Welcome to the Press Conference

Industrial robots are meeting the changing demands of their customers

- Total world supply of industrial robots up to 2007
- Distribution in the main regions (Americas, Asia, Europe)
- Applications
- Industries
- Forecast 2008
- Service Robots
World Robotics 2008 - First results
Press conference 11 June 2008

- Åke Lindqvist, IFR Vice President
  Chairman IFR Robot Suppliers,
  ATC Vice Chairman (Automation Technology Council),
  RIA (Robotics Industry Association of North America)
  Board of Directors & RIA Chairman Statistics Committee
  Group Vice President, ABB Inc, USA

- Tokuo Iikura, Executive Director, JARA (Japanese Robotics Association), Japan

- Yasushi Tomita, General Manager, Overseas Sales Department, Yaskawa Electric Corporation, Japan

- Stefan Müller, IFR President,
  Chairman, EUnified Robotics
  Senior Consultant, KUKA Roboter, Germany

- Gudrun Litzenberger, Director IFR Statistical Department

World Robotics 2008 – First results
World: 1 million industrial robots operating

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*preliminary data

Quelle: IFR Statistical Department
World Robotics 2008 – First results

World: Increase of 5% in 2007

Estimated worldwide yearly supply of industrial robots
1992 - 2007

Source: IFR Statistical Department

World Robotics 2008 – First results

World: Automotive is changing

Automotive industry
- Significant growth in unit sales only in the growing markets
- In the mature car markets only growth in value of turnover
- Reorganisation of the business with the suppliers
- Boosting investments as well as
- Reduction of capacity and relocation of production sites

Source: Comau
World Robotics 2008 – First results

World: Automotive is changing

- Non-automotive sectors
  - Trend towards automation
  - Tailored solutions of the robot suppliers
  - Continued increase:
    - metal
    - food and beverage
    - glass/ceramics
    - pharmaceutical
    - medical devices
    - photovoltaic

Source: FANUC

World Robotics 2008 – Customers

Growth in non-automotive sectors

Worldwide yearly supply of industrial robots 2006 - 2007* by main industries

- Motor vehicles: +19%
- Automotive parts: +64%
- Electrical/electronics: +10%
- Chemical, rubber and plastics: +13%
- Metal products: +6%
- Machinery(industrial and consumer): +18%
- Food: +19%
- Communication: -37%
- Glass, ceramics: +54%
- Medical, precision and optical instruments: +38%

* preliminary data

Source: IFR Statistical Department
World Robotics 2008 – World
Different results in the regions

Estimated yearly supply of industrial robots
by regions 2005 - 2007

Source: IFR Statistical Department

World Robotics 2008 - First results
Americas

Presented by
Åke Lindqvist
IFR Vice President
Chairman, IFR Robot Supplier Group
ATC Vice Chairman (Automation Technology Council),
RIA (Robotics Industry Association of North America)
Board of Directors & RIA
Chairman Statistics Committee
Group Vice President, ABB Inc, USA
Estimated yearly supply of industrial robots in Americas

- 1994: 6,770 units
- 1995: 8,934 units
- 1996: 8,543 units
- 1997: 10,828 units
- 1998: 9,470 units
- 1999: 13,046 units
- 2000: 14,086 units
- 2001: 11,263 units
- 2002: 10,257 units
- 2003: 12,957 units
- 2004: 15,400 units
- 2005: 21,386 units
- 2006: 17,910 units
- 2007: 20,960 units

Source: IFR Statistical Department

Estimated yearly supply of industrial robots by countries in Americas 2006 - 2007*

- USA
- Canada
- Brazil
- Mexico
- Others

*preliminary data

Source: IFR Statistical Department
World Robotics 2008 – Americas
Cleanroom applications increasing

Estimated yearly supply in Americas of industrial robots 2005 - 2007 by applications

- Handling
- Welding
- Assembly
- Dispensing
- Processing
- Cleanroom

Source: IFR Statistical Department* preliminary data

World Robotics 2008 – Americas
High investments of motor vehicle suppliers

Yearly supply of industrial robots in Americas 2004 - 2007 by main industries

- Motor vehicles
- Automotive parts
- Electrical/electronics
- Chemical, rubber and plastics
- Metal/Machinery
- Food

Source: IFR Statistical Department* preliminary data
World Robotics 2008 – Americas
Stock increased by 8%

Estimated operational stock of industrial robots at year-end in Americas

Source: IFR Statistical Department

World Robotics 2008 - First results
Asia

Presented by
Gudrun Litzenberger, Director
IFR Statistical Department

Report on JARA (Japanese Robot Association) member statistics:
Yasushi Tomita, General Manager, Overseas Sales Department, Yaskawa Electric Corporation, Japan

Source: Motoman
World Robotics 2008 - Asia
Demand at a plateau

Estimated yearly supply of industrial robots in Asia

[Graph showing yearly supply of industrial robots from 1994 to 2007]

*preliminary data

Source: IFR Statistical Department

World Robotics 2008 - Asia
Robot sales in China continued to increase

Estimated yearly supply of industrial robots by countries in Asia 2006 - 2007

[Graph showing robot sales by countries in Asia]

Source: IFR Statistical Department
Estimated yearly supply in Asia
of industrial robots 2005 - 2007 by applications

- Handling
- Welding
- Assembly
- Dispensing
- Processing
- Cleanroom

Source: IFR Statistical Department*  preliminary data

Yearly supply of industrial robots in Asia
2005 - 2007 by main industries

- Motor vehicles
- Automotive parts
- Electrical/electronics
- Chemical, rubber and plastics
- Machinery (industrial and consumer)
- Metal products
- Communication
- Precision & optical products
- Food

Source: IFR Statistical Department*  preliminary data
World Robotics 2008 - First results
Europe

Presented by
Stefan Müller
Chairman,
International Federation of Robotics (IFR),
Chairman,
EUneut Robotics
Senior Consultant,
KUKA Roboter, Germany

Estimated yearly supply of industrial robots in Europe

Source: IFR Statistical Department

*preliminary data
World Robotics 2008 – Europe
Germany engine of growth

Estimated yearly supply of industrial robots in Europe by countries 2006 - 2007*

- Germany
- Italy
- France
- Central Eastern Europe
- Spain
- BENELUX
- Sweden
- United Kingdom
- Austria
- Switzerland
- Denmark
- Turkey
- all other countries

Source: IFR Statistical Department* preliminary data

World Robotics 2008 – Europe
Material handling is surging

Estimated yearly supply in Europe of industrial robots 2005 - 2007* by applications

- Handling
- Welding
- Assembly
- Dispensing
- Processing
- Others

Source: IFR Statistical Department* preliminary data
World Robotics 2008 – Europe
Strong non-automotive sectors

Yearly supply of industrial robots in Europe 2005 - 2007* by main industries

- Motor vehicles
- Automotive parts
- Chemical, rubber and plastics
- Metal products
- Food
- Machinery (industrial and consumer)
- Glass/ceramics
- Basic metals
- Electrical/electronics

Units: 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000

Source: IFR Statistical Department* preliminary data

World Robotics 2008 – Europe
Demand of non-automotive is growing

Estimated yearly sales of industrial robots 2001 - 2007
Share of Automotive - Non-automotive Industry in Europe

- Automotive
- All others

Source: IFR Statistical Department* preliminary data
World Robotics 2008 – Europe
33% of the robots worldwide operating in Europe

Estimated operational stock of industrial robots at year-end in Europe

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</table>

*preliminary data

Source: IFR Statistical Department

Forecast 2008
Technical trends

- Improvements in sensor technology
  - Robot Vision
  - Force sensing
  - Environment recognition

- Improvements in communication
  - Human-Machine Interface
  - Remote Operation

- Improvements in System Technology
  - Off-Line Programming
  - Safety
  - Multi-robots Cooperation

Source: Motoman

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Forecast 2008

Customers
- Automotive will remain main customer, but
- Non-automotive is growing, i.e.
  - Metal
  - Food
  - Glass/Ceramics
  - Furniture
  - Semi-conductors
  - Photovoltaics.....
- Small and medium enterprises
- High quality and environmental standards boost automation

World Robotics 2007 - Service Robots

in 2010 abt. 7.2 million service robots sold
- Up to 2006
  - almost 40,000 service robots for professional use
  - about 3.5 million service robots for private use
- Forecast 2007 - 2010
  - another 35,000 service robots for professional use
  - another 3.6 million service robots for private use

Source: KUKA

Source: Robotech
Service Robots for professional use
Increasing demand

- Most established professional robots, high growth rates expected
  - Military robots
  - Surveillance and security robots
  - Milking robots
  - Underwater systems
  - Robot assisted surgery or therapy

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Service Robots for personal/domestic use
Surging demand

- Low-cost products – many units
- Market for entertainment robots is boosting
- Vacuuming cleaners and lawn mowers are establishing in the households
- Handicap assistance – the future market

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Source: Robowatch

Source: Bluebotics

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Thank you!
Your questions, please!

www.worldrobotics.org