Press release

Contact Gudrun Litzenberger
Phone +49 69 66 03-1502
Fax +49 69 66 03-2502
E-Mail gudrun.litzenberger@worldrobotics.org

Munich, 11 June 2008

Industrial robots are meeting the changing demands of their customers

At the end of 2007 about **1 million industrial robots** were working in factories worldwide according to the initial 2007 results. About 118,000 new industrial robots were supplied worldwide in 2007, 5% more than in 2006.

There were several principal customer trends which influenced the results in 2007.

The main customer – the automotive industry – is changing. Significant growth in unit sales of cars can only be realised in the growing markets of India, Southeast Asia, Russia and other Eastern European countries. In the mature car markets of Western Europe, North America, Japan and the Rep. of Korea, only growth in value of turnover is possible as a result of improvements in technology. Motor vehicle suppliers are reorganizing their business with their suppliers. They are reducing the number of direct suppliers. Furthermore, strong competition in all markets has caused some car suppliers to boost investments, while others have reduced capacities and relocated production sites. These changes in the business of the motor vehicle suppliers and the cycle of new models resulted in at times huge robot investments in some countries. In other countries, investment stagnated or even decreased. Robot sales to automotive parts suppliers were flat in all regions in 2007.

Automotive parts suppliers have to restructure in order to meet the demand of the motor vehicle suppliers. In 2007, robot sales in this market were flat in all regions.

There is a worldwide trend towards automation in the “non-automotive industry”. Robot suppliers are offering increasingly tailored solutions to these customers. The metal industry, the food and beverage industry, the glass industry, the pharmaceutical and medical devices industry, and the photovoltaic industry continued to increase their robot investments.

As in recent years, the results in the major regions were quite different: Stagnation in Asia, remarkable increase in the Americas, continuing growth in Europe.

The Americas: strong demand of the automotive industry

About 21,000 industrial robots were supplied to the Americas in 2007, 17% more than in 2006. The strong demand of the motor vehicle industry in the United States and in Canada was the main reason for this good result.

Total supplies in the **United States** grew by 12% to 16,600 units and in **Canada** by 67% to 2,900 units. **Brazil** was in third position with 700 units, 62% more than in 2006. Mexico was down by 33%. Demand in Argentina also increased remarkably.

In terms of applications, supplies of welding robots increased by 42%. Handling and cleanroom applications also saw remarkable growth. Assembly declined sharply by 42 %, and processing and dispensing solutions were also down.

Motor vehicle suppliers ordered 52% more industrial robots than in 2006. Nevertheless, the total number of 6,200 units still did not reach the record number achieved in 2005 (8,200 units). Asian car suppliers, in particular, invested to increase their capacities in North America. American car supplies were reducing capacities and relocating production sites. The tough competition in this stagnating market is continuing. Robot sales to automotive parts suppliers stagnated in 2007. The electrical/electronics industry (most prominently the semiconductor industry) continued to increase robot purchases. The food and beverage industry and the pharmaceutical industry also ordered more industrial robots. There was, however, a slight decrease in sales to the metal and engineering industries, as well as to the rubber and plastics industry.

The **operational stock of industrial robots** increased by 8% to about 167,000 units, about 17% of total world stock.

Asia: demand at a plateau

Robot investment in Asia stagnated at about 60,900 units in 2007.

In **Japan**, the largest robot market in the world, sales increased slightly by 2%, at 38,100 units. In 2005, a lot of replacement investments as well as new model lines boosted robot supplies to the automotive industry. In 2006 and 2007, the cyclical effect of this business caused a decrease of robot sales. On the other hand, demand from the electrical/electronics industry, the metal and machinery industry, the rubber and plastics industry, the medical devices and the pharmaceutical industry, as well as the food and beverage industry rose at an above average rate.

Mr. Yasushi Tomita, General Manager, Overseas Sales Department, Yaskawa Electric Corporation, Japan will now present the detailed results of the member statistics of the Japanese Robot Association (JARA). The total number of robots supplied to Japan differ from that of the IFR, because the IFR data include estimates of robot companies, which are not member of JARA. For the final evaluation of the World Robotics data JARA will provide the total supply of robots to Japan including also the recorded data of non-member companies. The JARA report is attached separately in your press kit.

Robot supplies fell by 4% in the **Republic of Korea** (the second largest Asian robot market) in 2007, to 10,300 units. A slump in orders from nearly all industries – especially motor vehicle suppliers - was partly offset by stronger investment in the electronics industry and automotive parts suppliers.

Robot investment is still booming in **China,** the third largest Asian robot market, with 6,600 units supplied in 2007, an increase of 14% on the previous year. Here, demand is increasing in all industries, including the automotive sector.

In **India**, robot installations stagnated, reaching 830 units. Considering the fact that modernisation of production sites is increasing rapidly in almost all industries, the stagnating number of robot sales is astonishing.

Robot supplies to **Taiwan** (Province of China) were down by 34%. Total supplies in all other Asian markets, including **Indonesia, Malaysia**, the **Philippines, Singapore, Thailand** and **Vietnam,** surged by 21%.

Robots for cleanroom applications, dispensing and **welding** increased, while all other applications fell by around 5% on average. Handling operations for measuring, inspecting and testing, and for stamping, forging and bending increased remarkably. Robot Vision is gaining in importance as well as metal working.

The increasing robot supplies to the **metal products industry**, the **electrical/electronics industry**, the **rubber and plastics industry** and the **pharmaceutical and medical devices industry** compensated to some extent for the decline in sales to motor vehicle suppliers in Asia.

The **operational stock of industrial robots** increased by 3%, to about 490,000 units, almost half of the total world stock.

Europe: continued growth

Sales of industrial robots in **Europe** were up by 10% to about 34,600 units, the highest number of robots ever recorded in one year. This was the result of surging investments in the non-automotive sector as well as in the motor vehicle industry.

Germany – the largest market for industrial robots in Europe – was the engine of growth in Europe. Supplies of industrial robots surged by 29% to about 14,800 units, the highest number of robots ever recorded in one year for the country. This was due to significant increased demand from almost all industries, especially of the motor vehicle industry, the metal and engineering industry, the glass and ceramics industry, the medical devices industry, the electrical/electronics industry and the food and beverage industry.

Italy – the second largest market was down by 10% to about 5,600 units. The rubber and plastics industries cut their robot investment sharply in 2007, although the automotive industry, the metal industry and the food and beverage industry all invested very heavily in industrial robots.

The yearly supply of industrial robots in **France** decreased by 10% to about 2,800 units. This has been due to the largely stagnant investment climate in France. Almost all industries decreased their robot investment in 2007.

Supplies to **Central/Eastern European countries** surged by 56%. Sales to **Spain and the United Kingdom** were down.

Handling operations increased by 19%. **Material handling** – mostly used in the automotive industry surged by 71%, and **packaging, picking and placing** by 49%. **Assembly** surged by 42%. **Welding** slightly decreased, despite an overall rise in robot investment in the motor vehicle industry. It can therefore be concluded that motor vehicle producers used more robots for other operations like material handling.

The **motor vehicle industry** boosted investment in Europe by 35% while automotive parts suppliers reduced their robot orders by 8%. Sales to the **metal and machinery industry**, the **food and beverage industry**, the **glass industry**, the **medical devices industry**, the **communication industry** and the **paper industry** grew at an above average rate. Between 2005 and 2007, the non-automotive sectors were gaining in importance very strongly in Europe. This is the main reason for the continuing growth. In 2005, the slump of orders from the automotive industry caused only a slight decrease of total robot supplies. In 2006, despite the continuing decrease of sales to the automotive industry the total sales increased by 11%.

The **operational stock of industrial robots** increased by 6% to almost 329,600 units, about one third of the total world stock.

Forecast 2008

The robot market is continuing to grow in the current year.

Improvements in sensor technology like robot vision, force sensing or environment recognition will enhance quality control and inspection. Improvements in communication such as remote operation or better human-machine interface will open new customer groups such as small and medium sized companies. Improvements in system technology, like off-line programming, safety, multi-robots cooperation will guarantee solutions for sophisticated automation processes.

The automotive industry will continue robot investment in the growing markets such as China, India, Southeast Asia, Russia, Eastern Europe and South America to increase capacities. The non-automotive sector will continue to increase their robot investments, especially the metal and machinery industry, the glass/ceramics industry, the semiconductor industry, the photovoltaic industry and the furniture industry.

Small and medium enterprises will become first time robot users, due to attractive prices and intelligent easy to use systems.

The high quality and environmental standards are forcing all manufacturing industries especially in countries such as India, Russia or China to modernize their plants in order to be competitive on the global market.

Finally the development of the robot sales will again be different in the three big regions. In 2008, the non-automotive sectors will increase remarkably in the Americas, but such increases will not be sufficient to offset the expected cyclical decline in sales to the automotive sector. So robot sales will decrease in 2008 in this region. The robot supplies in Europe will continue to grow. In the biggest market, Germany, the order intakes of the first quarter 2008 are still at double-digit rates. In Italy an increase of robot installations is expected between 5% and 10%. In the Eastern European countries further strong robot investment will be realised. The robot supplies to Asia will increase in 2008 after the stagnation in 2007. Moderate growth in Japan and the Republic of Korea and surging sales to the growing markets in Asia will be realised.

According to first estimates, in 2008, the total increase of the robot shipments in the world will be between 8% and 12% higher than 2007.

Service Robots

For Service Robots we still cannot provide the 2007 figures. In 2006 we estimated that about 35,000 service robots for professional use and 3.6 million service robots for personal/domestic use will be sold worldwide in the period 2007 – 2010.

Professional service robots are valuable, high-tech products. There are a lot of categories. Just some successful examples:

- The rate of diffusion of **military robots,** such as unmanned aerial or ground-based vehicles, is growing rapidly in response to successful deployment in Afghanistan and Iraq. Civilian use has in particular been promoted in Europe.
- **Surveillance and security systems** free guards from regular patrol. They can stay at a central "office" and follow the robots via video transmission. Where several robots operate in this way, much larger areas can be covered with fewer personnel. They are used for military and civilian purposes.
- The future dairy industry will be far more automated than today, using **automated milking systems** which besides high productivity and cost efficiency will satisfy the demand for higher milk quality and more humane conditions for dairy herds.
- **Underwater systems** can go deeper and stay underwater for longer periods of time than divers, who would have to come up every so often to take new oxygen bottles and recover. This should allow operations to be completed faster, more cheaply and with fewer personnel.
- **Robot assisted surgery or therapy** will increase remarkably. The number of operations requiring technically advanced methods is increasing, and as a result, new methods are being sought. In addition, many more systems are being developed or are currently in their prototype phase and awaiting approval from medical authorities.

Robots for **personal/domestic** use have already reached a high level of distribution. Entertainment and toy robots are usually low-cost products. Sales of these robots are increasing. Vacuum cleaners and lawn mowers are in use in more and more households. Robots for handicap assistance have not yet achieved the level of uptake that could be expected given their potential in regard to both the supposable need and the existing technological level of the equipment. In a longer term, say in the next 10 years, and taking into account demographic shifts and advances in technology, assistive robots for disabled and handicapped persons are certain to be a key application area for service robots. Important research institutions are focussing on developing prototypes of this kind of robot.

The press information and charts are downloadable at:
www.worldrobotics.org

The IFR Statistical Department, which is hosted by the VDMA Robotics + Automation association publishes the study World Robotics every year. This unique publication presents comprehensive global statistics on both industrial and service robots in uniform tables allowing consistent country comparisons. It contains detailed statistical data for some 50 countries, broken down by application areas, industrial branches, types of robots and by other technical and economic variables. Data on production, exports and imports are presented for a selection of countries. Trends in robot densities, i.e. number of robots per 10,000 persons employed in relevant sectors, are also featured. The chapter about Service Robots is written by our partner the Fraunhofer IPA.