

THE FACULTY OF ENGINEERING



Maersk Mc-Kinney Moller Institute

Expertise and R&I facilities at The University of Southern Denmark
Robotics, Automation, Software engineering



Robotics @ SDU

Core competences in

- Applied mathematics, AI, Software Engineering, Computer Vision, Human-Robot Interaction, Electrical Engineering, Embedded System, Mechanical Engineering, Soft Robotics

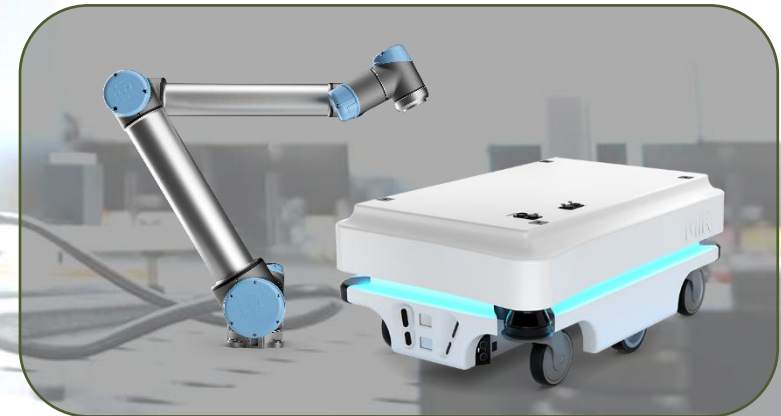
Domains

- Industry, Healthcare, Agriculture, Pharma, Maritime, Construction, Service Robotics and more to come

Spin-outs and the cluster in Odense

- Multiple spin-outs every
- Universal Robots (UR) and Mobile Industrial Robots (MIR)
- Odense Robotics: 136 robotics companies, 4000 employees

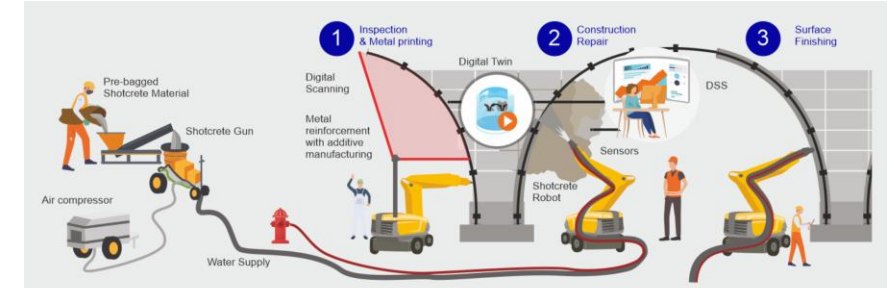
Winner of unofficial World Championship in Industrial Robotics in 2018 and 2020



Selected ongoing EU projects

RobetArme

The RoBétArmé project aims toward a step-change in the Construction 4.0 by automating particularly laborious construction tasks in all phases of shotcrete application.



Fluently

Fluently leverages the latest advancements in AI-driven decision-making process to achieve true social collaboration between humans and machines while matching extremely dynamic manufacturing contexts.



Fit4Weld

The Fit4Weld welding cell, with its self-adjustable jig system, reduces machine downtime, making industrial welding quicker, more flexible, and efficient.



Selected ongoing EU projects

WildDrone

An international training network funded by the EU's Marie Skłodowska Curie Actions to research and develop the use of drones for wildlife conservation.

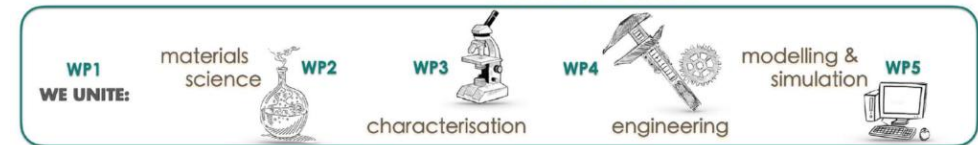


MAGnEtic SofT matter for Robotics (MAESTRI)

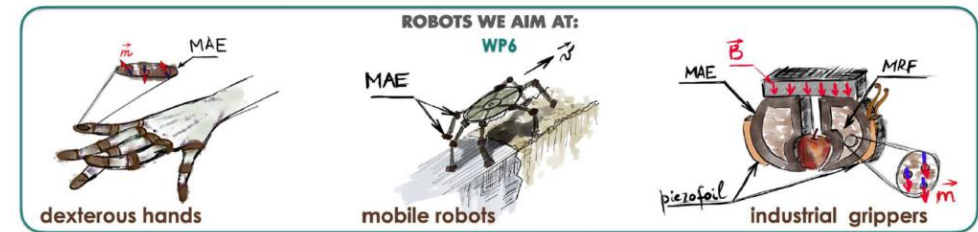
The MAESTRI DN aims to go beyond these limitations by developing smart soft materials with adaptable and self-sensing properties for robotics. To do so, we will focus on an alternative group of soft materials that are controlled by external magnetic fields. MAESTRI is a Marie Skłodowska-Curie Actions DN.

ONE4ALL

The project aims to boost manufacturing plants' transformation, especially small and medium sized enterprises, towards industry 5.0 (I5.0). It is done through a human-and-sustainability-centred development of plug-and-produce reconfigurable cyber-physical production modules (RCPMs).



WORKING PRINCIPLES: magneto-rheology, field stiffening, magnetic plasticity, friction, adhesion



ROBOTIC FUNCTIONALITIES: shape adaptivity, motion, adjustment to the environment, grasping, self-sensing



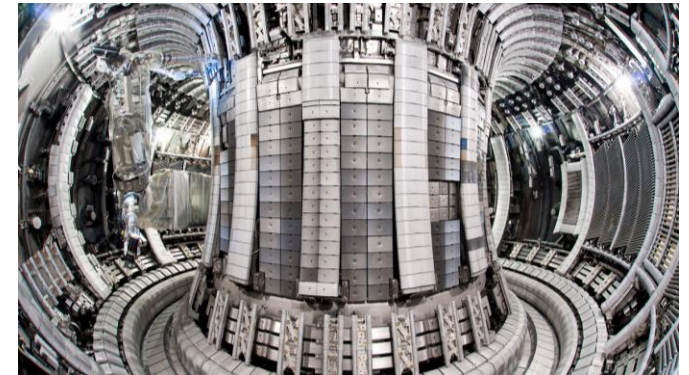
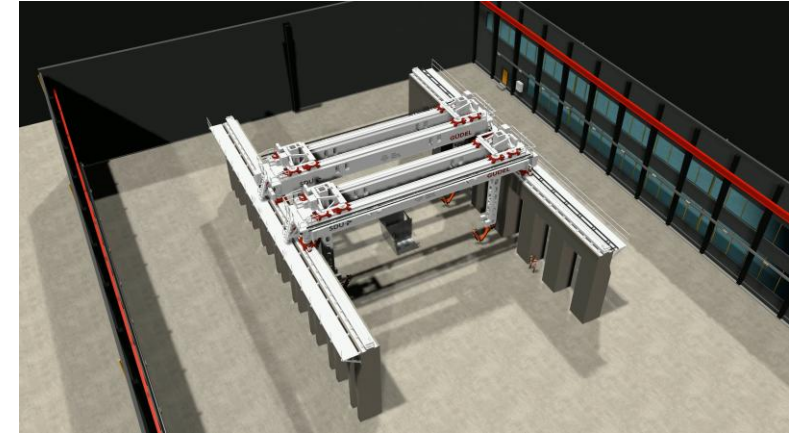
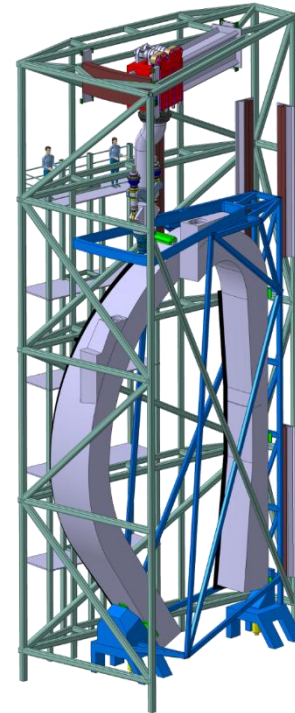
Selected ongoing EU projects

SDU Large Structure Production (LSP)

The central idea of our ambitious program “Large Structure Production” (LSP) is to activate robotization and digitalization for the sectors maritime, construction and energy. Equipment funded by EU React funding

EuroFusion

The facility aims to develop, demonstrate, and optimize remote handling solutions for breeding blankets and large structures in fusion power plants.



Topics/Calls of strong interest and match with our fields of competences

HORIZON-CL4-INDUSTRY-2025-01-TWIN-TRANSITION-01

- Integrated approaches for remanufacturing

HORIZON-CL4-INDUSTRY-2025-01-TWIN-TRANSITION-02

- Physical and cognitive augmentation in advanced manufacturing

HORIZON-CL4-2025-03-DATA-08

- Large-scale pilots for supply end-to-end Infra-structures integrating device, network computing and communication capabilities for Telco Edge Cloud deployments, as a basis for Connected Collaborative Computing Networks

HORIZON-CL4-2025-03-DATA-13

- Fostering Innovative and Compliant Data Ecosystems (IA) (AI, Data and Robotics Partnership)

Topics/Calls of strong interest and match with our fields of competences

HORIZON-CL4-2025-04-DATA-02

- Empowering AI/GenAI along the Cognitive Computing continuum

HORIZON-CL4-2025-04-DATA-03

- Software Engineering for AI and Generative AI

HORIZON-CL4-2025-03-DIGITAL-EMERGING-07

- Robust and trustworthy GenerativeAI for Robotics and industrial automation

HORIZON-CL4-2025-04-DIGITAL-EMERGING-05

- Soft Robotics for Advanced physical capabilities

HORIZON-CL4-2025-04-DIGITAL-EMERGING-07

- Enhanced Learning Strategies for General Purpose AI

HORIZON-CL4-2025-02-SPACE-12

- Digital solutions for autonomy for space transportation systems, design and simulation tools

Selected facilities and labs



Cyber-Safe Lab

Lab facilities shared by Center for Industrial Software (CIS) and SDU Software Engineering



Data & Intelligence Lab

Lab facilities shared by Center for Industrial Software (CIS) and SDU Software Engineering

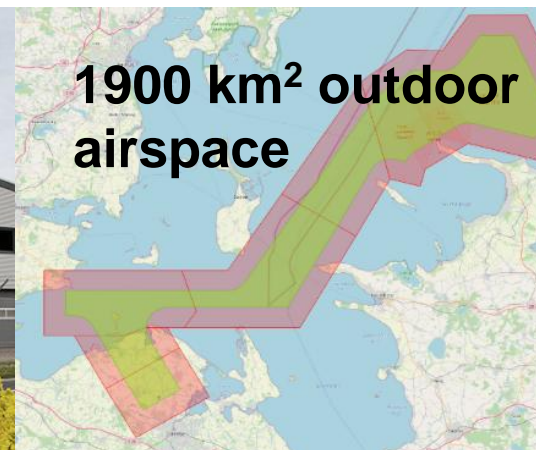


CoSELab: The Coding and Software Engineering Lab

Lab facilities shared by Center for Industrial Software (CIS) and SDU Software Engineering



SDU Droncecenter



1900 km² outdoor airspace



Indoor flightlab



SDU I4.0 Lab



SDU LSP Center

For More Information Please Contact



Kasper Hallenborg, Head of Department
The Maersk Mc-Kinney Moller Institute
Tel: +45 2135 6256
E-mail: hallenborg@mmmi.sdu.dk

