



Simulation and Virtualization

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Design requirement definition & management

Easily <u>Define</u>, carefully <u>check</u>, and <u>maintain</u> all design requirements <u>through the whole</u> <u>lifecycle.</u>



Efficiency Energy Analisys



Process:

- Virtual schema definition
- System Concept and control ring optimization
- Prototype building (or retrofitting)

Benefits:

• Evaluate and Optimize machine concept configuration selecting components with better energy consumptions conditions/combinations

EE Multi-Machines Analisys -> Digital Factory

Scopes:

- Work Conditions Consumption levels, stand by etc. (line balancing)
- Consumptions Behavior Tracking

Benefit:

• Better definition of the energy commitment and the energy supply agreement (contract)

AMESim model of the badminton robot

Electrical drive

configuration of the robot





Design Optimization

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 The optimization reached with the collaboration venture between the component selection tool and the CAD project give you a final result that is the motion profile ready to use in your motion controller

Virtual Design Tools





Development optimized





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CAD

• Project

- Motion Analisys
- Plot force diagrams



Simulation Tool

- Analize
- Simulate
- Optimization
- Selection

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PLC

- Export / Import
- AOI instruction
- CAM Profile



The Final Digital Mockup







The Digital Twin Model





Benefits and advantages







- Reduced Time To Market
- Greater Innovation Agility (Test without Risk)
- Risk Mitigation (Simulation reduce risk by predicting)
- Commissioning time reduced (waste already predicted)
- Increased machine value (more throughput, no additional cost)

By take advantage of these technologies it's possible to reach a big step forward on the machine performance





MECHATRONICS: IT'S ABOUT TIME



