

## NEWS FROM THE INTERNATIONAL FEDERATION OF ROBOTICS (IFR)

1. A number of the world's leading robotics specialists received awards during the International Federation of Robotics' 27th International Symposium on Industrial Robots (ISIR) held in Milan last October.

The U.S. Robotic Industries Association presented four awards named after the 'father of robotics' and Robotica editorial board member Joseph Engelberger. The Engelberger award for robotics application was bestowed upon Dr William Bargar and the late Dr Howard Paul, co-founders of the California company Integrated Surgical Systems which has pioneered the use of robots in hip-replacement operations. (An article about this group's work appeared in the Special Issue of Robotica on Robotics in Health Care, published in November–December 1993.) The Engelberger award for technology development was given to Professor Paolo Dario of Pisa, Italy for his pioneering research in tactile sensing and artificial perception. The Engelberger award for industry leadership went to Mr Walter Reis, general manager of the German robot manufacturer Reis Robotics, and from 1993 to 1995 chairman of the International Federation of Robotics. The Engelberger award for education was bestowed upon Professor Miomir Vukobratović of Yugoslavia for his research and publications in the field of kinematics, dynamics and control of robot systems.

ABB Flexible Automation conferred the Golden Robot Award upon François Ronssin of Philips Display Components, Dreux, France, for his achievements in introducing robots in the manufacture of television tubes.

The Japan Robot Association (JARA) presented three awards for papers presented at the 26th ISIR held in Singapore in 1995. Dr Oussama Khatib of Stanford University received the JARA Research and Development award for his paper on mobile robot manipulation which developed and validated strategies for co-ordinating and controlling mobile manipulator platforms, including systems in which an accurate manipulator is attached to a coarse manipulator. Messrs Mauro Onori and Anders R. Ericsson and Prof. Anders Arnström of the Royal Institute of Technology, Sweden, were given the Application Technology award for a paper describing a novel flexible automated assembly system. Messrs Kenneth Taylor and James Trevelyan of the University of Western Australia received the Application Technology award for their paper describing how remotely

situated users can control an industrial robot via the World Wide Web.

IFR's 28th International Symposium on Robots – the word 'Industrial' has been dropped from the symposium name – will take place in Detroit, USA

2. The International Federation of Robotics has endorsed the 3rd Asian Conference on Robotics and its Application (3rd ACRA), as an IFR regional event. This conference will be held in Tokyo from 29 to 30 October 1997, and coincides with the '97 International Robot Exhibition (which takes place from 28 to 31 October). Further information about these events is available from the Japan Robot Association, fax +81 3 3578 1404.

3. The 1995 statistics of World Industrial Robots, including forecasts to 1999, have been published by the United Nations as report no. GB.E.96.0.26. This annual survey, a co-production of the UN Economic Commission for Europe and the International Federation of Robotics, estimates that some 650,000 robots are now in operational use, and analyses their distribution by country, application area, and the industrial branch in which each robot is used. This year's report includes a special section describing the use of robots for assembly tasks.

Some key findings of the latest annual collection of data regarding robot installations are that:

- 75,500 robots were installed worldwide in 1995, a 26% increase over the previous year
- The value of this market was US\$5,700,000,000, a 33% increase over 1994
- Japan accounted for US\$2,500,000,000 of the world market in 1995
- The average price of a robot (not including peripheral equipment) has declined from US\$108,000 in 1991 to US\$82,000 in 1995
- Three of the largest robot producers accounted for more than 30% of the total market
- Almost 60% of the world's robot stock is located in Japan

4. The International Federation of Robotics will shortly have a presence on the World Wide Web, supplementing the information already placed on the Web by IFR member associations in several countries. Details of the IFR Web site will be given in a future issue of *Robotica*.