



Technologies for our future



MECHATRONICS EXPLAINED BY COMPANIES

Present and future of industrial machines design

16 May 2022

University of Applied Sciences and Arts
of Southern Switzerland

SUPSI



**UNIVERSITÀ
DI PARMA**

1. OPENING SESSION

- Welcome greeting by **Prof. Marco Silvestri**, SUPSI and University of Parma
- **Sabina Cristini**, President Mechatronics Group of ANIE Automazione

3. OEM SESSION

- Carmine Di Sciuolo, **EMS** Group

2. SESSION BY TECHNOLOGIES PROVIDERS

TRANSMISSION AND MECHANICAL DESIGN

Kinematic chain and dimensioning, WITTENSTEIN

SAFETY AND SECURITY

Safety and Security, SCHMERSAL

AUTOMATION AND CONTROL

Edge and cloud optimization in automation, OMRON ELECTRONICS

Robot guidance with vision system, SICK

Cables in dynamic applications, LAPP ITALIA

SIMULATION AND VIRTUALIZATION

Bridging Digitalization and Automation, ROCKWELL AUTOMATION

Virtual Sensing: a closed loop digital twin to improve production performance, SIEMENS

LOGISTICS

Technology for Intelligent Transport Systems, BECKHOFF

Intralogistics: Mobile Assistance Systems and the Lean Smart Factory, SEW-EURODRIVE



Technologies for our future



ANIE Automazione

- Reference point for companies supplying advanced technological systems and solutions for industrial automation.
- Member companies are organized into working groups, distributed on several working groups:

VARIABLE SPEED DRIVES	5G
COMPONENTS AND TECHNOLOGIES FOR MEASUREMENT AND CONTROL WG ENCODER, NETWORKING, RFID, SAFETY, WIRELESS, VISION SYSTEMS	MECHATRONICS
PROCESS CONTROL	INDUSTRIAL SOFTWARE
HMI-IPC-SCADA	REMOTE CONTROL SYSTEMS
PLC-I/O	INTELLIGENT TRANSPORT SYSTEMS
OPC-UA	

- A network committed to supporting and promoting the technological excellence of the sector.
- At the forefront on issues of digitalization and Industry 4.0.



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Mechatronics Group

 ABB SPA - ELECTRIFICATION PRODUCT DIVISION	 B&R AUTOMAZIONE INDUSTRIALE SRL	 BALLUFF AUTOMATION SRL	 BOF DIGITAL BIOECCO TDE MACCO	 HAGER BOCCIOTTI SPA	 HEIDENHAIN ITALIANA SRL	 IMAGE S SPA	 IMEQUADRI DUESTELLE SPA	 RITTAL SPA	 ROCKWELL AUTOMATION SRL	 SADA CAVI SPA	 SCHMERSAL ITALIA SRL
 BECKHOFF AUTOMATION SRL	 BONFIGLIOLI SPA	 BOSCH REXROTH SPA	 BTICINO SPA	 KEB ITALIA SRL	 LAPP ITALIA SRL - PARTNER DI LAPP	 LENZE ITALIA SRL	 LOGIKA CONTROL SRL	 SCHNEIDER ELECTRIC SPA	 SCHUNK INTEC SRL	 SDPROGET INDUSTRIAL SOFTWARE SRL	 SEW EURODRIVE SAS DI SEW SRL & OO.
 CAREL INDUSTRIES SPA	 DANFOSS SRL	 DELTA ELECTRONICS (ITALY) SRL	 DKC EUROPE SRL	 MITSUBISHI ELECTRIC EUROPE B.V.	 MOTOVARIO SPA	 NIDEC ASI SPA	 NIDEC INDUSTRIAL AUTOMATION ITALY SPA	 SICK SPA	 SIEMENS SPA	 SP ELECTRIC SRL	 THE MATHWORKS SRL
 E.T.A. SPA	 EPLAN SOFTWARE & SERVICE SRL	 ESA S.P.A.	 ESTUN INDUSTRIAL TECHNOLOGY EUROPE SRL	 NORD MOTORIDUTTORI SRL	 ODE SRL	 OMRON ELECTRONICS SPA	 PANASONIC INDUSTRY ITALIA SRL	 VISION SRL	 WEDMÜLLER SRL	 WERMA ITALIA SRL	 WITTENSTEIN SRL
 FANDIS SPA	 FESTO SPA	 GEBRÄUDE SRL	 GIORDANO CONTROLS SPA	 PARKER HANNIFIN ITALY SRL	 PHOENIX CONTACT SPA	 PHOENIX MECANO SRL	 RIGHI ELETTROSERVIZI SPA				



Technologies for our future



Growing global challenges in industry

Customized products

Easy to use

Time to market

Profitability

Efficiency

Safety

Product variants

Integrated technology

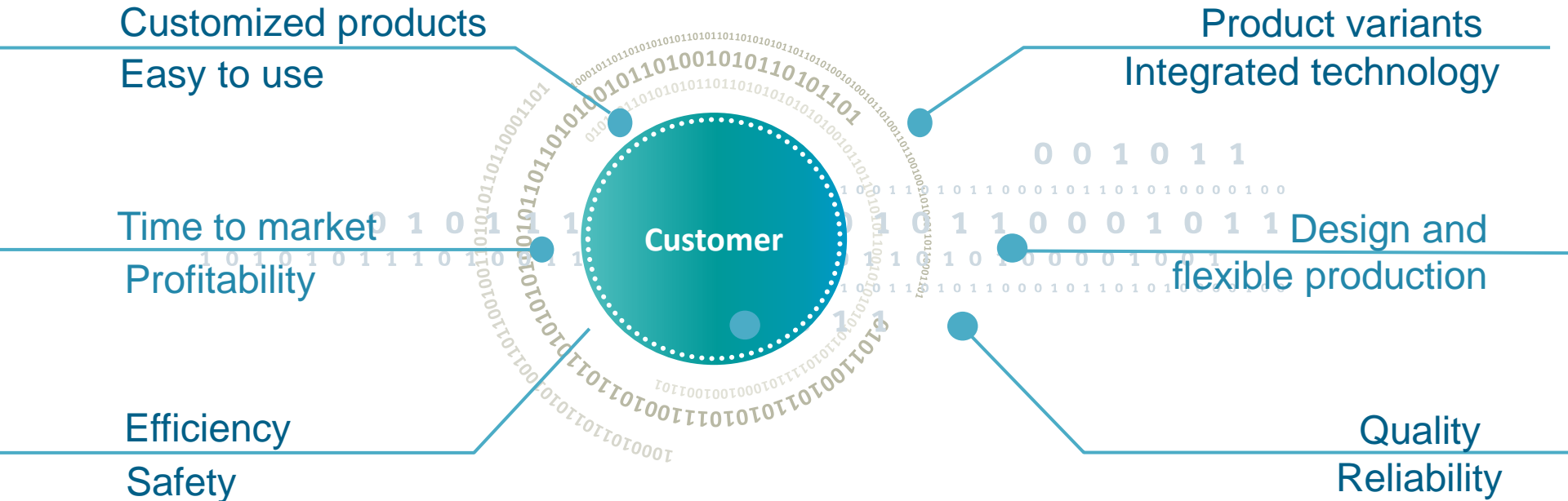
Design and

flexible production

Quality

Reliability

Customer



Advantages of the mechatronic approach and simulation

- Development of new machines
- Expansion of existing machines/lines
- Retrofits and optimizations



Speed

- Parallel design of mechanical and automation aspects
- Less time to develop a prototype and machine variants



Quality

- Optimize machine design and functionality in a virtual environment
- It helps to identify mechanical or electronic faults at an early stage



Risk

- Safe and efficient testing using models
- Reduced risks for real commissioning and fewer failures in operation



Cost

- Margins to reduce risks and costs during real commissioning.
- Reduced time to market



Flexibility

- Environments to simulate/experiment with alternative control concepts
- Evaluation of machine modifications in operation



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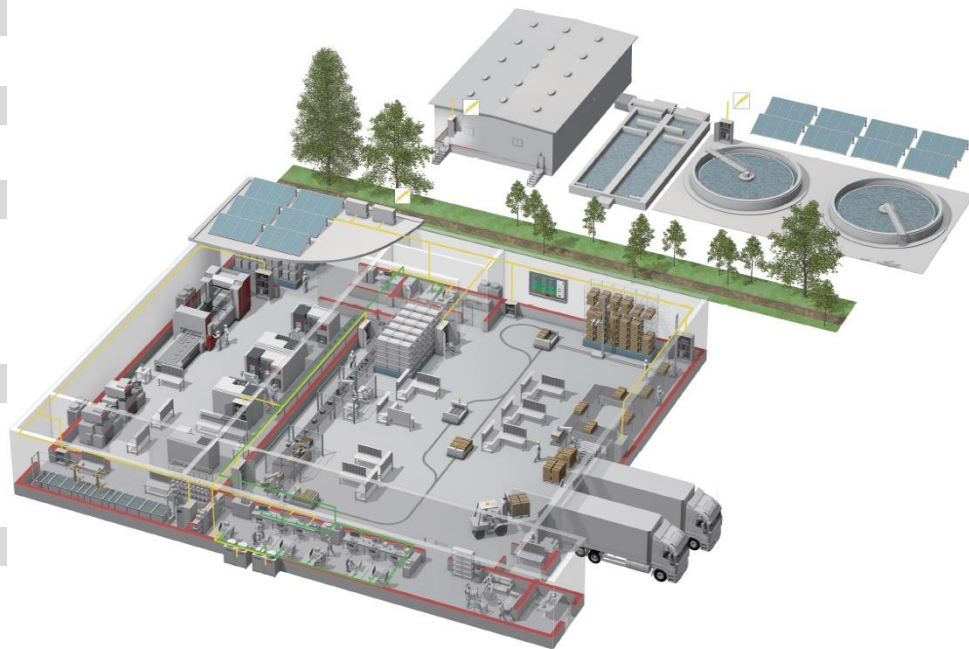
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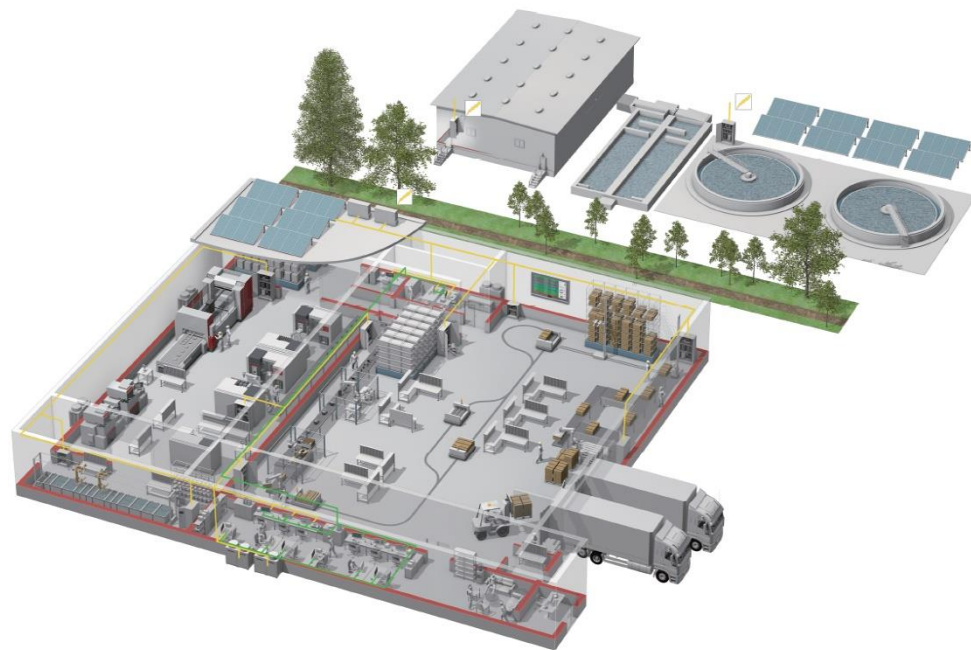


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OEM SESSION

EMS Group
Carmine Di Sciullo
Chief Technical Officer





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THANK YOU!

The workshop proceedings will be available on
www.anieautomazione.it

Contact us for the certificate of participation
anieautomazione@anie.it