

## Foreword

By: Dr. Andreas Bauer, Chairman IFR Industrial Robot Suppliers Committee



Dear Reader,

Dear Robotics Community,

Robotics is a hot topic these days! Many cutting edge technologies are connected with the field of robotics, like machine learning and AI, IIOT, man-machine-collaboration or autonomous mobile systems. Intelligent robots are the crucial part of digitalization of the manufacturing industry.

The global manufacturing industry is facing big challenges however, like rapidly changing consumer trends, shortage of resources, shortage of skilled workers, aging society, and demand for local productions.

Flexible industrial robot-based automation delivers the solution to all these challenges. That is why in this latest issue of “World Robotics” we see not only a significant rise in the number of robots put into operation, but also an increasing number of new application areas.

I have the honor to announce some of the highlights of the booming robotics industry:

- the fifth consecutive year with the highest level of an annual sales volume ever recorded: approx. 381,000 industrial robots were sold in 2017 (+ 30% units compared to 2016)
- the global manufacturing industry crossed the threshold of two million robots in operation for the first time: 2,098,000 industrial robots were in operation worldwide in 2017 (+ 15% units compared to 2016)

The shipments of industrial robots are growing in most countries, but the growth of China is outstanding. Robotics is one of the key sectors in the government’s “Made in China 2025” plan and, as a result, the state incentives for the use of industrial robots in China – from both domestic and international manufacturers – continue to increase.

- The highest level of an annual sales volume ever recorded for a single country: industrial robot sales in China surged in 2017 by + 59% to 138,000 units. More than every third robot worldwide was installed in China.
- The highest level of the operational stock of industrial robots ever recorded for a single country: about 473,000 industrial robots were in operation in China in 2017 (+ 39% units compared to 2016).

Looking to the near future, this historic global growth is expected to go on. Between 2018 and 2021, it is estimated that more than 2 million new industrial robots will be installed in

factories around the world (CAGR 14%). Total global annual sales will reach over 600,000 units in 2021, with Asia still at the top both in sales and stock, followed by Europe and the Americas.

In the future, new potentials will be unlocked and possibilities for the use of industrial robots will even further increase. Technological developments in robotics are progressing at a rapid pace. Collaborative robots, Industrial Internet of Things (IIoT), and machine learning will lead the way in the coming years, and the impact of the cloud and big data will open up an entirely new production environment.

Finally, in the midst of all the record numbers and rapid technological developments, we cannot forget that the manufacturing industry together with robot suppliers and their partners have a great social responsibility: to create better working conditions, to secure more attractive jobs, to sustainably improve productivity and output, and to use resources more efficiently.

Robotics and automation will increasingly shape the way we work in the future, with enormous potential for improvements in productivity, quality, safety, remuneration, and manufacturing competitiveness.

For me this sounds like a very exciting future lying ahead of us. The best is yet to come!

Best wishes,

A handwritten signature in blue ink, appearing to read 'Andreas Bauer'.

Dr. Andreas Bauer