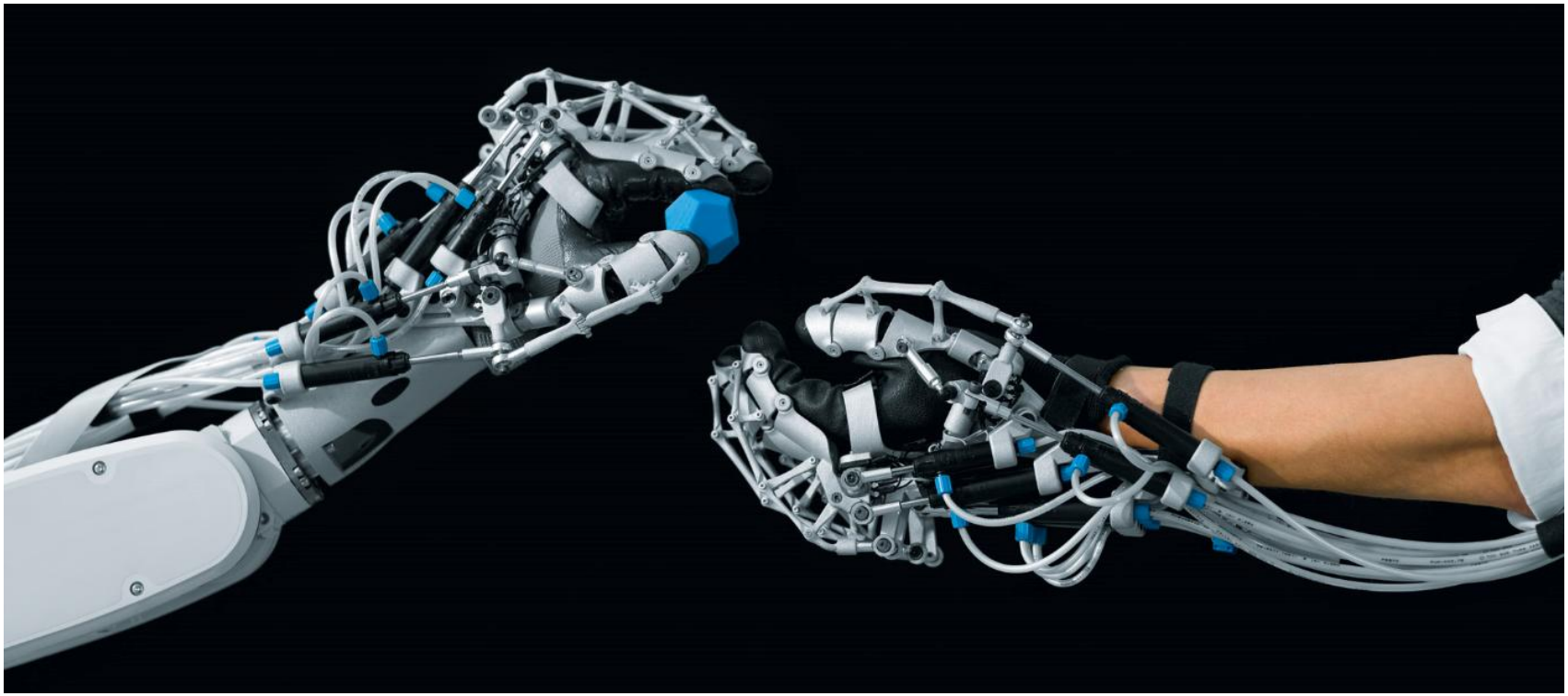
FESTO

Shangh'AI lecture 2013

Robotics @ Festo – From Bionics To Industrial & Educational Robots



Agenda

- **Introduction**
  - Festo Corporation – facts & figures
- **Bionics**
  - SmartBird – BionicOpter – ExoHand
- **Industrial & Educational Robots**
  - Bionic Handling Assistant – Tripod
  - Robotics Learning Systems – Robotino Next Generation
- **Conclusion**
  - Outlook

Festo Corporation – facts & figures

Headquarter in Esslingen-Berkheim Germany

Festo Corporation

Automation technology and Didactics
EUR 2.24 billion turnover in 2012
international in 59 countries and 240 locations

Innovative
2 900 patents globally, about 100 innovations per year
R&D: more than 7 % of sales

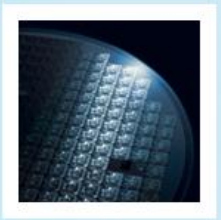
Self-learning
approx. 16 200 employees around the world
Training and Education: 1.5 % of sales

Committed to environment and quality
Quality and eco certificates
(ISO 9001, VDA 6.4, ISO/TS 16949, ISO 14001)

Festo Corporation – facts & figures

Automotive

Food
+ Packaging



Electronics

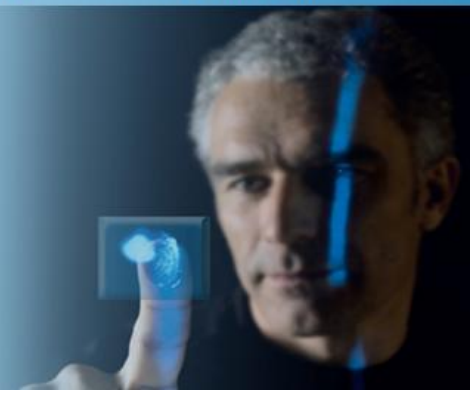
Solar

Biotech
+ Pharma

Process
Automation

Products
- Pneumatics
- Electrics
- Sensors
- Controls

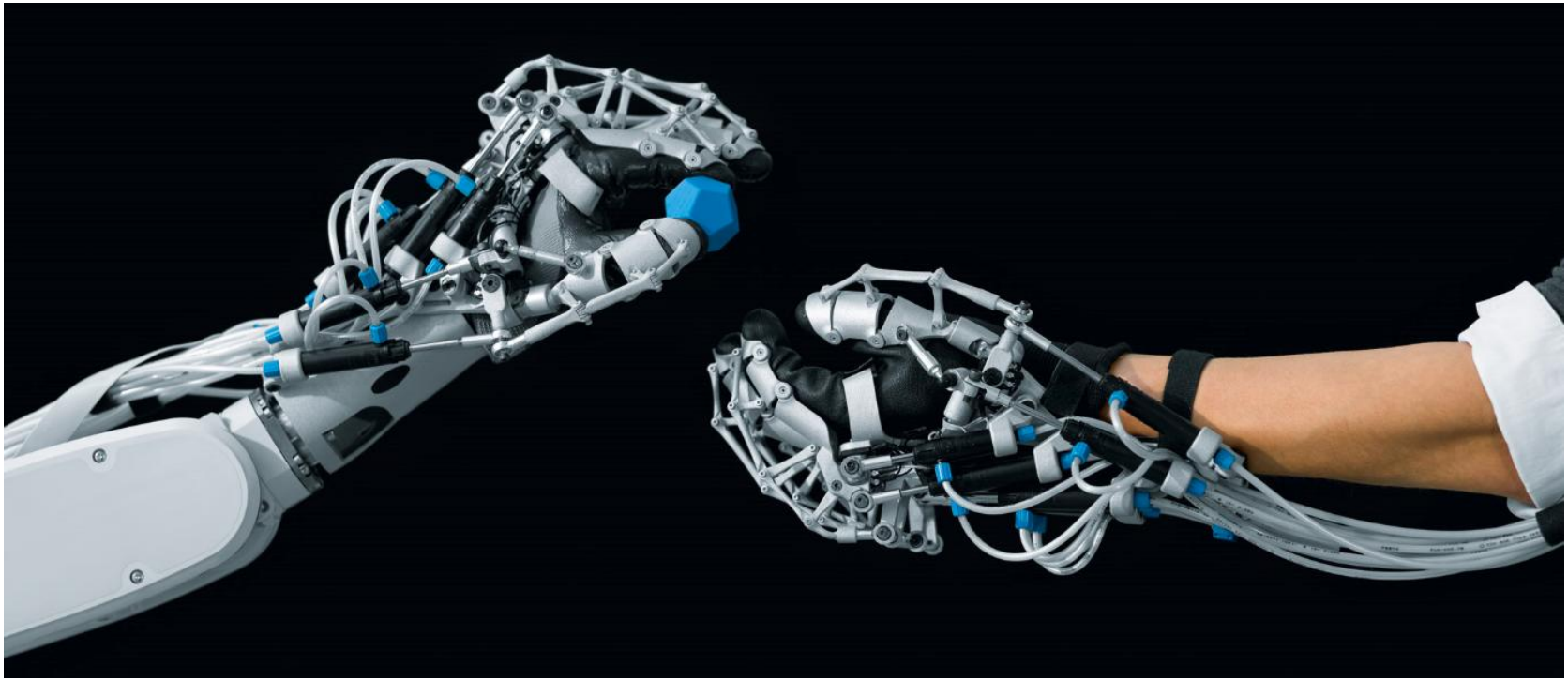
Services
- Logistics
- Commissioning
- Operation
- Maintenance



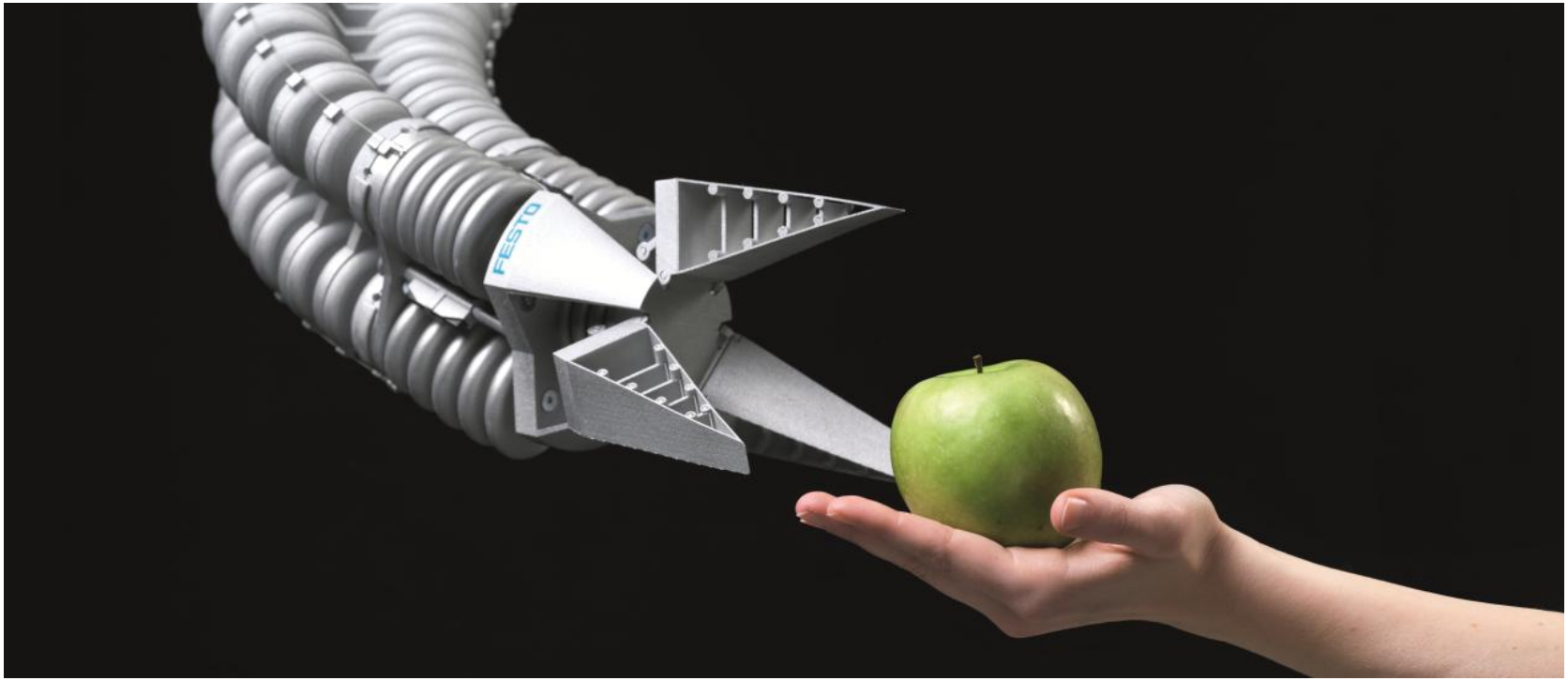
SmartBird

BionicOpter

ExoHand



Bionic Handling Assistant



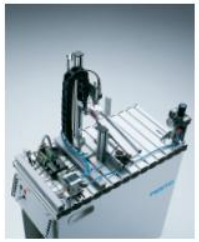
Tripod

MPS® – Modular Production System

Learning system for factory automation

Station Verteilen

Station Verteilen AS-i


Station Prüfen

Station Bearbeiten

Station Handhaben, pneumatisch

Station Handhaben, elektrisch

Station Trennen

Station Lagern

Station Puffern

Station Pick&Place

Station Fluidic Muscle Presse

Station Roboter

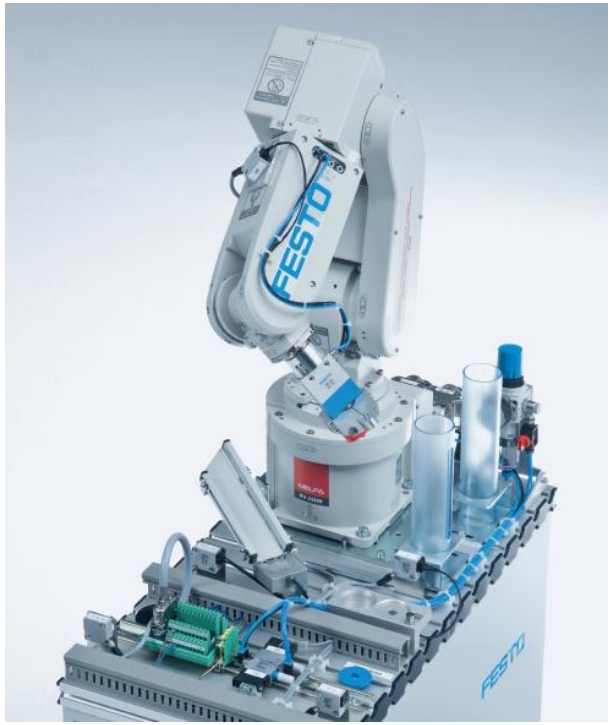
Station Montieren

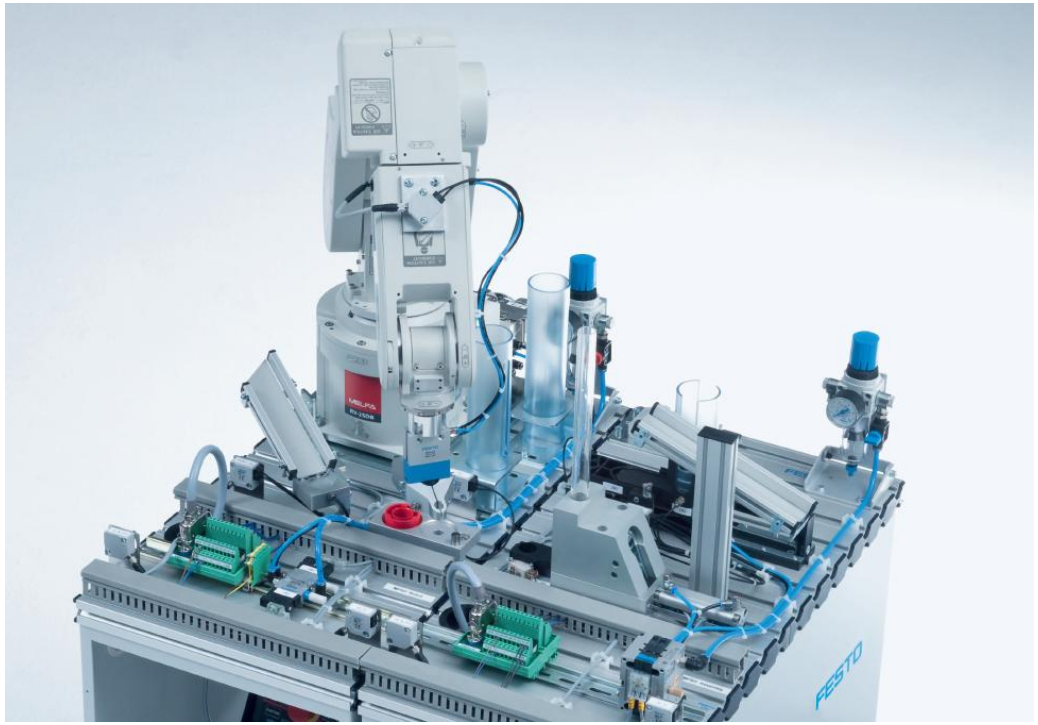
Station Stanzen

Station Sortieren

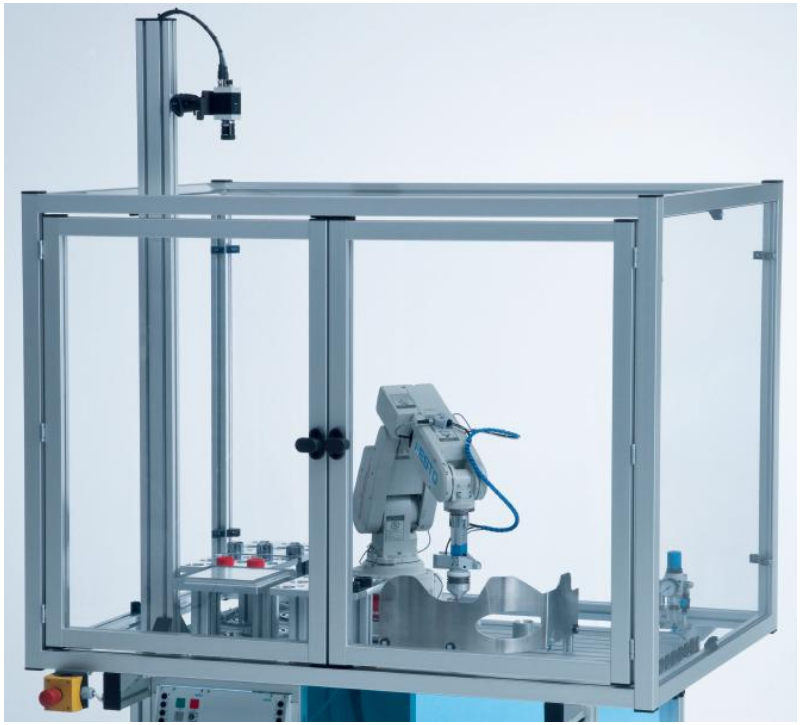
Station Sortieren DP

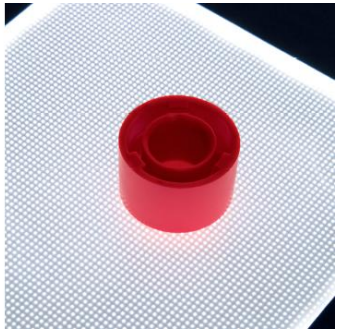
MPS® Robot Station

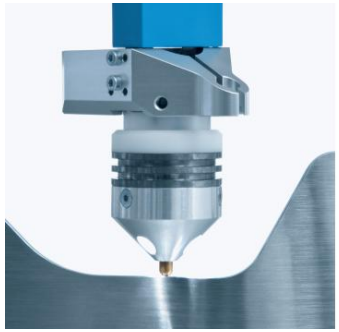


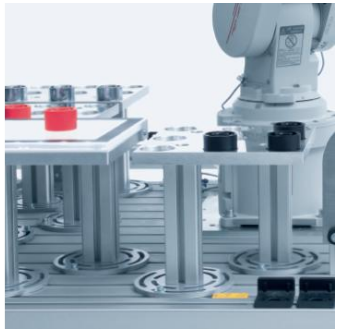


Robot Vision Cell









Robotino

Research Areas

- Navigation Technologies
- Machine Learning
- Multi-Sensor Data Fusion
- Autonomous Systems
- Artificial Intelligence
- Co-Operative Robot Systems
- Mobile Manipulation
- Service Robotics Applications

Fields of Knowledge

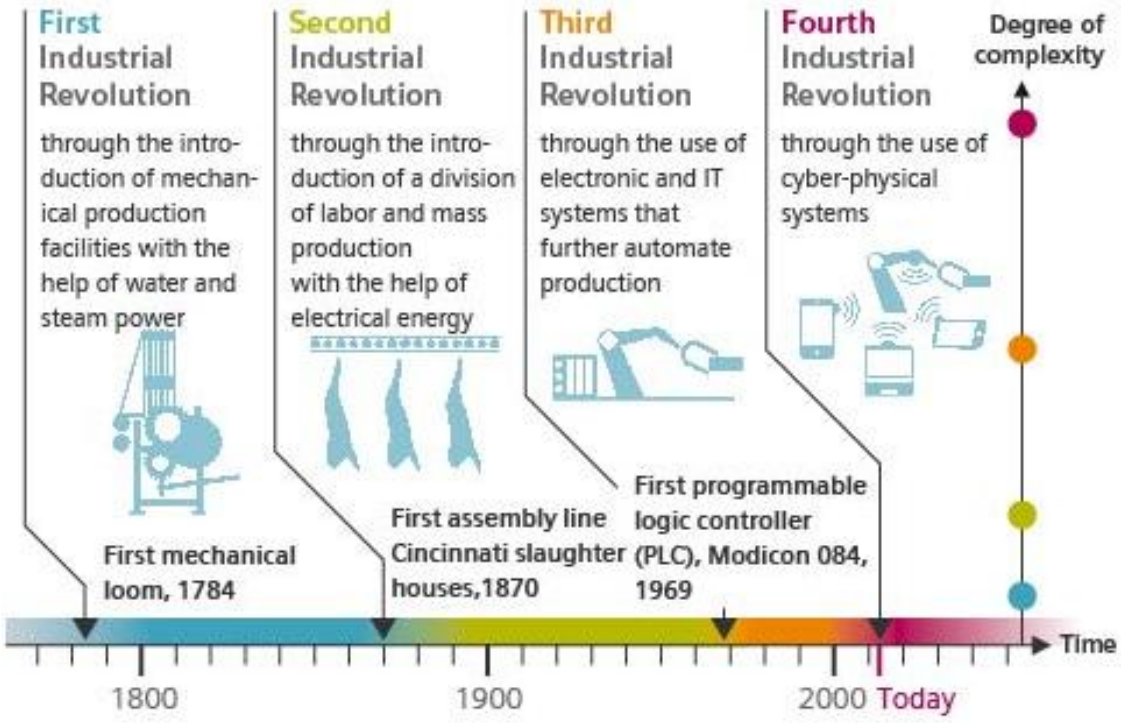
- Drive Technology
- Motor Control
- Sensor Technology
- Image Processing
- Microcontroller Programming
- Service Robotics
- Automated Guided Vehicles
- Production Logistics

Robotino

Robotino

Robotino

Outlook – From Industry 1.0 to Industry 4.0



Source: DFKI, 2011