

Announcements*

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

* These announcements supplied by organisers of conferences and exhibitions are published on the understanding that *Robotica* is not responsible for their contents.

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.

CAT '86 – COMPUTER-AIDED TECHNOLOGIES IN MANUFACTURING—SECOND INTERNATIONAL EXHIBITION AND USER CONFERENCE (Stuttgart; May 13–16, 1986)

1. CAT '86

Die zentrale Kongreß-Messe für Anwender von rechnerunterstützten Technologien in der Automobilindustrie, dem Maschinenbau, der Feinmechanik und Optik, der Kunststofftechnik, der Elektro- und Elektronikindustrie.

2. Von Praktikern für Praktiker:

Inhaber, Geschäftsführer, Technische Leiter, Produktmanager, Projektleiter, Anwendungsingenieure, Konstrukteure, Designer, Arbeitsvorbereiter, Produktionsleiter, Berater, Systementwickler, Wissenschaftler und Ausbilder aus dem gesamten Bundesgebiet und dem angrenzenden Ausland werden als Chairmen, Referenten, ausstellungsbesucher und Kongreß- Δ teilnehmer erwartet.

3. CAT '86

Ihr Forum für die Anwendung rechnerunterstützter Technologien in der Fertigungsindustrie.

4. Der Kongreß

Am 13. Mai werden Intensivseminare für Neuinteressenten und erfahrene Anwender angeboten.

Im Kongreß vom 14.–16. Mai sind Einzelvorträge, Plenarsitzungen, Podiumsdiskussionen und Anbieterpräsentationen vorgesehen.

Hauptthemenbereiche des Kongresses sind:

- Entscheidungsgrundlagen für das Management
- CAD, Design, Konstruktion, Arbeitsvorbereitung (sofern mit Grafik unterstützt), Montage, Industrieroboterdarstellung, Simulation
- Elektronik
- Prozeßleittechnik mit grafischer Unterstützung
- technische/statistische Datenrepräsentation
- technische Dokumentation (Text und Grafik als eine Einheit)
- Schnittstellen- und Integrationsproblematik
- Standardteilverwaltung
- Organisationsprobleme
- Qualitätssicherung
- Neue Problemlösungen für bestehende Rechnerkonfigurationen
- Steigerung der Flexibilität in der technischen Auftragsentwicklung
- Dateneingabe und -speicherung
- Zusammenarbeit zwischen Kunde und Lieferant
- Aus- und Weiterbildung

Während der Behandlung von Querschnittsthemen werden keine parallelen Vorträge stattfinden.

Anwender, Berater und andere Referenten, die ihre praktischen Erfahrungen, Probleme, Lösungen und Ideen vortragen wollen, werden gebeten, bis zum 25. Oktober 1985 das beiliegende Formblatt einzusenden.

Am 12. und 13. Mai 1986 wird zusätzlich in Stuttgart ein internationaler Design-Kongreß stattfinden.

5. Die Ausstellung

Internationale und deutsche Aussteller werden Problemlösungen, die neuesten Entwicklungen in der rechnerunterstützten Technologie und in der ständigen Verbesserung im Preis-/Leistungsverhältnis präsentieren.

Die Ausstellung wird dem Besucher einen umfassenden und komprimierten Überblick geben sowie genügend Zeit für Detaildiskussionen bieten.

Enquiries to: STUTTGARTER MESSE- UND KONGRESS-GMBH, Am Kochenhof 16, Postfach 990, D-7000 Stuttgart 1, West Germany.

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) 4766.24.19, Telex: 290163 EURTEL Code 235.

Re Exhibition: Agence de L'Informatique, Tour Fiat – Cedex 16 – 92084 Paris la Défense, Tel.: (1) 4796.43.21. Telex: AGINFOR 613632F.

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 micro-computers. 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, 28–30 High Street, Kempston, Bedford MK42 7BT (U.K.). Tel.: (0234) 854477. Telex: 825489 (U.K.).

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 guidance 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 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).

EIGHTH IASTED INTERNATIONAL SYMPOSIUM AND EXHIBITION – ROBOTICS AND ARTIFICIAL INTELLIGENCE

(Toulouse, France; June 18–20, 1986).

Sponsored by

The International Association of Science and Technology for Development – IASTED.

With the support and cooperation of

L'Association Française pour la Cybernétique Economique et Technique – AFCET.

Location

Université Paul Sabatier, Avenue de Rangueil, F-31077 Toulouse cedex, France.

Scope

Covers all aspects of robotics and artificial intelligence with particular emphasis on applications and includes:

- Modelling
- Simulation
- Systems
- Dynamics
- Kinematics
- Stability

- Design
- Control
- Algorithms
- Multilevel control
- Computer aided design
- Robot-computer interface
- Man-robot interface
- Software
- Programming languages
- Artificial intelligence
- Bionics and robots
- Image processing
- Pattern recognition
- Object recognition
- Scene analysis
- Speech analysis and synthesis
- Controllers
- Actuators
- Teleoperators
- Sensors
 - Visual
 - Tactile
 - Sonar
 - Others
- Arms
- Wrists
- Hands
- Vision systems
- Hand eye coordination
- Remote controlled robots
- Multi-robot systems
- Economic analysis
- Safety
- Reliability
- Human factors
- Management
- Supervision
- Industrial robots
- Applications, all fields:
 - Welding
 - Painting
 - Assembly
 - Material handling
 - Feeding mechanisms
 - Automatic inspection
 - Mining
 - Exploration
 - Energy
 - Space
 - Defence
 - Agriculture
- Trends
- Social implications
- Education and curriculum development
- Artificial intelligence architectures and languages
- Artificial intelligence and education
- Automated reasoning
- Expert systems
- Knowledge acquisition
- Knowledge representation
- Logic programming
- Methodology
- Applications of artificial intelligence, all fields
- Applications of expert systems

Exhibition

Space is available for vendors to exhibit their products and services. The fee is 550 FF per sq. m (min. 10 sq. m).

Languages

English or French may be used, but preferably English.

Enquiries to: Professor P. Lopez, GARI/DGE/INSA, RAI/

IPAR '86, Avenue de Ranguel, F-31077 Toulouse cedex (France).

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 multi-lingual 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.

SIXTEENTH INTERNATIONAL SYMPOSIUM ON INDUSTRIAL ROBOTS

(Brussels, Belgium; September 29–October 2, 1986)

1. General information

- Instructions as to the preparation of papers will be sent to speakers once their abstract has been accepted.
- Completed manuscripts in camera-ready form must be submitted by 15 May 1986, at the latest, for final review by the committee. Failure to meet this deadline risks exclusion from the published proceedings.
- All submitted papers should be in ENGLISH.
- Final papers should be 2,000 to 4,000 words in length, with a maximum of 10 illustrations.
- Presentation time for each paper will be maximum 30 minutes, including time for discussion.
- The use of clear, professionally produced visual aids is strongly recommended.
- The official conference language is English.
- Papers should be free from commercialism.

2. Suggested topics for papers

The scope of subjects covered at the symposium has increased immensely since the early events, reflecting the rapid technological developments which have taken place. The 16th ISIR Scientific Committee, under the chairmanship of Prof. Dr. Ir. H. Van Brussel of the Katholieke Universiteit Leuven, has identified a list, given below, of topics to which the 16th Symposium will address itself. In addition, recognising that

robotics technology cannot be considered totally in isolation, the Committee intends to focus also on two areas of particular current interest: robotics education and human factors. For each, a special forum is planned and authors are invited to submit papers for these in addition to the ISIR programme.

3. Topic areas

Forum on Robotics Education

- Government views
- Industry needs for education and training in robotics
- Reports on existing and planned robotics and automation centres
- Education in robotics. What and at which level?

Forum on Human Factors in Robotics

- Man-machine interaction
- Safety aspects
- Changes in job content due to the introduction of robots
- Social aspects of robot implementation
- Employment aspects
- Strategies for introducing robots
- Ergonomic considerations in work place design

16th ISIR

1. State-of-the-art and development trends in flexible automation
2. Robot technology
 - Manipulation kinematics and dynamics
 - Robot design
 - Actuators and measuring systems
 - Locomotion systems, mobile robots
 - Gripper design
 - Modularity in robot construction
3. Control of robots
 - Control architectures
 - Sensor interactions, force/position control, compliant motion
 - Dynamic motion
 - Hierarchical control
4. Robot programming systems
 - Robot languages
 - Standardised interfaces
 - Cell programming
5. Flexible robot peripherals and sensors
 - Visual, tactile, force, distance sensors
 - Integration aspects of sensor-based systems
 - Flexible feeding devices
6. Standardisation in robotics (hardware, software, programming)
7. Performance and acceptance testing of robots
8. Technical aspects of integrated flexible production systems
9. Economic justification of integrated robot systems
10. Application and operational experiences
 - Traditional areas
 - New areas: laser machining, water jet cutting, welding
 - Non-manufacturing applications: medical, inspection, nuclear, household, maintenance, mobile marine and mining robots, space manipulators.

Speakers are requested to indicate on the abstract form which subject area their paper is intended to cover.

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