

## Announcements

### **INTERNATIONAL CONFERENCE ON VERY LARGE DATA BASES**

VLDB (Stockholm, Sweden; August 21–23, 1985)

VLDB Conferences are intended to identify and encourage research, development and applications of database systems. Their objectives are the promotion of an understanding of current research, the furthering of exchanges of information and experience gained in the design, construction and use of databases, and the provision of a forum for the discussion of future research and development.

The eleventh VLDB Conference will emphasize the contribution of database technology to evolving areas like artificial intelligence, software engineering, CAD/CAM, graphics, office information systems and the new challenges that the interaction with those areas presents to the field of database management.

#### *Topics*

Engineering Databases  
Office Information Systems  
Knowledge Based Data Management  
Distributed Databases  
Concurrency Control  
Intelligent User Interfaces  
Design Methodology and Tools  
Hardware Architectures  
Data Models  
Database Theory  
Performance  
Query Optimization

*Enquiries to:* Lars Söderlund, Dept. of Computer Science, University of Stockholm, S-106 91, Stockholm, Sweden.

### **EIGHTH INTERNATIONAL CONFERENCE ON PRODUCTION RESEARCH "TOWARDS THE FACTORY OF THE FUTURE"**

(Stuttgart, F.R. Germany; August 20–22, 1985)

The objectives of the Conference are to support the international exchange of experience about outstanding industrial developments and the latest results of production research.

#### *Topics*

1. Highly Automated Flexible Manufacturing Systems
2. New Manufacturing Technologies
3. Production Planning and Control
4. Computer Aided Design and Computer Aided Manufacturing
5. Assembly Automation
6. New Concepts in Work Organization
7. Design of Work Stations
8. Industrial Robots
9. Sensors and Quality Control
10. Corporate Strategies
11. Industrial Engineering Methodologies
12. Human Factors and Ergonomics
13. Office Automation
14. Applications of Fuzzy Set Theory in Production Research

Outstanding personalities representing the field of production research on an international level are members of the prog-

ramme committee which works together with the organizing committee (Chairman: Prof. Dr.-Ing. habil. H.-J. Bullinger, University of Stuttgart) to prepare the sessions. Each session will cover some of the above mentioned topics and will be opened by an "invited lecture". The following contributions of each session will contain the research aspects as well as the advantages for the production itself.

*Enquiries to:* ICPR Secretary, c/o IPA, Eierstrasse 46, 7000 Stuttgart 1, West Germany.

### **1985 INTERNATIONAL CONFERENCE ON ADVANCED ROBOTICS ('85 ICAR)**

(September 9–10, 1985; Tokyo, Japan)

and

### **1985 INTERNATIONAL INDUSTRIAL ROBOT EXHIBITION**

(September 12–16, 1985; Tokyo, Japan)

#### *1. Call for papers*

It is our pleasure to announce to you the Second International Conference on Advanced Robotics (ICAR), which will be held in Tokyo on September 9–10, 1985.

This conference is a sequel to the first conference held in Tokyo in September, 1983. The objective of this conference is to provide a place for presentations and discussions on basic research as well as application research in the newly developed application fields of advanced robotics, namely intelligent robots, mobile robots and sensory control robots, which are undergoing rapid advancement in many countries throughout the world. It also aims at providing an opportunity of exchanging state-of-the-art information on various national projects in each country, large-scale research and development projects, cases of international cooperation, and other items of interest. We believe that these objectives will serve to greatly contribute to strengthening the industrial constitution, vitalizing industrial economy as well as helping the humanization of working life, all of which are mutually required by all nations. A national project of "R & D on Advanced Robot Technology" in Japan is one example.

We invite papers which are appropriate to the items summarized in the suggested topics not only from robotic specialists but also many people from various professional fields. We also hope to see people representing various nations participate in this conference, discuss and promote worldwide mutual understanding, and further diffuse the research results.

We believe the time, as well as the site of the 2nd ICAR, is very suitable for an understanding of the advancement in not only robotics but also the scientific technology as well, as for nurturing future developments.

Following the 2nd ICAR, the 15th International Symposium on Industrial Robots (ISIR) will be held from September 11 to 13, 1985 at the same place and the '85 International Industrial Robot Exhibition from September 12–16, 1985 in Tokyo. In addition, TSUKUBA EXPO '85, an international exposition on science and technology, will be held from March, 1985 until September 16, 1985 in Tsukuba, in outskirts of Tokyo. Also, a post-conference tour is being planned for the participants. We

are very pleased to host this international event and invite you to submit a paper to the committee. The following material is provided for your reference.

2. *Suggested topics for papers*
  - a. Overviews on Advanced Robotics
    - National projects
    - International collaboration
    - Other R & D activities
  - b. Robots for the Unstructured Environment
    - System design and implementation
    - Man-robot interface
    - Teleoperation
    - Telecommunication
  - c. Intelligent Manipulation and Locomotion
    - World model representation
    - Knowledge data based systems
    - Problem solving
    - Robot languages
    - Spatial planning
    - Trajectory generation
    - Task description
  - d. Sensory systems
    - Image understanding
    - Design of sensors and sensor systems
    - Algorithms for sensing data acquisition
    - End effector sensors
  - e. Mechanics of Manipulator
    - Arms, wrists, hands, and fingers
    - Actuators
    - Kinematics
    - Dynamics and control
  - f. Mechanics of Locomotive Robots
    - Design and structure
    - Kinematics
    - Dynamics and control

Any enquiries relating to the Symposium should be sent to: Mr. A. Yasutake, Organizing Secretary, '85 ICAR, Japan Industrial Robot Association, Kikai Shinko Kaikan Bldg., 3-5-8, Shiba-Koen, Minato-ku, Tokyo, 105 Japan.

#### **INTERNATIONAL SEMINAR ON COMPUTER NETWORKING AND PERFORMANCE EVALUATION** (September 18-20, 1985; Tokyo, Japan)

##### *Sponsors*

IBM Japan  
INRIA  
Kyoto University  
IFIP WG7.3  
ITC

##### *Seminar coverage*

- Queueing Applications
- Performance Evaluation Tools
- Performance of Parallel Processing Systems
- Network Architecture
- Local Area Networks
- Metropolitan Area Networks
- Wide Area Networks
- Satellite Communications
- Simulation Methodologies
- Case Studies
- Other Related Areas

##### *Official language*

English

All correspondence should be addressed to: Dr. Yutaka Takahashi, Dept. of Applied Math. and Phys., Kyoto University, Kyoto 606, Japan (Phone: (075)751-2111 ext. 5513; Telex: 5422693LIBKYU J).

#### **SIXTH INTERNATIONAL CONFERENCE ON AUTOMATIC WAREHOUSING-ICAW 6**

(Stockholm, Sweden; October 15-17, 1985)

'... the warehouse has changed and will continue to change. It will be increasingly dynamic, not static, and it will require the best available management talent. Furthermore, the contribution of the warehouse to the performance of the total system will be much better understood and will result in increased attention from upper management'. This was how John White, Director of the Material Handling Research Center, Georgia, summarised his paper as Chairman of the 5th ICAW.

The 6th International Conference on Automated Warehousing will continue the investigation into new ideas and developments in machinery and controls and the management of transportation. The success of any automated warehousing system depends largely on its ability to function without breakdown or delay. The Conference will consider actual operating experiences of downtime, maintenance, control systems and economics.

6th ICAW returns to Europe after meetings in the USA and Japan. In the past the ICAW Conferences have each attracted some 250 delegates from around 20 countries. It is hoped that once again delegates will join in a truly international exchange of expertise at the 6th ICAW.

##### *Suggested topics*

- \* Control systems: design software support
- \* Hardware: rack structures conveyor systems
- \* Automated Warehouse design: use of simulation
  - level of automation
- \* Justification of automated storage: financial
  - management
  - social
- \* Automated identification and order picking
- \* New developments in equipment
- \* Case studies

Enquiries to: IFS (Conferences) Ltd., 35-39 High Street, Kempston Bedford, MK42 7BT, England (Tel: 0234-853605; Telex 825 489).

#### **FOURTH INTERNATIONAL CONFERENCE ON FLEXIBLE MANUFACTURING SYSTEMS**

(October 15-17, 1985; Stockholm, Sweden)

##### *A successful series*

When FMS-1 - the world's first conference devoted to flexible manufacturing systems - took place in Brighton in 1982, there was tremendous interest in what was essentially an emerging technology. With each successive year the conference series has expanded its scope of interest. Each year it has become increasingly international, as more countries send their leading FMS experts to participate as speakers or delegates.

##### *The technology*

It is now clear that FMS is not a technology in isolation, but is an integration of many technologies, skills and disciplines; in short, a manufacturing strategy. At its most sophisticated, FMS encompasses computer-integrated manufacturing (CIM); rather less ambitiously, it can begin with a single manufacturing cell or the first new machine in a step-wise implementation. As the complexity of the subject develops, the areas for learning and discussion diversify. FMS has moved a long way in a short time; from machining into complicated assembly systems, from metalworking into a host of varying industries. And interestingly, the reasons for implementing FMS and the ways of justifying the investment, now differ from company to company.

##### *FMS-4 in Sweden*

Sweden is one of the leading exponents in Europe of FMS technology. There are historical reasons for this, notably

changes in the labour market and in production requirements. At any rate, Sweden is now heavily committed to FMS for the continuing expansion of its industrial sector. The active participation of many of Sweden's leading establishments is expected to give FMS-4 a very distinct character, although the programme will, of course, be as comprehensive and international as on past occasions.

The main theme of the conference is 'making FMS work' – reflecting the practical bias of the conference. Particular emphasis will be given to techniques, organisation and economy.

A number of technical visits designed to complement the conference sessions will be arranged to show the best in Swedish FMS.

FMS users, suppliers and researchers worldwide are once again invited to share their knowledge and experience in this field, by actively participating in the conference programme.

#### Suggested topics

- \* Case study applications of FMS
- \* Human factors
- \* Management of FMS
- \* Economic evaluation and justification of FMS
- \* FMS simulation
- \* Development trends in FMS software and hardware
- \* CIM: FMS integration with CAD/CAM, MRP and business information systems integrated inspection and maintenance
- \* Systems design
- \* Preparation for new technologies
- \* Adaptation of production planning to FMS from traditional methods
- \* Product design for FMS

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

#### AFCEC AUTOMATION CONGRESS – “THE TOOLS FOR TOMORROW”

(October 23–26, 1985; Toulouse, France).

The AFCEC-AUTOMATIQUE, one of the societies of the French Computer Association (Association Française pour la Cybernétique Economique et Technique) is organizing its biennial conference in Industrial Electronics, Control and Instrumentation, with emphasis on the application of advanced theory and models to new fields.

The Conference, entitled THE TOOLS FOR TOMORROW will be held in Toulouse (France) on October 23–26, 1985, simultaneously with SITEF exhibition, which is devoted to the future technologies.

The main purpose of this conference is to provide a platform for scientific and technological exchange of information to enhance the dissemination of knowledge on relevant topics through communications of high quality papers.

The topics within the scope of the conference are:

##### 1. Methods

- optimization, modelization, identification
- control structures
- control architecture and operational security
- expert systems and artificial intelligence
- industrial local area network
- instrumentation, sensors
- human factor engineering
- education and training

##### 2. Applications

- energetic systems, continuous process
- computer integrated manufacturing (products)
- aeronautics and space
- biotechnology, medical and biological engineering
- communication network

Papers written in French or English language will be accepted.

*Enquiries to:* AFCET, 156, Boulevard Péreire, F-75017 Paris, France. (Tel. (1) 766 2419; Telex 290 163 Code 235)

#### FIFTH INTERNATIONAL CONFERENCE ON ROBOTVISION AND SENSORY CONTROLS

RoViSeC 5 (Amsterdam, The Netherlands, October 29–31, 1985)

The RoViSeC Conferences are now well established as an important forum for the fields of Robot Vision and Sensory Controls. The Conferences are truly international: previous conferences have been held in the UK, Germany and the United States. This year RoViSeC moves to The Netherlands, the home of much innovative engineering.

The technology of robot sensory control is expanding rapidly with robot vision becoming more and more advanced. The aim of the RoViSeC 5 Conference is to explore the capabilities of robot vision and sensory systems for use in the efficient, productive and profitable factories of the future.

RoViSeC 5 will provide a platform for both the end user and the developer. Production engineers from manufacturing industry will explain their own requirements, and describe how they have achieved results. Equipment manufacturers will demonstrate the advances that have been made over the last few years and illustrate the scope of future innovations. Research scientists will describe their current work and indicate the path of future developments. The presence of all sides of the technology from so many countries represents a great deal of experience, from which everyone can benefit.

Delegates will meet in Amsterdam, under the chairmanship of Professor Zimmerman of the University of Technology at Delft, to discuss the present technology and its applications and to explore the future of this exciting and vital field. On this occasion the Conference is being sponsored by three major Dutch societies: The Royal Institution of Engineers in the Netherlands (KIVI), the Dutch Society of Informatics (NGI) and the Society of Production Engineering. We anticipate that yet again another facet will be added to this important international event.

*Enquiries to:* IFS, as above.

#### SYMPOSIUM ON ROBOT CONTROL '85

(November 6–8, Barcelona, Spain)

##### Purpose

The Symposium is aimed to focus mainly in the control aspects, in a broad sense, of robots, as automatic devices or as forming part of a system. The influence of the applications field in the conception and design of the robotic system will also be of interest.

##### Topics

The main topics of the Symposium on Robot Control will be the following:

- kinematics and dynamics
- control synthesis and implementation
- sensor based control (force, torque, compliance, . . .)
- programming languages
- man-machine communication
- cooperation between robots and machines
- artificial intelligence in robotics (visual and tactile perception, plan generation, task planning, error recovery)
- simulation and CAD

##### Invited sessions

Special sessions based on invited papers dealing with specific topics will be organized by members of the IPC.

*Enquiries to:* ONC Chairman: Prof. G. Ferraté, Secretariat of SYROCO'85, Institut de Cibernètica, Diagonal, 647, 08028 Barcelona, Spain (Phone: (3) 249 28 42, telex 52821) or IPC Chairman: Prof. G. N. Saridis, Robotics and Automation Lab.,

Electr., Comp. & Systems Eng. Dpt., Rensselaer Polytechnic Institute Troy, New York 12180-3590 (Phone: (518) 266-6076, telex 646542).

### SECOND INTERNATIONAL CONFERENCE ON MACHINE INTELLIGENCE (M1-2)

This conference will be held alongside the Machine Intelligence '85 Show at the Novotel Hotel, London (U.K.) from 26-28 November 1985 inclusive. The international conference programme will feature major technology sessions focussing on vision, speech synthesis and recognition, laser sensing, pattern recognition and expert systems—all components of artificial intelligence. The conference will open with a plenary session, and special seminars will be held concurrently, covering both the basics of the technologies and in-depth reviews of specific topics and applications.

#### 1. *Machine Intelligence-21st Century Manufacturing in 1985*

Pressures are increasingly being imposed on product manufacturers to produce the right goods at the right time and to a consistently high quality. Traditional manufacturing methods are not capable of meeting such demands and, in order to stay competitive, manufacturers are having to turn to flexible methods for making their goods. Flexibility is the essence of the Factory of the Future in which intelligent machines or intelligent manufacturing cells are the key element. Intelligent machines have the capability of adapting to changing needs ON DEMAND, but at the same time meeting the consistent high quality that more and more customers are demanding. As a result, manufacturers who have their eyes to the future are investigating, and some are now installing, equipment and machines based on intelligent sensing techniques. The Machine Intelligence Conference and Show will provide a unique opportunity for manufacturers to examine, understand and obtain practical information on efficient advanced manufacturing methods that will ensure their profitability into the 1990s and beyond into the 21st century, a mere 15 years away.

#### 2. *Conference topics*

- Artificial intelligence languages
- Automated inspection systems
- Force and pressure sensors
- Robot vision
- Speech synthesis
- Intelligent sensing
- Pattern recognition
- Image analysis
- Guidance systems and range finding
- Colour recognition
- Speech recognition
- Expert systems
- Economic justification of machine intelligence
- Management of machine intelligence
- Sensor-based monitoring systems
- Optical and laser sensing and measurement

*Enquiries to:* IFS, as above

#### 3. *Machine Intelligence '85 Exhibition*

MACHINE INTELLIGENCE '85 -- THE 2ND International Exhibition of Products and Services for the Automated Factory -- follows the highly successful inaugural event, Machine Intelligence '84.

Supported by 45 exhibiting companies and attended by over 1,000 buyers from 34 different countries. MACHINE INTELLIGENCE '84 was voted an astonishingly successful new-business forum by exhibitors and visitors alike. So much so, that with over 80% of the space available for the 1984 event already optioned for MACHINE INTELLIGENCE '85, the organisers are offering an extended exhibition area. Thus even more companies will be able to take advantage of the sales-boosting potential offered by this unique and rapidly expanding

event to exhibit at low cost to an audience of high quality visitors.

The range of products covered by MACHINE INTELLIGENCE '85 will be wide. It will feature systems and software for intelligent sensing, vision and speech recognition, and their many applications in inspection, quality control, robots and assembly operations. Companies wishing to exhibit should contact the MACHINE INTELLIGENCE sales manager, Iain Melville, at:

Industrial and Trade Fairs Ltd.  
Oriol House  
26 The Quadrant  
Richmond  
Surrey TW9 1DL, England  
(Tel: 01-940 6065; Telex: 337073)

### 2nd INTERNATIONAL TECHNICAL SYMPOSIUM ON OPTICAL AND ELECTRO-OPTICAL APPLIED SCIENCE AND ENGINEERING

(25 November-6 December 1985, Palais des Festivals et des Congrès, Cannes, France)

Following the highly successful 1983 Geneva meetings, the *Second International Technical Symposium on Optical and Electro-Optical Applied Science and Engineering* will be held in Cannes, France, Nov. 25 to Dec. 6, 1985.

This important two week symposium is being organized by ANRT (Association Nationale de la Recherche Technique) and SPIE (International Society for Optical Engineering).

The Cannes symposium still offer technical conferences covering 20 different topics, up to 6 being held simultaneously, addressed to meet the needs of industry, science, education, government and medicine. It will include Tutorial educational programs and an extensive technical Exhibit.

Held within the internationally well known Palais des Festivals et des Congrès in Cannes, the conferences anticipate the presentation of over 600 papers with attendance exceeding 2000.

Major conference topics include: COMPUTER VISION FOR ROBOTS, DIGITAL IMAGE PROCESSING, FIBER OPTICS TECHNOLOGIES, INFRARED TECHNOLOGY, IMAGERS AND REMOTE SENSING INSTRUMENTATION, APPLICATIONS OF HOLOGRAPHY AND OPTICS, INSTRUMENTATION FOR SUBMILLIMETER X-RAY ASTRONOMY, OPHTHALMIC OPTICS and IMAGE PROCESSING SYMPOSIUM (held in conjunction with BIOSTEREOMETRICS '85) OPTICS IN ENGINEERING MEASUREMENT, MEDICAL IMAGE PROCESSING, ETC.

A call for papers was issued by the organizers in January. Those requiring additional information should contact:

USA  
SPIE  
P.O. box 10  
Bellingham, WA 98227 (U.S.A.)  
(Tel. 206/676-3290; Telex 46-7053)

EUROPE  
Judith Prado  
ANRT  
101 av. R Poincaré  
75116 PARIS (FRANCE)  
(Tel. 1/501 72 27; Telex 612510)

### BRITEC 1968—BRITISH INFORMATION TECHNOLOGY EXHIBITION AND CONFERENCE ON ENGINEERING SOFTWARE

(July 14-16, 1986; at the Hilton at Colonial, Route 128, Wakefield, MA 01880 (USA))

#### *Objectives of the Conference*

To provide a forum for the presentation and discussion of new and advanced ideas in engineering software.

To encourage and enhance the role of engineering software and other related disciplines by providing an opportunity for the presentation of the work of engineers, mathematicians and computer scientists involved in solving problems closely related to engineering disciplines.

#### *Call for papers*

Papers are invited on the topics outlined below and other topics which fit within the general scope of the Conference. Abstracts of not more than 300 words should be submitted to the Conference Director, Dr. A. C. Brebbia, by November 1985. Abstracts should clearly state the purpose, results and conclusions of the work to be described in the final paper. Authors will be notified of the preliminary acceptance by December 1st, 1985. Final acceptance will be based upon review of the full length paper which must be received by March 1st, 1986. Papers presented at the meeting will be published in the Conference Proceedings.

#### *Time schedule*

- Submit Reply Form
- Submit Abstract (300 words): November 1st, 1985
- Preliminary acceptance December 1st, 1985
- Submit Full Paper: March 1st, 1986

#### *Conference themes*

- CAD Systems
- Software Development and Architecture
- Software Maintenance and Support
- Integration of Software Packages
- Finite and Boundary Element Packages
- Application Software for Civil and Structural Engineering
- Application Software for Mechanical Engineering
- Geometric Modelling
- Real Time Simulation
- Interfacing Experiments and Computer Codes
- Control of Manufacturing Processes
- Engineering Databases
- Workstations and Networks

- Implementing CAD/CAM
- Artificial Intelligence Applications

#### *BRITEC Exhibition*

The Conference will take place at the same time as the British Information Technology Exhibition, also to be held at the Hilton at Colonial. This will give participants the opportunity of viewing a large range of products and services available through British companies. The Exhibition will accommodate some of the more innovative products with emphasis on those related to Engineering Software.

*Enquiries to:* Dr. C. A. Brebbia, Computational Mechanics Inc., Suite 6200, 400 West Cummings Park, Woburn, MA 01801, USA (Tel. (1) 617-933-7374) or Dr. C. A. Brebbia, Computational Mechanics, Ashurst Lodge, Ashurst, Southampton SO4 2AA, U.K. (Tel. 44-(0)421-293223).

#### **43rd FID CONFERENCE AND CONGRESS (INTERNATIONAL FEDERATION FOR DOCUMENTATION)**

(Montréal, Canada; September 14–18, 1986)

Information, Communications and Technology Transfer will be the theme of the events. Proposed topics include new techniques for information handling and information transfer, advances in communication systems, advances in computer systems, electronic publishing, electronic document delivery systems and all aspects of technology transfer. The conference languages will be English and French. Original papers in either language are requested.

Authors are requested to submit six copies of a summary of a proposed paper to the conference chairman: Mr. E. V. Smith, Director, CISTI, National Research Council of Canada, Ottawa, Ontario, Canada K1A 0S2.

*Enquiries to:* Local Organising Committee, 43rd FID Conference, Succursale Place, Destardins, Montréal, Canada H5B 1B3 (Tel. 514-288-8524; telex 055-60944).