

IFR News

Preparations under way for 30th ISR and '99 ICAR

PREPARATIONS are under way for the 30th International Symposium on Robotics (ISR) which will be held at the Keidanren Kaikan in Tokyo, from 27 to 29 October 1999.

The theme of this year's event is one of celebrating the 30th anniversary and looking forward to the next Millennium.

The robotics industry is entering a new stage in its development as the new Millennium nears. The host country is making the utmost effort to broaden the scope of the symposium, which over the last 30 years has become a benchmark as one of the most authoritative forums on robotics in the world, contributing to the development of industrial robots.

In keeping with the theme, there will be special sessions focusing on the spread and development of next-generation robotics, as well as presentation papers on the newest robotic R&D and application technologies. There will also be major memorial sessions. Under the topic of robotics review, the symposium will address itself to the current situation in different countries, national projects, statistics and international co-operation, and state-of-the-art and current trends.

Applied research and technology will embrace a wide range of subject areas from robot kinematics to robot visions, and from telerobotics to virtual reality and advanced human interfaces.

Traditional robot applications are expected to be covered as well as new and novel applications such as horticulture, space, networked robots and amusement robots. Finally, it is planned to look at the management aspects of robotics as well as the implications of standardisation.

Taking place in the same week as the 30th ISR will be the International Conference on Advanced Robotics — '99 ICAR. This will be held from 25 to 27 October 1999 at the same venue – Keidanren Kaikan – in Tokyo.

This will also be an opportunity to see the very newest domestic and foreign robot products and technologies under one roof at the '99 International Robot Exhibition. This will be staged at the Tokyo Big Sight. All three of these events will form Robot Week – an extended forum with much to offer robot researchers as well as users and suppliers alike.

The official languages of the 30th ISR will be English and Japanese – there will be simultaneous translation provided.

Those considering offering papers for presentation at the conference are invited to submit an extended abstract (two pages of A4 sheet) together with figures or photographs before the deadline of 31 March 1999 to the 30th ISR Secretariat, c/o JARA, Kikashinko Bldg, 3-5-8 Shibakoen, Minato-ku, Tokyo 105-0011, Japan. Tel: +813 3434 2919; Fax: +813 3578 1404; E-mail: jara@jade.dti.ne.jp

Multi-agent-systems debut

MULTI-AGENT-SYSTEMS (MAS) was first introduced as a keyword some 15 years ago in order to face the increasing complexity and dynamics of distributed systems. Up to now, most of the realised MAS applications, are dealing with software agents. Nevertheless, application of MAS to production and automation is believed to be one of the key aspects of modern manufacturing.

Several intelligent and autonomous modules or agents have to accomplish a global task. Using high-level control software, these agents are able to divide the global task into various sub-tasks, to organise them and then to carry them out.

Research in robotics is aimed at dealing with a flexible combination of autonomous, modular systems. Robots working simultaneously have to carry out their tasks in a co-ordinated manner without any delays and without blocking other agents.

A new issue on robotics therefore is dealing with co-operation and co-ordination among different robots. Multi-robot (agent)-systems are often working in a highly dynamic environment as other robots intentionally affect the environment in unpredictable ways. Consequently, robots not only have to control themselves, but must also consider the movement of other robots, being passive parts of the environments.

These and other related subjects will form the basis of a new event that is being organised by the Institute of Handling Devices and Robotics of the Vienna University of Technology. Titled the 1st IFAC Workshop on Multi-Agent-Systems in Production – MAS '99 this will be held from 2 to 4 December 1999 in Vienna. Further details of this event are available from: <http://www.ihrt.tuwien.ac.at/MAS99/>. n

Joseph F. Engelberger awards

THE ROBOTIC Industries Association (RIA) is still accepting nominations for the Joseph F. Engelberger Robotics Awards.

The awards recognise outstanding individuals for achievements in the following four areas: technology development, application, education and leadership.

The deadline to submit nominations for the 1999 Joseph F. Engelberger Robotics Awards is August 15, 1999.

For details on the award, contact RIA headquarters at 734/994–6088, ria@robotics.org or on the Internet at www.robotics.org.

Nominate your winner for the Golden Robot Award

IT IS that time of the year to think seriously about who you would like to nominate for the Golden Robot Award which this year will be presented to the winner at a ceremony during the 30th International Symposium of Robots (ISR) to be held in Tokyo, 27–29 October 1999.

The Golden Robot Award is open to deserving individuals throughout the world. Nominations for the 1999 Golden Robot Award must reach the Award Committee no later than 15 June 1999.

Contact the Golden Robot Award Committee at ABB Flexible Automation: Fax: +46 21 344695 or through the Internet at lars-erik.ringstrom@sefax.mail.abb.com.

Robots come out of the factories and into the fields

THE last 15 years has seen a massive increase in farming mechanisation, with the labour force shrinking proportionately. Whereas once, it took twenty people to run a typical 2,000-acre farm, it now takes two. Such economies of scale have led to farms getting bigger and large commercial operations entering the farming arena for the first time.

This pattern is being repeated all over the developed world, so The Ministry of Agriculture, Fisheries and Food (MAFF) commissioned a fact finding mission on robotics in agriculture, from the BRAA, the body which represents British Robotics and Automation. Two of the principal contributors to this report were Geoff Pegman and David Hopper of UK Robotics Limited. UK Robotics runs the National Advanced Robotics Research Centre, based at Trafford Park, Manchester.

While the report focused on robotics and agriculture world-wide, special attention was paid to the international leaders in this field, France, The Netherlands, Japan and the United States of America.

The final report provides an in-depth description of the state of current agricultural robotics research in the UK and abroad and identifies where UK funding should be directed

to maximise benefit to growers and farmers.

Technologies like Global Positioning System (GPS) already exist, making autonomous tractors viable. The UK's Silsoe Research Institute has three futuristic applications close to commercial release – robotic milking, automated mushroom harvesting and a Remotely Operated Vehicle (ROV) for aquaculture.

The UK was found to be at the forefront of advanced robotic research. However, unlike The Netherlands, the UK does not have many advanced systems in commercial use. It was concluded that funding would be best directed to educating farmers about the benefits of robotics and automation and by helping the new technology to bridge the commercial gap by offering financial support to those farmers willing to adopt mature prototypes and early commercial systems.

Geoff Pegman commented: "With the increasing call for more traceability within the food industry, the time is now right for advanced automation to be harnessed to the farmer's computer-based management systems. If we adopt the "wait and see approach" we will be in danger of being left behind. The next five years should see the development of agricultural robots that are robust and effective, as current technologies develop incrementally. In the long term, we should see co-operative robots and fast, lightweight robots, some of which will be fitted with vision-based navigation, with others fitted with biological and chemical sensors capable of monitoring and controlling growing crops."

Dr. David Hopper added: "The future should also bring efficient walking robots and small scale robots, but already, there are prototype systems capable of utilising artificial vision to harvest delicate soft fruit like tomatoes or strawberries. It is important that agricultural machinery manufacturers and systems integrators are included in these robotics projects early on, so that the skills are developed to successfully build and maintain these new technologies."

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