
Reliability Society Newsletter

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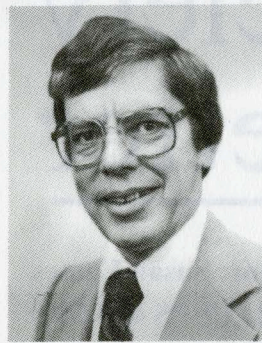
In Memoriam



Joseph J. Naresky

1923-1982

President's Message



Carl M. Bird, President

Joe was pioneer in the field of reliability and made significant contributions to our profession. As head of the Reliability and Compatibility Division of Rome Air Development Center, he, for many years, chartered the course for one of the most respected reliability organizations in the world. His able leadership resulted in the development of many new and innovative techniques in the reliability field. Upon retirement from Government Service, Joe joined the IIT Research Institute and continued his work in the reliability field. Joe was elevated to the rank of Fellow of IEEE for his contributions to our profession.

Those of us who knew and worked with Joe Naresky deeply feel the loss of a valued friend and colleague. The reliability field will miss one of its able leaders and contributors.

I WOULD LIKE to dedicate this issue of the Newsletter to the memory of Joe Naresky who died suddenly on July 10, 1982. Joe was the President of the Reliability Society in 1977 and 1978 and was a willing and able worker for the Society for many years.

Editor's Corner

THIS ISSUE OF THE Reliability Society Newsletter is dedicated to Joseph J. Naresky. The thoughts and prayers of the members of the Reliability Society are with the family and friends of a great man who has accomplished much for the advancement of the Reliability Discipline.

Editor Address Change

Please note that the editor's address has changed. Address all correspondence to:

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P.O. Box 584
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In Memoriam

MR. JOSEPH J. NARESKY, one of the leading figures in Reliability Engineering, died suddenly on July 10, 1982, of asphyxia, choked on food he had eaten earlier.

Mr. Naresky's accomplishments in reliability began in 1955 when he produced the first general reference manual for reliability engineers, "Reliability Factors for Ground Electronic Equipment." The document was widely used as a training aid, and 20 years later a Chinese translation was still in use in the People's Republic of China. Mr. Naresky also served on the Advisory Group for Reliability of Electronic Equipment, whose report in 1957 launched reliability as an engineering discipline throughout the Department of Defense.

From these pioneering efforts, and a four-man reliability group at the Rome Air Development Center, Mr. Naresky developed a program recognized for its significant contributions to reliability engineering and the largest concentration of reliability specialists in the Department of Defense. RADC is now responsible for preparing most of the military systems and equipment reliability and maintainability standards, and all of the micro-electronic standards. It is the leading military agency for research and development of reliability and maintainability techniques. In 1980, it was awarded the Air Force Outstanding Unit Citation for its reliability contributions. Mr. Naresky's efforts earned him Sustained Superior Performance Awards in 1959 and 1966 and the Air Force Decoration for Exceptional Civil Service, the highest award that can be given to an Air Force Civilian, in 1968. He also received the IEEE Reliability Society Annual Award in 1975 and was elected Fellow IEEE in 1976.

Mr. Naresky was born December 27, 1923 in Plymouth, Pennsylvania. He served with the U.S. Army Air Corps in Europe during World War II. Following the war, he was employed by the Army's Watson Laboratories, Red Bank, New Jersey, and stayed with it when it was transferred to Rome, New York, to become Rome Air Development

Center in 1951. Through part time study at Syracuse University Mr. Naresky earned a Bachelor's Degree in Physics, with high honors, and Master's Degrees in both Electrical Engineering and Engineering Administration. In 1979, he retired as Chief of RADC's Reliability and Compatibility Division, completing 37 years of Government Service. He immediately joined the Illinois Institute of Technology as an Engineering Advisor. He also continued teaching Reliability Engineering as an adjunct professor for the Industrial Engineering and Operations Research Department of Syracuse University, a position he acquired in 1977.

Mr. Naresky was a member of Sigma Pi Sigma, a Physics Honor Society, the IEEE Reliability Society, Engineering Management Society and Electromagnetic Compatibility Group, and the AIAA. He was a member of the IEEE Reliability Society AdCom and the Society President in 1977-1978. He was a member of the AIAA Committee on Reliability and Maintainability and was elected an Associate Fellow, AIAA. He also served as a U.S. Representative on the International Electrotechnical Commission, Technical Committee No. 56 (Reliability) and has been a member of the Management Committee for the Annual Reliability and Maintainability Symposium since 1973. Besides his technical activities, he was active in community affairs through the Rome Rotary Club which he served as President in 1967 and 1968.

Mr. Naresky's last project, completed shortly before his death, was *Reliability Design Handbook*. The handbook is an encyclopedic work providing guidance in all areas of reliability engineering, intended to be a basic reference for reliability practitioners.

Mr. Naresky is survived by his wife, Jean, daughter, Laura, and three sons: J. Michael, John, and Steven. He is also survived by a mature reliability engineering discipline which he helped create and to which he devoted most of his professional life.

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Reliability Society Album



Kam Wong, Chairman of the Los Angeles Reliability Chapter, receiving a service award from the Los Angeles Council. The award is being presented to Mr. Wong by George Kujawski, Los Angeles Council Chairman.



At the L.A. Council Annual Installation Dinner/Dance held on the Queen Mary in Long Beach, California on June 5, 1982. In the picture from left to right are: Irv Doshay, Vice Chairman-Treasurer, L.A. Chapter; George Kujawski, Chairman of the L.A. Council; Sam Lehr, Vice Chairman-Programs of the L.A. Chapter; Don Segel, Vice-Chairman-Facilities; and Kam Wong, Chairman of L.A. Chapter.

Society Album Note

You could be here too!!! How about appointing an official photographer for each of your Chapter functions and provide the Editor with some snapshots (preferably black and white) of your activities???

Chapter Reports

Central New England Council Chapter

The Central New England Council (CNEC) has many activities planned for the upcoming year. Over the summer the Executive Committee met to outline the main events for the 1982-1983 season. Some of the highlights are: Five technical meetings are planned to keep our members and the Reliability Community informed about new matters in our discipline; A One-Day Seminar is planned on Testability (in place of our usual Fall Lecture Series); and of course, our Annual Spring Seminar and Banquet. We are looking forward to an enjoyable and informative season.

Cleveland Chapter

The Cleveland Chapter plans to hold five Technical Meetings during the 1982-1983 Season. The Chapter Officers for this year are: V. R. Lalli, Chairman, A. M. Peabody, Vice Chairman, and C. W. Thomas, Secretary. A major conference, CECON '83, is being planned for the Cleveland area next year. The Cleveland Chapter will be involved in this conference and will keep the membership informed.

During the 1981-1982 Season five Technical Meetings were held. The highlight was the March 18th Meeting co-sponsored by the IEEE and ASQC. At this meeting,

Naomi McAfee of Westinghouse was the Guest Speaker.

Vincent Lalli
Chairman

Denver Chapter Report

A little history on the Denver Chapter:

Sam Keene started the chapter in 1980. Actually, Sam tried to start the Chapter in 1979 via a series of letters and dates for the First Meeting. The first two meetings had to be postponed due to the fact that 12 potential members were needed to form a chapter.

Finally, in the Spring of 1980, the Denver Chapter had the 12 members needed. These charter members were as follows: John R. Adams, P. Spencer Elliott, Werner O. Haussman, H. A. Lauffenburger, Norman G. Alvis, Robert A. Jaquess, Henry W. Rackley, M. J. Shumaker, Michael E. Jinnette, R. M. Wainwright, Samuel J. Keene, Jr., Craig A. Walter, Jack M. Watson, Ronald L. Watts.

The first meeting was very eventful. The night of the first meeting was met with a hard, almost blinding, snowstorm. Members came from Ft. Collins (60 miles north) and Colorado Springs (100 miles south). Some of the members were over one hour late—but they came—they didn't turn

back. And so the Denver Chapter was formed!

All of the Charter Members had one thing in common—a burning interest in Reliability and sharing their experiences and knowledge with one another. The members of the Denver Chapter come from a variety of Business backgrounds, commercial, aerospace, military, public, and Research. This made their interchange very rewarding. The first couple of meetings were called with an agenda of Planning their Future Path and Sharing various aspects of reliability. Usually, one of the members would prepare a topic and start the meeting by telling of his involvement in that area. Then the rest of the members would enter into a discussion and reflect on how that affects each one's job. In September of 1980 the Charter Meeting was held. It was a great evening with an inspiring talk by Dr. Thad Regulinski.

The appointed Officers were:

Chairman: Samuel J. Keene; Vice Chairman: Robert A. Jaquess; Secretary: Harold A. Lauffenburger; Treasurer: Maurice J. Shumaker; Membership Chairman: Henry W. Rackley.

The Denver Chapter states: "Sam Keene is very responsible for the success and growth of the Denver Chapter of the IEEE Reliability Society. He deserves recognition for his fine accomplishment."

Mohawk Valley Chapter

The Mohawk Valley Section sadly announces the loss of its illustrious Chairman Mr. Joseph J. Naresky, who died suddenly on July 10, 1982.

Technical meetings conducted by Mr. Naresky this year were held on May 12, a joint meeting with ASQC, when Carl M. Bird, Reliability Society President, spoke on Environmental Stress Screening; and on June 10, 1982 when Anthony Coppola presented a talk on Artificial Intelligence Applications to Testability.

Mr. Naresky will be succeeded as Chapter Chairman by Mr. Jerome Klion, RADC/RBET, Griffiss AFB, NY 13441, (315) 330-4726.

Santa Clara Valley Chapter

An average of 70 people attended five talks presented by the Santa Clara Valley chapter in 1981-82. All the talks were technical in nature, but a variety of topics were included. The title list for 1981-82 was "The Secret of Japanese Quality," "Static Electricity and ESD," "How much Gold is Enough on Connectors," "Software Reliability," and the "Role of NBS in Semiconductor Measurement Technology."

The 1982-83 board, headed by Chairman Ajit Goel of Zymos has made a tentative schedule of events beginning in October. The rough schedule will allow all board members to seek the best speakers for each topic. The tentative schedule is shown below.

October— A panel discussion: The Impact of Semiconductor Reliability Requirements through 1989.

The Chapter will co-sponsor a two-day course "MSI Structure and CV Plotting."

- November— Failure Analysis of Electrical Overstress.
- December— Device Scaling Effects on Reliability.
- January— Personal Computer Reliability.
- February— A one or two-day course on practical aspects of Voltage Contrast and EBIC in Scanning Electron Microscope Applications.
- March— Robotics Reliability.
- April— Reliability of Plastic Packages/Semiconductor Passivation.
- May— MOS Radiation Hardening-Processing Induced Damage.

LA Chapter

A Seminar on "Improving Availability of Hardware-Software Systems" will be held at the TRW Forum at Space Park, Redondo Beach, CA on November 13, 1982. It is jointly sponsored by the Los Angeles Chapters of the IEEE Computer and Reliability Societies, but is open to all, including non-Society members.

The Program will emphasize techniques of Evaluation: such as Reliability and Maintainability, as well as Implementation: such as Fault-Tolerant Design, for Computer Systems and Networks Improvement.

The fee is only \$40.00 which includes lunch, beverages, and handouts. \$10.00 of the fee will be refunded in a check made out to the IEEE for use towards membership, purchase of IEEE documents, or any other purpose. Please mail your check to: IEEE, Computer Society, LA Chapter, P.O. Box 1285, Pacific Palisades, CA 90272.

For information on participation call Dr. Peter Bright at Aerospace Corporation, (213) 648-5206.

The program (tentative) is as follows:

Bruce Waddington (Burroughs): "Measuring and Improving Availability of Installed Systems."

Algirdas Avizienis (UCLA): "Progress in Fault Tolerant Design."

Myron Hecht (Sohar, Inc.): "Software Fault Tolerance: Why It's Necessary, and a Methodology for its Implementation."

Irv Doshay (TRW): "Availability of Distributed Point-of-Scale Computer Networks."

Mike Sievers (Fail Safe Technology Corp.): "A Low Cost Fault Tolerant Computer System."

Joe Duran (Southwest Research Institute): "Estimating Software Reliability Through Dynamic Testing."

Caesar Chavez (Consultant): "Enhancing Availability Using Hardware Fault Diagnosis via Hardware plus Firmware plus Software."

Los Angeles Chapter Announcement

The Los Angeles Chapter now has available additional copies of the *Data Compendium* from the Electronic Components Reliability Screening Seminar held in May 1981. To obtain a copy, please mail your check for \$13.00 to IEEE Reliability Society, LA Chapter, P.O. Box 1285, Pacific Palisades, CA 90272.

Announcements

AUTOTESTCON '82

The International Automatic Testing Conference was held at the Dayton Convention Center, Dayton, Ohio during October 12-14, 1982. The Reliability Society endorsed this Conference, which was cosponsored by the Society of Instrumentation and Measurement and the Aerospace Electronics and Systems Society. The newly established Automatic Testing Committee of the National Security Industrial Association held its annual meeting in conjunction with AUTOTESTCON '82 on Friday, October 15, 1982.

Alan Plait

Maintainability Matters

The following report on the 1982 Avionics Maintenance Conference appeared in the May 1982 issue of "Plane Talk."

The annual Open Forum of the Avionics Maintenance Conference was held on April 20-22, 1982 at the Williams Plaza Hotel in Tulsa, OK. This Open Forum continued to enjoy world-wide support from all segments of the air transportation community. This included representatives from 139 air transport operators, 275 equipment manufacturers, 18 airframe manufacturers and 34 regulatory and support organizations. The total attendance comprised 468 participants representing 28 countries.

This Open Forum provided an opportunity for the maintenance specialists to improve the scope of their understanding of existing and future avionics systems. The primary objective of the conference was identifying solutions to chronic and mutual avionics maintenance problems to provide significant benefits for the operator participants. Equally important, the operators and product support specialists from the manufacturers were able to exchange information concerning future trends in the maintenance of avionics equipment. The Airbus A-310 and Boeing 767/757 digital avionics development programs provided valuable insight to the future. Longer term changes in this dynamic field were reflected in the seminars on the Traffic Alert and Collision Avoidance System (TCAS) and automated diagnostic systems.

The AMC task group chairmen made effective use of travel resources through a series of scheduled activities on Monday, April 19, 1982 immediately prior to the Open Forum. These task group activities provided an opportunity for all Open Forum participants to benefit from the work programs conducted throughout the year.

These activities have dealt with the specialized needs in the avionics maintenance field for documentation, digital testing and reliability reporting. AMC also conducted a training workshop directed at the challenges inherent in the transition from the present "analog airplane" to the "digital airplane" of the future.

AMC Chairman John Laviolette of Air Canada introduced AMC-1982 with the observation that a view toward the future shows a great expansion, some call it an explosion, of avionics into new areas. In particular, the range of microprocessor applications far exceeds past visions held by many people. This new reality has brought us the "glass cockpit" and the "management by computer" concept. As a result, most airlines are introducing significant changes in their maintenance practices. This starts with electrostatic discharge (ESD) protection when parts arrive in receiving inspection and flows throughout the system to get the airplane "off the gate" in the shortest possible time. The mounting increases in avionics complexity, due to the increased capabilities of new equipment, comes at a time of greatest economic need in our industry. All of which emphasizes the need for continued close support by the suppliers in solving chronic maintenance problems. The Chairman, therefore, challenged all participants to provide their full support for AMC at the annual Open Forum and throughout the year.

A limited number of Conference "Reports" are available. Contact:

Mr. Larry Carpenter, Executive Secretary-AMC
Aeronautical Radio, Inc.
2551 Riva Road
Annapolis, MD 21401

The Maintainability Matters Column is brought to you by Dr. Richard Kowalski, Chairman for Maintainability, IEEE Reliability Society.

Special Offer

Reliability Society members may obtain a copy (first come, first served, as long as they last) of the 1982 (June) Proceedings of:

Engineering Conference on Reliability for the Electric Power Industry

There is no charge to members for this offer. Simply send your request and mailing address to:

Robert Filipovitz, Chairman
Distribution Dept.-TW 19
Pennsylvania Power and Light Co.
2 North 9th Street
Allentown, PA 18102

Another Special Service for Reliability Society Members

1983 International Reliability Physics Symposium

April 5-7, 1983
Hyatt Regency Phoenix
Phoenix, Arizona

The Twenty-first Annual Symposium, cosponsored by the IEEE Reliability and Electron Devices Societies, emphasizes device reliability as the dominating influence in the development of new VLSI technologies and circuit designs. With the awareness that today many technology decisions are based on the trade-off of one reliability physics concern versus another reliability concern, the 1983 Symposium will emphasize the reliability physics of LSI and VLSI devices from design through processing, packaging, and testing. Papers are especially solicited in this area; however, work in all areas of reliability physics will be included in the program.

Papers should deal with work on:

- Physics of Failure Mechanisms—Quantitative models and mechanisms of component failure.
- Failure Analysis Techniques—Advanced or simplified, as they are applied to specific problems.
- Accelerated Testing and Screening—Emphasizing the physical mechanisms which validate testing and screening techniques.
- Design and Process Control for Reliability—Relating specific design concepts and process controls to part reliability.

In the following or related areas:

- VLSI (Microprocessors, Memory, PLA, Redundancy, etc.)—MOS, Bipolar
- Semiconductor/Insulator Interfaces, Contacts and Metallization
- Packaging, Bonding, Die Attach, Coatings and Encapsulation
- Hybrids (Materials, Processes and Components)
- Displays, Sensors, and Solar Cells
- Microwave, Optoelectronic, and SAW Devices
- GaAs Devices and Interface Effects on III-V Devices
- New Devices and Technologies
- Passive Components
- Attachment of Leadless Ceramic Chip Carriers

A special one-on-one session is also planned for significant papers on very specialized subjects and papers with high mathematical content. In this session, authors will display significant data, equations, and a summary of their work on posters or other suitable format and be available during the entire session to discuss their work.

The deadline for submission of abstracts is October 18, 1982. Prospective authors are requested to notify the Program Chairman of their intention to submit an abstract

and the topics to be discussed. Authors must submit a 50-word descriptive abstract and a 300-500 word summary appropriate to describe a 20-minute paper or a poster presentation with 10 placards.

Both the abstract and summary must clearly state: (1) the purpose of the work, (2) how it advances the knowledge of reliability physics, and (3) the results of the investigation. The 50-word abstract, suitable for publication in the advance program, should be typed on a separate sheet, and include the title of the talk, name and affiliation of the author(s), complete return address, and telephone number. The 300-500 word summary must be submitted in a single-sided, double-spaced typewritten format suitable for immediate reproduction and review purposes. No photographs or drawings are permitted because of printing restrictions. The title, name and affiliation of authors, complete return address, and telephone number should appear on the first page, and the paper title and author's name on each subsequent page. Forward abstracts and summaries to:

Dr. John W. Peeples, Technical Program Chairman
1983 International Reliability Physics Symposium
NCR Corporation
3325 Platt Springs Rd.
W. Columbia, SC 29169
Tel: (803) 796-9250, ext. 478

A limited number of late news papers reflecting important new developments will be considered on a space available basis.

Criteria used by the program committee to select papers for the symposium are:

- The work must be new and previously unpublished.
- Evidence of quantitative results and analytical models of studied phenomena must be given in the abstract.
- The purpose and results of the work and how it advances the state of the art must be clearly described.

Authors of accepted papers will be required to submit their slides and paper manuscripts for review by their session chairman before March 2, 1983. Visual aid legibility is mandatory. Only horizontal format 35mm slides will be permitted. Papers will not be approved for presentation if the slide quality is unacceptable. Final versions of manuscripts for all papers must be submitted at the symposium for inclusion in the proceedings.

For general conference information contact:

David L. Burgess, General Chairman
1983 International Reliability Physics Symposium
Hewlett Packard
1501 Page Mill Road, Bld. 28A
Palo Alto, CA 94304
Tel: (415) 857-3886

The names and addresses of new members who joined the Reliability Society between April 1, 1982 and June 30, 1982, are listed below. For U.S.A. members, the states are listed alphabetically and the names are listed alphabetically within the states. For members outside the U.S.A., names are listed alphabetically within each country and each country is listed alphabetically according to its English name.

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1982 Conference and Course Calendar

DATE	CONFERENCE OR COURSE	LOCATION	MORE INFORMATION
Oct. 11-13	AUTOTESTCON '82	Dayton, Ohio	Oscar Sepp ASD/AEG, WPAFB, Ohio 45433 (513) 255-2996
Oct. 11-15	Applications of Reliability and Risk Analysis, With Emphasis on Nuclear Power Plants	George Washington University, Washington D.C.	George Wash. Univ. Continuing Education Washington, D.C. 20056 (800) 424-9773
Oct. 13-15	Seventh Aerospace Testing Seminar	Hyatt House Hotel Los Angeles, CA	Inst. of Env. Sciences 940 E. Northwest Hwy. Mt. Prospect, IL 60056 (312) 255-1561
Oct. 17-20	MILCOM '82	Stouffer's Glen Bedford, MA	MILCOM '82 P.O. Box 208 Bedford, MA 01730
Oct. 17-21	CEIDP	University of Mass. Amherst, MA	J. Keith Nelson Rensselaer Poly. Tech. (518) 270-6328
Oct. 18-22	Introduction to Random Vibration MIL-STD-781C and -810C	Canton, MA	Wayne Tustin Tustin Institute of Tech. (805) 682-7171
Oct. 18-22	Maintainability and Availability Engineering and Equipment of Systems	UCLA, Los Angeles, CA	Dimitri Kececioglu (602) 626-2495
Oct. 25-26	Reliability Techniques for Product Design and Test	Rochester, NY	Amer. Inst. for Quality and Reliability 6583 Belbrook Court San Jose, CA 95120
Oct. 27-29	Software Quality Assurance	Washington, DC	IEEE Standards Seminar 345 East 47th Street New York, NY 10017 (212) 705-7907
Nov. 16-18	International Test Conference (Semiconductor Devices and Allied Components and Assemblies, LSI, VLSI)	Franklin Plaza Hotel Philadelphia, PA	Harry Hayman P.O. Box 639 Silver Spring, MD 20901 (301) 589-3386
Nov. 22-23	Reliability Techniques for Product Design	Burbank, CA	Amer. Inst. for Quality and Reliability 6583 Belbrook Court San Jose, CA 95120
Nov. 29-Dec. 1	Software Quality Assurance	San Francisco, CA	IEEE Standards Seminar 345 East 47th Street New York, NY 10017 (212) 705-7907
Dec. 5-10	The 21st Reliability Inst. (Dorian Shainin)	Willimantic, CT	University of Conn. Dr. Albert L. Jeffers (203) 486-3232
Dec. 6-10	System Reliability Engineering and Risk Assessment	Sheraton Atlanta, GA	JFB Associates 1630 Downtown West Blvd. Atlanta, GA
Dec. 6-10	Mechanical Failures Prevention Group 36th Symposium "Technology Advances and Their Impact on Detection, Diagnosis and Prevention"	Phoenix, AZ	G. Allan Whittaker Honeywell, Inc. P.O. Box 524 Minneapolis, MN 55440 (612) 870-6247

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DATE	CONFERENCE OR COURSE	LOCATION	MORE INFORMATION
Jan. 25-27	Reliability and Maintainability Symposium—"Increasing Productivity—The Continuing Challenge"	Sheraton Twin Towers Orlando, FL	T. L. Fagan General Electric Co. P.O. Box 8555 Philadelphia, PA 19101
Feb. 23-25	1983 IEEE Int'l Solid State Circuits Conference	New York City, NY	Lewis Winner 301 Almeria Coral Gables, FL 33134 (305) 446-8193 or 8194
Apr. 5-7	Int'l Reliability Physics Symposium	Hyatt Regency Phoenix, AZ	David L. Burgess Hewlett Packard 1501 Page Mill Rd. Bldg. 28A Palo Alto, CA 94304 (415) 857-3886
May 2-4	1983 IEEE Int'l Symposium on Circuits and Systems	Newport Beach, CA	Dr. Sanjit K. Mitra Dept. Of Elec & Comp Engrg Univ. of California Santa Barbara, CA 93106 (805) 961-3957
May 16-18	33rd Electronic Component Conf.	Orlando, FL	Don L. Willyard The Bendix Corp. Dept. 867, MF39 P.O. Box 1159 Kansas City, MO 64141
May 17-20	CLEO '83	Baltimore, MD	Optical Society of Amer. 1816 Jefferson Place, N.W. Washington, D.C. 20036 (202) 223-8130
Jun. 28-30	FTCS-13	Milano, Italy	Michele Morganti Telettra S.p.A. Via E. Mattei 20 20064 Gorgonzola-Italy Tel: + 39 2 9511561
Jul. 4-8	ICCBS	Toulouse Cedex, France	1st ICSD Laboratoire De Genie Electrique Universite Paul-Sabatier 118, route de Narbonne 31062 Toulouse Cedex France
Jul 25-29	Sixth Int'l Symposium on Multivariate Analysis	University of Pittsburgh, PA	P. R. Krishnaiah Center for Multi-Variate Analysis Ninth Floor Schenley Hall University of Pitts. Pittsburgh, PA 15260
Oct. 4-6	Int'l Carnahan Conference on Security Technology	Zurich, Switzerland	P. de Bruyne ETH Zentrum-KT CH-8092 Zurich Switzerland Tel: (.411) 256-2792

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