — An End-User Language

Before World War I, the telephone industry was growing like the computer industry is today. However, its potential size was limited by the fact that all calls had to be switched by human operators. If the telephone's potential were to be realized, the entire work force would have to be employed as operators. Of course, that could not happen. The salvation was end-user direct dialing: the automatic telephone switching system.

With the explosive growth we are witnessing in the computer industry, today's half-million professional programmers (and two million computer-literate laymen) will have to increase in number to absorb the entire work force. That will not happen, but what will happen, and is happening, is the introduction of end-user direct programming, the fourth generation software systems.

LOGO was the first of the very high-level programming languages designed for end users. Others are appearing and better ones will come. Being first probably assures a long life for LOGO just as it has for FORTRAN. LOGO first appeared commercially on the TI 99/4. It is now on the Apple II, the TERAK (an LSI-11 based machine), was announced for the Commodore 64, and prototypes are running on the IBM Personal Computer and the Texas Instruments Professional Computer.

Because LOGO is very easy to learn, at first it appeared as an elementary school level language. But as more powerful versions come into existence, with good character string manipulation, floating-point arithmetic, data access methods, and other features in addition to its intrinsic graphics capability, it promises to become an end-user direct programming language for all applications.

Riccomi, Carolyn A. *(Consultant, Richardson, TX)*

Medical Therapeutic Application of a Computer

This presentation offers an anecdotal account of the use of computer-aided instruction (CAI) and TI-LOGO with a severely physically handicapped teenager. In addition to being a stimulus and adjunct to his formal educational experiences, the computer has proven to be a valuable tool for improving fine motor control, recent memory skills, and for providing positive experiences in demonstrating his ability to succeed.

Walker, Bill *(The University of Oklahoma, Norman, OK)*

TI 990/12 in an Academic Enviroment

Using the TI 990/12 in an academic environment presents unique problems including file security, training masses of users, avoiding undesirable interaction with managerial applications, and making resources available to users.

Solutions to some of these problems, as implemented at the University of Oklahoma, will be presented. New procedures for student use will be illustrated, and appropriate privilege levels will be indicated. The student system resembles the popular CP/M in many ways. The physical facilities, including large screen monitors and laboratory equipment will be described, and future plans for networking the TI 990/12 with the VAX 11/780, the DEC 11/70 and the DEC 11/44 will be reviewed.

Watt, Joe T. *(Lamar University, Beaumont, TX)*

Microcomputers in a First Digital Lab

This presentation summarizes 17 years of effort to provide laboratory experience in support of digital courses in an undergraduate electrical engineering program. Beginning in 1974 with a Texas Instruments 960A minicomputer, the laboratory has used several 8-bit microcomputers programmed in assembly language. The present lab course uses Texas Instruments 990/U89 University Modules programmed in BASIC. Microcomputer lab experiments used in this course are described. These experiments emphasize hardware and interfacing.

END-USER SIIX* — Session Chairman Richard E. Max, Synkote Paint Co., Elmwood Park, NJ
Wednesday, April 6, from 3:45 p.m. to 6:00 p.m. in Marlborough AB

*Special Interest Information Exchange

The purpose of the End-User SIIX is to provide a forum for the interchange of ideas and problems for end users of TI products. This session will provide a liaison between the end user and TI management. Appropriate representatives from the home office will be present to discuss problems that relate to the end user in terms of new products, marketing, TI-qualified resellers, hardware, support, etc. Specifically, emphasis will be placed on the unique situations of the end user, both large and small.

The approach for this session will be two-fold. First, a presentation will be given on the integration of personal computers into an MIS strategy. Following will be an open-ended forum providing the end user with the opportunity to interact with home office personnel. An attempt will be made to arrive at solutions and conclusions to problems which are presented.

Person, Ron *(Texas Instruments, Austin, TX)*

Integrating Personal Computers into Your MIS Strategy

There is a question of growing intensity every MIS department must answer, "What do we do about personal computers?" PCs present problems: security, data integrity, purchase procedures, support, and compatibility, but, they also present enormous opportunities. Discover how others are tailoring their MIS strategies to integrate personal computers.

FORTRAN — Session Chairman Fred W. Powell, Powell and Associates, Staunton, VA
Friday, April 8, from 10:30 a.m. to 12:30 p.m. in the Melrose Room

Karculias, Peter N. *(Texas Instruments, Austin, TX)*

Migration to FORTRAN-78

This presentation will focus on the differences between FORTRAN-66 and FORTRAN-78 and TI plans to increase compatibility between these products. Known incompatibilities will be discussed and plans to solve them will be presented. Specific feedback concerning difficulties in converting and recommendations for solving them will be sought from the attendees.

Karculias, Peter N. *(Texas Instruments, Austin, TX)*

FORTRAN-78 Future Enhancements

This presentation will present the new features planned for the 1983 release of FORTRAN-78. TI is planning enhancements in several areas including functional capabilities, user-flexibility, ease of use and improved documentation. A question and answer session will provide an opportunity for attendees to recommend product enhancements in these and other areas.

Plamondon, Rejean *(Ecole Polytechnique de Montreal, Montreal, Quebec, Canada)*

Production of Structured FORTRAN Via a Software Tool to be Used on a TI Microcomputer

Schemacode is a software tool that enables programmers to define their applications in a schematic pseudocode. Schemacode is based on the graphical representation and documentation of control structures which are generally contained in programs to specify execution order of statements (sequence, condition, repetition). This interactive tool assists designers in successively refining programs by keeping track of all processes involved and making sure that they are complete, integrated and documented. This refining process can go as far down as the FORTRAN code level. With Schemacode, the programmer does not have to handle the details of the code himself. Moreover, the tool assures the structuralization of FORTRAN programs and eases maintenance since it enforces concurrent documentation. Several projects are now being conducted in our laboratory to incorporate Schemacode in a microcomputer environment. To this point, the tool runs on an IBM 4341. The source it produces is downloaded via an asynchronous link on a sequential file of a TI microcomputer (FS 990/4). It is then compiled and linked to other object modules from the TX FORTRAN library. The program is then ready to be executed or burned in EPROMS to be fitted on TMS 100 microcomputer modules. This procedure has been compared to the common way of programming directly in assembly language. With Schemacode, development time is reduced and documentation is always up-to-date.

HARDWARE CONCEPTS — Session Chairman Michael Roginsky, Lockheed-Georgia Co., Marietta, GA
Thursday, April 7, from 3:45 p.m. to 6:00 p.m. in the Napoleon Ballroom

Ahlstrom, Lucas *(Progress Data A.B., Sundbyberg, Sweden)*

The White Box Outdoor Data Processing for a Flying Start

The White Box is an instrument for fast setup and operation under extreme conditions such as deserts, offshore mining, etc. Transportation can be made by boat, airfreight and/or truck. The operation range is from −45 degrees to +60 degrees centigrade with a variation of approximately 2 degrees. The White Box is in use in South America, Europe, the Middle East, and Africa. The White Box has outside peripheral connection and control panels. Computer hardware and user systems combine for a total solution.

Erickson, Ivan L. *(Texas Instruments, Austin, TX)*

The Business System 300 Architecture

The use of specialized large scale integration (LSI) circuitry has made possible a high performance, compact, cost effective multiuser system for business applications. The features of the Business System 300 architecture, their functions, and their benefits to the user will be covered.

Lawrence, James L., Jr.; Raymond, David L.; and Suchter, Richard A. *(Analog Technology Corp., Irwindale, CA)*

New Graphics 810 Printer/Controller Simplifies Forms, Label, and Barcode Printing

Repetitive forms, label, and barcode printing is markedly simplified with the newest of Analog Technology Corporation's Graphics 810 series of plug-in conversion boards, the Model 195 for the TI 810 RO printer. A two-microprocessor mechanization which facilitates forms and label printing, in addition to high-speed graphics hard copy, will be discussed.

Simple command statements sent to the 810 provide printing of variable size characters from 0.1 to 10 inches which can be oriented vertically, sideways, or upside down on the paper on an individual character basis. On-board programs simplify barcode printing as the 195 will automatically calculate check sums, append start-stop characters and print the selected barcode based on a short command followed by the characters the user wishes to encode. Scanner readable Optical Character Reader (OCR) A and B character sets are among the many selectable hardware fonts. Forms and labels can be created and then repetitively printed with no further assistance from the host processor. Forms can also be printed with fixed and variable data fields. The variable data fields can be incremented or decremented, and the user's processor can fill in fields as each form is printed. As with other boards in the Graphics 810 series, only simple plug-in installation is required and TI 810 warranties are preserved.

Purvis, John R., III *(Texas Instruments, Austin, TX)*

Considerations for Custom Business System 600 and 800 Configurations

Standard package system configurations make up the bulk of initial system orders. But what factors should be considered when a nonstandard system is being contemplated? What limitations are there on how standard packaged systems can be modified with optional peripherals? This presentation offers a few suggestions and guidelines for the novice system configurator to follow when venturing beyond the standard packaged system configuration.

Purvis, John R., III *(Texas Instruments, Austin, TX)*

The 990/10A: Squeezing Five and a Half Boards Down to One

The 990/10A provides the user with a giant stride forward in price/performance. This paper discusses how five and a half boards of the 990/10 were reduced to a single board, and in the process provided a 40 percent to 70 percent improvement in processor throughput. What this new design and its companion, the 990A13 chassis, mean to the user in regard to price, performance, and maintenance is covered, as well as why they are possible.

Purvis, John R., III *(Texas Instruments, Austin, TX)*

The FCC EMI Regulations: How They Will Affect Computer Equipment

On September 19, 1980 the Federal Communications Commission (FCC) adopted a set of regulations governing the amount of emitted and radiated Electromagnetic Interference (EMI) permissible from electronic equipment. This presentation offers a lay explanation of what the FCC regulations are and why they were enacted. A discussion of the specific impact of these regulations upon computing equipment is also given. This paper is intended for the OEM and system integrator, to inform him/her of the impact that the FCC regulations have upon his/her operations.

MANAGEMENT INFORMATION SYSTEMS — Session Chairman Ashok K. Nagrani, Antech, Inc., Roswell, GA
Friday, April 8, from 8:30 a.m. to 10:15 a.m. in Marlborough AB

Cratin, John H. *(Cratin Computing Co., Inc., Fort Washington, PA)*

Audit and Control Considerations for the Minicomputer Environment

The following questions will be addressed during this presentation:
- Are the audit and control considerations different between large scale computers and minicomputers?
- What controls should be included?
- What is a backup? When should it be done?
- What will the auditors want?
- What Computer Aided Audit Procedure Systems (CAAPS) are available for the 990/10, 990/12?

Daniels, William D. *(Texas Instruments, Lewisville, TX)*

Software Tools for Solution of Business Problems

What kind of business problems can be easily solved by using Application Distribution Center (ADC) tools? What are some software development and business/program management tools? What will they do for me in my business and how do they work? Who can use these tools, what training is required, and what is the cost of these tools? If I have a problem or question, what do I do, who do I contact, and how long do I have to wait for a solution or answer?

These are some of the questions and topics to be covered in this presentation. Software tools to be presented are:
- TICALC — Interactive electronic spreadsheet
- Directory/File Manager (DFM) — Management of computer information/files

Each tool will be described briefly as to capabilities, types of business problems, and how to use the tool to solve a problem. These tools run interactively on the TI 990/12 computer using the DX10 or DNOS operating system.

Nagrani, Ashok K. *(Antech, Inc., Roswell, GA)*

The Selection of a Decision Support System

This presentation will describe the rationale why every computer used in a management environment must have a Decision Support System (DSS). The various types of DSS Systems will be enumerated with their relative pros and cons. Evaluation criteria will be discussed, and common features that must exist in all good DSS systems will be detailed.

Petersen, Bill *(Texas Instruments, Austin, TX)*

Operation Research Software — "The Next Spreadsheet?"

In the past two years, we have seen a proliferation of "spreadsheet" type canned software. These programs attempt to provide a generic solution to the problem faced by business people who are forced to cope with a large amount of interrelated numerical data.

There are also a number of programs currently available which allow the use of PERT/CPM, linear programming, and econometric modeling. Unfortunately, they all require a high degree of user knowledge in the field of Operations Research (OR), and are, therefore, not generally usable by most businesses. However, the approach used by the spreadsheet systems could also be applicable to the field of Operations Research. A user-friendly, menu-driven system should be designed in such a way that the user would only need to select the OR technique applicable to his problem. The system would then guide him by requesting all of the input parameters. These could even be the product of some predecessor spreadsheet program.

The purpose of this presentation will be to briefly describe where Operations Research fits into the business environment, what OR tools are available today, and finally, how these could be reconfigured into a problem solving device for use by general management.

MARKETING AND SALES TECHNIQUES — Session Chairman Larry R. Briggs, Timberline Systems, Inc., Beaverton, OR
Thursday, April 7, from 1:30 p.m. to 6:00 p.m. in Grand Salon D

Baugh, Diane *(Texas Instruments, Austin, TX)*

The Role of the Computer Demonstration in Marketing and Sales

With the enormous growth in competition, the demonstration plays a key part in marketing and sales, a valuable tool that must be used skillfully. This presentation will discuss the purpose of computer demonstrations, the various levels of technical information that must be considered, and the problems associated with presenting too much information. It will deal with the salesman, marketer, and analyst working together as a team to understand their customers and will demonstrate how the computer can improve their business.

Crane, Douglas A. *(Creative Media Development, Inc., Portland, OR)*

Using Multi-Image to Market Your Product

This presentation will show examples of the work at Creative Media Development, giving specific examples where multi-image was the most effective seminar format and citing results achieved. The presentation will include the benefits of using multi-image to achieve specific objectives within a given time frame and budget. The objective will be to acquaint the audience with multi-image and the excitement and motivation that it can instill.

Frenz, Thomas R. *(SBAA Marketing, Inc., Cape Girardeau, MO)*

Effective Management of Your Salesman or Sales Territory

This presentation will try to analyze a basic sales market or sales territory. It will describe effective methods to cover your territory for vertical markets and general markets.

Ways of ensuring that salesmen are covering the territory and basic rules or guidelines to follow in sales management will be presented. There will be a first time sales manager's survival handout.

Klier, Paul R. *(Texas Instruments, Austin, TX)*

Alternatives for Training Your Sales Representatives

This presentation will examine alternatives for imparting selling skills and product knowledge to personnel hired to sell computer systems. Topics will include hiring criteria, identifying training priorities, developing selling skills, dealing with feature/benefit information, finding time for training, and evaluating training results.

McHenry, Julie *(Regis McKenna, Inc., Portland, OR)*

Public Relations for High Technology Companies

This presentation will focus on the practice of public relations for high technology companies. The presentation will deal specifically with the role of public relations in the marketing process and the position of products and companies in a competitive marketplace. The presentation will also focus on how to work with the press to achieve effective external communications.

Shouldice, Mike *(Open Systems, Inc., Minneapolis, MN)*

Selling Packaged Software for Profits

This software marketing presentation will focus on a variety of pre-sale and post-sale concerns. The overall profitability will depend on:

- Choosing software that matches your markets. The dealer/OEM needs to evaluate marketability and supportability of software before investing in a product line. Specific criteria include the software manufacturer's track record, sales tools available, and channels of support.
- Training a sales force for productivity. Does the marketing literature and demonstration system provide the information necessary for adequate product knowledge? Do special training aids exist? Motivate and guide your sales force towards success.
- Making business decisions based on perceived benefits, not product features. Describe each feature of your software in terms of the benefit it produces.
- Customer modification for pain or profit. Sell your services when you can but selling a standard product provides quick turnaround and more sales.
- Installation training and support. Provide top quality service for your customers and profit from it. Build a customer base that relies on you and respects the value of the relationship with a group of professionals.

Spiewak, Paul J. *(Unilaw Systems, Inc., Miami, FL)*

The Advantages of Vertical Marketing

The significant factors in analyzing, locating, and developing unique advantages in the marketplace for the vertical software marketer will be covered. The end-user's benefits and incentive to purchase from a vertical market specialist will also be discussed. Additional points included are: minimization of risks, optimization of resources, and maximization of results.

Zeitler, Joe *(Texas Instruments, Austin, TX)*

TI's Cooperative Advertising Program

This presentation will highlight the current Texas Instruments Cooperative Advertising Program and emphasize the advertising opportunities in each of the media covered by the TI program. Successful case histories will be documented. Media efficiencies, as well as various ways advertising can be utilized by resellers, will be explained. Basic advertising issues will be discussed, such as selecting and compensating an advertising agency, frequency discounts, nonadvertising production sources available other than an agency, opportunities to share advertising resources with other resellers, media efficiencies, vertical market versus mass retail opportunities, and how to use cooperative advertising in all these situations.

A review of Texas Instruments current computer advertising programs and future plans in this area will be presented. Reseller tie-in opportunities will also be described.

MICROPROCESSOR APPLICATIONS — Session Chairman John McMullen, R.V. Weatherford Co., Glendale, CA
Wednesday, April 6, from 8:30 a.m. to 3:30 p.m. in the Melrose Room

Butler, L. Allan *(Associated Medical Devices, Inc., Denver, CO)*

TI Pascal in a Real-Time Microprocessor

This presentation will describe the use of standard TI Pascal (TIP) to program a real-time microprocessor product based on the TMS 9900, with 8K bytes of Read-Only Memory (ROM) and 4K bytes of Random Access Memory (RAM). Assembly language routines are used to initialize the interrupt trap vectors and to interface with the Pascal start-up and interrupt handler routines. Pascal is used for all interrupt handlers and for mainline processing. Common data areas are used for communication between handlers and mainline; global references are not used in handlers. I/O is done by CRU instructions compiled inline in TIP. Partitioning of the software into ROM and RAM is done during link editing.

Pascal compiled code is efficient enough to acquire, process, and act on data in real time. Furthermore, the often quoted productivity advantages of using high-level language programming were indispensable to rapid development in parallel with hardware design. Use of TIP and AMPL on a Model 20 development system enabled us to move from initial design to shippable product in six months.

Dohmann, Edgar L. *(Intermetrics, Inc., Houston, TX)*

An Oil Movements System for Refinery Tank Farms

This presentation will describe an industrial application using a TI DS990 minicomputer communicating with TM990 microprocessor modules and a PM550 programmable controller. The application was for oil movements monitoring and supervisory control in a refinery tank farm installation. The system performs monitoring of tank levels and temperatures for inventory and custody transfer tracking. The system also includes an interface to monitor gasoline blending and controls an in-line jet fuel blend.

The configuration of the system, its purpose, and benefits gained from its installation will be detailed. The various implementation techniques and problems encountered during its development will also be discussed.

Miller, Fred *(West Bond, Inc., Orange, CA)*

Software for Stepper Motor Control

Software routines will be described that control several stepper motors in a machine construction simultaneously: to accelerate, run, and decelerate at different rates, and through different distances; in effect, to create "software cams." Tailoring these routines to individual requirements on the AMPL development system will be discussed. Example routines, written in TI 9900 assembly language, will be explained.

Plamondon, Rejean *(Ecole Polytechnique de Montreal, Montreal, Quebec, Canada)*

An Experimental Setup for Handwritten Data Analysis Under TI Microcomputer Control

A setup has been developed in our laboratory to study the feasibility of handwritten data entry on microcomputers. The input of the system is composed of a graphic tablet and a special instrumented pen. The purpose is to make comparative studies about position versus acceleration as the proper information for character discrimination. The signals from the tablet are sent to the microcomputer via a TI EIA interface module. The signals from the accelerometric pen are amplified, filtered, sampled and then converted to numeric value by a TI A/D Conversion module. A software package has been developed that controls data acquisition and processes the numeric values to extract features of the handwritten symbols and to store them in memory. If selected, an option allows online transmission of the data to a host computer for future computation. In every case, each block of data is stored on a file of the microcomputer system. Presently, algorithms are developed and performance is compared on both input systems to recognize simple handwritten characters such as lines and circles. These programs are designed to run between interrupts, making the system a real-time system. In the long run, this approach would permit the used table and/or an instrumented pen instead of a special function keyboard for communication with dedicated microcomputers.

Reimer, John *(Texas Instruments, Irvine, CA)*

TMS 320 Provides Digital Signal Processing Capabilities to the TI Professional Computer

The TI TMS 320 is just one of many integrated circuits which make the TI Professional Computer a leadership product. The main reason is its ability to execute 90 percent of its instruction in just 200 nanoseconds. With this kind of speed, digital signal processing operations never before achievable with a MOS microprocessor are now possible. This presentation will discuss the architecture of the TMS 320 and how it lends itself to applications like speech recognition and voice store and forward.

Wixson, Steve *(University of Alabama in Birmingham, Birmingham, AL)*

Four-Dimensional Medical Image Processing with TI Hardware

This presentation is from a design paper describing a four-dimensional processing and display system for cardiovascular research. A four-dimensional image in this paper refers to a time (or other) series of three-dimensional images. The system consists of components to develop, test and run programs and to manipulate and store multi-dimensional digital images. A four-dimensional display is used to study raw and processed data. The display uses binocular stereo to generate a three-dimensional image and bulk memory to store multiple stereo pairs for the fourth dimension. Voice input and output will be used to communicate with the system. A binocular infrared eye tracker will be used as a multi-dimensional cursor to interact with the data. Software development areas are summarized. The current state of the project will be presented at the end of the talk.

OFFICE AUTOMATION TECHNOLOGY — Session Chairman Susan Raff, Owens-Corning Fiberglas, Toledo, OH
Thursday, April 7 from 1:30 p.m. to 3:30 p.m. in Marlborough AB

Bice, Kenneth, C. *(Texas Instruments, Austin, TX)*

The Role of Voice in Office Automation

Studies show that white collar workers spend about 75 to 90 percent of their time communicating with other white collar workers. A significant portion of this time uses voice as the communication medium. So it is necessary to facilitate the voice channels used in an office in order to substantially improve the productivity of office workers. This presentation will concentrate on how the newly demonstrated Voice Management capability on the TI Professional Computer will address the voice channels in the automated office.

The presentation will first overview how voice is presently used in the office. Then a description of the TI Professional Computer digital voice capabilities will help show how these voice functions can be installed in a TI Professional Computer, and how it can provide many other useful functions which have never been available before.

Besides performing the standard functions of telephone answering and dictation, this same hardware is capable of voice mail, voice annotation of text, text-to-speech, remote (telephone) voice control of the TI Professional Computer, voice recognition, and even speaker authentication for security access to the computer or data base.

As part of the presentation, a demonstration of these capabilities on a TI Professional Computer will exemplify the quality of the voice coding and playback and the voice recognition capability. Some future expectations of voice in the office will also be presented.

Hammer, Kay *(Texas Instruments, Austin, TX)*

The Role of TI Natural Language Database Interface in Office Automation

Most companies today spend a considerable amount of money automating their data processing. However, the increased accuracy and efficiency that result from computer data processing is often offset by the fact that the company's data is now accessible to only a few, specialized employees. Application programs can be written so that untrained personnel can access/update parts of the data in prescribed ways, but these programs are expensive to develop and maintain. TI's new Natural Language Database Interface running on the TI Professional Computer offers an answer to these problems.

With this product, a relatively naive user of SEQUEL (the relational query language used by IBM's System R and RSI's Oracle) can automatically generate any number of menu-driven natural language interfaces to his company's databases. These interfaces require a minimum number of keystrokes to operate, include a complete online help facility, and can be used within a matter of minutes by people who have no computer background. By design they insure both that the user will generate only legal queries and that he can see no more of the data than the person generating the interface wants him to see. With this product, receptionists can have an interface allowing them to ask questions about an employee's address, telephone number, or department; sales personnel can have an interface allowing them to

ask questions about inventory or shipments; and managers can have interfaces allowing them to ask random questions about trends in sales, etc.

This paper will examine the data processing needs of a car dealership and show how the TI Natural Language Database Interface can be used to increase employee efficiency while reducing the company's expenditures on traditional application software.

Rogers, Kris *(Texas Instruments, Austin, TX)*

An Evaluation of Microcomputer Word Processing Software Packages

The functionality available on the word processing software packages which execute on personal computers or very small business systems varies widely. This presentation will evaluate the major word processing software packages available for use on this class of computer and the word processing software package which Texas Instruments offers on its Business System hardware. The evaluation will consist of a comparison of the major functionality offered by each word processing software package, as well as the identification of the major strengths and weaknesses of each word processing software package.

OPERATING SYSTEMS (DX OPERATING SYSTEMS AND DNOS) - Session Chairman Fred W. Powell, Powell and Associates, Staunton, VA
Wednesday, April 6, from 8:00 a.m. to 6:00 p.m. in the Napoleon Ballroom

Culp, Ken *(Texas Instruments, Austin, TX)*

Uses of DNOS Segmentation

The DNOS segment-swapping Supervisor Calls (SVCs) can replace overlay swapping to achieve dramatically improved performance. One heavily overlayed program was observed to run faster by a factor of 20. This presentation will explain segmentation and segment swapping in general, and the details associated with Pascal programs in particular. Topics covered will include: using the link editor's SEGMENT command, installing swappable and/or shareable segments in program files, and mapping control of these segments.

Edgard, Glenn *(Texas Instruments, Austin, TX)*

Tips and Techniques on Converting DX10 Applications to DXM

This presentation will discuss operating system differences between DX10 and DXM from an application viewpoint. Size and performance issues will be presented. A utility to analyze system data structures in order to optimize operating system configurations will be discussed.

Gillen, Daniel *(Texas Instruments, Austin, TX)*

Operating System Support for Asynchronous Terminals

A Device Service Routine (DSR) must provide support for two hardware units, the peripheral device and the 990 chassis resident controller. A DSR structure will be discussed which separates the software support for these two units into different DSR code modules. This DSR structure has two major components. The first is a Terminal Service Routine (TSR) module providing support for the peripheral device independent of the controller. The second is a subroutine module named the Hardware Service Routine (HSR) providing controller support. This DSR structure is being used to interface to asynchronous peripherals.

The DSR structure will be discussed in terms of functionality, logic, data flow, and module interfaces. The interface to HSR subroutines will be discussed in some detail. The emphasis will be on how to write a new TSR module to interface to an existing HSR module.

Johns, Richard P. *(Texas Instruments, Austin, TX)*

Asynchronous Communications under DX10 Micro

The asynchronous subroutine package (ASP) is a software product composed of a set of subroutines that run under the DX10 Micro Operating System (DXM) release 1.1 or later on the Business System 200. These subroutines provide an application task the capability of sending and receiving data through the Business System 200 two-channel communications option board to an asynchronous device over leased or switched telephone lines.

This presentation is aimed at the application or system-level programmer and discusses functionality and features of ASP.

Powell, Fred W. *(Powell and Associates, Staunton, VA)*

System Job Queue for DX10

The DX10 operating system, through the System Command Interpreter (SCI), provides each station (user) with a logical foreground and background, but only one task can be run at a time per background, and the next task cannot be started until the previous one finishes. This utility greatly improves system throughput and user productivity through a system job queue. A job is defined as a single task, a single command which invokes multiple tasks, or a batch stream of multiple commands. Any user may submit jobs to the queue for subsequent execution without waiting for the completion of previous jobs. Any job which is run in background can be submitted to the job queue. Jobs are removed from the queue by a queue server task, and execution of each job is done independently of any station's background area. This presentation will describe the design, implementation, and use of this utility.

Simpson, Michael P. *(Texas Instruments, Austin, TX)*

Disk Surface Analysis

The purpose of this presentation will be to provide information on the Initialize Disk Surface (IDS) utility. Details will be given on the expanded user interface, with an overview of the error-finding algorithm IDS uses.

Simpson, Michael P. *(Texas Instruments, Austin, TX)*

DNOS File Security

The need to protect sensitive data from unintended destruction and unauthorized access is now being answered by a new feature under development for DNOS 1.2. This presentation will introduce the scope, concepts, and functionality of DNOS file security. It will include an overview of the user interface, the role of the system manager, and the impact to existing applications.

Stuart, Lori Mohr *(Texas Instruments, Austin, TX)*

Interprocess Communication in DNOS

The Interprocess Communication (IPC) facility of the Distributed Network Operating System (DNOS) provides a means of task synchronization and message exchange. Tasks exchange messages by reading and writing over IPC channels that are created by the system at the request of the user and exist independently of the tasks using them. This presentation explains the interprocess communication facility and its use in Pascal programs. Special problems that arise while debugging programs that use IPC channels will be addressed.

Wilensky, Harold *(Texas Instruments, Austin, TX)*

New Utilities for Data Backup

Two new utilities are under development that will provide faster methods of backing up disk-based data. One utility will provide for sequential backup of a directory to either mag tape or another disk. The other utility will copy one entire disk to another. The two disks need not be of the same type. The goal of both of these utilities is to perform data backup much faster than our currently available utilities. A friendly user interface will be provided.

p-SYSTEM — Session Chairman Michael Hadjioannou, TICOM Systems, Marina Del Rey, CA
Thursday, April 7, from 8:30 a.m. to 3:30 p.m. in the Melrose Room

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Burckhartt, David *(Texas Instruments, Austin, TX)*

UCSD p-System™ Implementation on the TI Professional Computer

This presentation will discuss specific implementation features of the UCSD p-System™ on the new TI Professional Computer. The goal of this presentation is to provide information which will supplement the available documentation and allow p-System programmers to take full advantage of existing features.

Hadjioannou, Michael *(TICOM Systems, Inc., Marina Del Rey, CA)*

Graphics for the UCSD p-System™

With graphics becoming an important part of business and office systems, there has been significant activity in the definition of standards for graphics application, as well as in the implementation and use of these standards. This presentation will provide an overview of graphics capabilities available under the p-System in terms of the existing standards. It will also address the use of standard interfaces by application programs for achieving and maintaining portability.

Jackson, Jonathan F. *(Texas Instruments, Austin, TX)*

Using DX10 UCSD p-System™

This presentation will provide information to users of the DX10 operating system about the functions and capabilities of the DX10 p-System. The discussion will present the various DX10-specific areas and utilities used in conjunction with the p-System for software development.

Peterson, Bob *(Texas Instruments, Dallas, TX)*

UCSD p-System™ History at Texas Instruments

The UCSD p-System™ has been used at Texas Instruments since 1979 and has been offered to TI's customers since 1981. After a brief review of p-System's history, the presentation will discuss how the p-System, an operating system developed outside TI, was introduced within the company; how it is being used to support TI's internal computing needs; and how and why it became a product of three diverse divisions of Texas Instruments.

Siep, Thomas M. *(Texas Instruments, Dallas, TX)*

"User-Proofing" UCSD Pascal™ Programs

The UCSD p-System™ provides a friendly environment for the applications developer. The end user of an application developed under the UCSD p-System™ may not be so tolerant of cryptic, often ambiguous error messages which are normally returned by the operating system in response to incorrect data entry.

This presentation will cover techniques specific to the UCSD p-System™ implementation of Pascal which "protect" the user from cryptic system messages which appear to the user after the application has blown up. The new- to medium-level of programmer will be shown several ways to prevent system errors from crashing his (her) application. Among the techniques discussed will be: menus, string handling cautions, I/O error trapping, buffer allocation, range checking, system units, and separate compilation.

Smith, Presley *(Texas Instruments, Austin, TX)*

Introduction to the UCSD p-System™

This presentation is a tutorial on the UCSD p-System™ features and benefits. Details of p-System implementation on TI equipment is also included.

Stafford, Ron *(Texas Instruments, Dallas, TX)*

Evolution of a p-System Directory Display Utility

Utility programs are usually written to solve a single problem and then evolve into a more general purpose program. The Directory/File (DF) utility started as an exercise in the use of the p-System and became a second file manager for the system.

The first problem to be solved with the utility was to display the content of a p-System volume directory on a single CRT screen with 24 lines of 80 characters. Following success in this area, suggestions for additional capability were quick to follow. Access of the system unit table for disk volume names, building a menu of volume names, using cursor selection to identify a file name, and printing the screen image are examples of the suggestions which were accepted and implemented. Initially the utility was written to use a specific CRT terminal with predefined cursor control sequences. Hardware and software upgrades both required and allowed the utility to be modified for portability to any computer running the p-System.

Whittington, Fritz *(Texas Instruments, Dallas, TX)*

Design Techniques for Tightly-Fitting Programs

Version IV of the UCSD p-System™ allows large applications programs to be written in segments and separately compiled units. Some large programs can suffer severe performance degradation if the target system has only 64K bytes of RAM available. This paper suggests program design techniques which can minimize the amount of disk segment swapping required for a particular application, and ways to make the best use of heap/stack space.

PROFESSIONAL WORKSTATIONS — Session Chairman Art Miller, Texas Instruments, Austin, TX
Wednesday, April 6, from 1:30 p.m. to 3:30 p.m. in Grand Salon D

Barnett, William *(Texas Instruments, Dallas, TX)*

Integrating Professional Workstations into a Communications Network

Information Systems & Services (IS&S) is the internal computing facility for Texas Instruments. The IS&S computing facilities support TI business worldwide by maintaining a central facility of IBM mainframes, a large private data communications network, and an extensive array of distributed systems that use TI Data Systems Group (DSG) products. These distributed systems (terminal controllers, network-connected TI 990s and workstations) are the primary user interface to the IS&S facility.

The traditional user has shared computer resources through network-connected terminals or through distributed processor terminals. The advent of dedicated computer resources on personal workstations presents both an opportunity and a challenge to use this capability effectively within an existing computer network.

Belew, Bill *(Texas Instruments, Dallas, TX)*

The TI Professional Computer's Information Center Role

The information center concept is developed along with the usage of fourth generation software tools on professional computers and mainframe computers. Particular attention is paid to the point of analysis, integrity, and residency of corporate database information.

Stolar, Paul *(Texas Instruments, Houston, TX)*

Professional Workstations:
An Assessment of Required Functionality and Current Developments

This presentation is an assessment of the functionality required of, and being developed for, professional workstations. The market for these systems and, particularly, their relationship to minicomputers and mainframe computers will be explored.

RESELLER SIIX* — Session Chairman W.J. Kiely, KPS, Inc. Westlake Village, CA
Wednesday, April 6, from 3:45 p.m. to 6:00 p.m. in Grand Salon D

*Special Interest Information Exchange

The purpose of the Reseller SIIX session is to act as a forum for resellers to meet and exchange ideas with other resellers and TI management personnel. The presentations below will begin the session. The session will conclude with a panel discussion. TI managers will field user questions regarding the reseller channel of distribution.

Benson, Maria *(Texas Instruments, Austin, TX)*

TI Service Options for the Reseller

Providing warranty and maintenance service on customers' computer systems requires the reseller to make an investment in service resources, such as spare parts inventory, tools and test equipment, service facilities, and the training of service technicians.

TI Service offers the reseller a variety of service options that match whichever level of service investment the reseller chooses to make:
Service Option 1: TI provides standard warranty and maintenance service to the reseller's customers directly through individual and blanket TI Maintenance Service Agreements and On-Call Maintenance service backup.
Service Option 2: TI provides standard warranty while the reseller provides selected maintenance service through his own growing service organization, backed up by TI factory repair, spare parts, and training.
Service Option 3: The reseller provides all warranty and maintenance service directly to his customers through his own well-established and mature service organization.

The choice is the reseller's—which maintenance solution is the best for him and his customers?

Erickson, Ivan L. *(Texas Instruments, Austin, TX)*

Lease or Purchase of Computer Equipment:
Which Is Better for Your Business?

In this period of high interest rates and uncertainty, is it better to lease computer equipment which requires little investment capital, or purchase computer equipment and obtain the tax advantages? The various aspects of leasing and purchasing computer equipment will be examined. The impact of the lease purchase decision on the business will also be discussed.

Pigott, Virginia *(Dun's Marketing Services, San Antonio, TX)*

Meeting the Marketing Needs of the 80s

Dun's Marketing will help define marketing challenges and objectives of the 80s as we perceive them, based on our constant contact with marketing and sales executives. We will then elaborate on the use of external data to support and reach these objectives.

SOFTWARE AND SYSTEMS ENGINEERING — Session Chairman Michael H. Tarnowski, Johnson Controls, Inc., Milwaukee, WI
Friday, April 8, from 10:30 a.m. to 12:30 p.m. in the Napoleon Ballroom

Craddock, L.L. *(Texas Instruments, Austin, TX)*

The TI Software Quality Metrics Program

The metrics used to measure software quality throughout the product life cycle are described. Methods employed to use these measures to promote quality are discussed. The relationships between the metrics and the actual error history are illustrated with software development project data.

Fisher, James R. *(I.C. System, Inc., St. Paul, MN)*

An Analysis of Errors

The largest cost in the life cycle of a typical system is incurred not in the development phases but in its maintenance. The cost of correcting errors and making changes to a system is too often from two to four times the initial development cost. Most companies spend more than 50 percent of their data processing budgets on maintenance. Software engineering techniques are aimed at reducing this cost and at increasing the quality of the final product.

This presentation will take an in-depth look at software errors, where they are typically found, their causes, and the cost of correction at various stages in the development life cycle. The four approaches to software reliability will be covered in detail. A number of practical techniques will be recommended which include designing reliability into a system and using walk-throughs at each stage in the development to eliminate errors in translation.

Hoette, Fred *(Productive Computer Systems, Middle Haddam, CT)*

Productivity Oriented Software

While the computer hardware cost/benefits ratio has continually and drastically been improved, software development has not come close to keeping pace. Current development techniques require a user to fully define his system needs months in advance and relegate software development to programmers practicing an esoteric artform. This approach is no longer appropriate and future development will need to be much more user-oriented.

This presentation will suggest the use of systems modeling or prototyping as a development, documentation, and implementation methodology. In order to apply the systems modeling approach, much more sophisticated and less technical development tools will be required.

Korienek, Eugene *(Johnson Controls, Inc., Milwaukee, WI)*

A Methodology for Testing the Completeness and Functional Correctness of a Unit of Software

At some time in the development cycle of a unit of software, it becomes necessary to determine that the software is complete in its prescribed functions and that these functions execute correctly as specified. This paper describes a structured testing methodology that is designed to evaluate software completeness and functional correctness.

The four basic processes in this methodology are: (1) the identification of the functions of the software, (2) principles for the selection of test cases, (3) a format for the structured execution of the test cases, and (4) a validation process by which the effectiveness of the testing methodology may be evaluated. Each process within the methodology is structured and will be explicitly described in both text and sample. Data collected from a case study application of the methodology will also be discussed.

Reinert, Ronald *(Johnson Controls, Inc., Milwaukee, WI)*

The Unstructured Approach to Software Testing

For purposes of this presentation, unstructured software testing will be defined as the testing of software without a formal test plan. The software is tested against a specification of its intended functions, with the test cases being derived by the technician performing the test as the test progresses. The technician creates the test cases by studying the specification and applying his or her instincts and experience to suggest test conditions and test data.

Recent trends have emphasized the advantages of structured testing methodologies, in which test cases are derived by predefined techniques prior to test execution, and committed to paper to form a test plan.

The presentation will address the following points:

- The advantages and disadvantages of the unstructured approach
- To what extent unstructured techniques can be analytically described
- Whether structured and unstructured techniques tend to reveal different types of software problems
- How duplication of effort can be minimized when both structured and unstructured techniques are applied to the same software.

Results will be presented from an application in which unstructured test techniques were applied after the same software had undergone a structured test.

SUPPORT SERVICES — Session Chairman Mark D. Rissmiller, MFA, Inc., Columbia, MO
Thursday, April 7, from 3:45 p.m. to 6:00 p.m. in Marlborough AB

Arnold, Gaye *(Texas Instruments, Austin, TX)*

Education and Development Center Customer Training

The purpose of this presentation is to expose the user community to what the Education and Development Center's charter is, current and proposed courses, the course development system, and current strategies relating to quality thrusts of course development and instruction. The presentation will also focus on the new thrust to meet the training needs of the small business system's end user.

Kaufman, Burt *(Texas Instruments, Austin, TX)*

Software Trouble Reports — Help TI Help You

Software Trouble Reports (STRs) sent to the Data Systems Group (DSG) are maintained online on the STR system. This information is used by TI software development personnel to reproduce and solve customer software problems. This presentation will help users to understand how the data is used to solve problems, explain what information is required by the development staff, and identify areas which are primary causes

of "nonreproducible" problems. Methods that customers may use to track the status of their STR will be detailed, as well as methods whereby the customer can learn about current common problems with selected software products.

McAdams, Bethany *(Texas Instruments, Austin, TX)*

TI Technical Publications

Technical Publications is one of many publications groups at TI. The Austin Technical Publications group concentrates on producing 990-based computer systems hardware and software documentation. This presentation will describe the Austin Technical Publications group; how we are organized, what skills are required, and what kind of publications we prepare.

The documentation cycle is very complex and depends on the type of document that is being prepared. The presentation will present the most typical flow of a document through Technical Publications: the planning cycle, the research and outline cycle, the draft preparation and review cycle, and the production cycle.

Technical Publications needs customer feedback in order to continue to improve our documentation. The presentation will describe the techniques used to gather customer feedback such as user response sheets, questionnaires, beta test reviews, and visits to customers. Technical Publications is always thinking about how we can improve TI's documentation. The presentation will describe some of our plans for future improvements: changes in style and format, changes in presentation methods, changes in reading level, and others.

Rose, Karen *(Texas Instruments, Austin, TX)*

Texas Instruments Customer Publications

One of the ways TI supports customers is through its customer publications. *Data Systems News* is a monthly publication directed at the end user of TI equipment as well as the reseller. It covers basic information about TI and TI equipment as well as some hardware and software technical information that is of general interest. Information of specific relevance to resellers of TI equipment is communicated via supplementary publications.

Copies of the publications will be available, as well as subscription information.

Rycaj, Jerry *(Texas Instruments, Houston, TX)*

On Overview of TI Service

This presentation will outline the charter, objectives, and goals of TI's Field Service Organization. Information will also be provided on industry and market trends, and on TI's plans to meet them.

In order to meet customer needs, TI's field service has grown into a major organization with many national and international offices. As the organization progresses, providing competitive and quality service continues to be a primary objective. As a result, the performance of all aspects of service is closely monitored by management to assure that quality is not compromised.

In addition to its high standards of quality, TI field service offers a wide variety of service products designed to meet the specific needs of its customers. A number of new service offerings are available that will provide customers with a wider range of service alternatives.

Storer, Roger A. *(Texas Instruments, Houston, TX)*

Field Analyst Support

This presentation will address the various support offerings available from the Field Analyst Organization of Texas Instruments. Differentiation will be made between the types of support available for different classes of products and different classes of customers. Information will be given on the current and near term strategy of the analyst organization.

Tully, Bob *(Texas Instruments, Austin, TX)*

The Customer Support Function for TI Minicomputers and Terminals

Recent revisions in the Customer Support Line (CSL) organization and support responsibilities will be reviewed in detail. TI's support policies for both hardware and software products will be described. The role of the CSL in providing support for minicomputer and direct terminal customers will be pursued in detail, including such topics as the automated call handling system, the automated patch system, and the level of support for new products. The presentation will investigate the customer's role and his obligations in the support situation. Suggestions for optimizing interactions with the CSL will be detailed. Discussion and participation from the audience will be encouraged.

SYSTEM MAINTENANCE — Session Chairman Jerry L. Pyles, Texas Instruments, Lubbock, TX
Friday, April 8, from 10:30 a.m. to 12:30 p.m. in the Oak Alley Room

Abell, Keith R. *(Texas Instruments, Austin, TX)*

Diagnostic Operating Control System and Unit Level Diagnostics

Unit Level Diagnostics (ULD) have numerous applications in a diverse and complex set of environments. They are used in field maintenance, factory test operations, and hardware verification functions. Diagnostic software tools must have the power and flexibility for expert interactive diagnosis while retaining a structure suitable for running in an automatic mode of operation. Also, provisions must be made for reliable error reporting and operation in the presence of suspected or known system faults.

This paper is an overview of the Diagnostic Operating Control System (DOCS) and the DOCS compatible ULD. The following topics will be covered:

- Design and test philosophy of DOCS and ULD
- Current status of DOCS and ULD
- Important DOCS/ULD features and diagnostic tools
- Preview of next release
- Trends in DOCS/ULD development.

Bolin, Bob *(Texas Instruments, Austin, TX)*

Online Remote Diagnostics

Online Remote Diagnostics (ORD) is a new service offering that will significantly enhance computer system reliability and availability to end users. ORD performs remote system monitoring and diagnostics on TI's Business System 300 through 800 series, as well as DS990 Models 4 and up.

This presentation will discuss ORD in detail. Topics to be covered include: what it is, how it works, security considerations, and customer requirements. The resulting benefits of ORD to customers will also be discussed.

DeWitt, Tom *(Texas Instruments, Austin, TX)*

System Diagnostics

The Online Diagnostics (OD) application level tasks provide opportunities for obtaining critical information about your DX10 or DNOS system. Controlled testing of system resources and peripherals offers a timely and accurate method for verifying performance levels, identifying failed areas or predicting system "health" trends. In many cases, failures are not instantaneous but are the result of degrading component performance levels. Often, advanced warning of an impending failure can be given by stress testing the system and analyzing the resultant error log information. Also, the repeated and vigorous system activity provided by OD can often provoke intermittent faults into more easily diagnosable states.

In conjunction with OD, the System Log Analysis (SLA) provides an analysis and condensed report of the system log information. Different levels of reports resulting from the analysis are available.

This paper focuses on the TI OD/SLA and covers the following topics:

- Philosophy of the TI OD
- History of the OD/SLA
- Current status of the OD/SLA
- Enhancements in progress
- New features within the next release
- Emerging trends in OD.

SYSTEM PERFORMANCE AND ANALYSIS – Session Chairman Charles F. Phillips, III, Concord Management Systems, Greenbelt, MD
Friday, April 8, from 8:30 a.m. to 10:15 a.m. in the Oak Alley Room

Jackson, R. Brent *(Texas Instruments, Austin, TX)*

Hardware Uptime Optimization

There are four critical elements that must be effectively and continually planned and dealt with to ensure optimum equipment operation. This presentation will consider some highlights of these elements: proper site preparation and site maintenance, proper equipment installation and system integration, effective training of site personnel, and quality maintenance for on-going operation, and how adequate attention given to each may benefit the user's operation. The purpose of this presentation is to inform users or prospective users of TI computer systems or equipment of these factors which, when implemented, can positively influence maximum equipment availability.

Phillips, Charles F., III, *(Concord Management Systems, Greenbelt, MD)*

DX10 System Performance Tuning and Tools

This presentation will deal with various aspects of the DX10 operating system that can be used to more finely define and tune system performance. The sysgen process and specific TI utilities such as the Show Memory Map and Show System Table Map will be discussed.

TECHNIQUES AND CONCEPTS FOR THE NONTECHNICAL OR NEW USER – Session Chairman John R. Hall DIGATEX, Austin, TX
Wedesday, April 6, from 8:30 a.m. to 3:30 p.m. in Marlborough AB

Adney, E.M. *(Texas Instruments, Austin, TX)*

Survey of 990 Languages

"Survey of 990 Languages" consists of three presentations, one hour and 40 minutes of a five-hour session on the capabilities of TI computers. The following languages and productivity software topics will be examined:

- Languages – advantages of matching language characteristics with application requirements
- Productivity boosters – benefits of using the System Command Interpreter (SCI), QUERY and TIFORM
- Data management – an overview of the factors to be considered in the decision to use data base management.
- Word processing – utilization of the Texas Instruments Page Editor (TIPE) on TI's Business System Series.

Barlow, Bruce *(Texas Instruments, Austin, TX)*

990 Hardware and Software Overview and Comparisons

This presentation will consist of three parts aimed at familiarizing the novice or nontechnical user with computers and operating systems in general and the 990 hardware and software in particular. The first part will deal with the fundamentals of computer hardware and the general characteristics of computer operating systems. The specific features of the various 990 computer architectures will also be discussed in this presentation. The second portion will deal specifically with features of the DX10 operating system, including memory structure and system files. Finally, the Distributing Network Operating System (DNOS) will be discussed in a similar manner to DX10, and a comparison of DX10 and DNOS characteristics will be given.

Burckhartt, David *(Texas Instruments, Austin, TX)*

UCSD p-System™ Overview

This presentation will describe the UCSD p-System™, what it is, and its relation to other TI products. The concept of portability provided by the UCSD p-System™ will be stressed. The p-System benefits in obtaining applications that will run on multiple computer systems will also be detailed.

Davis, Michael *(Texas Instruments, Austin, TX)*

Texas Instruments: A Historical Perspective

Innovation in electronics and computer technology has become one of TI's major themes. In the 1950s when transistors were replacing vacuum tubes, TI was among the first companies to produce them. And now, in the 1980s, TI uses its own technology extensively within the company. TI's distributed computing network is used in a wide variety of applications throughout TI. This multi-media presentation will describe TI's entrance into and recent developments in the electronics/computer industry.

Gardner, Adrienne and Watkins, Charles E. *(Texas Instruments, Austin, TX)*

Your Part in Business System Documentation

The Business System Series of computers introduced a modular approach to system documentation. This presentation will explain the new approach and how it affects you, the user.

Types of Documentation: The Operator's guide explains how to set up and use your equipment and operating system software. The application User's Guides provide instructions for installing and using your applications software. It is also likely that you will keep some additional records concerning your system.

Document Use: As you set up your equipment and install your operating system software, you build an Operator's Guide that is tailored to your own system. The Operator's Guide also gives you a short tour of your equipment and step-by-step procedures for its use. The application User's Guides provide instructions for using the applications and keeping records on their use.

Document Maintenance: Change packages consist of replacement pages that contain new or updated information for your manuals. You bring your documentation up-to-date by replacing the old pages with new ones. Your backup log keeps track of when you made backup copies of your software, so that you can restore any data you might lose in case of trouble. The application notes allow you to tailor your application package to the needs of your business.

Imken, Gary *(Texas Instruments, Austin, TX)*

Introduction to SCI for the Nontechnical or New User

This presentation describes the System Command Interpreter (SCI) which functions as the interface between the user and the Distributed Network Operating System (DNOS) and DX10 operating systems. Examples of the screen displays that SCI uses to prompt the user for information will be shown to introduce SCI's menus and the means by which commands are entered. The language used by SCI to build up more complex commands (called procedures or procs) will be briefly presented to illustrate command extensibility without focusing on syntactic details. Finally, additional SCI features such as background processing, privilege levels, special procs, and synonyms will be described to summarize the other major capabilities of SCI.

Lancaster, Rodney V. *(Texas Instruments, Austin, TX)*

A Link Editor Overview with COBOL Specific Applications

This presentation will overview the link editor and TI program files. This will show how COBOL programs can be linked in many ways to save memory, enter execution faster, and save disk space. The presentation will look at: creating program files, linking and installing a COBOL task on a program file, using shareable procedures, using shared COBOL subroutines, and overlaying COBOL subroutines.

Miller, Art *(Texas Instruments, Austin, TX)*

Computer Systems Hardware

This presentation will cover the basis of computer systems hardware starting from the level of standard computing functions based upon Boolean logic. Computer architecture and major implementation types (mainframes, minicomputer, and microcomputer) will be developed along with the concepts of coding, instructions, data, memory, and input/output. Major forms of memory and input/output will be addressed in a summary format stressing the changes in technology that have been required, as well as those that are becoming commercially feasible. Emphasis during this final portion will be on the diversity of options available for a computer system, finishing with a lead into system and applications software.

TIFORM — Session Chairman Lars Greninger, Texas Instruments, Austin, TX
Friday, April 8 from 8:30 a.m. to 10:15 a.m. in the Melrose Room

Baum, Stephen *(Texas Instruments, Austin, TX)*

Fundamentals of TIFORM

The fundamentals of TIFORM source definitions, source generation, form testing, and form execution will be described. Also, specific problems of the Form Definition Language (FDL) and Form Manipulation Language (FML) will be discussed.

Bruhl, Tina *(Texas Instruments, Austin, TX)*

TIFORM 2.0 Versus 3.0

A new version of TIFORM, version 3.0, was released in the summer of 1982. This presentation will discuss the differences between the new version and its predecessor, version 2.0. Some of the enhancements to be discussed will be pre- and post-entry conditional selection, "same as ... except for," and "copy to ... from." The uses of the enhancements and some examples will be included in the discussion.

Koerschen, Charlotte *(Texas Instruments, Austin, TX)*

The Screen Management Task Group

In December 1978, the CODASYL COBOL Committee established a task group to develop a specification for a Screen Management Facility. This paper will track the Screen Management Task Group's methodology in this development effort as well as compare the future specification with the Texas Instruments Screen Management Facility, TIFORM.

TIPS AND TECHNIQUES FOR THE TECHNICAL USER — Session Chairman James D. Gordon, Ford Motor Co., Detroit, MI
Friday, April 8, from 8:30 a.m. to 10:15 a.m. in the Napoleon Ballroom

Copass, Cliff H. *(Johnson Controls, Inc., Milwaukee, WI)*

Optimizing DX10 For High Speed Burst I/O

A user of DX10 found that characters were being lost when multiple 9600-Baud EIA RS-232 interfaces operating with blocked data were connected to a 990 computer. The changes to DX10 made by the user which eliminated this problem will be discussed.

Gordon, James D. *(Ford Motor Co., Detroit, MI)*

SCI Elimination Under DX10

This will be a brief discussion of how Ford Motor Company provides applications to run either with or without SCI. The presentation will include:

- Application environment/overview
- SCI elimination concept
- Actual changes required to provide dual support
- Benefits and shortcomings
- Hints and pitfalls of how to implement this approach.

Keenan, David *(Texas Instruments, Austin, TX)*

The TI Professional Computer and the IBM Personal Computer — Differences and Similarities

This presentation will outline some of the differences and similarities of the TI Professional Computer and the IBM Personal Computer. One of the most frequently asked questions of the TI Professional Computer Support Line deals with the compatibility (or lack of it) between TI and IBM machines. This is an important issue since there is a large software and hardware base for the IBM and people are interested in how much of this can be interchanged between the two machines.

The presentation will compare the following items in an objective feature-for-feature comparison.

Hardware:

- Motherboard and use of expansion slots
- Diskettes and Winchester disks
- Monochrome and color monitors
- Printer support
- Keyboard

Software:

- MS-DOS and MS-BASIC
- Communications
- ROM BIOS
- Application programs

Stermer, Craig *(Texas Instruments, Austin, TX)*

Interfacing Printers to the TI Professional Computer

This presentation will give information on interfacing printers, both TI and non-TI, to the TI Professional Computer. RS-232C and its use in interfacing computers will be shown. Examples will show pin outs, signal names, and how the devices communicate to TI products.

BIRDS-OF-A-FEATHER (BOAF) SESSIONS

BOAF sessions are designed to promote informal discussions of specialized topics. BOAF meeting rooms will be available Wednesday and Thursday, April 6 and 7. The following BOAF sessions have already been organized. BOAF sessions can also be formed at the symposium by contacting the information booth personnel.

BASIC — Schiemenz, Robert *(Texas Instruments, Austin, TX)* Thursday, April 7, from 6:00 p.m. to 8:00 p.m. in the Cambridge Room

Users who are interested in having enhancements added to the current BASIC offering or who have problems with the current release of BASIC should plan to attend this session. TI representatives will be present to discuss ideas for enhancements and complaints generated by BASIC users. Issues brought to this meeting will be seriously considered for future BASIC releases. This is a working session and not a presentation.

COMPETITIVE ISSUES — Briggs, Larry R. *(Timberline Systems, Inc., Beaverton, OR)* Wednesday, April 6, from 6:00 p.m. to 8:00 p.m. in the Magnolia Room

How do TI products stack up to what is needed and/or generally available in the marketplace? This session provides a forum for the discussion of competitive issues which can be provided to TI for product planning purposes. The discussion leader is the chairman of the newly formed TI-MIX Competitive Issues Committee. Both resellers and end users are welcome to attend. Attendees are encouraged to bring prepared input for the session.

COS990® — Rickard, Miles O. *(Ryan-McFarland Corporation, Round Rock, TX)* Thursday, April 7, from 6:00 p.m. to 8:00 p.m. in the Chequers Room

COS990® is multitasking, highly efficient, operating system designed to run on TI computers starting with the 771 and going through the full range of TI systems, including the Business System Series. The purpose of this session is to allow both current and prospective TI computer owners the opportunity to discuss current and new applications written especially for COS990®. There will be a question and answer period, and an informal exchange of ideas that will certainly be of benefit to you.

DATA MANAGEMENT SOFTWARE — King, John W. *(Texas Instruments, Austin, TX)* Thursday, April 7, from 6:00 p.m. to 8:00 p.m. in the Prince of Wales Room.

This will be an informal meeting of all current and prospective users of TI's data management software. TI representatives will be present to discuss ideas for enhancements and concerns generated by users.

PASCAL – Powell, Fred *(Powell and Associates, Staunton, VA)* Wednesday, April 6, from 6:00 p.m. to 8:00 p.m. in the Elmwood Room

This session will open with a presentation on how to access SCI synonyms and parameters when linking with minimal run time. This session is a working session with TI Pascal development personnel to discuss enhancements and extensions to TI Pascal.

RIX (REGIONAL INFORMATION EXCHANGE) MEETING – Max, Richard E. *(Synkote Paint Co., Elmwood Park, NJ)* Wednesday, April 6, from 6:00 p.m. to 8:00 p.m. in the Chequers Room

This meeting is for RIX officers and other interested parties. The purpose of the meeting is to exchange ideas on regional meeting success, meeting topics, attendance motivators, etc. If you are not a RIX member, but you are interested in joining or helping in the formation of a RIX, please attend.

SYSTEMS COMMITTEE MEETING – Teague, Robert *(Business Systems Group, Westlake Village, CA)* Thursday, April 7, from 6:00 p.m. to 8:00 p.m. in the Magnolia Room.

The purpose of the TI-MIX Systems Committee is to provide a concentrated channel of dialogue between TI and its users on matters relating to computer hardware and software product development. For those interested in committee membership, the first 15 minutes of the meeting are open to all interested parties. During this time the committee goals for 1983 will be discussed. The remainder of the meeting will be a working session with current TI-MIX Systems Committee members and TI representatives.

TIPE – Rogers, Kris *(Texas Instruments, Austin, TX)* Thursday, April 7, from 6:00 p.m. to 8:00 p.m. in the Elmwood Room

Users who have problems with the current release of TIPE or who are interested in having enhancements added to the current TIPE offering should plan to attend this session. A TI representative will be present to discuss both ideas for enhancements and complaints generated by the TIPE users. This is a working session and not a presentation.

NOTES

TI E&DC COURSES

In conjunction with TI-MIX 1983, the TI Education and Development Center (E&DC) is offering a variety of short courses ranging in length from one half to a full day. Class sizes are limited in order to maximize the learning environment, so you are encouraged to register early. To register for the courses described below, go to the TI E&DC booth in the TI exhibit room.

Course: dBase II on the Texas Instruments Professional Computer
Date: Wednesday, April 6, 1983 **Time:** 1:30 p.m.-5:00 p.m.
Price: $60 **Place:** Jasperwood Room
Abstract: dBase II is an extremely powerful data base management system. Using English-like instructions, you can create data files and prepare formatted reports in a short time period. In this course, you will create a data base that can be used for payroll applications; add, change, and delete records from the data base; and generate a series of payroll reports (payroll register, W-2, 941, etc.).
Prerequisites: None
Class Size: Limited to 10 people.

Course: Dealer Sales Training — Improving Sales Productivity
Date: Tuesday, April 5, 1983 **Time:** 8:30 a.m.-4:00 p.m.
Price: $60 **Place:** Prince of Wales Room
Abstract: This workshop is designed for the sales and marketing personnel of TI's resellers and OEMs who have outside sales forces. The class will provide demonstration and practice of a variety of sales techniques that have been effective in selling computer systems. Topics include: generating leads, first call techniques, overcoming objections, and obtaining customer commitments.
Prerequisites: None
Class Size: Limited to 15 people.

Course: DX10 to DNOS COBOL Migration Course
Date: Tuesday, April 5, 1983 **Time:** 8:30 a.m.-4:00 p.m.
Price: $105 **Place:** Cambridge Room
Abstract: This course begins with an overview of DNOS capabilities. The students learn to use batch jobs, synonyms and logical names, the spooler, XCTF command, error messages, and log on prompts. This course combines lecture with hands-on lab exercises. The lab exercises include work on file concatenation and multifile KIF.
Prerequisites: DX10 COBOL
Class Size: Limited to 12 people.

Course: Easywriter II and Easyspeller II on the Texas Instruments Professional Computer.
Date: Thursday, April 7, 1983 **Time:** 8:30 a.m.-noon
Price: $45 **Place:** Jasperwood Room
Abstract: First, you will learn to use Easywriter II on the TI Professional Computer. This includes typing a letter, inserting and deleting text, forming paragraphs, finding a replacing text, and printing documents. In the second part of this course, Easyspeller II will be discussed and the medical and legal versions will be examined. This section will also have hands-on lab exercises.
Prerequisites: None
Class Size: Limited to 10 people.

Course: MS-BASIC on the Texas Instruments Professional Computer
Date: Friday, April 8, 1983 **Time:** 8:30 a.m.-noon
Price: $55 **Place:** Jasperwood Room
Abstract: MS-BASIC includes a set of very powerful graphics features. Using a tutorial approach, you will create and execute a BASIC program that demonstrates some of the graphics features of MS-BASIC, including creating a design using circles and lines, using the color base, and using the animation functions. As well, you will learn to program the sound catalog.
Prerequisites: Experience programming in BASIC
Class Size: Limited to 10 people.

Course: Multiplan on the Texas Instruments Professional Computer
Date: Wednesday, April 6, 1983 **Time:** 8:30 a.m.-noon (Section A)
Date: Thursday, April 7, 1983 **Time:** 1:30-5:00 p.m. (Section B)
Price: $55 **Place:** Jasperwood Room
Abstract: This course discusses the powerful modeling and presentation capabilities of Multiplan on the TI Professional Computer. The student will learn to construct a Multiplan worksheet, to link worksheets together, to use alphabetic and numeric sorting capabilities, to use math and conditional statements, and to prepare printed reports.
Prerequisites: None
Class Size: Limited to 10 people.

April 5, Tuesday

8:30 a.m.-4:00 p.m.	Dealer Sales Training (Prince of Wales Room)	DX10 to DNOS COBOL Migration (Cambridge Room)

April 6, Wednesday

8:30 a.m.-noon	Multiplan – Section A (Jasperwood Room)
1:30 p.m.-5:00 p.m.	dBase II (Jasperwood Room)

April 7, Thursday

8:30 a.m.-noon	Easywriter II & Easyspeller II (Jasperwood Room)
1:30 p.m.-5:00 p.m.	Multiplan – Section B (Jasperwood Room)

April 8, Friday

8:30 a.m.-noon	MS-BASIC (Jasperwood Room)

EXHIBITS

TI-MIX exists to promote the exchange of information between users and Texas Instruments. A vital area of information exchange is the exhibit rooms. These rooms are used to inform attendees about Texas Instruments products and about suppliers of products directly related to TI computers. Booth exhibitors and literature display exhibitors have paid for the space they occupy in the exhibit rooms. TI-MIX allows no product or service advertising outside of these rooms. Agenda advertisers have paid for space in this agenda. Any advertising distributed during the symposium as handouts or posted on the Message Board or elsewhere will be removed. TI-MIX is a nonprofit, educational organization. Product sales in the exhibit or session rooms are prohibited. Such sales would jeopardize the nonprofit status of the TI-MIX organization.

TI-MIX members will exhibit their hardware, software, services and literature in Grand Ballroom ABC. Texas Instruments will exhibit their equipment and services in Grand Ballroom D. The exhibit hours for these two rooms are:

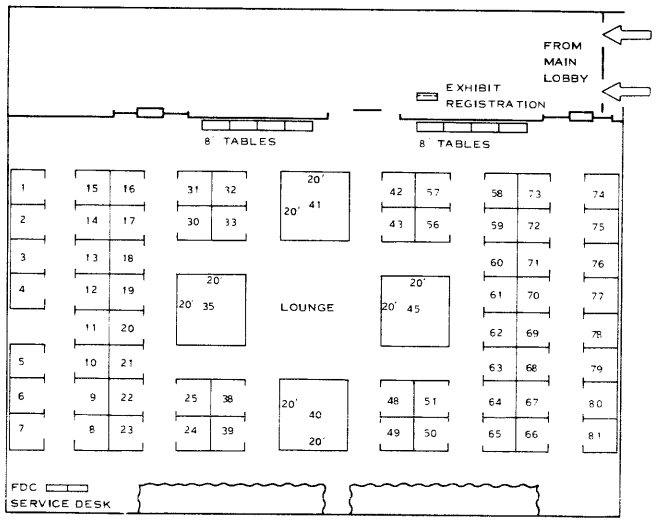
Tuesday	April 5	2:00 p.m.-8:00 p.m.
Wednesday	April 6	1:30 p.m.-7:30 p.m.
Thursday	April 7	1:30 p.m.-7:30 p.m.
Friday	April 8	10:00 a.m.-3:00 p.m.

TI-MIX Member Exhibits

(Includes only booths contracted before the agenda publication deadline.)

Exhibitors by Booth Number

1/2	RESPONSIVE COMPUTER SYSTEMS, INC.
3	SBAA MARKETING, INC.
4	SPECTRA LOGIC CORPORATION
12	AMICON CORPORATION
13	CYEX SYSTEMS CORPORATION
14/15	MINI DATA SYSTEMS
16	ANALOG TECHNOLOGY CORPORATION
17	GATEWAY SYSTEMS CORPORATION
18	CPS BUSINESS SYSTEMS, INC.
19	RACAL-VADIC
20	MICRO-BASE CORPORATION
21/22/23	RESPONSIVE TERMINAL SYSTEMS
24/25	NATIONAL MEMORY SYSTEMS CORPORATION
30/31	MCBA, INC.
32	R SYSTEMS, INC.
33	KIELY PROFESSIONAL SERVICES, INC.
35	DIGITAL ELECTRONIC SERVICES, INC.
38	THE MEMTRAC GROUP
39	REAL-TIME MANAGEMENT, INC.
40	PLENARY SYSTEMS, INC.
41	PERCOR INCORPORATED
42/43	SALEM ONLINE SYSTEMS
45	TIMBERLINE STSTEMS, INC.
48/49	ACECO (AUTOMATIC CONTROL ELECTRONICS COMPANY)
56/57	RYAN-MCFARLAND CORPORATION
58	DIGITAL INTERFACE SYSTEMS, INC.
59	DUN'S MARKETING SERVICES
60	CEDACO SALES, INC.
61/62	CSI (CUSTOM SYSTEMS, INC.)
63	BUSINESS AUTOMATION INCORPORATED
64/65	SCIENTIFIC & BUSINESS MINICOMPUTERS, INC.
71	MILLER COMPUTING COMPANY
72	PRODUCTIVE COMPUTER SYSTEMS
73	SOUTHERN DATA
74/75	KROHM INTERNATIONAL LTD.
76	CUSTOM COMPUTER CABLES, INC.
77	DATAFLOW



Grand Ballroom ABC

Exhibitors by Company

ACECO (Automatic Control Electronics Company)
San Antonio, TX
Booth 48/49

ACECO will exhibit the following products: MEGA RAM 1, PRO/90, ACE-PORT 7, MEGA RAM Drive, Entry-Sentry, PROM-PAK 5, JET-Stream Controller, Fast RAM, and Multi-Terminal package. These products will be demonstrated on a TI 990/10 system with an 810 printer and ¼" streaming tape drive.

AMICON CORPORATION
Pleasant Hill, CA
Booth: 12

AMICON will display their AMICALC Spreadsheet program, agency filing system, Cy-Global system, and user guide.

ANALOG TECHNOLOGY CORPORATION
Irwindale, CA
Booth: 16

Analog will feature their conversion boards for the TI 810 RO printer that provide graphics, barcode, label printing, and vector-to-raster conversion capabilities.

BUSINESS AUTOMATION INCORPORATED
Mundelein, IL
Booth: 63

Business Automation will demonstrate their distributor system software and manufacturing system software on a Business System 600.

CEDACO SALES, INC.
Jackson, MS
Booth: 60

CEDACO will exhibit various 990 and Business System packaged systems and other TI peripherals.

CPS BUSINESS SYSTEMS, INC.
Wichita Falls, TX
Booth: 18

CPS will feature INFOTRIEV (Information Retrieval and Composition System) on a Business System 672.

CUSTOM COMPUTER CABLES, INC.
Garland, TX
Booth: 76

Custom Computer Cables will exhibit their line of cables.

CUSTOM SYSTEMS, INC.
Eden Prairie, MN
Booth: 61/62

CSI will exhibit peripheral controller interfaces for the TI 990 series, including disk, mag tape, couplers, multiplexers, and line printer controllers.

CYEX SYSTEMS CORPORATION
Rosemont, IL
Booth: 13

Cyex will feature the Cy-Global Word Processing, Program Development, Report Management, and Spooling Control System.

DATAFLOW
Groningen, Netherlands
Booth: 77

Dataflow will display their error-correcting memory expansion board for TI computers.

DIGITAL ELECTRONIC SERVICES, INC.
Shreveport, LA
Booth: 35

Digital Electronic Services will demonstrate Fujitsu Winchester disk drives, and Spectra Logic controllers on a TI 990/10A.

DIGITAL INTERFACE SYSTEMS, INC.
Benton Harbor, MI
Booth: 58

Digital Interface Systems will exhibit an array of their TI 990 compatible hardware and software, software protection boards, and TM990 hardware and software.

DUN'S MARKETING SERVICES
San Antonio, TX
Booth: 59

Dun's Marketing Services will have literature explaining the lead generation system available to dealers.

GATEWAY SYSTEMS CORPORATION
Okemos, MI
Booth: 17

Gateway will demonstrate their ADEPT II/TI application/system software tools on a TI 990/10 Model 7.

KIELY PROFESSIONAL SERVICES, INC.
Westlake Village, CA
Booth: 33

KPS will exhibit general accounting software on the Business System 682 and will have brochures on other TI hardware.

KROHM INTERNATIONAL LTD
Troy, MI
Booth: 74/75

Krohm will feature their typesetting system on the DS990 and/or Business System 300.

MCBA, INC.
Montrose, CA
Booth: 30/31

MCBA will exhibit their field-proven quality software for business/distribution and manufacturing environments.

MICRO-BASE CORPORATION
Dayton, OH
Booth: 20

Micro-Base will exhibit the following software: communications TTY emulator, report generator, and graphics.

MILLER COMPUTING COMPANY
Phoenix, AZ
Booth: 71

Miller Computing will be exhibiting literature on their rental, travel

simulation, student records, and accounting software packages that run on a DS990.

MINI DATA SYSTEMS
El Segundo, CA
Booth: 14/15

Mini Data will feature their DX10 TOPIC Manufacturing Software System and DX10 Automatic Composition Software System on a TI 990/10 with an M1000 CPU, 810 LP, TeleVideo 950 VDT, Xerox 2700 LP, CDC Lark disk, and CDC Phoenix disk.

NATIONAL MEMORY SYSTEMS CORPORATION
Livermore, CA
Booth: 24/25

National Memory Systems will exhibit their NMS 2604-CC disk/tape memory system which features a 450MB, 1.86MB TR 10.5-inch Winchester; a disk/tape multifunction controller; and a cache memory streaming tape drive.

PERCOR INCORPORATED
Austin, TX
Booth: 41

Percor will feature their materials management software package on a DS990 Model 9. Also information will be available on maintenance services for TI equipment.

PLENARY SYSTEMS, INC.
Dallas, TX
Booth: 40

Plenary Systems will exhibit TI Professional Computers with applications software, manuals, and brochures.

PRODUCTIVE COMPUTER SYSTEMS INC.
Middle Haddam, CT
Booth: 72

Productive Computer Systems will demonstrate their PCS Report Generator, OLADS Application Development System, and utility package on a DS990 Model 4.

R SYSTEMS, INC.
Dallas, TX
Booth: 32

R Systems will exhibit their word processing software on a Business System 200 and Business System 600.

RACAL-VADIC
Sunnyvale, CA
Booth: 19

Racal-Vadic will feature modems that range from 300 to 4800 BPS.

REAL-TIME MANAGEMENT, INC.
Bridgeport, CT
Booth: 39

Real-Time Management will exhibit an Epsilon Factory Data Collection System (Shop Floor Terminals) and supporting software. They will also show additional business and manufacturing software for the Business System 300, 600, 800 and DS990 Model 4 and up.

RESPONSIVE COMPUTER SYSTEMS, INC.
Plano, TX
Booth: 1/2

Responsive Computer Systems will exhibit a 990/10 or Business System 300 with an 810 LP, TeleVideo CRTs, Prism printers, and microterminals that work with their 7-channel multiplexers. They will also show their general business package, DSRs, and other application software.

RESPONSIVE TERMINAL SYSTEMS
Plano, TX
Booth: 21/22/23

Responsive Terminal Systems will feature a DS990 Model 4 or a Business System 661 with multiple CRTs, TI printers, and intelligent multiplexer boards which operate using DX10 and OCTACOMM software.

RYAN-MCFARLAND CORPORATION
Round Rock, TX
Booth: 56/57

Ryan-McFarland will demonstrate their software (Howe, RM/COS, COS990, and RM/COBOL) on a Business System 200.

SALEM ONLINE SYSTEMS
Columbus, OH
Booth: 42/43

Salem Online will exhibit their SOS-TI CP/M Hardcard, CP/M Execution System for TI 990 Models 4 and up operating under DX10, and a Hardcard System for the Business System 300.

SBAA MARKETING, INC.
Cape Girardeau, MO
Booth: 3

SBAA Marketing will demonstrate their medical accounting control system on a TI 990/10.

SCIENTIFIC & BUSINESS MINICOMPUTERS INC.
Atlanta, GA
Booth: 64/65

Scientific & Business Minicomputers will demonstrate their educational software on a Business System 300.

SOUTHERN DATA
Cardiff, CA
Booth: 73

Southern Data will demonstrate their Nyplan modeling package on either a DS990 or Business System 300.

SPECTRA LOGIC CORPORATION
Sunnyvale, CA
Booth: 4

Spectra Logic will be displaying the following disk/tape controllers for the TI 990 computers: Spectra 16, 26, and 46. The exhibit will also feature Spectra Stream DX10.

THE MEMTRAC GROUP
Irving, TX
Booth: 38

The Memtrac Group will exhibit a TI 990/10 with Priam disk drives, Cipher tape drive, GE printer, and terminals. Materials will be available on membership and fund accounting and descriptions on Priam and Cipher.

TIMBERLINE SYSTEMS, INC.
Beaverton, OR
Booth: 45

Timberline Systems will demonstrate their spreadsheet, MAC (Management Accounting for Construction), PROMT (Property Management), and Member Trac (membership system) on a Business System computer.

Literature Displays

BUSINESS AUTOMATION INCORPORATED
Mundelein, Il

CAPITAL DATA
Lansing, MI

COMPUTER SYSTEMS RESOURCE
Charlottesville, VA

DAILY RENTAL INFORMATION SYSTEMS INC. (DARIS)
San Antonio, TX

DIGITAL ELECTRONIC SERVICES, INC.
Shreveport, LA

POWELL & ASSOCIATES
Staunton, VA

R SYSTEMS, INC.
Dallas, TX

R&S LABORATORIES
Vista, CA

RALPH KNAPP
Nashville, TN

SOFTWARE SOLUTIONS INC.
Lebanon, OH

SYNERGISTIC SYSTEMS
East Thetford, VT

THE MEMTRAC GROUP
Irving, TX

Texas Instruments Exhibit

Texas Instruments will exhibit products and services in Grand Ballroom D at the New Orleans Hilton. The following groups will be available to answer questions and provide information about their respective groups.

Data Systems Group (DSG)

DSG will exhibit four TI Professional Computers, two Business System 300s, one Business System 800, and printer and terminal products. DSG marketing and technical personnel will be present to answer questions about these products.

Education and Development Center

The Education and Development Center (E&DC) will offer self-study courses for sale. During 1982 the E&DC revised and updated a majority of their course offerings. The following table lists some of the courses that will be available to TI-MIX 1983 attendees:

TITLE	PRICE	COMMENTS
990 Assembly Language	$300	
DD-990: Using Data Dictionary	115	Released in 1982
DNOS Operators Self-Study	90	Updated to support DNOS 1.1
DX10 Operators Self-Study	90	Updated to support DX10 3.5
Introduction to Pascal	85	Updated to support TIP 1.7, DX10 3.5, DNOS 1.1
SCI: A Self-Study Approach	115	Updated to support DX10 3.5, DNOS 1.1
Sort/Merge Self-Study	95	
TI BASIC: A Tutorial Approach	95	Complete revision
TIFORM Tutorial	95	Major revision

In addition to these courses, a sales tool called TIPS (Texas Instruments Prompting System) will be available for a price of $10. This tool is extremely useful in helping both salespeople and end users understand the various Business Systems configurations. Both the self-study courses and TIPS can be purchased at the symposium by check, money order, MasterCard, or VISA.

The latest E&DC course catalog will be available at the booth. Representatives from the E&DC will be glad to discuss any training questions or issues that you have. In addition, feedback on any training courses or self-study courses you have taken through the E&DCs would be appreciated.

Service

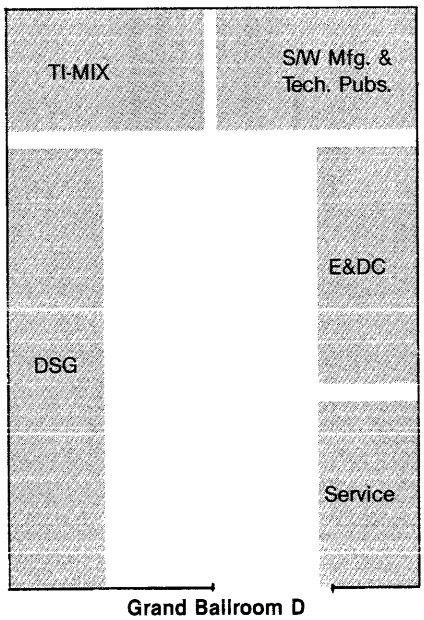
TI Service will demonstrate their TI Online Remote Diagnostics (ORD), a new service offered to users of TI equipment. This service performs customer monitoring and diagnostics from TI's Remote System Diagnostic Center (RSDC) located in Austin, Texas. A 940 terminal with modems to RSDC will be set up for demonstration purposes. ORD is available to users of all systems in the Business System 300 through 800 Series and DS990 Models 4 through 36. Service representatives and service brochures will be available.

Software Manufacturing and Technical Publications

Software Manufacturing and Technical Publications will offer manuals and software for sale again this year. DX10 and DNOS operating systems manuals, language manuals, and software and promotional items on the TI Professional Computer will be available. A comprehensive list from past symposia sales has been compiled, and an excellent assortment and supply will be available. The manuals and software may be purchased by check, money order, MasterCard, or VISA.

TI-MIX

TI-MIX will have a booth in the Texas Instruments exhibit room for the first time this year. Representatives from the TI-MIX General Board and staff will answer questions and take feedback on the services of TI-MIX. Promotional items such as TI-MIX T-shirts will be available for sale. Orders for TI-MIX library items will also be accepted. Come see the special deal offered to anyone who places a library order at the symposium!



AGENDA EXCHANGE

The Exchange section is for information and equipment exchanges between TI-MIX members relating to Texas Instruments computer equipment. Hardware notices may not include prices or percentage discount figures. Neither failure to print a notice for any reason nor typographic errors appearing in any published notice shall subject anyone to liability. All matters concerning any exchanges resulting from the Exchange section shall be solely between the inquirer and the offering party. Publication of product or service announcements does not constitute an endorsement by TI-MIX or Texas Instruments Incorporated. If you desire service from Texas Instruments on the products offered in the Exchange, please contact TI directly for information on the eligibility of service for that product.

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Booth #38

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Booth #38

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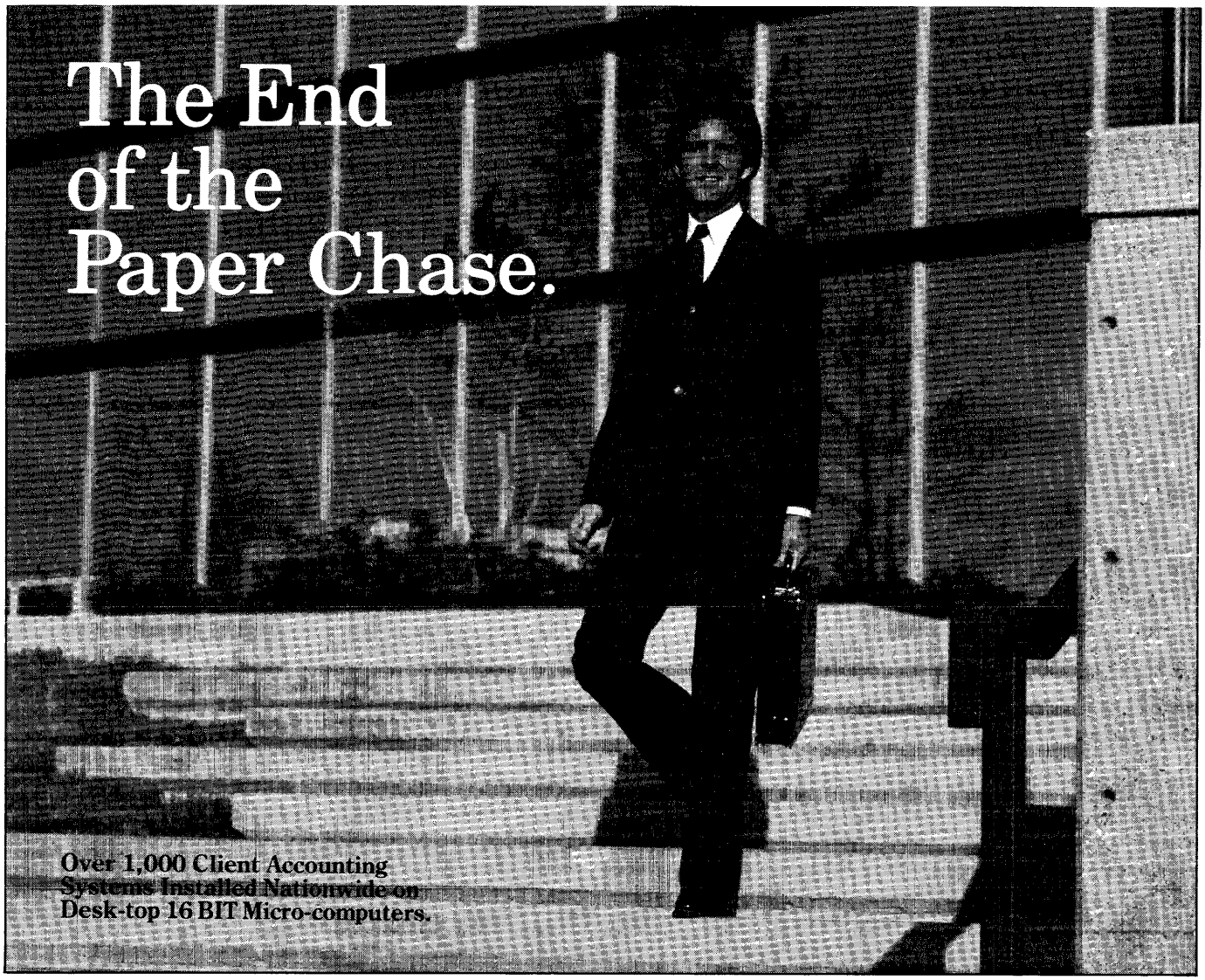
1. TI 990/10A CPU
2. Fujitsu 2351A (474MB) Disk Drive
3. CDC 9715 FSD (160MB) Disk Drive
4. Specta Logic 26 Disk Drive and Tape Controller
5. CDC 92181 Streaming Tape Drive
6. TI 911 VDT
7. TI 810 LQ Printer
8. TI 850 Printer
9. Televideo 950 CRT

To answer questions you may have regarding our products, there will be at least one representative from the following departments within our organization at the booth during show hours.

1. Sales — Hardware Configurations and Pricing
2. Software — Software Consultation
3. Service — Technical Support

While visiting our booth be sure to register for the free, four day cruise to the Bahamas. The lucky winner will be announced at the conclusion of the show Friday, April 8. (You need not be present to win.)



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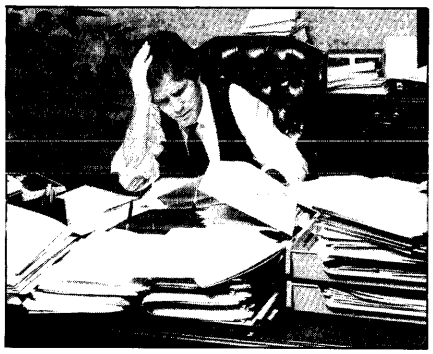

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☐ Post-award contract administration and change order control, and management of contingency reserves

☐ Project-level and contract-level Earned Value and Performance Analysis

Finance and Accounting: Cash Flows and Interest During Construction, and escalation vs. IDC trade-off analysis

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☐ Accrual-based costing, accounts payable, and corporate financial intertie

Design Workhour Control: Corporate staff planning across multiple projects

☐ Flexible Design Work Structures to conveniently handle both large and small design projects

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☐ Design drawing planning, scheduling and control

Scheduling & Resource Leveling: Up to ten calendars per project, referenced at the level of the activities and logic links

☐ Arrow or precedence diagramming or both in the same project network

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☐ A comprehensive word processing system to reduce the cost of project reports, letters, and other inter-project communications

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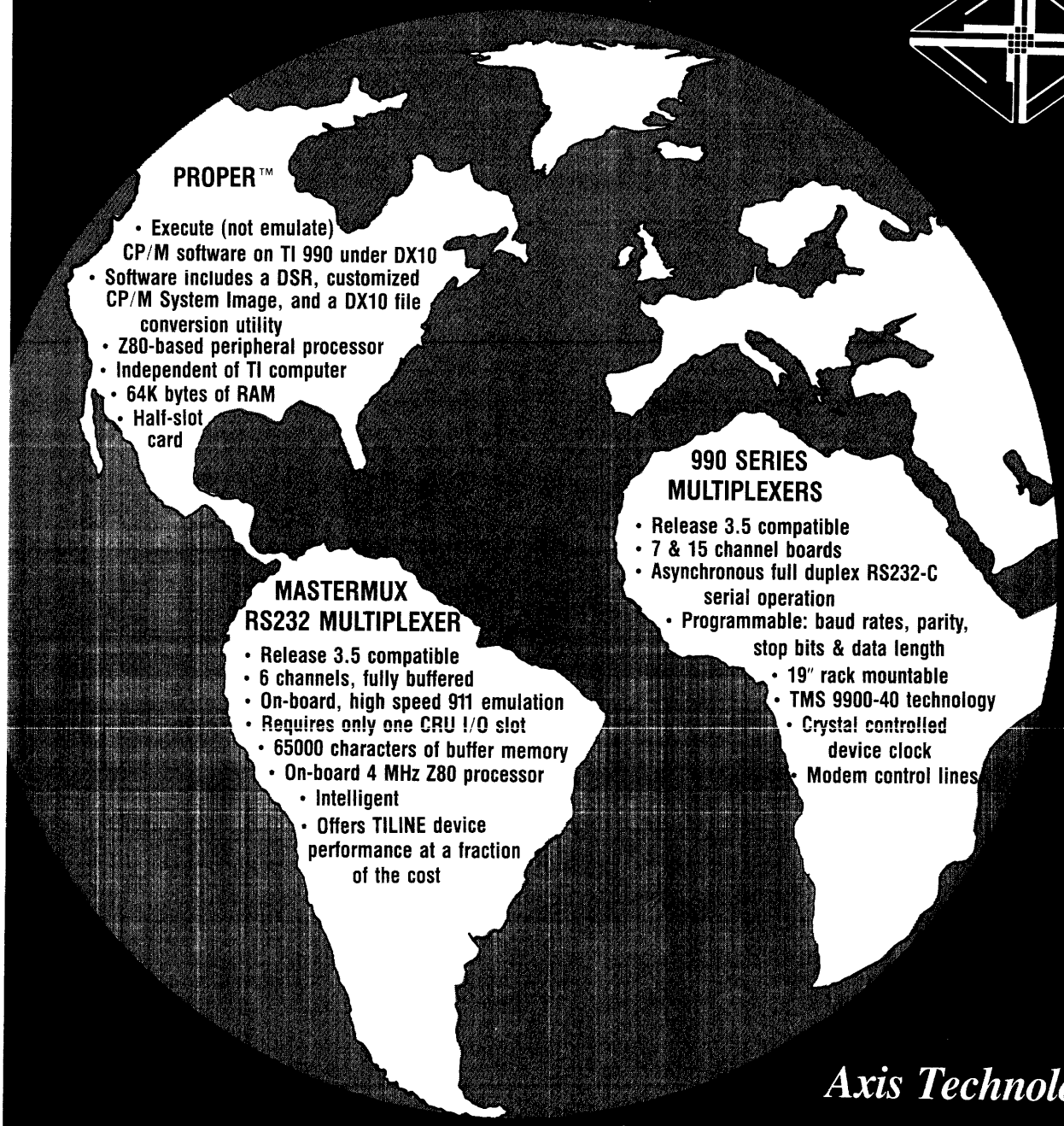

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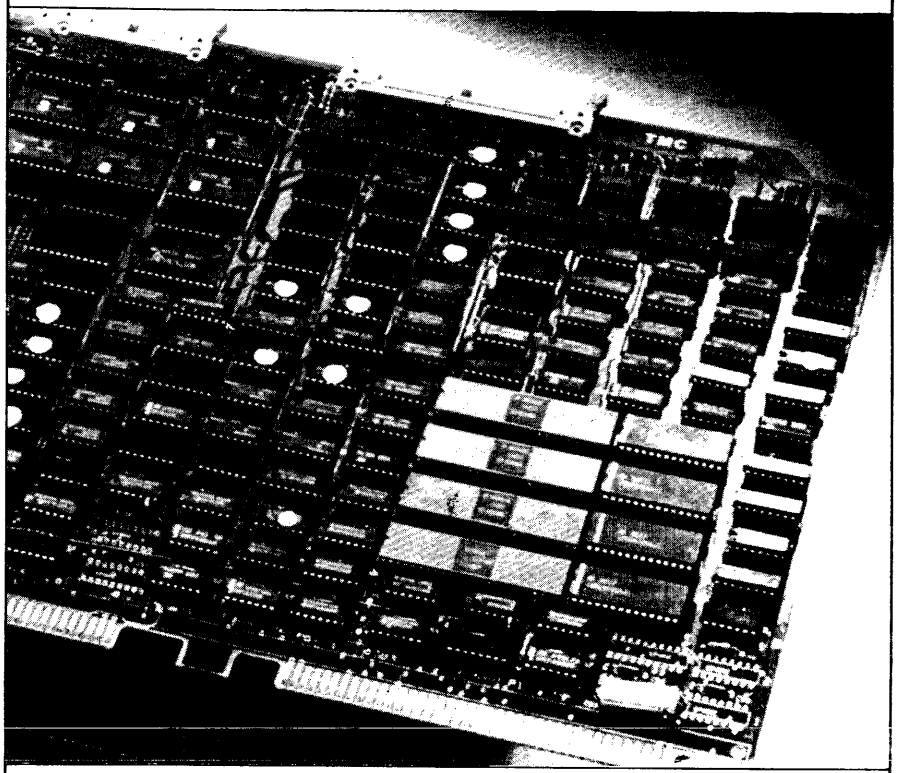

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DETAILED SCHEDULE

TUESDAY, APRIL 5

TIME		
2:00 P.M.		Symposium Registration at the first floor Convention Registration Counters from 2:00 P.M. to 8:00 P.M. Exhibits-Only Registration in the Chemin Royale Foyer from 2:00 P.M. to 8:00 P.M. TI-MIX Member Exhibits in Grand Ballroom ABC open from 2:00 P.M. to 8:00 P.M. TI Exhibit in Grand Ballroom D open from 2:00 P.M. to 8:00 P.M. Discussion Room in Grand Salon C open from 2:00 P.M. to Midnight Reception in the Chemin Royale Foyer, in Grand Ballroom ABC, and in Grand Ballroom D from 2:00 P.M. to 8:00 P.M. Spouse Reception in the Prince of Wales Room from 5:00 P.M. to 6:00 P.M. Speaker Preparation Room open from 8:00 A.M. to 8:00 P.M.
4:00 P.M.	GRAND SALON AB	Meeting for TI-MIX 1983 Speakers and Session Chairmen: Schedule changes and session guidelines will be discussed. At this time a personal gift from TI-MIX will be presented to each speaker and session chairman.
5:00 P.M.		Wine and Cheese Reception before the TI-MIX Membership Meeting—Come and get acquainted.
5:30 P.M.		TI-MIX Membership Meeting: Present your TI and TI-MIX concerns to the TI-MIX General Board during this meeting. Come and be heard!
6:30 P.M.		TI Products Review Session conducted by Art Miller, Texas Instruments, Austin Topics: TI Professional Computer, Business Systems Series Products, and New Data Systems Group Computer and Peripheral Products

WEDNESDAY, APRIL 6

8:00 A.M. — Symposium Registration at the first floor Convention Registration Counters from 8:00 A.M. to 7:00 P.M.
Exhibits-Only Registration in the Chemin Royale Foyer from 1:30 P.M. to 7:30 P.M.
TI-MIX Member Exhibits in Grand Ballroom ABC open from 1:30 P.M. to 7:30 P.M.
TI Exhibit in Grand Ballroom D open from 1:30 P.M. to 7:30 P.M.
Discussion Room in Grand Salon C open from 8:00 A.M. to 8:00 P.M.
Speaker Preparation Room open from 8:00 A.M. to 8:00 P.M.

NAPOLEAN BALLROOM

OPERATING SYSTEMS

8:30 A.M. — Session Chairman Fred W. Powell, Powell & Associates
Introduction

8:40 A.M. — Operating Systems Question and Answer Panel with the following TI Managers:
Bruce Barlow, 990 Operating Systems Branch Manager
Bob Courts, Systems Architecture Department Manager
David Flower, Software Engineering Manager for the TI Professional Computer
9:10 A.M. — Kirby Kyle, 990 Operating Systems Section Manager
Presley Smith, Small Business Systems Software Development Manager
9:30 A.M. — Joyce Statz, DNOS Operating Systems Section Manager

10:00 A.M. — **Coffee Break**

OPERATING SYSTEMS (continues)

10:15 A.M. — Operating Systems Question and Answer Panel (continues)
10:45 A.M.

GRAND SALON D

DISTRIBUTED TERMINAL SYSTEMS

8:30 A.M. — Session Chairman John Martin, Houston Computer Services
Introduction

9:00 A.M. — Geoffrey Lefavi, Texas Instruments, Irvine, CA
Creating Electronic Mail Systems Through TI Utilities ★★★

DISTRIBUTED TERMINAL SYSTEMS (continues)

10:15 A.M. — Stephen E. Starke, Houston Computer Services, Inc.
★ *Automated Message System*
10:45 A.M. — Daniel Gillen, Texas Instruments, Austin
The 931 VDT and Its Support Story

MARLBOROUGH AB

TECHNIQUES AND CONCEPTS FOR THE NON-TECHNICAL OR NEW USER

8:30 A.M. — Session Chairman John R. Hall, Digatex
Introduction

8:40 A.M. — Michael Davis, Texas Instruments, Austin
Texas Instruments: A Historical Perspective ★
9:00 A.M. — E.M. Adney, Texas Instruments, Austin
★ ***Languages and Productivity Software Introduction***
9:10 A.M. — Rhonda Lackey, Texas Instruments, Austin
★ ***Commercial Languages***
9:30 A.M. — Mitch Potter, Texas Instruments, Austin
★ ***System and Scientific Languages***

TECHNIQUES AND CONCEPTS FOR THE NON-TECHNICAL OR NEW USER (continues)

10:15 A.M. — Tim Seibert, Texas Instruments, Austin
★ ***Productivity Software***
10:45 A.M. — E.M. Adney, Texas Instruments, Austin
★ ***Languages and Productivity Software Summary***

MELROSE ROOM

MICROPROCESSOR APPLICATIONS

8:30 A.M. — Session Chairman John McMullen, R.V. Weatherford Co.
Introduction

8:40 A.M. — Rejean Plamondon, Ecole Polytechnique de Montreal
★ ***An Experimental Setup for Handwritten Data Analysis Under TI Microcomputer Control***
9:00 A.M. — L. Allan Butler, Associated Medical Devices, Inc.
TI Pascal in a Real-Time Microprocessor ★★★
9:30 A.M. — Fred Miller, West Bond, Inc.
★★ ***Software for Stepper Motor Control***

MICROPROCESSOR APPLICATIONS (continues)

10:15 A.M. — Edgar L. Dohmann, Intermetrics, Inc.
★ ***An Oil Movements System for Refinery Tank Farms***
10:45 A.M. — John Reimer, Texas Instruments, Irvine, CA
★ ***TMS 320 Provides Signal Processing Capabilities to the TI Professional Computer***

Where indicated, the author specified the technical level of his or her presentation as:
★ General audience (little technical expertise required) ★★ Intermediate knowledge of systems/programming required for understanding ★★★ Technical knowledge (experience with the subject matter required for understanding)

TIME — WEDNESDAY, APRIL 6 (continued)

10:55 A.M. – 11:35 A.M.

	OPERATING SYSTEMS (continues)	DISTRIBUTED TERMINAL SYSTEMS (continues)	TECHNIQUES AND CONCEPTS FOR THE NON-TECHNICAL OR NEW USER (continues)	MICROPROCESSOR APPLICATIONS (continues)
NAPOLEAN BALLROOM	Operating Systems Panel (continues) Michael P. Simpson, Texas Instruments, Austin ***Disk Surface Analysis*** ★ Harold Wilensky, Texas Instruments, Austin ***New Utilities for Data Backup*** ★	GRAND SALON D ***"931 VDT. . ." (continues)*** Question and Answer Period	MARLBOROUGH AB David Burckhartt, Texas Instruments, Austin ★ ***UCSD p-System ™ Overview*** Rodney V. Lancaster, Texas Instruments, Austin ***A Link Editor Overview with COBOL Specific Applications*** ★ Adrienne Gardner, Texas Instruments, Austin ***Your Part in Business System Documentation*** ★	MELROSE ROOM ***"TMS . . . " (continues)***

NOON — Luncheon in Grand Salon AB with Guest Speaker Loren Carpenter, Lucasfilm Ltd., presenting, "The Making of the Genesis Demo from Star Trek II"

1:30 P.M. – 3:30 P.M.

	OPERATING SYSTEMS (continues)	PROFESSIONAL WORKSTATIONS	TECHNIQUES AND CONCEPTS FOR THE NON-TECHNICAL OR NEW USER (continues)	MICROPROCESSOR APPLICATIONS (continues)
NAPOLEAN BALLROOM	Daniel Gillen, Texas Instruments, Austin ***Operating System Support for Asynchronous Terminals*** ★★★ Lori Mohr Stuart, Texas Instruments, Austin ***Interprocess Communication in DNOS*** ★★ Michael P. Simpson, Texas Instruments, Austin ***DNOS File Security*** ★ Ken Culp, Texas Instruments, Austin ***Uses of DNOS Segmentation*** ★★	GRAND SALON D Session Chairman Art Miller, Texas Instruments, Austin **Introduction** Paul L. Stolar, Texas Instruments, Austin ***Professional Workstations: An Assessment of Required Functionality and Current Developments*** William B. Barnett, Texas Instruments, Austin ***Integrating Professional Workstations into A Communications Network*** Bill Belew, Texas Instruments, Dallas ***The TI Professional Computer's Information Center Role*** Discussion	MARLBOROUGH AB Art Miller, Texas Instruments, Austin ***Computer Systems Hardware*** ★ Bruce Barlow, Texas Instruments, Austin ***990 Hardware and Software Overview and Comparisons*** ★ Gary Imken, Texas Instruments, Austin ***Introduction to SCI for the Nontechnical or New User*** ★	MELROSE ROOM Steve Wixson, University of Alabama in Birmingham ***Four-Dimensional Medical Image Processing with TI Hardware*** ★ Question and Answer Period

3:30 P.M. — Coffee Break

3:45 P.M. – 5:25 P.M.

	OPERATING SYSTEMS (continues)	RESELLER SIIX	END-USER SIIX	EDUCATIONAL SIIX
NAPOLEAN BALLROOM	Fred W. Powell, Powell & Associates ***System Job Queue for DX10*** ★★ Glenn Edgard, Texas Instruments, Austin ***Tips and Techniques on Converting DX10 Applications to DXM*** ★★ Richard Johns, Texas Instruments, Austin ***Asynchronous Communications Under DX10 Micro*** ★★ Operating Systems Question and Answer Panel of TI Managers concludes the session by responding to earlier questions and by taking final questions from the audience.	GRAND SALON D Session Chairman W.J. Kiely, KPS, Inc. ***Introduction*** Ivan L. Erickson, Texas Instruments, Austin ***Lease or Purchase of Computer Equipment: Which is Better for Your Business*** ★ Maria Benson, Texas Instruments, Austin ***TI Service Options for the Reseller*** ★ Virginia Pigott, Dun's Marketing Services ***Meeting the Marketing Needs of the 80s*** Reseller SIIX Question and Answer Panel with the following TI Managers:	MARLBOROUGH AB Session Chairman Richard E. Max, Synkote Paint Co. ***Introduction*** Ron Person, Texas Instruments, Austin ***Integrating Personal Computers into Your MIS Strategy*** ★ End-User Question and Answer Panel with the following TI Managers: Tommy Fox, Technical Support Manager for National Accounts Marketing Randy Gilliam, National Accounts Marketing Manager Nancy Jokovich, Training Development Manager Jerry Rycaj, DSG Service Marketing Manager Roger Storer, National Analysts Manager	MELROSE ROOM Session Chairman Bill Walker, The University of Oklahoma ***Introduction*** Alfred Riccomi, Texas Instruments, Dallas ***LOGO—An End-User Language*** ★ Carolyn A. Riccomi, Consultant ***Medical Therapeutic Application of a Computer*** ★ Joe T. Watt, Lamar University ***Microcomputers in a First Digital Lab*** Jim Ledbetter, Texas Instruments, Austin ***A Conversation Program: Design and Implementation*** ★★★ Bill Walker, The University of Oklahoma ★ ***TI 990/12 in an Academic Environment***

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TIME — WEDNESDAY, APRIL 6 (continued)

	OPERATING SYSTEMS (continues)	RESELLER SIIX (continues)	END-USER SIIX (continues)	EDUCATIONAL SIIX (continues)
	NAPOLEAN BALLROOM	GRAND SALON D	MARLBOROUGH AB	MELROSE ROOM
	Operating Systems Panel (continues)	Charles Boyd, Reseller Channel Manager Wendel Harrison, Reseller Channel Marketing Manger Terry McMullen, Software Solutions Program Manager John Schier, Reseller Channel Marketing Operations Manager Mike Weinnig, Customer Service Market Development Manager	End-User Panel (continues)	*"TI 990/12. . ." (continues)*
	TI-MIX Member Exhibits in Grand Ballroom ABC and TI Exhibits in Grand Ballroom D open until 7:30 P.M. Reception in the Chemin Royale Foyer, in Grand Ballroom ABC, and in Grand Ballroom D from 3:30 P.M. to 7:30 P.M.			
	BIRDS-OF-A-FEATHER MEETINGS			
6:00 P.M.	MAGNOLIA ROOM	ELMWOOD ROOM	CHEQUERS ROOM	MELROSE ROOM
	Larry Briggs, Timberline Systems, Inc. ***Competitive Issues***	Fred W. Powell, Powell and Associates ***Pascal***	Richard E. Max, Synkote Paint Co. ***RIX (Regional Information Exchange) Meeting***	Jim Fisher, I.C. System, Inc. ***Technical Contributions Meeting***
8:00 P.M.				

TIME — THURSDAY, APRIL 7

8:00 A.M.	Symposium Registration at the first floor Convention Registration Counters from 8:00 A.M. to 7:00 P.M. Exhibits-Only Registration in the Chemin Royale Foyer from 1:30 P.M. to 7:30 P.M. TI-MIX Member Exhibits in Grand Ballroom ABC open from 1:30 P.M. to 7:30 P.M. TI Exhibit in Grand Ballroom D open from 1:30 P.M. to 7:30 P.M. Discussion Room in Grand Salon C open from 8:00 A.M. to Midnight. Speaker Preparation Room open from 8:00 A.M. to 8:00 P.M.			
	COMMUNICATIONS AND NETWORKING	**BUSINESS MANAGEMENT CONCEPTS**	**COBOL**	**p-SYSTEM**
8:30 A.M.	NAPOLEAN BALLROOM	GRAND SALON D	MARLBOROUGH AB	MELROSE ROOM
	Session Chairman James R. Fisher, I.C. System, Inc. ***Introduction***	Session Chairman Dick Moeller, ProfitMaster Computer Systems, Inc. ***Introduction***	Session Chairman Don McGonigal, Hospital Corporation of America ***Introduction***	Session Chairman Michael Hadjioannou, TICOM Systems ***Introduction***
8:40 A.M.	Joe Gallio, Texas Instruments, Austin ***Datacomm-Man: Challenge of the 80s*** ★★	Jacqueline White, Concord Management Systems, Inc. ***Hiring, Motivating, and Keeping Competent Technical Personnel*** ★	Gary W. Cobb, Texas Instruments, Austin ***Methodologically Sound Tools for the Integration and Testing of Large COBOL Programs*** ★★	Presley Smith, Texas Instruments, Austin ***Introduction to the UCSD p-System™*** ★★
9:00 A.M.				
9:10 A.M.	Herman Dierks, Texas Instruments, Austin ***Local Area Networks*** ★	Ashok K. Nagrani, Antech, Inc. ***The Formulation of a Strategic Plan — A Cookbook Approach*** ★	Paul Denton, Texas Instruments, Richardson ***COBOL Development Considerations for Multiple Target Computers*** ★	Bob Peterson, Texas Instruments, Dallas ***p-System History at Texas Instruments*** ★
9:20 A.M.				
9:30 A.M.	Gary L. Wood, Texas Instruments, Houston ***A Systems View of Token Ring Local Networks*** ★★			David Burckhartt, Texas Instruments, Austin ***UCSD p-System™ Implementation on the TI Professional Computer*** ★★
10:00 A.M.	Coffee Break			
	COMMUNICATIONS AND NETWORKING (continues)	**BUSINESS MANAGEMENT CONCEPTS (continues)**	**COBOL (continues)**	**p-System (continues)**
10:15 A.M.	NAPOLEAN BALLROOM	GRAND SALON D	MARLBOROUGH AB	MELROSE ROOM
	David S. Lafitte, Texas Instruments, Houston ***An Architecture for VLSI Support of Token Ring Local Area Networks*** ★★★	Terry McMullen, Texas Instruments, Austin ***Industry Specific Solutions-The Key to Serving the Market Opportunities for Small Computers in the 80s***	Martin Tepe, TCC Systems ***Use of Report Writers in COBOL Systems*** ★	Jonathan F. Jackson, Texas Instruments, Austin ***Using the DX10 p-System*** ★★★

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TIME — THURSDAY, APRIL 7 (continued)

10:40 A.M. – 10:45 A.M. – 11:00 A.M. – 11:15 A.M. – 11:20 A.M. – 11:30 A.M. – 11:45 A.M. – Noon

NAPOLEAN BALLROOM — COMMUNICATIONS AND NETWORKING (continues)

Milt Rowen,
Texas Instruments, Austin
The Open Systems Interconnection Model for Communications
★

David C. Eagle,
Texas Instruments, Austin
Remote Resource Access — Including Terminals
★★★

Peter Goebel, UIMC International Management Consultant
Distributed Data Processing Strategy at Unilever
★★★

GRAND SALON D — BUSINESS MANAGEMENT CONCEPTS (continues)

"Industry Specific. . ." (continues)

Dick Moeller, ProfitMaster Computer Systems, Inc.
Selling to User Needs
★

Question and Answer Period

MARLBOROUGH AB — COBOL (continues)

"Report Writers. . ." (continues)

Don McGonigal, Hospital Corporation of America
Design Methodology for Vendor Independent COBOL Applications
★

Question and Answer Period

MELROSE ROOM — p-SYSTEM (continues)

"DX10 p-System. . ." (continues)

Thomas M. Siep,
Texas Instruments, Dallas
"User-Proofing" UCSD Pascal™ Programs
★★

Ron Stafford,
Texas Instruments, Dallas
Evolution of a p-System Directory Display Utility
★★

Discussion

Noon

Luncheon in Grand Salon AB with Guest Speaker Tom Ellis, TI DSG Vice-President, describing, "Texas Instruments as a Computer Vendor in the 80s"

1:30 P.M. – 1:40 P.M. – 2:00 P.M. – 2:10 P.M. – 2:30 P.M. – 2:35 P.M. – 2:40 P.M. – 3:00 P.M. – 3:10 P.M. – 3:30 P.M.

NAPOLEAN BALLROOM — COMMUNICATIONS AND NETWORKING (continues)

William B. Barnett,
Texas Instruments, Dallas
Integrating Professional Workstations into a Communications Network
★

Mark Rissmiller,
MFA Inc.
Providing TI 990 Transactions Real-Time to an IBM Host
★★★

Rejean Plamondon,
Ecole Polytechnique de Montreal
Remote Communication Between a TI Microcomputer and a Host Computer (IBM 4341) Via an Asynchronous Link (RS-232C)
★★

R. Patrick Mallory,
IFG Leasing Co.
Virtual Terminal Software Enables Turnkey Distributive Processing Network
★

GRAND SALON D — MARKETING AND SALES TECHNIQUES

Session Chairman Larry Briggs,
Timberline Systems, Inc.
The Importance of Marketing in a Competitive Environment

Mike Shouldice,
Open Systems, Inc.
Selling Packaged Software For Profits
★

Diane Baugh,
Texas Instruments, Austin
The Role of the Computer Demonstration in Marketing and Sales
★

Julie McHenry,
Regis McKenna, Inc.
Public Relations for High Technology Companies
★

Douglas A. Crane, Creative Media Development, Inc.
Using Multi-Image to Market Your Product
★

MARLBOROUGH AB — OFFICE AUTOMATION TECHNOLOGY

Session Chairman Susan Raff,
Owens-Corning Fiberglas
Introduction

Kay Hammer,
Texas Instruments, Austin
The Role of TI Natural Language Database Interface in Office Automation
★

Ken Bice,
Texas Instruments, Austin
The Role of Voice in Office Automation
★★

Kris Rogers,
Texas Instruments, Austin
An Evaluation of Microcomputer Word Processing Software Packages
★

Discussion

MELROSE ROOM — p-SYSTEM (continues)

Fritz Whittington,
Texas Instruments, Dallas
Design Techniques for Tightly-Fitting Programs
★★★

Michael Hadjioannou,
TICOM Systems
Graphics for the p-System
★★★

Question and Answer Period

3:30 P.M.

Coffee Break

3:45 P.M. – 3:55 P.M. – 4:10 P.M. – 4:15 P.M. – 4:30 P.M. – 4:35 P.M. – 4:40 P.M. – 4:50 P.M. – 4:55 P.M. – 5:05 P.M.

NAPOLEAN BALLROOM — HARDWARE CONCEPTS

Session Chairman Michael Roginsky, Lockheed-Georgia Co.
Introduction

John R. Purvis, III,
Texas Instruments, Austin
The 990/10A: Squeezing Five and a Half Boards Down to One
★★

Ivan L. Erickson,
Texas Instruments, Austin
The Business System 300 Architecture
★★

John R. Purvis, III,
Texas Instruments, Austin
The FCC EMI Regulations: How They Will Affect Computer Equipment
★

John R. Purvis, III,
Texas Instruments, Austin
Considerations for Custom Business System 600 and 800 Configurations
★★

GRAND SALON D — MARKETING AND SALES TECHNIQUES (continues)

Joe Zeitler,
Texas Instruments, Austin
TI's Cooperative Advertising Program
★

Paul R. Klier,
Texas Instruments, Austin
Alternatives for Training Your Sales Representatives
★

Paul J. Spiewak,
Unilaw Systems, Inc.
The Advantages of Vertical Marketing
★

MARLBOROUGH AB — SUPPORT SERVICES

Session Chairman, Mark D. Rissmiller, MFA inc.
Introduction

Karen Rose,
Texas Instruments, Austin
Texas Instruments Customer Publications
★

Roger A. Storer,
Texas Instruments, Houston
Field Analyst Support
★

Bob Tully,
Texas Instruments, Austin
The Customer Support Function for TI Minicomputers and Terminals
★

Burt Kaufman,
Texas Instruments, Austin
Software Trouble Reports — Help TI Help You
★

Bethany McAdams,
Texas Instruments, Austin
TI Technical Publications
★

MELROSE ROOM — BASIC

Session Chairman Bruce E. Murtha, Shepard Steel Co.
Introduction

Richard C. Valorose,
Interactive Management Systems Corp.
Guidelines to Structured Programming in TI Basic
★★

Walt Sealy,
Texas Instruments, Austin
Comparison of TI BASIC with Microsoft BASIC
★★

Robert L. Schiemenz,
Texas Instruments, Austin
TI BASIC — Release 4.0
★★

David Blair,
Texas Instruments, Austin
TI BASIC 4.0 External Subprograms
★★★

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TIME — THURSDAY, APRIL 7 (continued)

HARDWARE CONCEPTS (continues) — NAPOLEAN BALLROOM

5:15 P.M. – 5:25 P.M.
James L. Lawrence, Jr.; David L. Raymond; and Richard A. Suchter, Analog Technology Corp.
New Graphics 810 Printer/Controller Simplifies Forms, Label and Barcode Printing ★

5:35 P.M. – 5:40 P.M.
Lucas Ahlstrom, Progress Data A.B.
The White Box Outdoor Data Processing for a Flying Start

MARKETING AND SALES TECHNIQUES (continues) — GRAND SALON D

5:15 P.M. – 5:25 P.M.
Thomas R. Frenz, SBAA Marketing, Inc
Effective Management of Your Salesmen or Sales Territory ★

5:35 P.M. – 5:40 P.M.
Discussion

SUPPORT SERVICES (continues) — MARLBOROUGH AB

5:15 P.M. – 5:25 P.M.
"TI Technical. . ." (continues)
Jerry Rycaj, Texas Instruments, Houston
An Overview of TI Service ★

5:35 P.M. – 5:40 P.M.
Gaye Arnold, Texas Instruments, Austin
Education and Development Center Customer Training ★

BASIC (continues) — MELROSE ROOM

5:15 P.M. – 5:25 P.M.
Presley Smith, Texas Instruments, Austin
p-System BASIC ★★

5:35 P.M. – 5:40 P.M.
Bruce E. Murtha, Shepard Steel Co.
Comparison of Relative Execution Speeds of TI BASIC Statements ★

TI-MIX Member Exhibits in Grand Ballroom ABC and TI Exhibits in Grand Ballroom D open until 7:30 P.M.
Reception in the Chemin Royale Foyer, in Grand Ballroom ABC, and in Grand Ballroom D from 3:30 P.M. to 7:30 P.M.

BIRDS-OF-A-FEATHER MEETINGS — 6:00 P.M.

CAMBRIDGE ROOM
Robert Schiemenz, Texas Instruments, Austin
BASIC

CHEQUERS ROOM
Miles Rickard, Ryan-McFarland, Inc.
COS990^R

PRINCE OF WALES ROOM
John W. King, Texas Instruments, Austin
Data Management Software

MAGNOLIA ROOM
Robert Teague, Business Systems Group
Systems Committee Meeting

ELMWOOD ROOM
Kris Rogers, Texas Instruments, Austin
TIPE

8:00 P.M.

TIME — FRIDAY, APRIL 8

8:00 A.M.

Symposium Registration at the first floor Convention Registration Counters from 8:00 A.M. to 2:00 P.M.
Exhibits-Only Registration in the Chemin Royale Foyer from 10:00 A.M. to 3:00 P.M.
TI-MIX Member Exhibits in Grand Ballroom ABC open from 10:00 A.M. to 3:00 P.M.
TI Exhibit in Grand Ballroom D open from 10:00 A.M. to 3:00 P.M.
Discussion Room in Grand Salon C open from 8:00 A.M. to 5:30 P.M.
Speaker Preparation Room open from 8:00 A.M. to 3:00 P.M.

TIPS AND TECHNIQUES FOR THE TECHNICAL USER — NAPOLEAN BALLROOM

8:30 A.M. – 8:40 A.M.
Session Chairman James D. Gordon, Ford Motor Co.
Introduction

8:40 A.M. – 9:00 A.M.
Cliff H. Copass, Johnson Controls, Inc.
Optimizing DX10 For High Speed Burst I/O ★★★

9:00 A.M. – 9:05 A.M.
Dave Keenan, Texas Instruments, Austin
TI Professional Computer and the IBM Personal Computer — Differences and Similarities ★★★

9:05 A.M. – 9:30 A.M.
Craig Stermer, Texas Instruments, Austin
Tips and Techniques on Interfacing Printers to the TI Professional Computer ★

9:30 A.M. – 9:55 A.M.
James D. Gordon, Ford Motor Co.
SCI Elimination Under DX10 ★★★

MANAGEMENT INFORMATION SYSTEMS — MARLBOROUGH AB

8:30 A.M. – 8:40 A.M.
Session Chairman Ashok K. Nagrani, Antech, Inc.
Introduction

8:40 A.M. – 9:00 A.M.
Bill Petersen, Texas Instruments, Austin
Operation Research Software — "The Next Spreadsheet?" ★★

9:00 A.M. – 9:05 A.M.
William D. Daniels, Texas Instruments, Lewisville
Software Tools for Solution of Business Problems ★

9:05 A.M. – 9:30 A.M.
Ashok K. Nagrani, Antech, Inc.
The Selection of a Decision Support System ★

9:30 A.M. – 9:55 A.M.
John H. Cratin, Cratin Computing Co.
Audit and Control Considerations for the Minicomputer Environment ★

SYSTEM PERFORMANCE AND ANALYSIS — OAK ALLEY

8:30 A.M. – 8:40 A.M.
Session Chairman Charles F. Phillips, III, Concord Management Systems
Introduction

8:40 A.M. – 9:00 A.M.
R. Brent Jackson, Texas Instruments, Austin
Hardware Uptime Optimization ★

9:00 A.M. – 9:30 A.M.
Charles F. Phillips, III, Concord Management Systems
DX10 System Performance Tuning and Tools ★

9:30 A.M. – 9:55 A.M.
Question and Answer Period

TIFORM — MELROSE ROOM

8:30 A.M. – 8:40 A.M.
Session Chairman Lars Greniger, Texas Instruments, Austin
Introduction

8:40 A.M. – 9:00 A.M.
Stephen Baum, Texas Instruments, Austin
Fundamentals of TIFORM ★

9:00 A.M. – 9:30 A.M.
Tina Bruhl, Texas Instruments, Austin
TIFORM 2.0 Versus 3.0 ★★★

9:30 A.M. – 9:55 A.M.
Charlotte Koerschen, Texas Instruments, Austin
The Screen Management Task Group ★
Question and Answer Period

10:15 A.M.

Coffee Break

SOFTWARE AND SYSTEMS ENGINEERING — NAPOLEAN BALLROOM

10:30 A.M. – 10:45 A.M.
Session Chairman Michael H. Tarnowski, Johnson Controls, Inc.
Introduction

DATA MANAGEMENT — MARLBOROUGH AB

10:30 A.M. – 10:45 A.M.
Session Chairman David A. Teagarden, Moore Business Forms, Inc.
Introduction

SYSTEM MAINTENANCE — OAK ALLEY

10:30 A.M. – 10:45 A.M.
Session Chairman Jerry L. Pyles, Texas Instruments, Austin
Introduction

FORTRAN — MELROSE ROOM

10:30 A.M. – 10:45 A.M.
Session Chairman Fred W. Powell, Powell and Associates
Introduction

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★ General audience (little technical expertise required) ★★ Intermediate knowledge of systems/programming required for understanding ★★★ Technical knowledge (experience with the subject matter required for understanding)

TIME **FRIDAY, APRIL 8 (continued)**

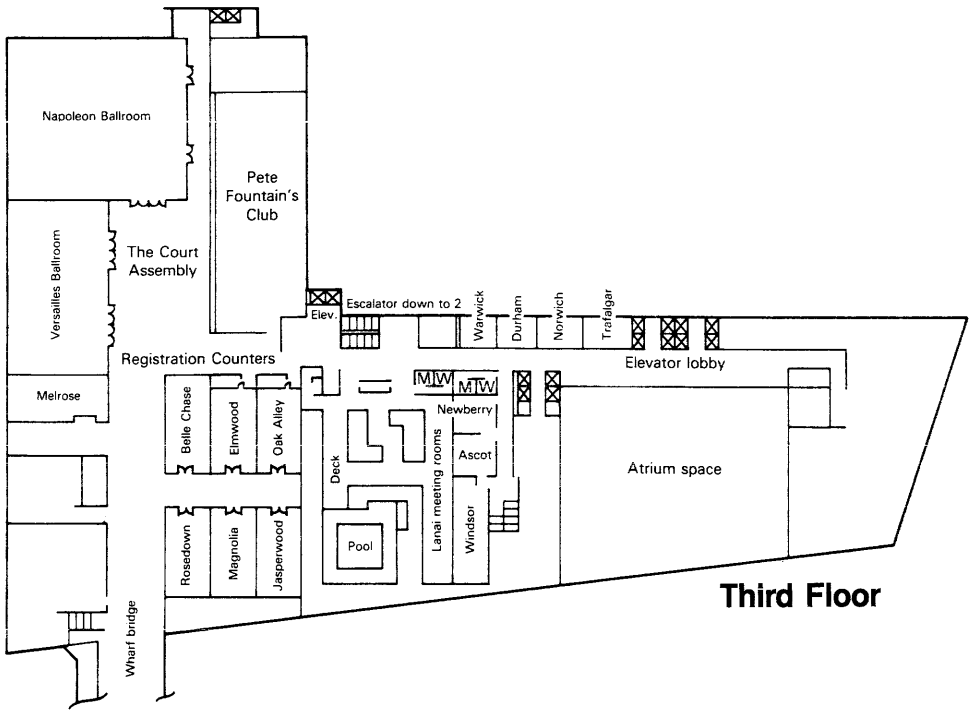
	SOFTWARE AND SYSTEMS ENGINEERING (continues) — NAPOLEAN BALLROOM	DATA MANAGEMENT (continues) — MARLBOROUGH AB	SYSTEM MAINTENANCE (continues) — OAK ALLEY	FORTRAN (continues) — MELROSE ROOM
10:40 P.M.	Jim Fisher, I.C. System, Inc. ★★ ***An Analysis of Errors***	Kathy Wells, Texas Instruments, Austin ***An Overview of DD-990*** ★★	Tom DeWitt, Texas Instruments, Austin ★★ ***System Diagnostics***	Peter N. Karculias, Texas Instruments, Austin ***Migration to FORTRAN-78*** ★★
11:00 A.M.				
11:10 A.M.	L. L. Craddock, Texas Instruments, Austin ***The TI Software Quality Metrics Program*** ★	John W. King, Texas Instruments, Austin ***Application Systems Without Programming*** ★	Bob Bolin, Texas Instruments, Austin ***Online Remote Diagnostics*** ★	Rejean Plamondon, Ecole Polytechnique de Montreal ***Production of Structured FORTRAN via a Software Tool to be Used on a TI Microcomputer*** ★★
11:20 A.M.	Eugene Korienek, Johnson Controls, Inc. ***A Methodology for Testing the Completeness and Functional Correctness of a Unit of Software*** ★		Keith R. Abell, Texas Instruments, Austin ***Diagnostic Operating Control System and Unit Level Diagnostics*** ★★	
11:40 A.M.	Ronald Reinert, Johnson Controls, inc. ***The Unstructured Approach to Software Testing*** ★	Jim Ledbetter, Texas Instruments, Austin ***Data Base Documentation: Considerations and Controls*** ★★★	Question and Answer Period	Peter N. Karculias, Texas Instruments, Austin ***FORTRAN-78 Future Enhancements*** ★★
11:50 A.M.				
12:10 P.M.	Fred Hoette, Productive Computer Systems ***Productivity Oriented Software***	Question and Answer Period		
12:30 P.M.	Buffet Luncheon in the Versailles Ballroom			
1:30 P.M.	HELP US HELP YOU — A REVERSE QUESTION AND ANSWER SESSION in the Napolean Ballroom chaired by Robert Teague, Business Systems Group. The following TI managers are panel participants: Terry Meyer, Business Communications Section Manager Art Miller, Product Management Support Branch Manager Jerry Rycaj, DSG Service Marketing Manager Joe Watson, DSG Vice-President and Strategic Planning Manager			
2:30 P.M.	Coffee Break			
2:45 P.M.	TI MANAGEMENT QUESTION AND ANSWER SESSION in the Napolean Ballroom with the following TI Data Systems Group (DSG) Managers: Pierre Clavier, Vice-President of International Data Systems Division Tom Ellis, Vice-President and U.S. Marketing Manager John Hanne, Vice-President and Software Development Manager Eric Jones, President of Data Systems Group Bill Martin, Vice-President and Service Manager Tom Stringfellow, Vice-President and Engineering Manager Joe Watson, Vice-President and Strategic Planning Manager			
4:30 P.M.				
5:30 P.M.	Closing Reception in the Versailles Ballroom			

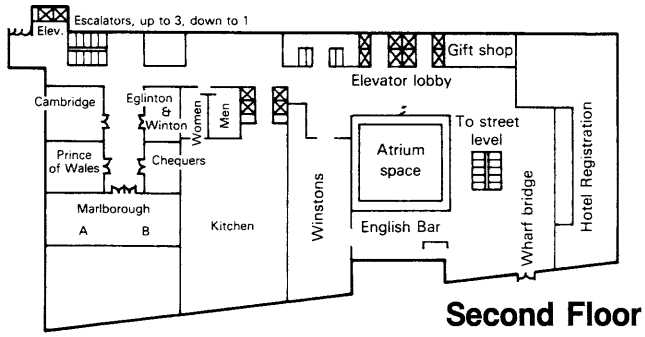
Where indicated, the author specified the technical level of his or her presentation as:

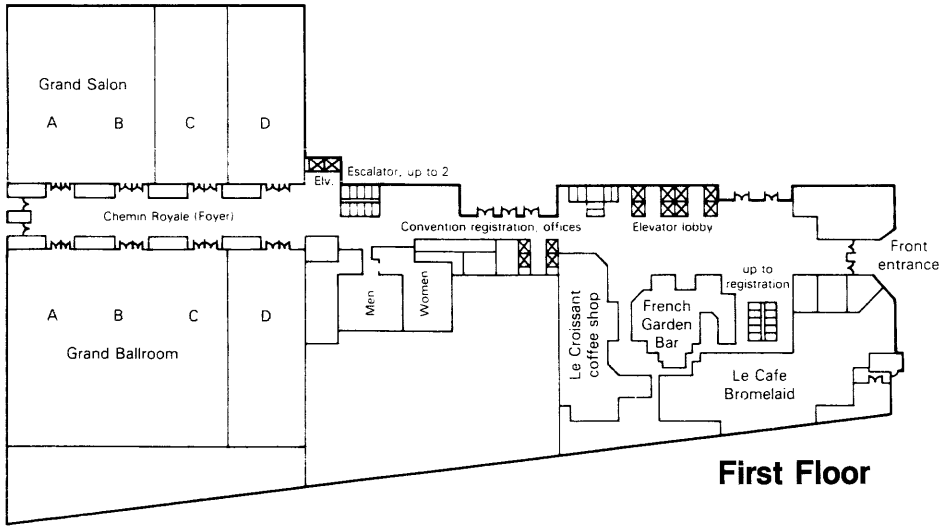
★ General audience (little technical expertise required) ★★ Intermediate knowledge of systems/programming required for understanding ★★★ Technical knowledge (experience with the subject matter required for understanding)

FLOORPLAN

New Orleans Hilton







POCKET SCHEDULE

Sessions for TI-MIX 1983 have been categorized into five tracks. Make plans to attend the sessions which will benefit you the most according to your areas of interest/expertise.

Business Management/Marketing Sessions:
Business Management Concepts
Management Information Systems
Marketing & Sales Techniques
Reseller SIIX

End-User Specific Sessions:
End-User SIIX
Office Automation Technology
Support Services
Techniques & Concepts for the Nontechnical or New User

Technical Sessions relating to TI Operating Systems and Languages:
BASIC
COBOL
FORTRAN
Operating Systems
p-System
Pascal
Software & Systems Engineering
Tips & Techniques for the Technical User

Technical Sessions – Miscellaneous:
Communications & Networking
Data Management
Distributed Terminal Systems
Educational SIIX
Hardware Concepts
Microprocessor Applications
System Maintenance
System Performance & Analysis
TIFORM

General Interest:
Professional Workstations
Reverse Question & Answer Session
TI Management Question & Answer Session
TI Products Review
TI-MIX Membership Meeting

TUESDAY, April 5, 1983

2:00 - 8:00 P.M.	Registration, Informal Reception, and Exhibits in Grand Ballroom ABCD
2:00 P.M. - Midnight	Discussion Room Open in Grand Salon C
4:00 - 5:00 P.M.	Session Chairmen/Speakers Meeting in Grand Salon AB
5:00 - 5:30 P.M.	Reception in Grand Salon AB
5:30 - 6:30 P.M.	TI-MIX Membership Meeting to determine concerns of the membership in Grand Salon AB
6:30 - 7:30 P.M.	TI Products Review in Grand Salon AB

WEDNESDAY, April 6, 1983

8:00 A.M. - 7:00 P.M.	Registration at the first floor Convention Registration Counters			
8:00 A.M. - Midnight	Discussion Room Open in Grand Salon C			
1:30 P.M. - 7:30 P.M.	Exhibits Open in Grand Ballroom ABCD			
8:30 - 10:00 AM.	Operating Systems Napoleon Ballroom	Distributed Terminal Systems Grand Salon D	Techniques & Concepts for the Nontechnical or New User Marlborough AB	Microprocessor Applications Melrose Room
10:00 - 10:15 A.M.	Coffee Break			
10:15 A.M. - Noon	Operating Systems (continues) Napoleon Ballroom	Distributed Terminal Systems (continues) Grand Salon D	Techniques & Concepts for the Nontechnical or New User (continues) Marlborough AB	Microprocessor Applications (continues) Melrose Room
Noon - 1:30 P.M.	Luncheon with Guest Speaker Loren Carpenter, Lucasfilm, Ltd., in Grand Salon AB			
1:30 - 3:30 P.M.	Operating Systems (continues) Napoleon Ballroom	Professional Workstations Grand Salon D	Techniques & Concepts for the Nontechnical or New User (continues) Marlborough AB	Microprocessor Applications (continues) Melrose Room
3:30 - 3:45 P.M.	Coffee Break			

WEDNESDAY, April 6, 1983 (continued)

3:45 - 6:00 P.M.	Operating Systems (continues) Napoleon Ballroom	Reseller SIIX Grand Salon D	End-User SIIX Marlborough AB	Educational SIIX Melrose Room
6:00 - 8:00 P.M.	Birds-of-a-Feather Sessions: Competitive Issues Committee in Magnolia, Pascal in Elmwood, RIX in Chequers, Technical Contributions Committee in Melrose.			

THURSDAY, April 7, 1983

8:00 A.M. - 7:00 P.M.	Registration at the first floor Convention Registration Counters			
8:00 A.M. - Midnight	Discussion Room Open in Grand Salon C			
1:30 P.M. - 7:30 P.M.	Exhibits Open in Grand Ballroom ABCD			
8:30 - 10:00 A.M.	Communications & Networking Napoleon Ballroom	Business Management Concepts Grand Salon D	COBOL Marlborough AB	p-System Melrose Room
10:00 - 10:15 A.M.	Coffee Break			
10:15 A.M. - Noon	Communications & Networking (continues) Napoleon Ballroom	Business Management Concepts (continues) Grand Salon D	COBOL (continues) Marlborough AB	p-System (continues) Melrose Room
Noon - 1:30 P.M.	Luncheon with Tom Ellis, TI DSG Vice-President, in Grand Salon AB			
1:30 - 3:30 P.M.	Communications & Networking (continues) Napoleon Ballroom	Marketing & Sales Techniques Grand Salon D	Office Automation Technology Marlborough AB	p-System (continues) Melrose Room
3:30 - 3:45 P.M.	Coffee Break			
3:45 - 6:00 P.M.	Hardware Concepts Napoleon Ballroom	Marketing & Sales Techniques (continues) Grand Salon D	Support Services Marlborough AB	BASIC Melrose Room
6:00 - 8:00 P.M.	Birds-of-a-Feather Sessions: BASIC in Cambridge, COS990 in Chequers, Data Management in Prince of Wales, Systems Committee in Magnolia, TIPE in Elmwood.			

FRIDAY, April 8, 1983

8:00 A.M. - 2:00 P.M.	Registration at the first floor Convention Registration Counters			
8:00 A.M. - 5:30 P.M.	Discussion Room Open in Grand Salon C			
10:00 A.M. - 3:00 P.M.	Exhibits Open in Grand Ballroom ABCD			
8:30 - 10:15 A.M.	Tips and Techniques for the Technical User Napoleon Ballroom	Management Information Systems Marlborough AB	System Performance & Analysis Oak Alley	TIFORM Melrose Room
10:15 - 10:30 A.M.	Coffee Break			
10:30 A.M. - 12:30 P.M.	Software and Systems Engineering Napoleon Ballroom	Data Management Marlborough AB	System Maintenance Oak Alley	FORTRAN Melrose Room
12:30 - 1:30 P.M.	Buffet Luncheon in the Versailles Ballroom			
1:30 - 2:30 P.M.	Help Us Help You — A Reverse Q & A Napoleon Ballroom			
2:30 - 2:45 P.M.	Coffee Break			
2:45 - 4:30 P.M.	TI Management Question and Answer Session Napoleon Ballroom			
4:30 - 5:30 P.M.	Reception in the Versailles Ballroom			

NOTES

COMMENT SHEET

Your inputs are needed in order to continue to improve TI-MIX symposia. Please complete the following questionnaire, fold and mail to the TI-MIX office, or return to the information booth at the symposium.

Name_____ Title:_____

Company_____ Phone: (_____)_____

Address: _____

City, State, Zip (Country): _____

1. Including TI-MIX 1983, how many TI-MIX symposia have you attended? _____
2. Has TI-MIX 1983 been worth your time and money? YES NO MAYBE

   If yes, what made it worthwhile? _____

   If no, what was lacking? _____
3. Should the symposium be longer, shorter, or the same length next year? _____

   Comment? _____
4. What session topics should be added next year?_____

   _____
5. What session topics should be deleted next year? _____

   _____
6. Would you like to serve as a session chairman next year? YES NO MAYBE

   If yes or maybe, for which session(s)? _____
7. Do you want to give a presentation next year? YES NO MAYBE

   If yes or maybe, during which session(s)? _____
8. What schedule changes would you suggest?_____

   _____

   _____
9. Should a full proceedings be included in the price of next year's registration fee? YES NO NO OPINION

   Comments? _____
10. Would you enjoy a group evening dinner function? YES NO NO OPINION

    If yes, would you prefer entertainment at the evening banquet, a computer industry spokesman, a non-computer related speaker, or specify other suggestions: _____

    _____

    If you prefer a speaker, suggestion(s)? _____
11. How would you rate the TI-MIX 1983 symposium facilities? (1 = Excellent, 2 = Good, 3 = Fair, 4 = Poor, 5 = No Opinion)

_____ City	Meeting Rooms:	_____ Sound
_____ Conference Facilities Overall	_____ Banquet Meals	_____ Lighting
_____ Meeting Rooms	_____ Temperature	_____ AV Equipment

12. Did you use Karson Travel for your airline and/or tour reservations? YES NO

If yes, was their service? EXCELLENT GOOD FAIR POOR

Comments? _____

13. Did you rent a car? YES NO If yes, from National? YES NO

If from National, was their service? EXCELLENT GOOD FAIR POOR

Comments? _____

14. What additional services should be provided at the symposium? _____

_____

15. Of the following symposium sites, rank in order of preference (1 being highest, 12 lowest).

_____ Atlanta, GA	_____ Dallas, TX	_____ Los Angeles, CA	_____ New York, NY
_____ Boston, MA	_____ Honolulu, HI	_____ Nashville, TN	_____ St. Louis, MO
_____ Chicago, IL	_____ Las Vegas, NV	_____ New Orleans, LA	_____ Washington, D.C.

16. Did you stay at the New Orleans Hilton? YES NO

If no, why not? _____

If yes, were the accommodations? EXCELLENT GOOD FAIR POOR

Was the service? EXCELLENT GOOD FAIR POOR

Were the hotel staff/personnel? COURTEOUS FRIENDLY APATHETIC

17. How would you classify your business? (end user, OEM, dealer, systems integrator, distributor, consultant, etc.) _____

_____

_____

18. Why do you come to a TI-MIX symposium? What are the major factors in making the decision to come? _____

_____

_____

19. Please list any further suggestions or criticisms. _____

_____

_____

Comment Sheet

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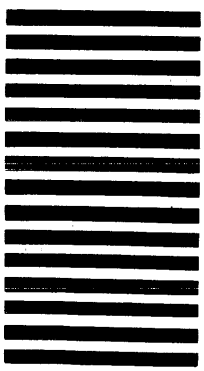

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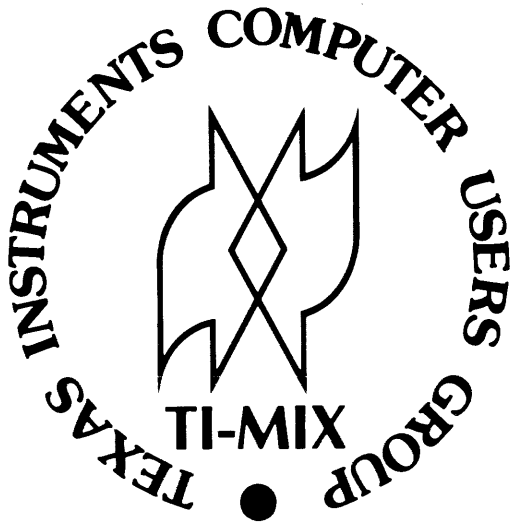
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