Welcome to the IFR Press Conference

Publication of World Robotics 2016 – Service Robots

12 October 2016, Seoul
Welcome and introduction

World Robotics 2016 - Service Robots
  - Results, Forecast, Trends

Highlights Robot Research in Korea

Get together and personal interviews
Speakers on the panel

**Martin Haegele**  
Chairman IFR Service Robot Group  
Head of Robot and Assistive Systems  
Fraunhofer IPA, Stuttgart, Germany

**Professor Jong-Oh Park**  
Vice Chairman IFR Research Committee  
Head of Robot Research Institute, Chonnam National University, Republic of Korea

**Gudrun Litzenberger**  
IFR General Secretary, Frankfurt
International Federation of Robotics

Represents the global robotics industry
Robotics turnover 2015: $35 billion

>50 members:
  National robot associations
  R&D institutes
  Robot suppliers
  Integrators

Sponsor of the International Symposium on Robotics (ISR)
Co-Sponsor of the IERA Award

Primary resource for world-wide data on use of robotics – IFR Statistical Department
More than 600 service robot suppliers identified

Number of service robot manufacturers of all types (professional and personal/domestic use) by region of origin

- North America, 226
- Asia, 112
- Europe, 258
- Others, 23

Source: IFR World Robotics 2016
Most start-up companies in the USA

Number of service robot start-ups of all types (professional and personal/domestic use) for selected countries

Source: IFR World Robotics 2016
2015: US$ 4.6 billion turnover of service robots for professional – US$ 23.1 between 2016 and 2019

Service robots for professional use. Estimated value of sales 2014 and 2015 and estimated value of forecast 2016 - 2019 (main applications)

Source: IFR World Robotics 2016
2015: 41.100 service robots for professional use sold – 333,000 units between 2016 and 2019

Service robots for professional use
Units sales 2014 and 2015, and forecast 2016-2019 (main applications)

Source: IFR World Robotics 2016
Logistic systems: AGVs will be all around

- AGVs in non manufacturing sectors:
  - E-commerce companies automate their business
  - AGVs have entered hospitals and other public areas

- AGVs in manufacturing
  - support human-robot collaboration
  - flexible manufacturing
  - important tool for Industry 4.0

AGV = Automated Guided Vehicle

Source: Magazino
2016-2019: Strong increase in most applications

Service robots for professional use.
Units sales 2014 and 2015, and forecast 2016-2019 (continued)

Source: IFR World Robotics 2016
Trends in the service robot market

- Exoskeletons on the rise
  - Rehabilitation, support
  - Ergonomic support for reducing loads

- Medical systems on the rise
  - Diagnostic systems
  - Robot assisted surgery or therapy
  - Rehabilitation systems

Source: BA Systemes
Source: Lockheed Martin
Source: Rewalk
2016 - 2019: 42 million new service robots for personal and domestic use

Main categories:

- Vacuum and floor cleaning
- Lawn-mowing robots
- Entertainment and leisure robots
- Robots for elderly and handicap assistance

Source: Kärcher (Vacuum cleaning)
Source: Ezrobot
Source: Aisoy Robotics S.L
2016 - 2019: at least 31 million new household robots

Service robots for personal/domestic use.
Units sales 2014 and 2015, and forecast 2016-2019

Source: IFR World Robotics 2016
2016 - 2019: US$ 22.4 billion turnover of personal/domestic service robots

Service robots for personal/domestic use.
Estimated value of sales 2014 and 2015, forecast 2016-2019

- Household robots: US$ 13.2 billion
- Entertainment and leisure robots: US$ 9.1 billion
2016-2019: US$ 45 billion sales value

Service robots for professional use and for domestic/personal use
Units sales 2014 and 2015, and forecast 2016-2019

Source: IFR World Robotics 2016
Global robot market between 2016 and 2019:

- 1.4 million industrial robots will be installed in the factories to increase productivity
- 333,000 service robots for professional use will be sold to non-manufacturing and to manufacturing sectors

and

- 42 million service robots for personal and domestic use (consumer robots) will be used in our private life
Thank you!

IFR - International Federation of Robotics