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Announcements

1986 SCS MULTICONFERENCE

(Bahia Hotel, San Diego, California; January 23–25, 1986).

1. *Modeling and simulation on microcomputers*

The objective of this fifth annual conference is to provide opportunities for presentation of new advances and applications in this field. Areas of interest include:

- Practical applications of modeling and simulation on microcomputers in business, engineering, finance, industry, ecology, medicine and science
- Software and hardware products intended to promote simulation on microcomputers. Included would be special modeling packages and computers intended specifically for simulation.
- Tutorials describing methods that can be used on microcomputers and packages that will run on microcomputers.
- Languages, methodologies, statistical packages, and other tools intended for use in modeling and simulation on microcomputers.

2, *Conference on continuous system simulation languages*

This conference will focus on this type of language, numerical techniques on which they are based, as well as interesting and important applications.

3. *Intelligent simulation environments*

Areas envisaged:

- User friendly simulation environments
- Knowledge based simulation systems
- Artificial intelligence applied to simulation environments.

Papers of special interest will describe models that (1) have many symbolic processes, (2) use heuristic search, (3) have a command structure separate from the knowledge domain, (4) have expertise built into the model so that decisions by the user would be minimized.

4. *Aerospace simulation*

This conference will bring together practicing engineers, scientists, and educators who are using computers in aerospace applications. The format will closely resemble the successful '84 conference. Five main topics will be highlighted: aircraft (military and commercial), rotorcraft, missiles, space structures and spacecraft. Different aspects of modeling such as hardware-in-the-loop, research/design, test and evaluation and mission rehearsal will be covered in this conference.

Computers described in the technical program vary from micros to array processors, parallel processing systems to large digital main frames and hybrid computers.

For more information call or write SCS, P.O. Box 17900, San Diego, CA 92117-7900; (619) 277-3888. (USA)

FIFTH SME CONFERENCE AND EXPOSITION ON TOOL AND MANUFACTURING ENGINEERING

(Charlotte, North Carolina; January 28–30, 1986).

The event, at the Convention Center in downtown Charlotte, will update Charlotte and South Atlantic-area manufacturing engineers and managers on advances in metalworking production technologies and improved management methods leading to increased productivity and product quality.

Charlotte, for years a leading Society of manufacturing engineers (SME) show site, is the center of a 12-county area known as Metrolina. Besides being a principal manufacturing locale, Charlotte also serves as the area's financial, distribution, and transportation center. According to statistics, 30,000 persons work in more than 200 metalworking facilities within a two-hour driving radius of the city.

The Charlotte exposition will consist of demonstrations of computer-run machine tools and related metalworking technologies, automated systems, and other equipment important to area industry. Some 200 equipment manufacturers and other exhibitors are expected to participate, SME said. With the show still five months away, more than 145 companies have already reserved space on both levels of the Convention Center, with new space requests arriving daily.

Among Charlotte and North Carolina-based firms holding large exhibit spaces are Deaderick & Royster Inc., Rudel Machine Co. Inc., and J & H Machine Tools, Inc., all of Charlotte; Price Equipment Co., Monroe; Machine Tools Inc., Huntersville; and Jeffrey's Engineering & Equipment Co., Greensboro.

The American Machine Tool Distributors' Association (AMTDA) will be participating in SME's Charlotte show with special promotion to its members.

Exposition hours at the Charlotte Convention Center will be 11:00 AM to 8:00 PM on Tuesday and Wednesday, January 28–29; and 11:00 AM to 5:00 PM on Thursday, January 30.

Running alongside the show, the SME technical conference (at the nearby Radisson Plaza Hotel) will feature day-long workshops and half-day technical sessions discussing new manufacturing methods and equipment. Complete details will be announced in mid-October, SME said.

Charlotte last hosted an SME tool and manufacturing conference and exposition in March 1984. Attendance totalled 8,800. Over 9,000 attendees from throughout the Carolinas, Virginia, and other states are expected, SME show officials note. SME has held events in Charlotte since 1977.

For complete attendance information on SME's 1986 Charlotte Tool & Manufacturing Engineering Conference and Exposition, contact the Public Relations Department, Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, Michigan 48121, Tel. (313) 271-0777 (USA).

For exhibiting details, contact William Yeates, Exhibits Development Manager at SME, Telephone (313) 271-0023 (USA)

SEVENTH INTERNATIONAL CONFERENCE ON ASSEMBLY AUTOMATION (ICAA-7)

(Zurich, Switzerland); February 4–6, 1986)

The 7th ICAA takes place in Zurich, Switzerland, alongside the world renowned Industrial Handling Show 1986. Earlier conferences in this international series have been held alongside major exhibitions, but this is the first time the conference has been held in Switzerland and it is hoped to attract new participants both as speakers and delegates.

Previous ICAA events have been held in the UK, West Germany, France and Japan and with each venue increased momentum is given to the technical programme so that a truly international participation is assured.

Assembly automation is a rapidly expanding area of technology; 7th ICAA will provide a forum for world experts to outline current state-of-the-art and future potential. A series of technical visits will be organised to complement the technical programme.

The conference will cover all aspects of automation in assembly and has as its principal theme the increased flexibility automated assembly can offer.

- product and component design for assembly
- flexible versus dedicated assembly
- assembly processes (including fastening)
- systems – flexible assembly cells
  – flexible assembly lines
- management of assembly systems
- system planning and design
- effect of new materials
- control and management of information
- planning, cost accounting and simulation for computer-supported assembly systems
- equipment – high speed, high accuracy robots for assembly; control systems; flexible transportation systems (AGVS and conveyors)
- sensory aided assembly
- role of artificial intelligence in assembly
- integrated inspection and testing
- feeding and orienting
- economic justification
- social implications
- safety
- basic and advanced training in assembly techniques

Enquiries to: Conference Manager (ICAA-7), IFS (Conferences) Ltd, 35–39 High Street, Kempston, Bedford MK42 7BT, England. Tel: (0234) 853605 Telex: 825489

MANUFACTURING PRODUCTIVITY CONFERENCE EXPOSITION (BY SME)

(Orlando, Florida; February 11–13, 1986).

The event, at the Orlando Expo Center in downtown Orlando's Centroplex, will update Florida-based manufacturers, plant maintenance engineers, and managers on advances in metalworking production technologies, plant engineering concepts, and improved management methods leading to improved productivity and product performance.

Orlando, a growing "Sunbelt" manufacturing locale, is home to several large manufacturing, computer, service, design, and defense/aerospace firms.

The Orlando exposition will consist of demonstrations of computer-run machine tools and related metalworking equipment, automated production systems, plant maintenance equipment, material handling devices, inventory control systems, energy and environmental control systems, site security/protection equipment, and other technologies important to area industry. Some 75–100 equipment manufacturers and other exhibitors are expected to participate, SME said. So far, more than 55 companies have reserved space at the Expo Center, with new space assignments being made daily.

Among Orlando and Florida-based firms holding large exhibit spaces are McKechnie Machinery, Longwood; DTC/Omnitech Machine, Hialeah; Moore Industrial Tooling, Orlando; and VP Precision Equipment, Longwood.

Exposition hours at the Orlando Expo Center will be 11:00 AM to 8:00 PM on Tuesday and Wednesday, February 11–12; and 11:00 Am to 5:00 PM on Thursday, February 13.

Running alongside the show, the SME technical conference will feature day-long workshops discussing new manufacturing methods and equipment. Complete details will be announced in late October, SME said.

Orlando last hosted an SME conference and exposition in January 1985. Attendance totalled over 2,600. More than 3,000 attendees from throughout Florida are expected to attend the 1986 edition, SME show officials note. SME held other events in Orlando in 1984 and 1976. The event is now annual.

For complete attendance information on SME's 1986 Orlando Manufacturing Productivity Conference and Exposition, contact the Public Relations Department, Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, Michigan 48121, Tel. (313) 271-0777.

For exhibiting details, contact William Yeates, Exhibits Development Manager at SME, Telephone (313) 271-0023 (USA).

HOUSTEX CONFERENCE AND EXPO, ON AUTOMATED AND MANUFACTURING OF METALWORKING TECHNOLOGIES

(Houston, Texas; February 18–20, 1986).

Sponsored jointly by the Society of Manufacturing Engineers (SME) and the Houston Chapter of the National Tooling & Machining Association (NTMA), Houstex '86, the 11th such event, will take place at the Albert Thomas Convention & Exhibit Center in downtown Houston.

The Houstex '86 exposition will feature hands-on demonstrations of highly-automated machine tools, computerized metalworking production systems, precision machining equipment, material handling devices, quality control/inspection equipment, and other technologies critical to Houston's diversified manufacturing community.

More than 100 equipment manufacturers and other companies are expected to exhibit, SME and NTMA officials said. So far, 70 firms have reserved exhibit space at the Albert Thomas facility.

Among Houston-based companies holding large exhibit spaces are C.J. Harter & Sons, Rex Machine Tool, Winter Industries (Machine Tool Div.), Southern Machine Tool, Briggs-Weaver, Inc. (ISD Div.), and Champion Machine Tools Inc.

The NTMA will sponsor a special job shop section in the Houstex exposition. On display will be examples of tool and die work, sheet metal, stamping, and precision machining. In addition, the American Machine Tool Distributors' Association (AMTDA) will be participating in the show with special promotion to its members.

Exposition hours at the Albert Thomas Convention & Exhibit Center will be 11:00 AM to 8:00 PM on Tuesday and Wednesday, February 18–19; and 11:00 AM to 5:00 PM on Thursday, February 20.

Running alongside the exposition, the SME technical conference will consist of day-long workshops and half-day technical sessions exploring new-generation manufacturing technologies and management methods. Complete details will be announced in late October, SME said.

During Houstex '86, the NTMA will sponsor its 14th Annual National Apprentice Machinist Contest & Banquet. The finals will bring together 19 regional winners from across the country to compete for national honors.

More than 6,000 manufacturing engineers, technologists, and company executives from throughout southeastern Texas and Louisiana are expected to attend. SME and NTMA have been sponsoring Houstex since 1976.

For complete attendance information on the Houstex '86 Tool & Manufacturing Engineering Conference and Exposition, contact the Public Relations Department, Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, Michigan 48121, Telephone (313) 271-0777 (USA) or the National Tooling & Machining Association, Houston Chapter, 2120 Canada Dry, Houston, Texas 77023, Telephone (713) 928-6241 (USA)

For exhibiting details, contact John Sonego, Exhibits Development Manager at SME, Telephone (313) 271-0023 (USA).

AUTOMATION IN AGRICULTURE CONFERENCE AND EXPOSITION (AGRI-MATION 2)
(Chicago Hilton Hotel, Chicago, Illinois; March 3–6, 1986).
AGRI-MATION 2 will focus on automated technology, systems and machinery used in food production and processing and will provide technical presentations and product demonstrations depicting the latest advancements available to agri-business.

"This event has a worldwide focus and is designed to help the agriculture industry increase efficiency and productivity, reduce losses, and conserve energy and natural resources," says Gary F. Kah, member of the AGRI-MATION 2 Planning Committee and President of Agtech Associates, a San Francisco-based agri-business firm. "Users, researchers, and manufacturers interested in automated agricultural systems will all benefit."

The conference will address such pertinent topics as machine vision and sensors for food processing and production, expert systems, the emerging role of robotics in agriculture–with new developments in tractors and implements, livestock, water management, communications, emerging concepts, and the economic prospects for agriculture–energy trends and concepts.

The exposition will feature advanced equipment, systems and services available to the agricultural and food processing industries. Last year's Agri-Mation exhibits included displays of vision systems, sensors, controls, monitoring systems, research, and related technical information.

The Society of Manufacturing Engineers (SME) is a technical society dedicated to advancing manufacturing technology through the continuing education of manufacturing engineers, technologists and managers. Founded in 1932, SME has over 80,000 members in 70 countries and sponsors 300 senior chapters and 158 student chapters and units.

The American Society of Agricultural Engineers (ASAE) is a technical, scientific and educational society committed to improving agriculture through the application of engineering principles. Organized in 1907, ASAE has a membership of more than 12,000 specialists: including engineers, managers, agriculturalists and students from over 90 countries.

For more details on AGRI-MATION 2, write the Public Relations Department, Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, Michigan 48121 or call 313/271-0777 (USA)

1986 EASTERN SIMULATION CONFERENCES
(Omni International Hotel, Norfolk, Virginia; March 10–12, 1986).
The Society for Computer Simulation is organising 4 simultaneous conferences, as follows:

1. *Hardware for the simulationist*
- Microcomputers
- Minicomputers
- System Architectures
- Mainframe & Supercomputers
- Hybrid (Analog/Digital) Machines
- Array/Parallel Processors

2. *Software for the simulationist*
- Programming Environments
- Ada
- Personal Computer Programs
- Advanced Mathematical Models
- Image Systems, Graphics
- Artificial Intelligence
- CAD/CAM
- Networks, Distributed Simulation
- Discrete and Continuous Systems
- Robotics, Vision Systems

3. *Simulations at the frontier of science*
- Global Processes
- Geophysics, Weather Systems
- Atmospheric Chemistry
- Management Sciences
- Astronomy and Astrophysics
- Oceanography
- Biological/Physiological Systems
- Economic Systems/Models

4. *Simulators III*
- Justification
- Effectiveness
- Sites, Sources and Capabilities
- Design Control
- Instructor's Consoles
- Graphics and Displays
- In Academia
- With Videodisks
- Models and Software
- Languages
- Biomedical Applications
- Architecture
- Video Theatre

Enquiries to: Society for Computer Simulation, P.O. Box 17900, San Diego, CA 92117 (619) 277-3888 (USA).

CONFERENCE ON ARTIFICIAL INTELLIGENCE FOR THE AUTOMOTIVE INDUSTRY
(Westin Hotel, Detroit, Michigan; March 12–14, 1986).
Technical sessions at the three-day conference will examine expert systems, languages, knowledge representation, and other technologies utilized in moving toward intelligent manufacturing.

Cochairing the conference will be Mark Fox, cofounder of the Carnegie Group in Pittsburgh, Pennsylvania, and Professor of Robotics at Carnegie-Mellon University, and Forrest Gale, Lab Department Director for the Defense Systems Management College, Fort Belvoir, Virginia.

To complement the conference, company exhibits focusing on Artificial Intelligence (AI) and related technologies also are planned.

"The fact that the automotive industry is a volume leader in manufacturing signifies it should be most receptive to AI and expert systems to increase productivity and reduce the direct cost of people and equipment," said William J. Hilty, SME Executive Vice President and General Manager.

"Since such systems can be relied on for objective and sustained assistance with their aggregate knowledge of experts, manufacturing should experience marked savings in cost and improved quality in output," Hilty continued.

For further information on the Artificial Intelligence for the Automotive Industry Conference, please contact Dale Mason, SME Technical Activities Department, at (313) 271-1500 extension 375 (USA).

For companies interested in exhibiting, contact Nancy Berg, SME Expositions Department at (313) 271-1500 extension 334 (USA).

TWENTY THIRD EXPO AND CONFERENCES ON MACHINE TOOLS – WESTEC '86.
(Los Angeles Convention Center, California; March 17–20, 1986).
For the 23rd consecutive year, WESTEC '86 will assemble a wide-ranging landscape of manufacturing and materials capability and technological expertise to benefit Western U.S. industries. And for the sixth straight year, attendance is expected to come in at 50,000 or more, according to the sponsoring Society of Manufacturing Engineers (SME) and the American Society for Metals (ASM). The American Machine Tool Distributors' Association (AMTDA) will participate in WESTEC with special promotion to its members.

In their joint announcement, William J. Hilty, SME Executive Vice President, and General Manager, and Edward L. Langer, ASM Managing Director, said, "The outstanding growth of WESTEC during its first 22 years emphasizes that industry's technological needs are being met. It also underscores WESTEC's position today as the major annual West Coast productivity event."

Since 1964, 686,539 engineers, executives, and technicians working in the Western aerospace, metalworking, materials and diversified industries have attended WESTEC. Although basically a West Coast regional event, national and international interest in WESTEC continues to accelerate, Hilty and Langer said.

With WESTEC '86 still six months away, all main floor exhibit space at the Los Angeles Convention Center and at the adjoining North Hall has been reserved. In addition, the lower level exhibit area at the Convention Center has been assigned to over 150 companies, but "good space is still available here," Show Manager Cecil Darnell said.

Currently, more than 500 exhibitors representing over 1,000 companies from the U.S.A., Canada and 20 other countries are in the show. Exposition hours will be 12:00 noon to 6:00 p.m. on Monday, March 17 and Thursday, March 20 . . . and 12:00 noon to 9:00 p.m. on Tuesday and Wednesday, March 18 and 19.

The WESTEC show will feature demonstrations of an estimated $30 million in machine tools, materials and related manufacturing systems, processes and services, "and computer-based automation and technology will be prominent," Darnell said. Scores of new product demonstrations are slated.

To handle the expected 50,000-plus visitors, free parking will be available at the nearby Los Angeles Coliseum with shuttle buses ($1.00 fare) running continuously to the Convention Center.

The WESTEC Conference program – to be announced soon – will include SME and ASM technical sessions and workshops focusing on the latest technological advances `` improving Western manufacturing productivity and materials applications. More than 100 speakers will make technical presentations.

Another WESTEC '86 highpoint will be the Keynote Luncheon speech by a prominent West Coast industrialist.

Local committees have been working closely with the SME and ASM headquarters staff to organize WESTEC '86. General chair for SME is Ed G. Linhart, Vice President, Production Readiness, Central Manufacturing, Northrop Corp., Hawthorne, CA. His counterpart at ASM is Dr. Suphal P. Agrawal, Senior Technical Specialist, Northrop Corp., Hawthorne, CA.

Reflecting Western industrial activity, the past five years have seen the best attendance at WESTEC. These figures include 50,886 in 1981, 51,064 in 1982, 49,640 in 1983, 50,842 in 1984 and 51,247 last year.

The two sponsoring societies, Society of Manufacturing Engineers and the American Society for Metals, have a combined membership of over 130,000 and are the nation's largest technical organizations in the fields of manufacturing engineering and materials technology.

For additional information on WESTEC '86, contact SME, Box 930, Dearborn, Michigan 48121, or ASM, Metals Park, Ohio 44073 (USA).

THIRD INTERNATIONAL CONFERENCE AND EXHIBITION ON AUTOMATED MATERIALS HANDLING (AMH 3 & IHSE '86)
(Birmingham, U.K.; March 19–21, 1986).

1. *AMH 3 – the conference*
'Materials Handling – the Fundamental Solution' is the theme of this, the 3rd International Conference on Automated Materials Handling (AMH 3), which will show how good handling techniques are the basis for all good automated manufacturing and distribution functions. All aspects of advanced materials handling will be considered with emphasis on its vital importance to the economic success of a company.

AMH 3 is scheduled to take place in the Metropole Hotel at the NEC, Birmingham, from 19–21 March 1986, thereby running alongside the International Handling & Storage Exhibition which it is planned to complement. Reflecting the Exhibition content, the Conference will encompass materials handling, from robots to port handling, in major industries such as manufacturing, mail order, retail, distribution, warehousing, food chemicals, construction, agricultural and printing.

Rapid developments worldwide have produced efficient and sophisticated advanced handling systems which should be part of every modern factory and warehouse. In manufacturing the automated production line needs efficient automated storage and retrieval systems and automatic conveyors to feed it the raw materials. Automated identification makes process monitoring quick and simple. In warehouse distribution the importance of advanced handling is self-evident. AMH 3 aims to bring this new technology to you. This important international conference is the event in 1986 for people in the materials handling world.

Enquiries to: IFS (Conferences) Ltd, as above.

2. *International Handling & Storage Exhibition – IHSE* '86
The International Handling & Storage Exhibition takes place at the National Exhibition Centre, Birmingham, from 18–21 March 1986. It promises to be, in the words of the organisers, Trinity Publishing Ltd., 'the dawning of a new era in materials handling marketing'. The last International Materials Handling Exhibition to be held in the UK was in 1980. In the past six years there have been innovations across the whole spectrum of materials handling equipment, from the manually operated forklift truck to advanced robots and automated guided vehicles. All will be on display at IHSE '86. The Exhibition occupies Halls 1, 2 and 3 of the purpose-built National Exhibition Centre – 36,500 m^2 – of which well over 90% has already been contracted.

For further information on IHSE '86 complete the reply form or contact:
Keith Harris, Trinity Publishing Ltd., Station Approach, Long Lane, Hillingdon, Middlesex UB10 9NR, UK.

NINTH ANNUAL CONFERENCE OF THE BRITISH ROBOT ASSOCIATION
(Stratford-upon-Avon, U.K.; May 12–14, 1986).
As robot technology has progressed, so too has knowledge and experience. Specialisation of robot use has grown. In recognition of these factors, BRA has in 1985 created special interest groups. These groups reflect existing members' interests and it is hoped will serve as a platform for the recruitment of new members from a wide cross-section of manufacturing organisations both in the UK and worldwide.

The 1986 BRA conference will reflect the existence of the

new groups by holding workshops and sessions specifically related to each group's special interest. BRA-9, therefore, will recognise current trends in robot technology and application by marrying the needs and interests of individual delegates with the latest information.

The special interest groups so far created relate by subject to:

Robot vision
Robot finishing/surface treatment
Robot welding
Palletising and handling

by industry to:

Robots in the food industry
Robots in the furniture industry
Robots in the pharmaceutical industry

Each of these special interest groups will sponsor a session or workshop at the 1986 conference. These sessions will highlight state-of-the-art development as well as indicating future requirements of these particular industries. The intention is that the BRA-9 conference will present a comprehensive view of robots in manufacturing today, and yet will also offer a sufficiently specialised programme to be of interest and benefit to those involved with all aspects of robot technology. By selecting papers of high quality to form an international programme based around those subject areas listed above, the conference will seek to promote the advancement of robot technology.

Annual general meeting

The Annual General Meeting of the British Robot Association will take place in Stratford-upon-Avon on the afternoon of Monday 12 May 1986. The meeting will be open to both Association members and non-members.

Enquiries to: British Robot Association, 28–30 High Street, Kempston, Bedford MK42 7BT, England Tel: (0234) 854477. Telex: 825 489 (U.K.).

CONFERENCE ON ROBOTS IN AUSTRALIA'S FUTURE

(Perth, Western Australia; May 13–16, 1986).

The following topics will be considered:

- Robots in Agriculture and Mining
- Robots in Light Manufacturing
- Robotic Systems and Sensors
- Robot Installations: Some Case Studies
- General Applications

A Trade exhibition of the latest developments in the robotics and automation fields will be held concurrently with the conference. The trade exhibition will be in the same venue as the conference. Companies interested in taking trade space at the conference can obtain further information from the Conference Secretariat.

Enquiries to: Conference Secretariat, P.O. Box 40, West Perth, 6005, Western Australia, Australia.

THIRD SOFTWARE ENGINEERING CONFERENCE AND EXHIBITION

(Versailles, France; May 26–30, 1986).

1. *Aims*

The third software engineering Conference is being organized by the AFCET-Informatique "Génie Logiciel" (Software Engineering) working group in co-operation with Agence de l'Informatique. Its aims will be to provide a state-of-the-art survey of the field and to encourage the "transfer of technology" by providing a forum for comparison between different research projects and applications.

Papers dealing with any of the following subjects will be accepted: scientific computing, management, real time, information systems, process control, system design, distributed systems, office information systems, computer aids, knowledge-based systems.

2. *Topics*

- Life-cycle issues
  Specification, analysis, coding, testing, integration, marketing, operations, software maintenance, project management.
- Software quality
  Definition of criteria, measurement, methods, languages, tools, environments.
- General software issues
  Economic, ergonomic, psychological, legal and social questions: problems associated with production and marketing.
- Training in software engineering

Enquiries to: **Re** Conference: AFCET 156, Boulevard Péreire – 75017 Paris, Tel.: (1) 4 766.24.19, Telex: 290 163 EURTEL Code 235.
Re Exhibition: Agence de L'Informatique, Tour Fiat – Cedex 16 – 92084 Paris la Défense, Tel.: (1) 4 796.43.21. Telex: AGINFOR 613 632 F.

SYMPOSIUM ON PROGRAMMABLE SYSTEMS SAFETY

(Guernsey, Channel Islands; May 28–30, 1986).

The use of programmable electronic systems (PES) in industry has grown considerably with the availability of microcomputers. These systems offer many benefits to the designer and user in providing more comprehensive control of industrial processes, environments, machine tools and in robot installations. As confidence grows with the application of PES, users and manufacturers are considering incorporating safety functions within the requirements and functions of the PES.

The Symposium will present and discuss the guidance available to users, designers and safety assessors of PES which applies across a wide range of industries and for many potential risk/safety situations.

Enquiries to: National Centre of Systems Reliability, Wigshaw Lane, Culcheth, Warrington WA3 4NE, United Kingdom.

FIFTH INTERNATIONAL CONFERENCE ON AUTOMATION OF DIAGNOSTIC CYTOLOGY AND HISTOLOGY

(Brussels, Belgium, May 30–June 1, 1986).

1. *Purpose of the conference*

To gather pathologists, cytologists, clinicians, engineers, and related scientists who are actively working toward quantitation of histologic and cytologic diagnoses. The goals of the meeting are threefold:

(a) To teach: through the use of tutorial presentations by experts in the field; the participants will hear didactic presentations on the state-of-the-art of automated and quantitative microscopy.
(b) To report: on progress of basic and applied research through presentation of scientific papers.
(c) To project: the future of quantitative pathologic diagnosis through panel discussions and dialogue following presentation of papers.

2. *Format of the conference*

(a) Invited speakers: will be experts actively engaged in basic or applied research whose abilities to educate are recognized. They will present the background to enable the listener to appreciate the papers presented in a given category, which will follow each didactic presentation.
(b) Solicited papers: The call for abstracts is included in this brochure. Please refer to the section below for the deadline for submission of abstracts and other details regarding presentation of papers.

(c) Panel discussions: Selected topics will be discussed by panels of experts to provoke and invite discussion from the audience. Suggestions for topics are solicited on the registration form.
(d) Poster presentations: All papers accepted for platform presentation will require a complementing poster to explain graphically the details of the platform presentation. Additionally, an individual or group may choose to present only a poster. Details on the preparation of poster presentations will be furnished at a later date.

Proposed main conference topics:
Ploidy Patterns: Recording and Analysis
Tissue Section Analysis and Histometry
Knowledge Data Bases
Instrumentation Technology: Future Projections
Clinical Needs for the Practicing Pathologist
"Truth" in Diagnosis: The Basis for the Data Base

Enquiries to: Fifth International Conference on Automation of Diagnostic Cytology (1986), International Academy of Cytology, 5841 S. Maryland Ave.–HM #449, Chicago, Illinois 60637, U.S.A.

THIRD INTERNATIONAL CONFERENCE ON LASERS IN MANUFACTURING (LIM-3)
(Paris, France; June 3–5, 1986).
LIM-3, third in this established series of conferences on Lasers in Manufacturing, is to be chaired by A. Quenzer of the Etablissement Technique Central de L'Armement (E.T.C.A.). It will continue to highlight the best in laser technology. The conference aims to bring delegates right up-to-date with the latest equipment and will demonstrate the many industrial applications. Important progress in research and development will naturally be considered. Once again LIM-3 will provide an international forum for the user, supplier, researcher and developer to meet and exchange their expertise. LIM-2 (UK 1985) attracted nearly 200 delegates from 19 different countries. Now LIM-3 moves to France where we expect an even larger audience representative of this expanding industry.
The topics considered are:
- Cutting
- Welding
- Surface treatment
- Alloying
- Hardening
- Annealing of semi-conductors
- Engraving
- Printing
- Non-destructive testing
- Inspection
- Holographic applications
- Laser robots
- Lasers in FMS
- Optical discs for computer and video storage
- Management and planning aspects
- Economic justification
- Systems planning and design
- Laser safety
- Social and welfare implications
- Equipment design
- Future trends in R & D

Enquiries to: IFS (Conferences) Ltd, as above.

SIXTH INTERNATIONAL CONFERENCE ON ROBOT VISION AND SENSORY CONTROLS (ROVISEC 6)
(Paris, France; June 3–5, 1986).
RoViSeC provides an opportunity unique among present conference programmes. It brings together manufacturers looking for highly efficient equipment with researchers offering cost effective sensor-based solutions. Its ability to do this has established RoViSeC as the leading forum in the field of intelligent manufacture.
Systems originally conceived in the laboratory are now beginning to be applied in assembly, welding, sealing, handling and inspection. Much effort is currently being applied in extending these applications and in commercialising the latest research generated ideas in advanced sensory systems. Problems still exist in such tasks as bin-picking, component recognition, tracking dynamics and mobile robot navigation. RoViSeC-6 will address these problem areas.
Since the first conference in 1981, over 1500 people have participated in this major international event in the UK, Germany, the USA and The Netherlands. Next year the conference moves to Paris under the chairmanship of M. Briot of the Laboratoire d'Automatique et d'Analyse des Systèmes at Toulouse. Once again the world's leading experts, drawn from end-users, system suppliers, research workers and software specialists will come together to discuss applications and developments in this vital and rapidly expanding area of automated manufacture.

Topics considered:
- Sensory Controlled Production
  assembly; welding; sealing/glueing; handling; surface coating
- Software and Vision Data Processing
- Vision Sensing
  illumination; image acquisition; visual servoing; image understanding; array processors; 3D vision; colour vision
- Multisensor Systems
- Sensors in Robot Dynamics
  performance monitoring; collision avoidance; navigation and giidance of mobile robots; sensory feedback
- Intelligent Systems
- Non Vision Sensing
  force sensing; tactile sensing; sensor design

Enquiries to: IFS (Conferences Ltd), as above.

CONFERENCE ON FUNCTIONAL INTERFACING FOR C.I.M. – SYNERGY '86
(Universal City, California; June 16–18, 1986).
SYNERGY '86 will focus on key questions on integrating production and inventory control within the total manufacturing enterprise, including:
- How can shop floor control be driven by the process?
- How should product structures be configured for process flow?
- How can tools and products be designed for automation?
- What is the impact of group technology on process engineering and shop scheduling and product design?

Panel discussions will address these questions and others. Evening workshops will augment case studies and the panel discussions by focusing on specific management issues such as team management, cost justification, tool requirement planning and configuration management. Additional workshops will concentrate on integration technologies including simulation, group technology for mechanical application and electronic application, shared data base creation, and the role of artificial intelligence/expert systems in the factory of the future.
"The entire conference is designed for the practitioner–the manufacturing engineer, the production and inventory control specialist, and the first line manager," said Ann Meister, DACOM, Inc., SYNERGY '86 Co-Chair.
"The case studies are from the implementation team to focus on the various functional areas involved in integration of manufacturing control. This is intended to show the 'synergy' or working together necessary to implement CIM."
"The workshops will enable us to look at management issues that contribute to the integration effort and provide depth on the integration technologies." noted Frank Becker, Deere and Company, SYNERGY '86 Co-Chair.
SYNERGY conferences are cosponsored by the Society of

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Manufacturing Engineers (SME), its Computer and Automated Systems Association (CASA/SME) and the American Production and Inventory Control Society (APICS).

For more information on SYNERGY '86, contact Cheri Willetts, Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, Michigan 48121, Telephone 313/271-1500, ext. 374. (USA)

SEVENTH INTERNATIONAL CONFERENCE ON THE ANALYSIS AND OPTIMIZATION OF SYSTEMS
(Antibes, France; June 24–27, 1986).
1. *Scope*

The purpose of this Conference is to present the advanced research in the field of Systems Analysis and Control where the most promising applications may be expected.

This meeting regularly organized every other year by INRIA will take place near the new INRIA Sophia-Antipolis Center on the French Riviera.

The organizers strongly encourage the authors to forward proposals of communications describing:
– original results of research
– effective applications of theoretical results

Also – possibly presented off proceedings – software demonstrations of industrial realizations related to the topics of the Conference are welcome.

2. *Topics*
(a) Control of non linear systems
algebraic and geometric system theory (including numerical algorithms and specific applications)
(b) Optimization and optimal control theory
deterministic control and mathematical programming
control of distributed systems
multidecision control and games
singular perturbations methods
numerical algorithms
(c) Stochastic systems
stochastic control
non linear filtering
adaptive control
partial information and non classical control
(d) Signal processing
system theoretical aspects of signal processing (stochastic realization, parametrization of systems, model reduction, . . .)
statistical methods (identification, detection, order estimation, . . .)
applications to industrial processes, telecommunication, . . .
(e) Computer aided engineering
computer aided control system design
expert systems and computer algebra methods in control engineering
real time languages
(f) Special interest sessions
discrete events systems (Petri nets, asynchronous automata, . . .)
bioengineering and biotechnological systems
control of manufacturing systems

Enquiries to: INRIA, Domaine de Voluceau, Rocquencourt, 78153-Le Chesnay Cedex, France

CONFERENCE ON C.A.D. AND ROBOTICS IN ARCHITECTURE AND CONSTRUCTION
(Marseille, France; June 25–28, 1986).
This joint conference (with CMCI) is organized by the International Institute of Robotics & Artificial Intelligence of Marseille (IIRIAM).

Enquiries to: Viviane Bernadac, IIRIAM/CMCI, 2, Rue Henri Barbusse, 13241 Marseille Cedex 1. (91) 91.36.72. (France).

SEVENTEENTH ANNUAL INTERNATIONAL CONFERENCE ON SIMULATION AND COMMUNICATION
(University of Toulon, France, July 1–4, 1986).
This conference is organized by the International Simulation & Gaming Association (I.S.A.G.A.)

Main Conference: 1–4 July 1986. The general theme of the conference, "Simulation & Communication", is to be interpreted as broadly as possible, to include such areas as: social interaction, intergroup relations, language learning and behaviour, attitudes, intercultural communication, negotiation, conflict, decision and policy making, management communication, development, media, information technology, . . .

Session types include: keynote presentations, talks, buzz groups, debates, participation workshops, . . .

Pre-conference workshop: 28–30 June 1986. Participation session in a special version of NSIST, an on-going, world-wide, multi-institution, educational simulation, involving multilingual communications and international relations, assisted by micros, mainframes, telecommunications and satellites, and affiliated with the University of Maryland, USA.

Post-conference summer school: from 7 July; courses in French as a foreign language (reduced rates for conference-goers).

Please note that early registration is recommended as places are limited, especially for the pre-conference workshop.

Enquiries to: Crookall/ISAGA 86, Université de Toulon, Ave de l'Université, 83130 La Garde, France. Home tél.: (94) 75.48.38.

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Special announcement

The Spanish Association of Robotics was formally created at the constituent assembly, which took place at the Escuela Technica Superior de Ingenieros Industriales (Technical College of Industrial Engineers) in Madrid, on May 21, 1985.

This Association, of which the social site has been fixed in Barcelona, has at the moment of its constitution the considerable number of 130 founding members; 75% of them were present or otherwise represented at the assembly. The number of constituent members surpasses extensively the forecasts made. This shows the interest attracted by the AER within the field of robotics in practically all the industrial areas of the country.

Once the Statutes and the economical management have been approved, the following step was to choose a provisional board of directors presided by Mr. Daniel Audí from the firm UNIDAD HERMETICA, S.A. Ever since the beginning the managing Commission as well as the Assembly itself considered it convenient for the first president to be a user who could provide invaluable help of his long experience as a pioneer of flexible automation of the production which is an unquestionable challenge to the Spanish industry.

Several types of professionals or entities belong to the AER, and coming from various geographical areas, to be precise, from Asturias, Catalonia, Madrid the Basque Country and Valencia, are represented on the provisional board. The task to be carried out until the next general meeting, which will take place in Barcelona next November, coinciding with the celebration of the SYROCO (Symposium on Robot Control), is divided into five areas: information, documentation and studies; training; congresses, conferences and similar; relations with administrative departments and other national and international organisms; and the fifth area is dedicated to the promotion of the association itself.

Finally, it was unanimously decided to apply for the celebration of the ISIR (International Symposium on Industrial Robots) for 1990 in Spain.

The AER has arrived at the right moment. No doubt, it can be an excellent tool in order to increase the use of robotics within the Spanish industry. All those who are involved in this matter can obtain benefits from it as the objectives are to render services to the user, suppliers, educators, investigators, etc. Whether success to meet these objectives will be achieved only depends on the capacity of collective work and the enthusiasm of the members of the association.