Welcome to IFR Press Conference

29 September 2016
Frankfurt
How Robots protect the EU in Global Competition

- Welcome and introduction
- World Robotics 2016 - Results, Forecast, Trends
- Robotics & Industrie 4.0
- Get together and personal interviews
Speakers on the panel

Joe Gemma  
IFR President  
President and CEO,  
KUKA Robotics Corp, USA

Professor Alexander Verl  
Chairman IFR Research Committee  
General Head of Institute Control Engineering of Machine Tools and Manufacturing Units  
University of Stuttgart, Germany

Gudrun Litzenberger  
IFR General Secretary, Frankfurt
1.4 million industrial robots between 2016 and 2019

**Worldwide annual supply of industrial robots**

*2001 - 2019*

2017-2019: +13% per year on average

*forecast

Source: IFR World Robotics 2016
2019: 2.6 million robots in operation

Worldwide estimated operational stock of industrial robots

Source: IFR World Robotics 2016
Almost 70% in three main industries

Estimated worldwide operational stock of industrial robots at year-end by main industries 2013 - 2015

- Automotive
- Electrical/electronics
- Metal
- Chemical and plastics
- Food
- Others
- Not specified by industries

Source: IFR World Robotics 2016
Increasing need of robots in all industries

- Continued strong demand from the automotive industry
- Increasing high volume order from the electronics industry
- The General Industry is more and more inclined to use robots
- Small and medium sized companies will increasingly use industrial robots.

Source: Yaskawa
Trends fueling robot installations 2016 to 2019

- Human-robot collaboration will have a breakthrough in this period.
- Compact and easy-to-use collaborative robots will drive the market in the coming years.
- Energy-efficiency and using new materials require continued retooling of production

Source: KUKA
2019: 40% of the global supply will go to China

Annual supply of industrial robots to China
2010 - 2019*

2017-2019 total forecast: 20% on average per year

Source: IFR World Robotics 2016
Republic of Korea: Continued increase 2016-2019

Annual supply of industrial robots to the Rep. of Korea 2010 - 2019*

* forecast

2016-2019 total forecast: +5% on average per year

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Japan: continued increase 2016 and 2019

Annual supply of industrial robots to Japan 2010 - 2019*

2016-2019 total forecast: +5% on average per year

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* forecast
Continued increase in main Western EU markets

Annual supply of industrial robots to main Western European** markets 2010 - 2019*

2016-2019 total forecast: +5% to +10% on average per year

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* forecast
**Germany, Italy, Spain, France, UK

Source: IFR World Robotics 2016
Substantial increase in main Eastern EU countries

Annual supply of industrial robots to Central and Eastern Europe 2010 - 2019*

2017-2019 total forecast:
+14% on average per year

* forecast

000's of units

3 5 4 5 5 6 8 9 10 11
Continued increase in North America

Annual supply of industrial robots to North America
2010 - 2019*

2016 - 2019: between 5% and 10% per year on average

Source: IFR World Robotics 2016
High robot density in EU countries

Figure 2.9 Number of multipurpose industrial robots (all types) per 10,000 employees in the manufacturing industry (ISIC rev.4: C) 2015
United States have caught up 5 EU countries among the top ten

Number of multipurpose industrial robots (all types) per 10,000 employees in the automotive and in all other industries 2015
ZEW Study*: Automation has a positive net effect on labour demand in Europe.

- Automation reduces production costs
- Reduced product costs reduce product prices
- Reduced product prices increase demand for products
- Increased product demand increases employment
Example automotive industry **United States 2010-2015:**
- 80,000 new industrial robots installed
- 230,000 more employees

Example automotive industry **Germany 2010-2015:**
- Operational stock increased by 3% on average per year (+13,000 units)
- Increase of employees: +2.5% on average per year (+93,000 employees)