worldskills Leipzig2013

Presented by

SAMSUNG

GLOBAL SKILLS MARKETPLACE

DISCOVER SKILLS UNLIMITED

WSI / BIBB / WSL 2013

Venue Naming Right Partner

DMG MORI SEIKI FESTO SAMSUNG STANLEY Volkswagen Service Deutschland

GEFÖRDERT VOM Bundesministerium für Bildung und Forschung

EUROPÄISCHE UNION

Europa fördert Sachsen. ESF Europäischer Sozialfonds

STAATSMINISTERIUM FÜR WIRTSCHAFT ARBEIT UND VERKEHR | Freistaat SACHSEN

brought to you by worldskills Germany worldskills international

ROBOTS AND EDUCATION

world skills Leipzig 2013

Presented by

SAMSUNG

World Skills Leipzig 2013

Dipl.-Ing. Jan-Philipp Liersch

Content

- Introduction Mitsubishi Electric Europe
- Robot Portfolio 2013
- In what we differ to others?
- Industrial robot applications
- School and university projects
- Summary and discussion

Cooperate Statement

Our corporate statement, "Changes for the Better" signifies the goal and stance of the Mitsubishi Electric Group to continually innovate for the better.

Changes for the Better

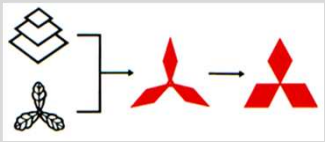
You wouldn’t believe the things we do

- Highly innovative efforts with 6 independent R&D-Centers for industrial automation

Mitsubishi Electric History

1870	Tsukumo Trading Company, which was the origin of Mitsubishi, was established.
1886	Mitsubishi Corporation was established.
1917	Mitsubishi Headquarters became a holding company.
1921	Mitsubishi Electric Corporation was established.
1945	Mitsubishi Headquarters was dissolved.
1946	**Each Mitsubishi company started as a new independent entity.**

The founder, Yataro Iwasaki



Origin of the Three-Diamond Mark

Mitsubishi Worldwide

Presented by

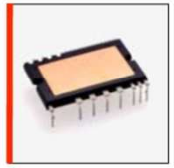
Mitsubishi Electric Worldwide

Building Systems

Factory Automation Systems

Information/ Communication Systems

Air Conditioning Systems



Semiconductors/ Devices

Visual Information Systems

Space Systems

Transportation Systems

Public Systems

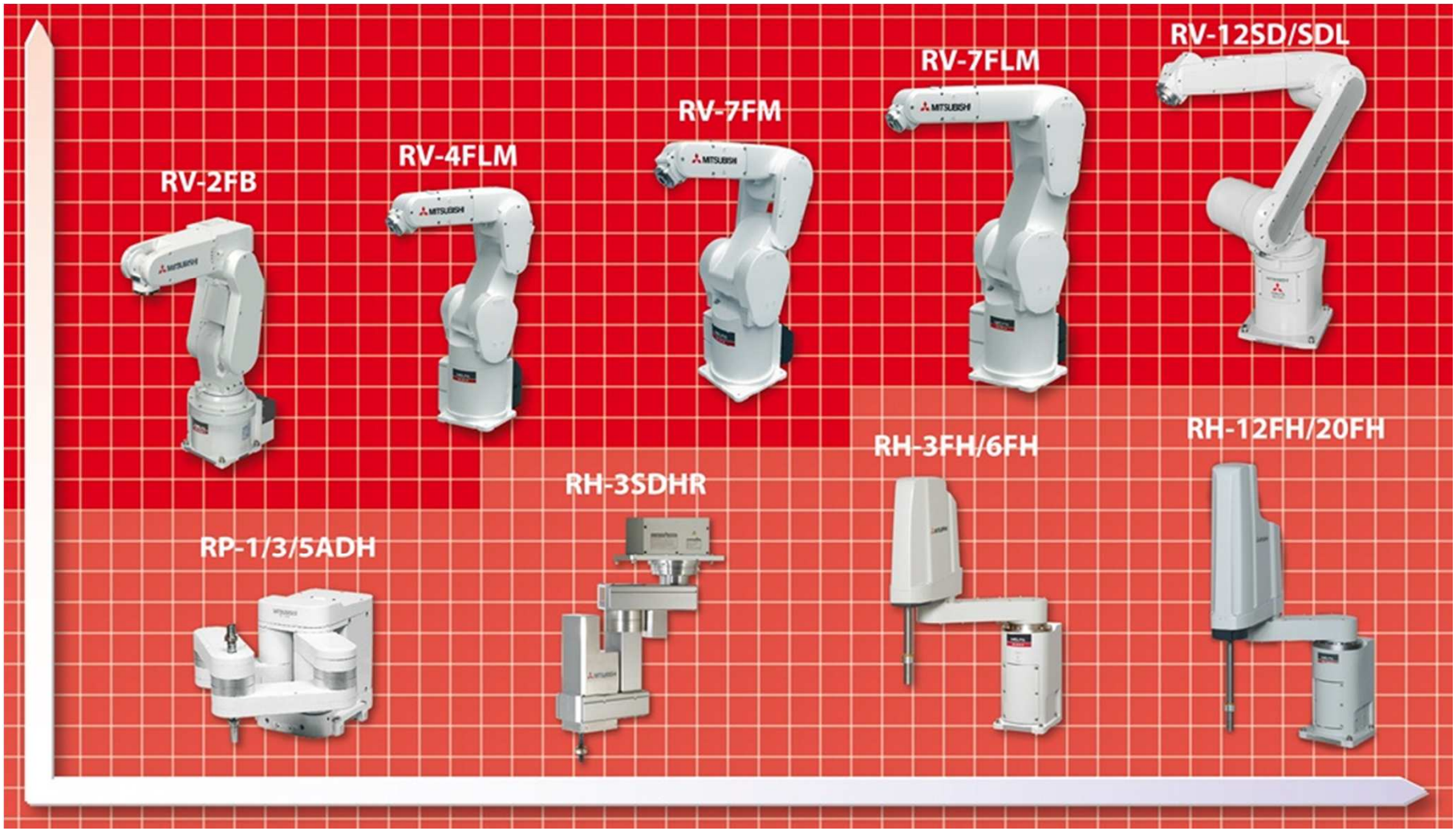
Energy Systems

Automotive Equipment

Home Products

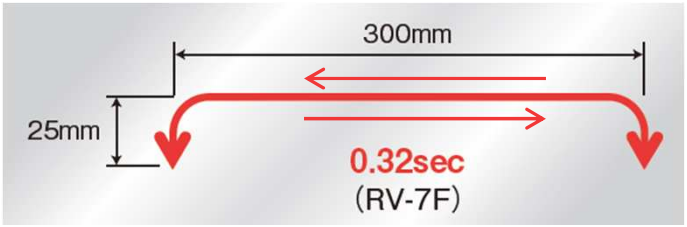
Product Portfolio

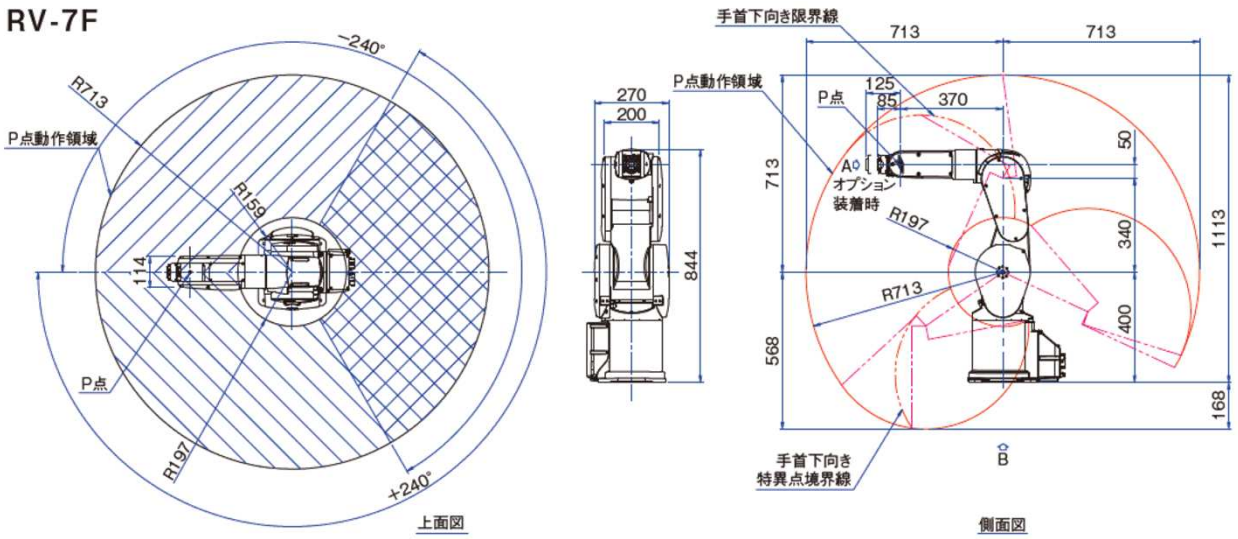
Robot portfolio 2013



Highlights of the robots

- 0.29 seconds for 12"-Cycle for more productivity
- IP67 as standard for full integration (water washable)
- Wide operating range for maximum flexibility





F-Series robots

Biggest working range in its class

F-Series robots

Biggest working range in its class

MITSUBISHI ELECTRIC
Changes for the Better

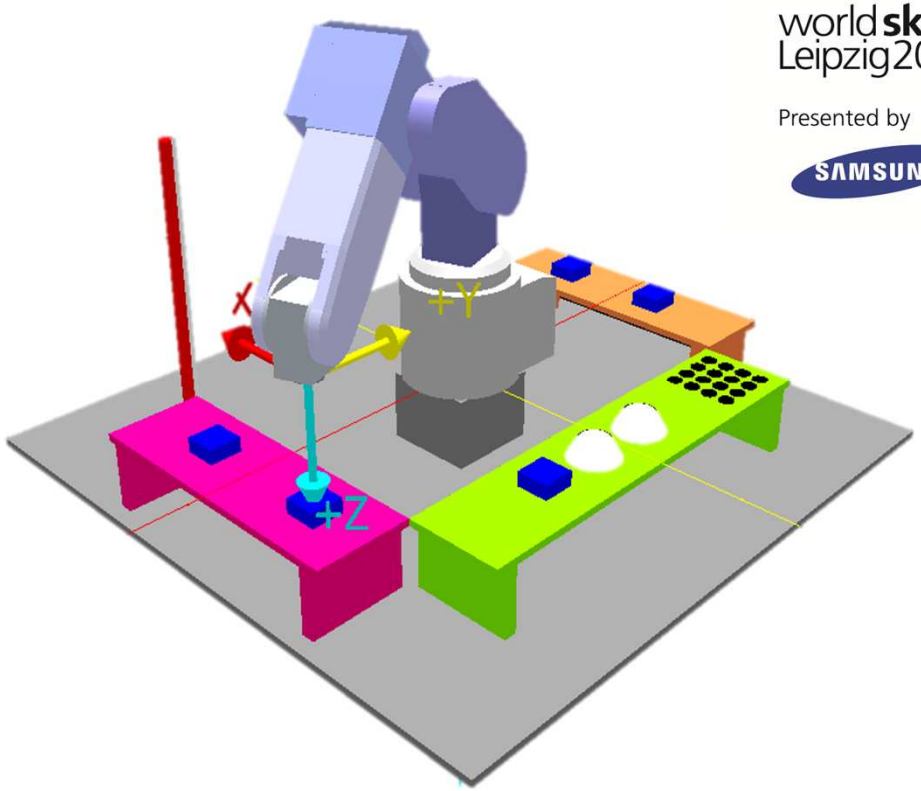
worldskills Leipzig2013
Presented by SAMSUNG

Special features and functions

IN WHAT WE DIFFER TO OTHERS?

MITSUBISHI ELECTRIC
Changes for the Better

world skills Leipzig 2013
Presented by SAMSUNG

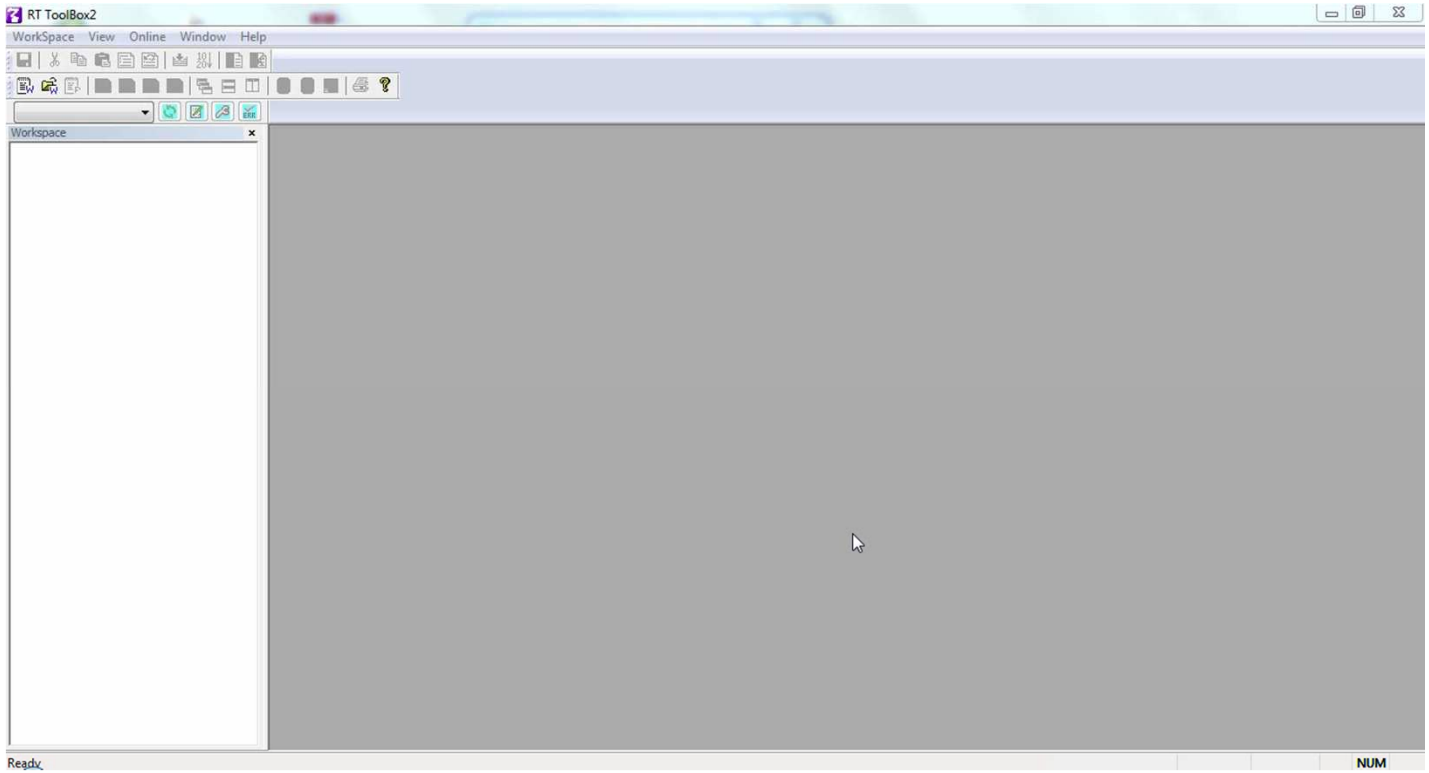


RT ToolBox2, R3-Protokoll, Real-Time Control

ROBOT SOFTWARE

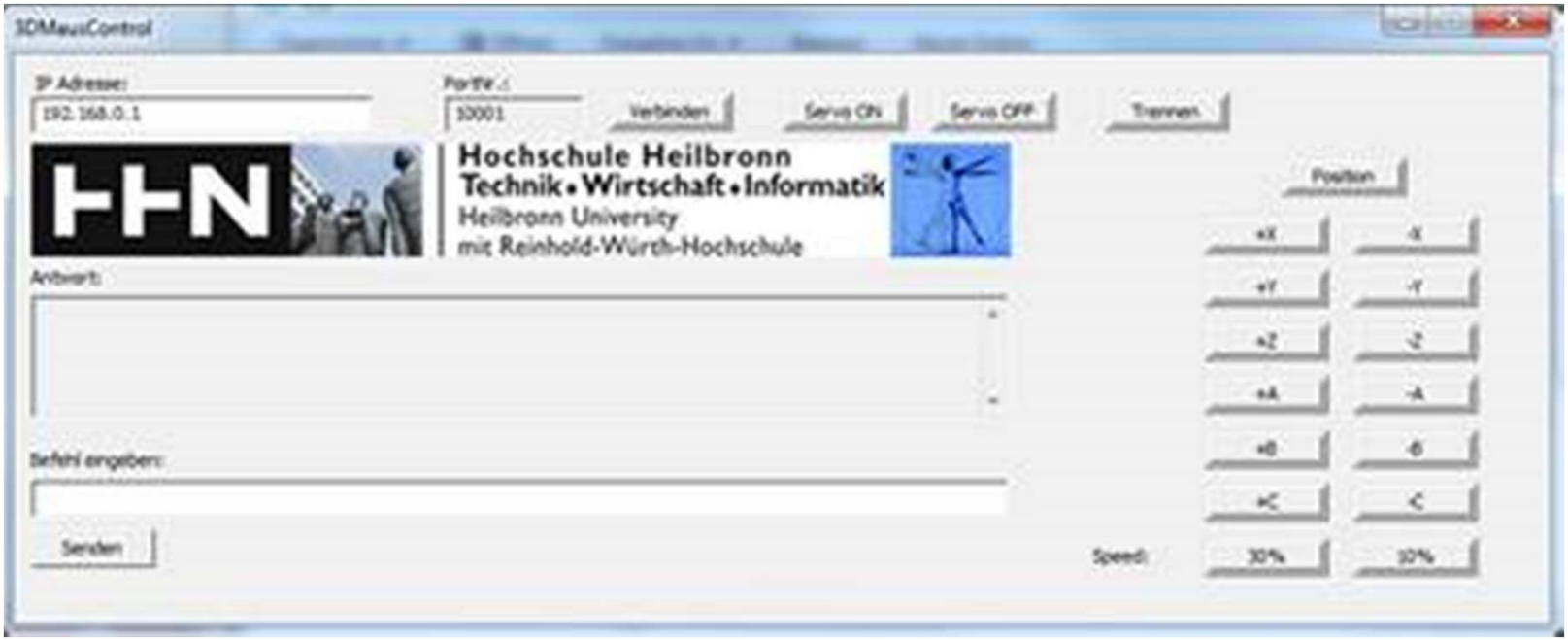
RT ToolBox2-Software

- Easy robot programming
- Accessable for everybody in educational fields



R3-Protocol

- Control of the robot directly over a PC
- Direct exchange of Programs, Data, I/Os etc.
- No need of robot programming language

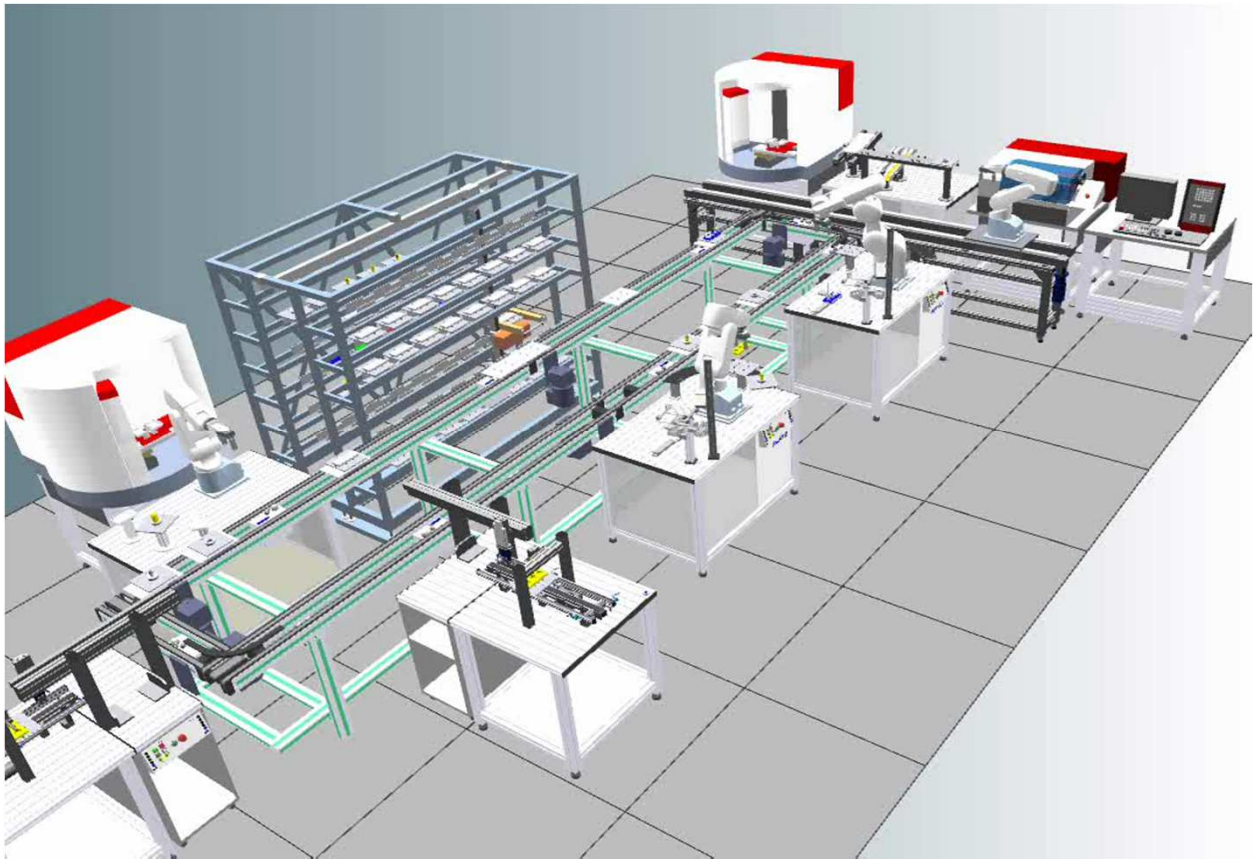


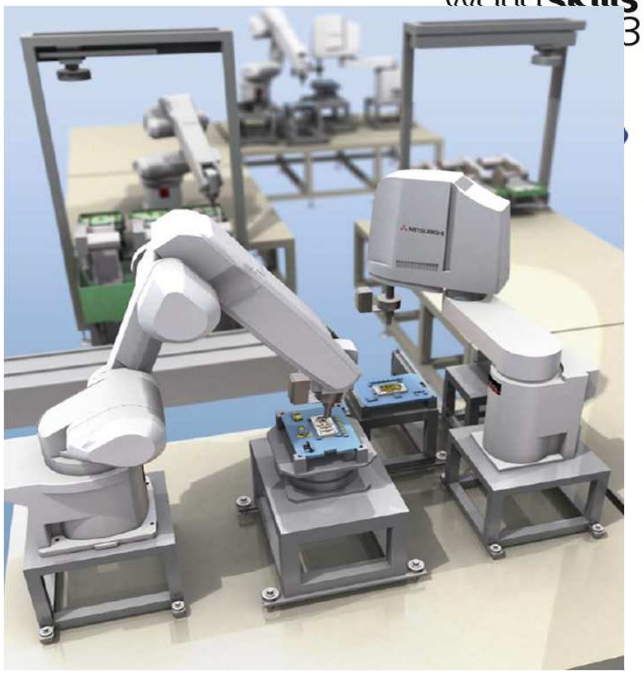
Real-Time-Control

- Manipulating the robot over a real-time system
- Programming via C++
- Absolute freedom of scientific programming

CIROS-Simulation

- Alternative software for simulation
- FESTO Didactic use the software for education

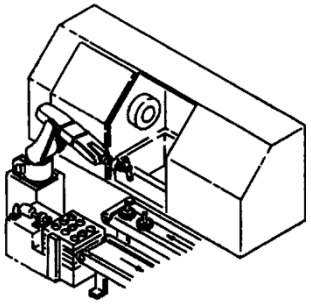




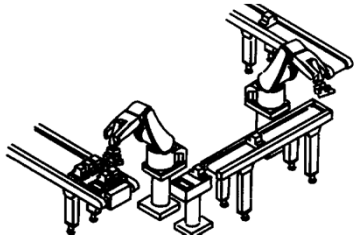
Mitsubishi Electric Robots

INDUSTRIAL APPLICATIONS

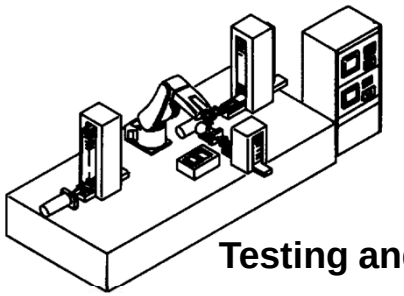
Applications



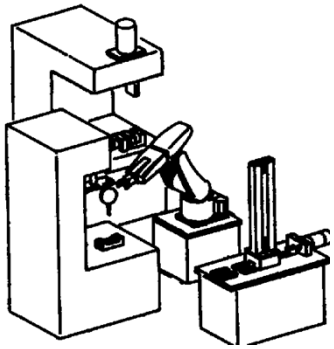
CNC- and Plasticmachine-Handling



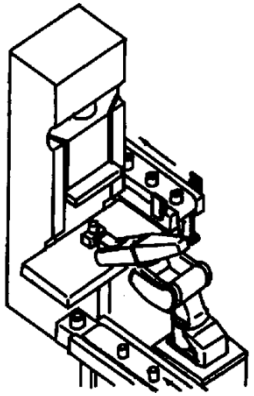
Assembly



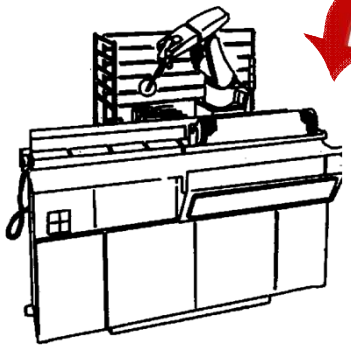
Testing and Palettizing



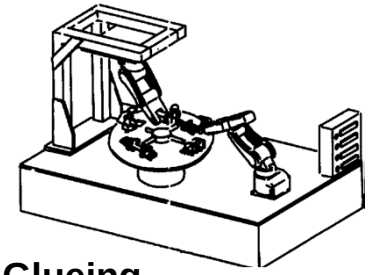
Handling



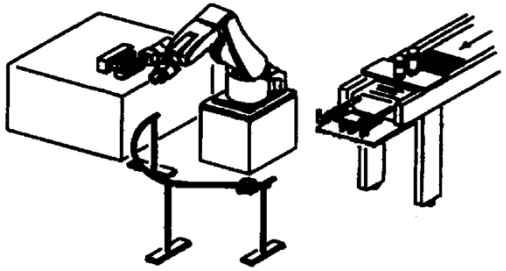
Press-Handling



Cleanroom-Handling



Glueing



Packaging

Packaging

- Camera supported pick and placing
- Conveyor tracking for continuous work flow

Quality control

- Force controlled operation of navigation systems

Industrial applications

MITSUBISHI ELECTRIC
Changes for the Better

worldskills Leipzig2013

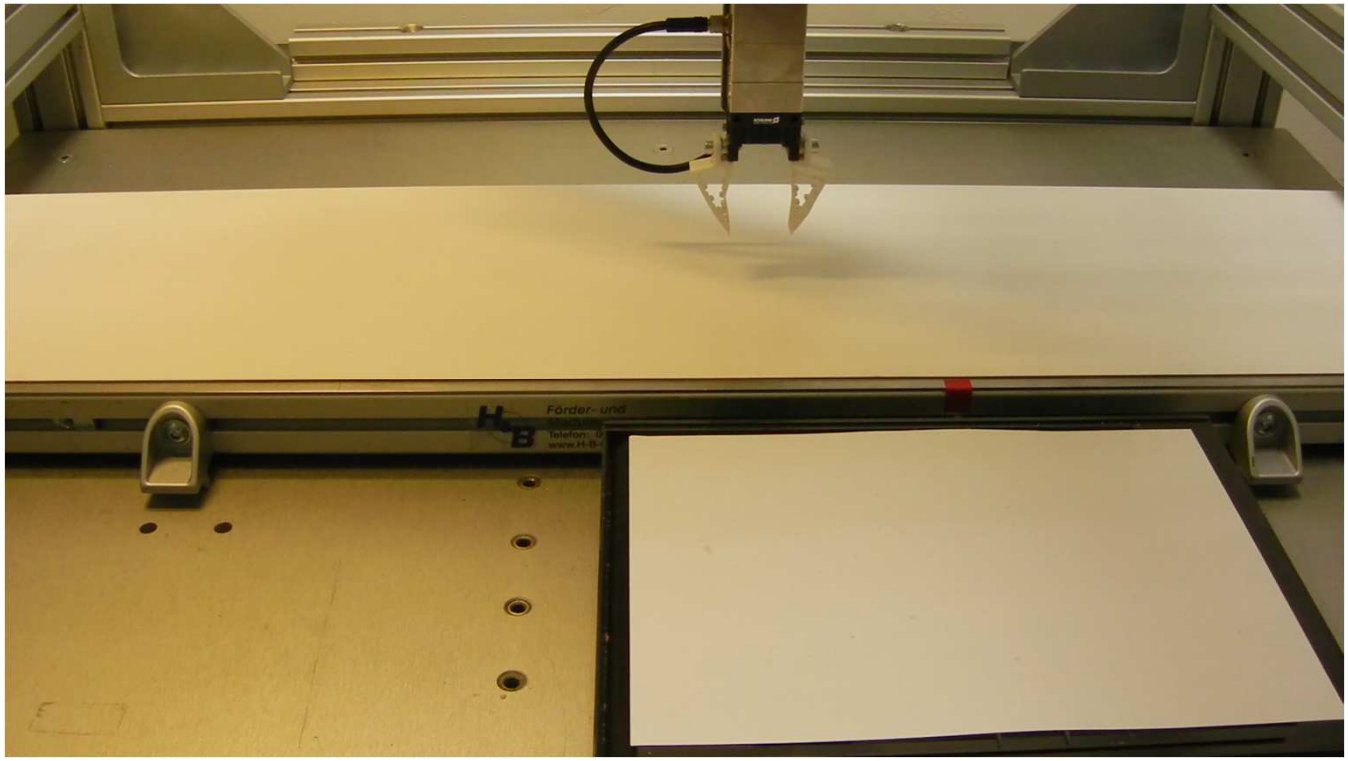
Presented by SAMSUNG

FESTO Didactic

EDUCTIONAL ROBOTS AND PROJECTS

Energy efficiency

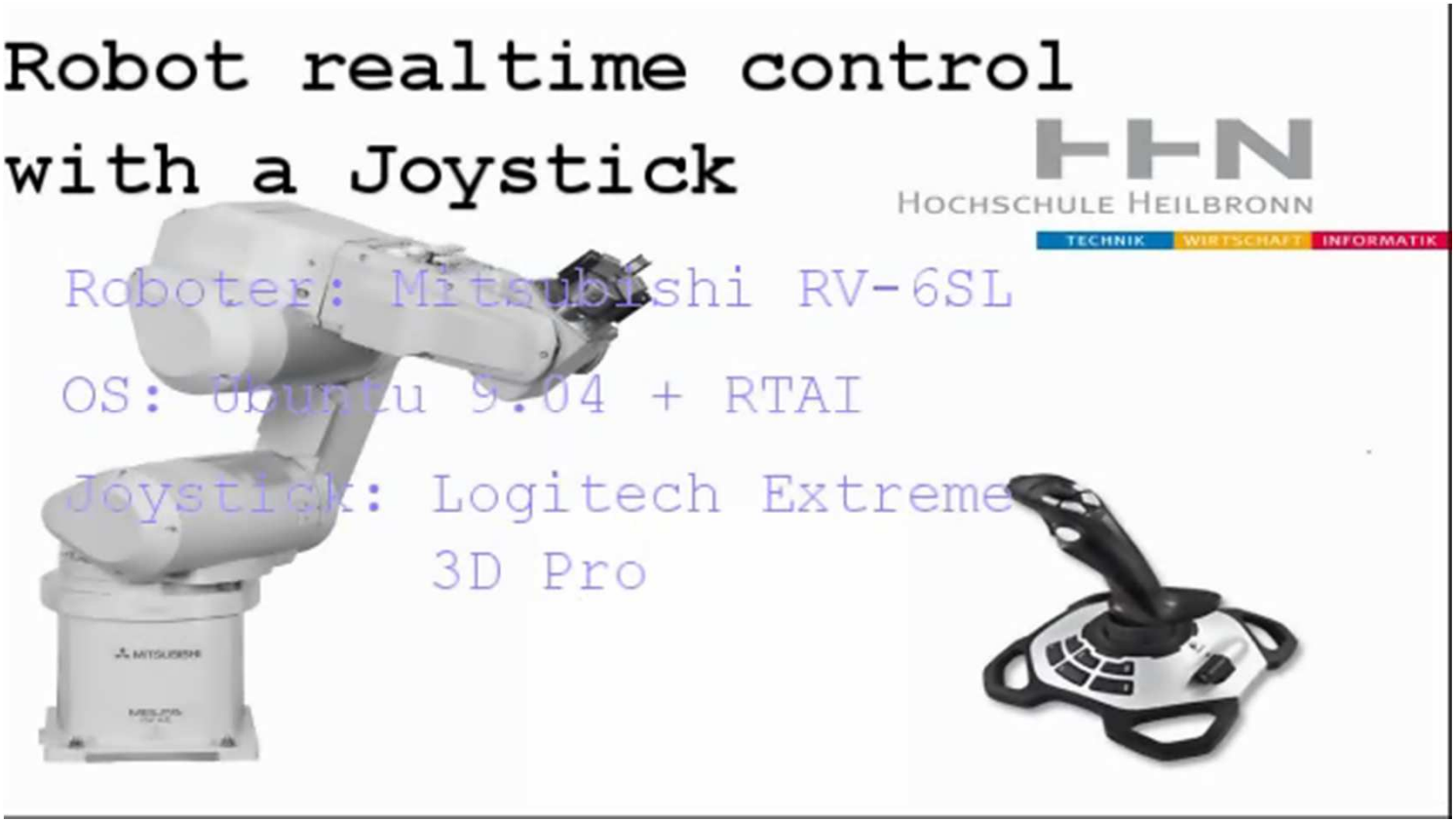
- Pick and place with electrical gripper
- Energy efficiency and increased hygiene



worldskills Leipzig2013
Presented by
SAMSUNG

Real-Time control

- Remote control of the robot with a standard joystick



Real-Time simulation

- Virtual layer on real application
- Ensures robot specifications and feasibility

Bionic transfer

- Learning from nature
- Transferring knowledge to technical fields

INTERACTIVE PART - HALL 3

FESTO HALL - MECHATRONICS

