



CAD/CAM

NEWSLETTER

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February 1985

Information Compiled by the CAD/CAM Technology Advancement Council*

1. Reference Issue for Sources of Information

As newsletter readers are aware, the January 1985 issue was organized to provide, as a special issue in reference form, a listing of the many sources available for information on CAD/CAM technology.

The January issue contained information on topics A-D as listed below.

- A - CAD/CAM Centres in Canada
- B - Canadian Organizations, both Regional and National
- C - Major Technical Societies
- D - Conferences for 1985

This issue for February continues with reference information collected on the following:

- E - Regularly Published Journals
- F - CAD/CAM Newsletters
- G - CAD/CAM Directories and Product Guides

It is expected to continue with a special listing of books on CAD/CAM in March and video tapes in April.

The information listed has been extracted primarily from past issues of the monthly CAD/CAM newsletter. Where prices or fees for material or conferences are shown they should be treated as a useful guide, but not necessarily current and subject to change without notice.

E - Regularly Published Journals

The following journals are either devoted to CAD/CAM technologies, or frequently contain a significant number of papers related to CAD/CAM technologies. For those published by the technical societies listed in the January 1985 CAD/CAM Newsletter, please refer, where necessary, to the addresses given therein for contact. In many cases, the journal referred to is received by society members as part of their membership fee, or may be obtained by separate subscription at rates usually in the \$30-\$60 range. Entries are grouped primarily by subject (CAD, Mechanical Engineering, Metalworking, Robotics, etc.) and also in approximate alphabetical order.

- "Automation News" To commence publication 18 times per year in tabloid newspaper format commencing March 14, 1983 with plans to become biweekly later in 1983. Both paid and unpaid circulation.

Contact: Automation News
160 East 47th Street
New York, New York 10017
U.S.A.
Telephone: (212) 223-0232

- "CAD/CAM and Robotics" A Canadian trade publication with inaugural issue published in June 1983. Currently published bimonthly. Articles on CAD/CAM management, economic justification, company case histories, product reviews and courses at educational institutions are regularly included plus mini-directories on occasion to CAD/CAM products and services.

Contact: Kerrwil Publications Ltd.
501 Oakdale Rd.
Downsview, Ontario
M3N 1W7
Telephone: (416) 746-7360

- "Commline - The Journal of Computerized Manufacturing" Published bi-monthly by Numeridex. Free of charge to qualified readers.

Contact: Commline
241 Holbrook Drive
P.O. Box 11000
Wheeling, Illinois 60090
U.S.A.
Telephone: (312) 541-9084

- "Computer" Published monthly by the IEEE Computer Society. Non-member prices on request.

Contact: IEEE Computer Society
10662 Los Vaqueros Circle
Los Alamitos, California 90720
U.S.A.

- "Computer Aided Design" An international journal published six times per year containing technical papers, state-of-the-art reviews, case studies, conference reports, etc. Subscription \$40 (U.S.) for individuals and \$196 (U.S.) for establishments.

Contact: Business Press International (USA)
205 East 42nd Street
New York, New York 10017
U.S.A.
Telephone: (212) 867-2080

- "Computer Aided Geometric Design" A new North-Holland quarterly international journal which commenced with four issues in Volume 1 in 1984. Subscription \$89.25 (U.S.) or Dfl 241 including surface-airlifted mail delivery to some countries, including Canada and U.S.A.

Contact: Elsevier Science Publishing Co. Inc.
Attn. Journal Information Center
52 Vanderbilt Avenue
New York, New York 10017
U.S.A.

- "Computer and Control Abstracts" A monthly publication produced by INSPEC. Published monthly by the Institution of Electrical Engineers (IEE) and the Institute of Electrical and Electronic Engineers (IEEE). Contains approximately 4000 reference titles and abstracts each month of which approximately 100 are in the CAD/CAM and robotics field and of which 20 are reproduced by permission each month in the CAD/CAM Newsletter. Subscription \$660 (U.S.).

Contact: Fulfillment Manager
Institute of Electrical and Electronic Engineers (IEEE)
445 Hoes Lane
Piscataway, New Jersey 08854
U.S.A.
Telephone: (201) 981-0060

- "Computers in Industry" An international journal on computer applications in industrial and technological processes, published quarterly by IFAC. Contains some papers on CAD/CAM in addition to many on process control and industrial computer applications.

Contact: North-Holland Publishing Company
52 Vanderbilt Avenue
New York, New York 10017
U.S.A.

- "Electronics" For a list of approximately twenty five publications recommended by the Ontario Centre for Microelectronics, dealing with CAD applied to both integrated circuits or printed circuit boards, see the CAD/CAM Newsletter, August 1984.

- "Finite Elements in Analysis and Design" A new quarterly international journal from North-Holland on applied finite elements and CAD/CAM commencing with Volume 1 in 1985. Emphasis is on structural, fluid and mechanical technologies. Subscription \$100.75 (U.S.), or Dfl 272.00 including air delivery to subscribers in U.S.A. and Canada.

Contact: Elsevier Science Publishing Co. Inc.
P.O. Box 1663, Grand Central Station
New York, New York 10163
U.S.A.

- "ACM Transactions on Graphics" Published quarterly. Two sections. Research Contributions and Practice and Experience. Members \$24 per year (U.S.), others \$65 per year (U.S.).

Contact: ACM Subscription Dept.
P.O. Box 9209
Church Street Station
New York, New York 10249
U.S.A.

- "IEEE Computer Graphics and Applications" Published monthly by the IEEE Computer Society.

Contact: IEEE Computer Society
10662 Los Vaqueros Circle
Los Alamitos, California 90720
U.S.A.

- Regular Publications from IFS

- "The Industrial Robot Journal" News, features and technical articles. Published quarterly, \$99 (U.S.) in North America.
- "Sensor Review" Covers all aspects related to manufacturing automation. Published quarterly, \$99 (U.S.) in North America.
- "The FMS Magazine" An international quarterly publication, \$99 (U.S.) in North America.
- "Assembly Automation" Includes robot assembly automation. Published quarterly, \$99 (U.S.) in North America.

Contact: IFS (Publications) Ltd.
35-39 High Street
Kempston, Bedford, England MK42 7BT
Telephone: (0234) 853605 Telex: 825489

- "Interfaces in Computing" A quarterly journal with an international advisory board publishes papers in English, French or German on topics concerning interfaces in computing. For example, material already covered has dealt with CAMAC, Ethernet, the Cambridge Ring and it is possible that papers on Factory Area Networks (FAN's) such as the General Motors Manufacturing Automation Protocol (MAP) and other CAD/CAM interface topics could be of future interest. Subscription rate is approximately \$85.75 (U.S.). Free sample copy available on request.

Contact: Journal Information Center
Elsevier Science Publishers
52 Vanderbilt Avenue
New York, New York 10017
U.S.A.
Telephone: (212) 867-9040

- "Transactions on Computer-Aided Design of Integrated Circuitry and Systems" Published quarterly by the IEEE.
- "Iron Age" Published 24 times by Chilton Company, a division of American Broadcasting Companies, Inc. Contains frequent articles on CAD/CAM and Manufacturing Systems. Canadian subscriptions \$42 (U.S.).

Contact: Iron Age
Chilton Company
Chilton Way, Radnor, PA 19089
U.S.A.

- "Canadian Machinery and Metalworking" Published monthly by Maclean Hunter Limited.

Contact: Canadian Machinery and Metalworking
Maclean Hunter Limited
Maclean Hunter Building
777 Bay Street
Toronto, Ontario
M5W 1A7
Telephone: (416) 596-5714

- "Computers in Mechanical Engineering (CIME)" Published bimonthly by the Computer Engineering Division of the American Society of Mechanical Engineers. Started in 1982, initially on a quarterly basis.

Contact: CIME
American Society of Mechanical Engineers
United Engineering Center
345 E 47 Street
New York, New York 10017
U.S.A.

- "Design Engineering" Published monthly by Maclean Hunter Limited.

Contact: Maclean Hunter (as above)

- "Engineering with Computers" A new international journal for computer-aided mechanical and structural engineering scheduled to begin publication January 1985. Subscription for volume 1 (4 issues) is \$74.00 (U.S.). Sample copy available on request.

Contact: D. Emin
Springer-Verlag New York, Inc.
175 Fifth Avenue
New York, New York 10010
U.S.A.

- "Mechanical Engineering" Published monthly by the ASME.
Contact: American Society of Mechanical Engineers
United Engineering Center
345 E 47th Street
New York, New York 10017
U.S.A.

- "IEEE Journal of Robotics and Automation" A new quarterly publication commencing in 1985. Available to IEEE members only, who are also members of an IEEE Society. Subscription \$10 (U.S.) for sponsoring society members and \$15 (U.S.) for members of other IEEE Societies.
Contact: IEEE Computer Society (as above)

- "The International Journal of Robotics Research" Published quarterly by the MIT Press commencing 1982. Contains research papers of high academic quality.
Contact: MIT Press Journals
28 Carlton Street
Cambridge, Massachusetts 02142
U.S.A.

- "Robotica" An international journal on robotics technology, including sensory perception, software, CAD/CAM systems, control, kinematics and dynamics involved in robot design. Published quarterly beginning in 1983 under the guidance of an editorial board of robotics technology leaders in North America, United Kingdom, Europe, Japan and elsewhere. Subscription rate \$110 (U.S.) for institutions and \$49.50 (U.S.) for individuals. For author's manuscript information or subscriptions,
Contact: Cambridge University Press
32 East 57th Street
New York, New York 10022
U.S.A.

- "Robotics" A quarterly publication from North-Holland with emphasis on international developments including market projections, and technology reviews. Applications cover manufacturing, including flexible manufacturing systems, as well as non-manufacturing areas. 1984 volume 1. Subscription (4 issues) \$100 (U.S.) plus \$8.40 (U.S.) postage.
Contact: Elsevier Science Publishing Co. Inc.
P.O. Box 1663
Grand Central Station
New York, New York 10163
U.S.A.

- "Robotics Technology Abstracts" A monthly publication entitled "Robotics Technology Abstracts", produced by Britain's Cranfield Institute of Technology, now available in North America from Tech Tran Corp. Provides summaries of important robotics information contained in technical and professional journals, trade publications, business magazines, conference proceedings, new product announcements, and special reports. The information comes from worldwide sources and, in many cases, the original documents have not been translated into English.

Contact: Tech Tran Corp.
134 North Washington Street
Naperville, IL 60540
U.S.A.
Telephone: (312) 369-9232

- Publications of the SME and affiliates

- "CIM Technology" Formerly called "CAD/CAM Technology". Published quarterly by CASA/SME.
- "Manufacturing Engineering" Published monthly by the SME.
- "Journal of Manufacturing Systems" Published biannually by SME and CASA/SME.
- "Robotics Today" Published bimonthly by RI/SME.
- "SME Newsletter" Published quarterly by the SME.
- "SME Technical Report" Published quarterly by the SME. Contains abstracts for all new SME Technical Papers. In addition the SME publishes many conference proceedings and books such as those in its Manufacturing Data Series.

Contact: Society of Manufacturing Engineers (SME)
One SME Drive, P.O. Box 930
Dearborn, MI 48121
U.S.A.
Telephone: (313) 271-0777

- F - CAD/CAM Newsletters

Reproduced from the January 1984 newsletter plus updates where new information has been received.

- "A-E-C Automation Newsletter" A subscription newsletter analyzing and reporting developments in automation for architects, engineers and constructors. Subscription for 12 issues per year \$96 (U.S.) by first class mail in U.S.A., Canada and Mexico.

Contact: A-E-C Automation Newsletter
7209 Wisteria Way
Carlsbad, California 92008
U.S.A.
Telephone: (619) 438-1595

- "Automation Microfiche Package" A new subscription service available from NTIS. Provides complete copies in microfiche form of current reports dealing with automation and computer technology for productivity improvement and manufacturing activities. Issued every two weeks. Approximately 110 reports per year.

Contact: Selected Research in Microfiche (SRIM)
National Technical Information Service (NTIS)
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
U.S.A.
Telephone: (703) 487-4640

- "CAD/CAM Alert" A state-of-the-art monthly news and information publication, guided by an extensive editorial board. Subscription \$232 (U.S.) per year.

Contact: The Management Roundtable, Inc.
822 Boylston Street
Chestnut Hill, Mass. 02167
U.S.A.
Telephone: (617) 232-8080

- "CAD/CAM Digest" A bimonthly publication with information on user applications, new product announcements and conference listings. Subscription \$40 (U.S.) in U.S.A. and Canada including postage.

Contact: CAD/CAM Publications Ltd.
170 Park Road
Peterborough, England PE1 2UF

- "CAD/CAM Management Strategies" A 300 page looseleaf reference publication that is updated monthly with information on industry trends, costs, benefits analysis and strategic planning information on CAD/CAM \$125 (U.S.).

Contact: Auerbach Publishers, Inc.
6560 North Park Drive
Pennsauken, New Jersey 08109
U.S.A.
Telephone: (609) 662-2070

- "CAD/CAM Newsletter" A monthly newsletter initiated in 1979 by the CAD/CAM Technology Advancement Council. Includes CAD/CAM abstracts selected from world literature plus information and conference listings. Available on request.

Contact: Secretariat
CAD/CAM Technology Advancement Council
Office of Industrial Innovation (5C)
Department of Regional Industrial Expansion
235 Queen Street
Ottawa, Ontario
K1A 0H5
Telephone: (613) 995-3741

- "Computer Aided Design and Manufacture" A monthly newsletter describing new systems available, systems applications, research and development, events, courses and meetings under the guidance of an international advisory board. Subscription £110 in U.K.

Contact: Oyez Scientific and Technical Services Ltd.
Bath House
56 Holborn Viaduct
London, EC1A 2EX, England

- "CAM/CAM News" A quarterly newsletter of abstracts, news and database changes.

Contact: CAE Database Controller
The National Computing Centre (NCC)
Oxford Road
Manchester, England M1 7ED

- "CICS Bulletin" Newsletter issued approximately four times per year to members of the Canadian Industrial Computer Society. Contains short technical reviews, notices, etc. concerning industrial computer systems, which includes sensor based process control systems, CAD/CAM and other application areas.

Contact: CICS Secretariat
12 Kindle Court
Ottawa, Ontario
K1J 6E2

- "CIM Newsletter" Produced on occasion by the Canadian Institute of Metalworking.

Contact: Shannon Kyles
Canadian Institute of Metalworking
1276 Sandhill Drive
P.O. Box 7317
Ancaster, Ontario
L9G 3N6
Telephone: (416) 648-5011

- "Flexible Automation - The Newsletter of Automated Systems"

"Flexible Automation" is a monthly newsletter that covers programmable production and assembly equipment plus the hardware and software that ties them together. Typical issues contain approximately eight pages of industry news on developments in flexible automation systems, CAD/CAM, robotics plus publications available, seminars and workshops. Subscription \$144 (U.S.) annually.

Contact: Flexible Automation
P.O. Box 175
Ho-Ho-Kus, New Jersey 07423
U.S.A.
Telephone: (201) 652-4464

- "IM Report" A bimonthly report on integrated manufacturing published by the Association for Integrated Manufacturing Technology (formerly the Numerical Control Society). Contains short articles, association news, reports available, etc.

Contact: Association for Integrated Manufacturing Technology
111 E. Wacker Drive, Suite 600
Chicago, Illinois 60601
U.S.A.
Telephone: (312) 644-6610

- "Manufacturing Productivity Frontiers"

A publication "Manufacturing Productivity Frontiers" is issued on a regular monthly basis by the Manufacturing Productivity Center of the Illinois Institute of Technology (IIT). The Manufacturing Productivity Centre (MPC) is dedicated to helping United States industry increase its productivity. While productivity is the responsibility of individual companies - they succeed or fail based on their own efforts - the MPC provides participants with information and motivation to help direct their efforts toward productivity gains.

The monthly publication, typically of 50-60 pages, contains feature articles, reviews and previews of meetings such as CAD/CAM and robotics conferences, short articles, book and journal reviews, abstracts of current literature and a meeting's calendar. Annual subscription rate to points outside the U.S.A. is \$150 (U.S.) for the first subscription and \$100 (U.S.) for each additional subscription to the same address.

Contact: Manufacturing Productivity Frontiers
Manufacturing Productivity Center
IIT Center, 10 West 35th Street
Chicago, Illinois 60616
U.S.A.
Telephone: (312) 567-4808

- "Ontario CAD/CAM Educators Newsletter" A bimonthly newsletter for which an annual membership fee of \$15 is charged to cover mailing costs, etc. Advises readers of new developments, conferences, and workshops.

Contact: Elizabeth Bond
Sheridan College
McLaughlin Road
Box 7500
Brampton, Ontario
L6V 1G6
Telephone: (416) 459-7533 Ext. 331

- "Industrial Robots International" A twice monthly newsletter entitled "Industrial Robots International", reporting on the use of robots in manufacturing, is available at a subscription price of \$192 (U.S.).

Contact: Technical Insights, Inc.
158 Linwood Plaza
P.O. Box 1304
Fort Lee, New Jersey
U.S.A.
Telephone: (201) 944-6204

- "Robotech Japan" A monthly newsletter describing the latest developments in Japan's robot industry including in-depth coverage of new Flexible Manufacturing System (FMS) developments. Annual subscription \$500 (U.S.).

Contact: Topika, Inc.
Nagatani Building
7-17-5 Ginza, Chuo-Ku
Tokyo, 104, Japan

- "The Robotics Report" A monthly newsletter on international trends and developments in robotics and automation. Covers new developments in the commercial, education, training, research and development fields. Annual subscription \$186 (U.S.).

Contact: The Robotics Report
Robotics Research and Consulting Services (R.R.C.S.)
P.O. Box 1291
Mountain View, California 94042-1291
U.S.A.

- "SACDA Process Simulation Newsletter" Distributed by SACDA to inform users and potential users of improvements and changes in SACDA computer programs. Oriented primarily to design and analysis of chemical process, flow sheet and energy conversion processes.

Contact: Systems Analysis, Control & Design Activity (SACDA)
Engineering Science Building
The University of Western Ontario
London, Ontario
N6A 5G9
Telephone: (519) 679-6570

- "SIGDA Newsletter" Published quarterly by the Association for Computing Machinery (ACM), Special Interest Group on Design Automation (SIGDA).

Contact: Association for Computing Machinery
11 West 42nd Street
New York, New York 10036
U.S.A.

- "S. Klein Newsletter on Computer Graphics" A twice monthly newsletter continuing from the previous Harvard Newsletter on Computer Graphics. Annual subscription \$155 (U.S.) plus \$35 (U.S.) for postage outside the U.S.A.

Contact: The S. Klein Newsletter on Computer Graphics
c/o Technology & Business Communications Inc.
730 Boston Post Road
Subscription Department, P.O. Box 89
Sudbury, Massachusetts 01776
U.S.A.

G - CAD/CAM Directories and Product Guides

The following items are based on the most recent information available to the newsletter editor. When obtaining material from the sources indicated, it is recommended that readers enquire if similar but more recent publications are available.

Reference Guide to CAD/CAM and Robotics Centres

A "Reference Guide to CAD/CAM and Robotics Centres" is in preparation and is planned to be available in publication form from the National Research Council about May 1985. The publication will provide an index and guide for managers and technical personnel in industry to the CAD/CAM and Robotics development and information centres in Canada, and to some similar centres in the U.S.A. on a selected basis. The publication will also be useful for the coordination of activities between the various centres in Canada. The Canadian centres, mostly established for regional delivery of information on CAD/CAM technology, including robotics, have both similarities and differences in their abilities and approach.

Contact: M. Zevy
Room 269-P, Building M-55
National Research Council
Montreal Road
Ottawa, Ontario
K1A 0R6

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- CAD/CAM Products and Services in Canada A directory of companies and organizations providing CAD/CAM products and services in Canada. Information compiled in 1981, 50 pp. Available in French or English. No charge. An updated edition is in preparation and planned to be available mid-1985.

Contact: Office of Industrial Innovation (5C)
Department of Regional Industrial Expansion
235 Queen Street
Ottawa, Ontario
K1A 0H5

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- "Directory of CADD Suppliers in Canada"

A comprehensive tabular directory to suppliers of Computer Aided Design and Drafting Systems (CADD) has been prepared by Canadian consultant R. Mackay and published in Canadian Consulting Engineer, Dec. 1984 (pp. 20, 22-23, 26-27, 30-46). Approximately 43 systems suppliers are listed with system hardware and software features, application areas, price range, principal address of the supplier and indication of the suppliers technical and sales support locations in other cities across Canada. A separate tabulation lists approximately 17 suppliers for CADD on a systems software or service basis.

Systems are now available in a continuous price range from under \$10,000 (using personal computers) to those with complete engineering and drafting capabilities in the \$150-\$200,000 range and up.

Contact: Canadian Consulting Engineer
1450 Don Mills Rd.
Don Mills, Ontario M3B 2X7
Telephone: (416) 445-6641

- Mini Directory The Canadian publication "CAD/CAM and Robotics" regularly publishes a mini-directory of CAD/CAM suppliers, CAD/CAM educational centres, etc.

Contact: CAD/CAM and Robotics
Kerrwil Publications Limited
501 Oakdale Road
Downsview, Ontario
M3N 1W7
Telephone: (416) 746-7360

- Annual NC Census The publication "Canadian Machinery and Metalworking" publishes an annual survey of NC machine tool installations in Canada, normally in their March issue. The survey lists user installations by company and location plus the make and model of equipment used. The survey was expanded in 1983 to include CAD/CAM, Robotics, and Flexible Manufacturing Systems.

Contact: Canadian Machinery and Metalworking
Maclean-Hunter Publishing Company
777 Bay Street
Toronto, Ontario
M5W 1A7

- "A Tutorial Guide to CAD/CAM, CAE Systems" A survey and buyer's guide to turnkey CAD/CAM computer graphics in these volumes as follows:

Part 1 - "CAD/CAM, CAE: The Contemporary Technology". 252 pages, 1984, \$127 (U.S.). Describes workstations, displays, plotters, etc.

Part 2 - "CAD/CAM, CAE: Evaluating Today's Systems". 120 pages, 1984, \$99 (U.S.). Describes system justification, training, purchasing.

Part 3 - "CAD/CAM, CAE: Survey, Review and Buyer's Guide". 540 pages, 1984, \$368 (U.S.). Provides comparative tables and charts of market statistics and description of vendor companies.

Contact: Daratech, Inc.
P.O. Box 410
Cambridge, Mass.
U.S.A.
Telephone: (617) 354-2339

- "The Computer Graphics Work Stations Market in the U.S." Frost and Sullivan report #1029 states that revenues from hardware, software and related services will grow from \$2.5 billion in 1982 to \$6.9 billion in 1986 and \$19 billion in 1990. The 289 page report identifies three principal application areas; business graphics, CAD/CAM and process control. Report #1029, price is \$1275 (U.S.).

Contact: Frost and Sullivan, Inc.
106 Fulton Street
New York, New York 10038
U.S.A.
Telephone: (212) 233-1080

- "CAD/CAM Presentation Resource Guide" A 400 page guide to suppliers of CAD/CAM systems, group technology, computer aided process planning, NC, manufacturing management systems, robotics and automated storage and retrieval systems. Includes a matrix of nearly 140 CAD/CAM system attributes compared to the equipment features of over 40 CAD/CAM system suppliers. Price \$125 (U.S.).

Contact: University of Texas
Arlington, Texas 76019
U.S.A.
Telephone: (817) 273-2011

- "CAD/CAM Productivity Equipment Series" A 785 page soft cover index to manufacturers' products giving manufacturer, address, product description, photographs, product features, etc. Covers Computer-Aided Design and Drafting Systems, CAD/CAM Systems, Graphics Systems, NC Tape Preparation Systems, Plotters, Digitizers, etc. Order Code #782. SME members \$41 (U.S.), Non-members \$46 (U.S.).

Contact: Publication Sales
Society of Manufacturing Engineers
One SME Drive, P.O. Box 930
Dearborn, Michigan 48121
U.S.A.

- "FACE Report No. 5 - Computer Aided Designing" A report listed in a recent issue of the Ontario CAD/CAM Educators Newsletter and recently published by FACE (The International Federation of Computer Users in Engineering, Architecture and Related Fields). The report, available for \$250 (U.S.), is a guide to the purchasing and introduction of CAD equipment. The systems tested by 8 engineering firms, industrial organizations and research institutions are:

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|-----------------------|------------------------|
| 1. ANVIL 4000-L | 6. EIDS |
| 2. APPLICON | 7. EUCLID |
| 3. CABLOS VMI/MEDUSSA | 8. INTERGRAPH |
| 4. CADAM/CATIA | 9. KONGSBERG CDM 300 |
| 5. COMPUTERVISION | 10. MCAUTO UNIGRAPHICS |

Contact: FACE Secretariat
576 St. Kilda Rd.
Melbourne 3004
Australia

- "The PC Software and Systems Directory for Computer-Aided Engineering" A directory of products and applications for Computer Aided Engineering implemented on personal computers. Lists 40 applications on 25 types of PC. \$99 (U.S.). Published January 1985.

Contact: CAD/CAM ALERT
The Management Roundtable, Inc.
824 Boylston Street
Chestnut Hill, MA 02167
U.S.A.
Telephone: (617) 232-8080

- "Computer Graphics Software and Services - 1088" A 1982 survey report for computer graphics software and services. Market is projected to increase 30-40% annually through the decade with the computer graphics software market expanding from \$70 million in 1981 to \$230 million in 1982, one billion in 1987 and \$2.5 billion at the close of the decade. Software market growth in CAD/CAM is projected at 40-66% annually, 243 pp., \$1250 (U.S.).

Contact: Frost & Sullivan
106 Fulton Street
New York, New York 10038
U.S.A.
Telephone: (212) 233-1080

- "The S. Klein Directory of Computer Graphics Suppliers" The 1984-85 edition of this reference publication describing vendor systems; component hardware, software, turnkey and time-shared systems is available, 130 pp., \$60 (U.S.), postage included.

Contact: S. Klein Directory of Computer Graphic Suppliers
730 Boston Post Road, Suite 27
Sudbury, MA 01776
U.S.A.
Telephone: (617) 443-4671

- "Factory of the Future" Report No. E82 - A market study and forecast report with statistics from 1967 to 1982 for factory automation including machine tools and controls, manufacturing computers, CAD/CAM systems and robots plus projections for the period 1982-87 and 1987-95. Spending for factory automation, which accounted for .56 of GNP in 1967 had reduced to .24% by 1982, with total sales in 1982 less than \$7.5 billion. Total sales should reach nearly \$15 billion by 1987 and growth rate of 15%. The market for CAD/CAM design and drafting, systems has reached \$1 billion annual sales with 25% annual growth projected to 1987. Annual growth rate for programmable controllers of 31% is forecast with sales progressing from \$213 million in 1982 to \$830 million in 1987. The robotics market is reported to have reached \$190 million by 1982 with a 36% annual increase projected until 1987 when sales will approach \$1 billion. Machine tools and controls at \$4 billion equipment sales represented 53% of the total \$7.5 billion market in 1982. Cost of the report is \$1400 (U.S.).

Contact: Predicasts Inc.
11001 Cedar Avenue
Cleveland, Ohio 44106
U.S.A.
Telephone: (800) 321-6388

- "CAD/CAM Markets" A market survey for turnkey CAD/CAM systems. Predicts that mechanical systems will continue to dominate the global market for U.S. manufactured systems, e.g. 1985 sales of \$775

million for 45 percent of the total market, up from 37 percent in 1977 and projected to reach 54 percent in 1995 when the total projected market will be \$12 billion. The architecture, engineering and construction (AEC) segment is the fastest growing, expanding from \$275 million in 1983 to over \$1 billion by the end of the decade. Twenty-six companies are reported to have 95 percent of the market in 1983, led by IBM and Computervision at 86 percent, while some 70 companies struggle for the remaining 5 percent. Report No. E93, 111 pages. Price \$1300 (U.S.).

Contact: Predicasts, Inc. (as above)

- Guide to Robotics Literature

A new guide to current robotics literature is available, without charge, from the Robotic Industries Association (RIA). Known as the RIA Publications Catalog, the guide provides descriptions, photos, and ordering information for ten titles of interest to those in the robotics field.

Contact: Robotic Industries Association (RIA)
P.O. Box 1366
Dearborn, Michigan 48121
U.S.A.
Telephone: (313) 271-7800

- "Industrial Robots" An addition (January 1983) to the SME Productivity Equipment series. A 400 page compilation of specifications and drawings from over 60 manufacturers. Includes sections on accessories, control systems, vision systems and consultants, \$31 (U.S.), for SME members \$36 (U.S.) for non-members, plus \$1.25 (U.S.) for postage and handling.

Contact: Publication Sales
Society of Manufacturing Engineers
One SME Drive, P.O. Box 930
Dearborn, Michigan 48121
U.S.A.

- "Industrial Robots: A Delphi Forecast of Markets and Technology" Presents the consensus opinion of an expert panel of engineers and managers from both users and producers of industrial robots, 230 pp., soft cover. Price SME members \$50 (U.S.), non-members \$65 (U.S.) plus \$1.25 (U.S.) for postage and handling in each case.

Contact: Society of Manufacturing Engineers (as above)

- "The International Robotics Industry Directory" Edited by P.C. Flora, 1984, 386 pages. Includes comparison and detailed data on models, specifications, price, warranty, etc. from robot manufacturers plus robot components, peripherals and a list of consultants. Price approximately \$60 (U.S.).

Contact: T.D.B.C.
P.O. Box 720
Conroe, Texas 77305
U.S.A.

- "Robotics in Industry" A series of five reports on industrial robot applications for foundries, assembly, metal fabrication, the plastics industry and general applications. \$65 (U.S.) for each of the first five reports. Available separately. 10% reduction on orders of 3 or more.

Contact: Technical Insights
P.O. Box 1304
Fort Lee, New Jersey 07024
U.S.A.

- "Robots in Industry - Applications for the Electronics Industry" Robot applications in the electronics industry are expected to grow rapidly based on advances in machine vision, the development of precision robots and application development. The 196 page report reviews the subject in 15 chapters, focussing on robot technology, assembly of electronic products, printed circuit board handling, drilling, component insertion, inspection and testing, etc. Price \$125 (U.S.).

Contact: Technical Insights, Inc. (as above)
Int'l Telex No. 230199 SWIFT UR T.1.1

- "Intelligent Robots" A 200 page report prepared by Technical Insights in cooperation with the SEAI Institute in Georgia, 200 pages. 18 chapters covering robot control systems, robot vision, tactile sensing, speech recognition, artificial intelligence, commercially available robot models, application reviews and future trends. Price \$185 (U.S.).

Contact: Technical Insights, Inc. (as above)

- "Machine Vision for Robotics and Automated Inspection" A three volume 350 page report dealing with machine vision as related to automated inspection and industrial robot applications. Volume I deals with solid state cameras, computer interfacing and imaging techniques. Volume II covers specific industrial applications. Volume III provides a detailed description of all known and available commercial systems. Price \$350 (U.S.).

Contact: Technical Insights, Inc. (as above)

- "Industrial Robots" A survey of foreign and domestic U.S. patents from 1969-March 1982. Describes 212 patents held by the U.S.A. (108), Japan (52), West Germany (13), Sweden (12), France (11), Italy (8) and others. Report order includes complete text and drawings of all 212 patents in microfiche form. \$95 (U.S.) for U.S.A. and Canadian orders.

Contact: National Technical Information Service (NTIS)
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
U.S.A.
Telephone: (703) 487-4650

- "A Survey of Industrial Robots" J.J. Allan III. Presents information on robot technology, vendor equipment and features. \$146 (U.S.) including postage and handling.

Contact: Leading Edge Publishing, Inc.
P.O. Box 8100
Suite 217, 5622 Dyer Street
Dallas, Texas 75205
U.S.A.
Telephone: (214) 696-0687

- "1983 Robotics Industry Directory" A 228 page directory of industrial robots, components and peripherals available from equipment suppliers is available at a listed Canadian price of \$37 (U.S.).

Contact: Robotics Industry Directory
P.O. Box 725
La Canada, California 91011
U.S.A.

- "The International Robotics Yearbook, 1983-1984" A comprehensive compendium describing research and development activities underway in academic and industrial research establishments worldwide. For information on availability, or to submit entries (for which there is no charge),

Contact: K. White, Information Editor
Kogan Page Ltd.
120 Pentonville Road
London N19 JN
England

- "Robotics Study" A "Robotics Study" report is available with over 100 pages of facts, figures and an in-depth analysis of the industry including company profiles of the leading manufacturers. Report cost \$300 (U.S.).

Contact: Dun & Bradstreet Credit Services
99 Church Street
New York, New York 10007
U.S.A.
Telephone: (212) 285-7416

Contact: Interfama FTE Ltd.
No. 1105, 11th Floor
World Trade Centre
1 Maritime Square
Singapore 0409
Republic of Singapore

- "Machine Intelligence" A new bibliography on contact and noncontact sensors is now available from IFS (Publications) Ltd. and Springer-Verlag. Entitled Machine Intelligence, the 240 page book contains approximately 1400 references with abstracts.

The book documents international R&D efforts in the research and production arenas over the past 10 years. Selections were made from major conferences and journals. Applications of sensors in the aerospace, automotive, electronics, steel, nuclear, and manufacturing industries are discussed. Applications in such process areas as assembly, inspection, production engineering, welding and fabrication and finishing are also reviewed.

Contact: IFS (Publications) Ltd.
35-39 High Street
Kempston, Bedford, England MK42 7BT
Telephone: (0234) 853-605 Telex: 825-489

or

Springer-Verlag New York Inc.
P.O. Box 2485
Secaucus, New Jersey 07094
U.S.A.

- "Solid Modeling: A State-of-the-Art Report" An in-depth comparison and benchmarking of currently available solids modeling systems authored by Bob Johnson, 270 pp., \$395 (U.S.). See also CAD/CAM Alert, Nov. 1984 for a tabular comparison of the strengths and weaknesses of many systems, including McAuto (UNISOLIDS), Applicon (SOLIDS MODELING II), MAGI (Synthavision), Matra Datavision (EUCLID), Prime Computer (MEDUSA) and others. Information is based on a new, additional, report in preparation.

Contact: CAD/CAM ALERT
The Management Roundtable, Inc.
824 Boylston Street
Chestnut Hill, MA 02167
U.S.A.
Telephone: (617) 232-8080

- "Automated Guided Vehicle Systems" A 111 page report published by Technical Insights in cooperation with the SEAI Institute in Georgia. Automated Guided Vehicle Systems (AGVS) are now being used in production line functions and flexible manufacturing systems as well as automated warehousing. Twenty-five manufacturers are listed with addresses and telephone numbers in the U.S.A. Price \$85 (U.S.).

Contact: Technical Insights
P.O. Box 1304
Fort Lee, New Jersey 07024
U.S.A.

2 - CAD/CAM Courses, Seminars, Workshops
(additions to the list presented in the January CAD/CAM Newsletter)

- CAM/CAM Courses at CATE

The Center for Advanced Technology Education (CATE) at Ryerson Polytechnical Institute in Toronto has a number of courses available which are especially designed to give managers a "hands-on" appreciation for the material presented.

<u>Course Name</u>	<u>Duration</u> <u>Days</u>	<u>Dates</u> <u>Offered</u> (1985)	<u>Fee per</u> <u>Session</u>
<u>CIM</u> - A Management Perspective. Focus is on management perspectives	1	Mar 7 Apr 3 May 13	\$200
<u>CAD-CID</u> - Computer Aided Design Computer Integrated Design. Focus is on various system capabilities	4	Feb 5-8 Apr 16-19	\$800
<u>Robotics</u> - Focus is on application requirements and robot operation	3	Mar 26-28 June 18-20	\$600
<u>Microcomputers</u> as Productivity Tools in Manufacturing	3	Mar 19-21 June 11-13	\$600
<u>Databases</u> in Computer Integrated Manufacturing	3	Feb 19-21 June 4-6	\$600
<u>MRP</u> - Introduction to Inventory Management and Manufacturing Resource Planning	4	Mar 12-15 May 21-24	\$800
<u>Simulation</u> - Computer Simulation of Manufacturing Systems	3	June 25-27	\$600
<u>Networking</u> in the Manufacturing Environment. Focus is on Local Area Networks (LAN) in Manufacturing	3	May 14-16	\$600
<u>Vision</u> Systems - Focus is on inspection and robot guidance	3	Mar 12-14 May 28-30	\$600
<u>Financial</u> Planning for Computer Integrated Manufacturing	2	Apr 10-11	\$400
<u>CAE</u> - Computer Assisted Engineering	4	Apr 30- May 3	\$800

Contact: Dr. Joanne Harack Hayne
Centre for Advanced Technology Education
Ryerson Polytechnical Institute
350 Victoria Street
Toronto, Ontario M5B 2K3
Telephone: (416) 979-5106

- "Production Planning and Inventory Management"
April 1-3. Canadian Management Centre - Toronto

A three day course with W.H. Tallman of Emerson Consultants New York as the principal and course leader. Includes Just in Time (KANBAN) Methodology and Computerizing of Production Planning and Inventory Control Systems. Fee (member) \$860. Non-members \$990.

Contact: Canadian Management Centre of AMA/International
100 University Avenue
Suite 303
Toronto, Ontario M5J 9Z9
Telephone: (416) 593-4600

- "AIM TECH 22 Conference and Exposition"
May 14-17, 1985. Sheraton St. Louis - St. Louis, Missouri

Annual Conference and Exposition of the Association for Integrated Manufacturing Technology (formerly the Numerical Control Society).

Contact: Lisa Schultz
AIM TECH 22
111 E. Wacker Dr., Suite 600
Chicago, Illinois 60601
U.S.A.
Telephone: (312) 644-6610

- "1985 SME World Congress on the Human Aspects of Automation"
Sept. 9-12, 1985. Boston, Massachusetts.

Call for papers has been issued with an abstract submission deadline of March 15, 1985. Must give paper title, abstract of 100 words or less and complete author identification. To submit abstracts or request future conference information.

Contact: Argenia C. Ford
Technical Activities Department
Society of Manufacturing Engineers
One SME Drive, P.O. Box 930
Dearborn, Michigan 48121
U.S.A.
Telephone: (313) 271-1500 Ext. 355

- Electronics and Microprocessor CAD Courses

The Ontario Centre for Microelectronics offers many courses in their "1985 Course Calendar" which cover Printed Circuit Board, LSI, VLSI design plus microprocessor hardware, software and interfacing. Courses are given in various cities including Toronto, London, Windsor and St. Catherines as well as Ottawa.

Contact: Ontario Centre for Microelectronics
Suite 400, 1150 Morrison Drive
Ottawa, Ontario K2H 9B8
Telephone: (613) 596-6680

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Please note that requests for additions, deletions or changes to the newsletter distribution list should normally be directed to the secretariat.