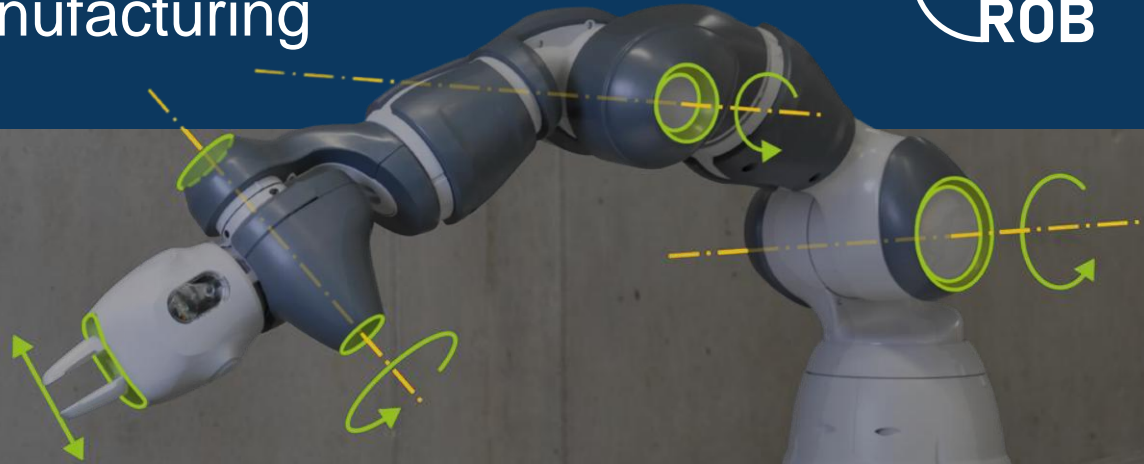


Sustainable and Reconfigurable ROBots for green manufacturing



www.surerob.eu



Funded by
the European Union



SureROB

What, Why and How?



What?

Address the challenges of green manufacturing through collaborative robots



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What, Why and How?



What?

Address the challenges of green manufacturing through collaborative robots



Why?

To support the European manufacturing industry, empower SMEs and support the European green deal



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What, Why and How?



What?

Address the challenges of green manufacturing through collaborative robots

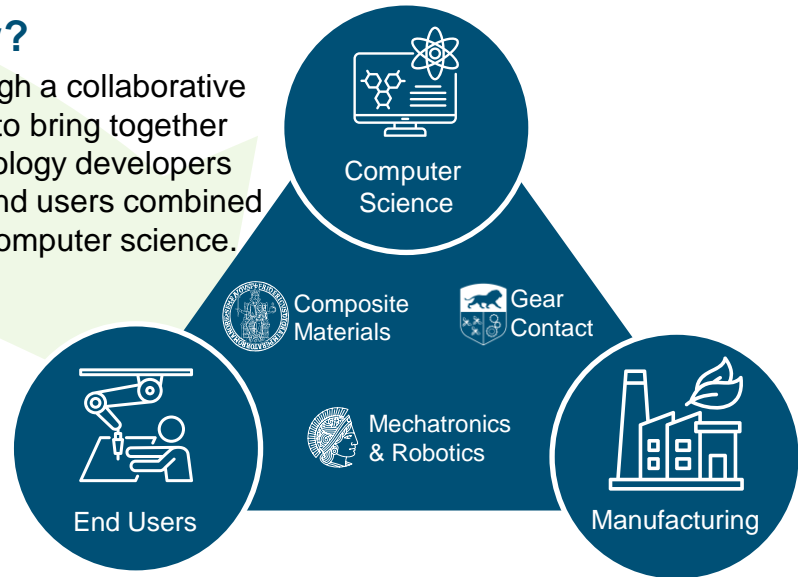


Why?

To support the European manufacturing industry, empower SMEs and support the European green deal

How?

Through a collaborative effort to bring together technology developers and end users combined with computer science.



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What, Why and How?



Sustainable and **R**econfigurable **R**OBots
for green manufacturing



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What, Why and How?



SUustainable and **RE**configurable **ROB**ots
for green manufacturing



Weight reduction and structural
optimisation



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What, Why and How?



SUustainable and **RE**configurable **ROB**ots
for green manufacturing



Weight reduction and structural
optimisation

Modelling and geometric
optimisation

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What, Why and How?



Sustainable and **R**econfigurable **R**OBots
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Weight reduction and structural
optimisation

Modelling and geometric
optimisation

Operational strategies



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Project Overview



Organizational Details

Project Duration:

- 48 months in total
- 9 PhD topics, of 36 months each

Funding:

- Supported by Horizon Europe
- Grant amount: 2,660,089.68 €

Program Type:

Marie Skłodowska-Curie Actions – Industrial Doctorates

Start of project:

1st of January 2026

Project Consortium

Academic Partners:

- Technische Universität Darmstadt, Germany
- Fraunhofer LBF, Germany
- École Centrale de Lyon, France
- Università degli Studi di Napoli Federico II, Italy
- Universidade de São Paulo, Brazil
- National Engineering School of Sfax, Tunisia

Industrial Partners

- ABB, Sweden
- Powerflex S.R.L, Italy
- EOS (Electro-Optical Systems) GmbH, Germany
- Adaptronica Sp. z o.o., Poland

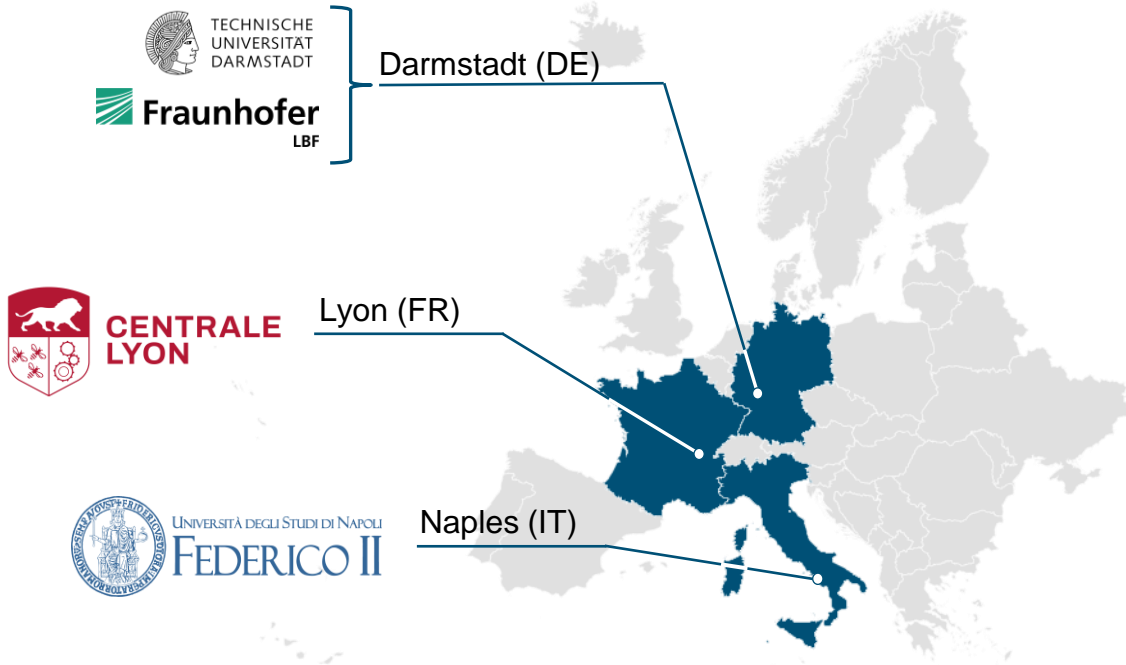


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Project Partners



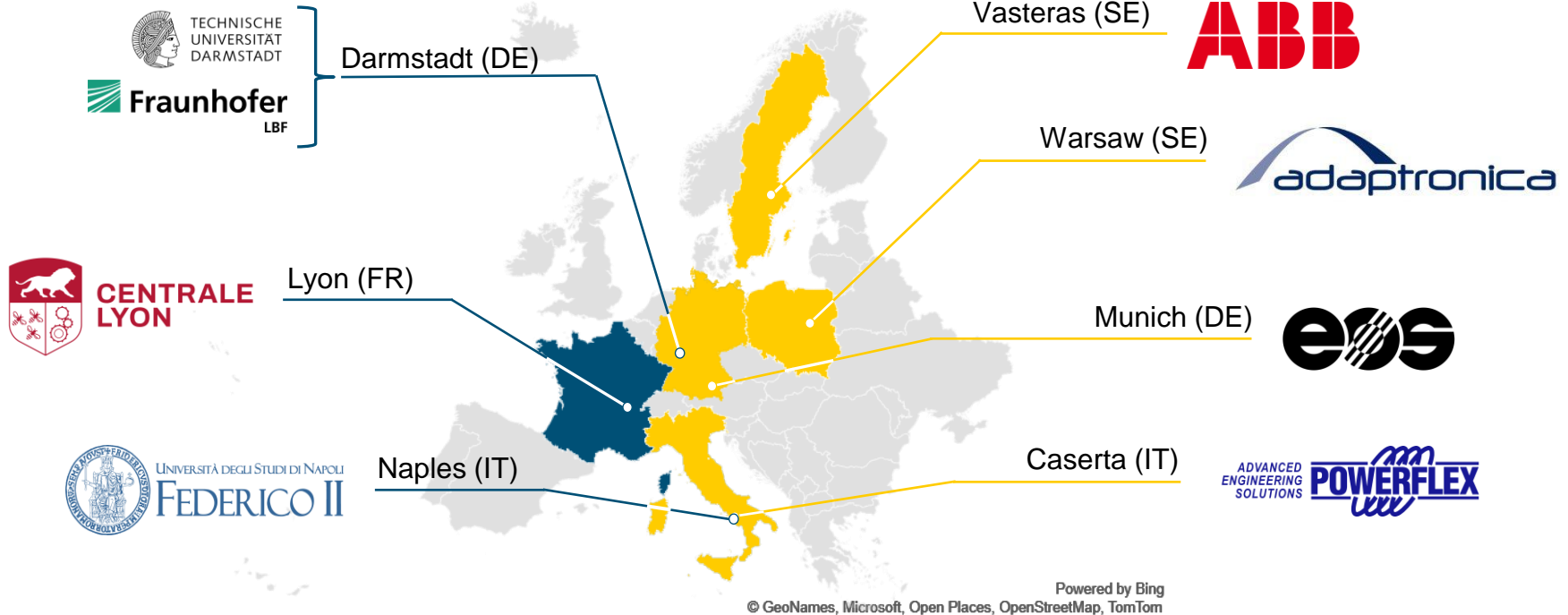
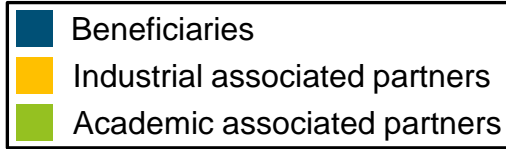
- Beneficiaries
- Industrial associated partners
- Academic associated partners



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Project Partners



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Project Partners



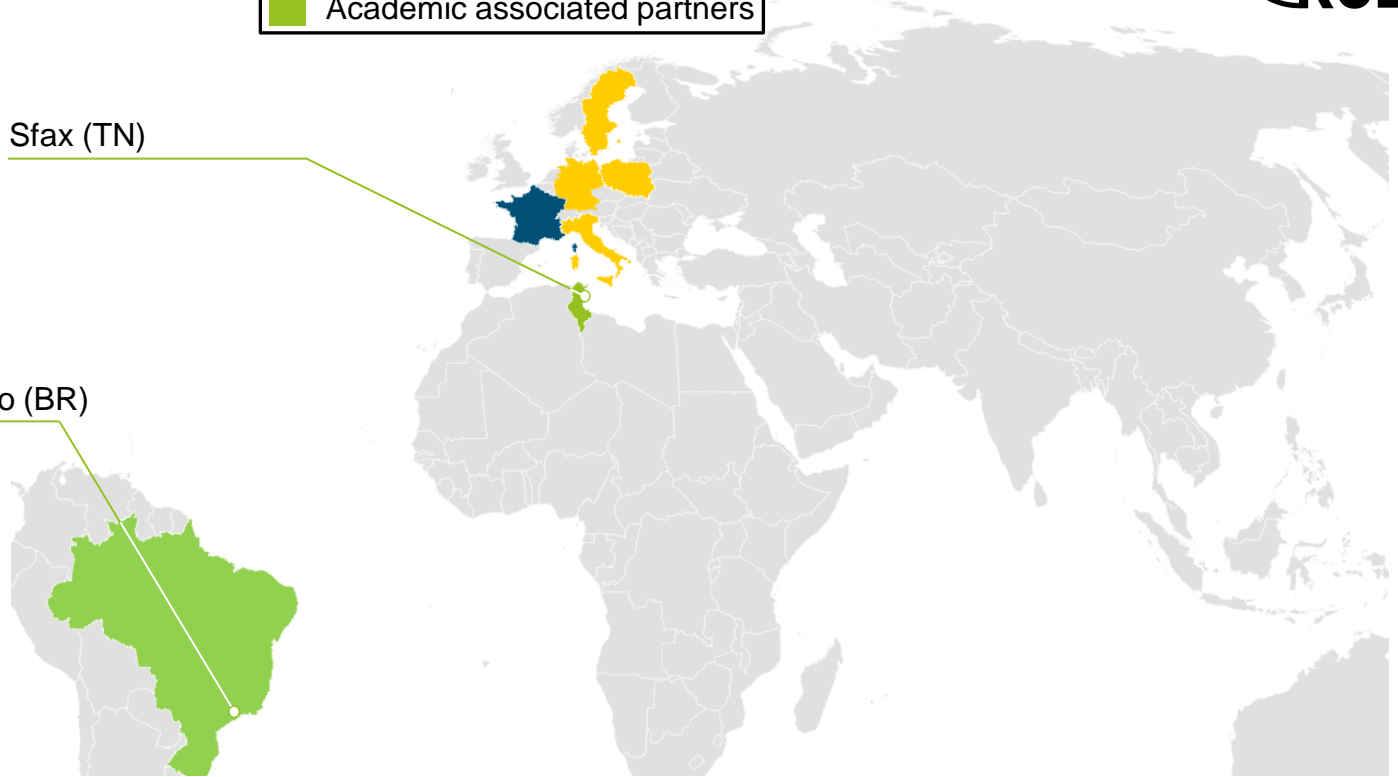
- Beneficiaries
- Industrial associated partners
- Academic associated partners



Sfax (TN)



São Paulo (BR)



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Research Projects



Candidate	Topic	Academic Partner	Industrial Partner
DC1	Structural optimisation and sustainable manufacturing of a harmonic drive	UNINA	EOS
DC2	Lightweight and additive manufacturing for optimised cycloidal reducers	UNINA	EOS
DC3	Kinematics analysis and optimisation of cycloid drives	ECL	PWF
DC4	Performance enhancement of Harmonic Drives through tooth profile optimisation	ECL	PWF
DC5	Design of a lightweight robotic arm	UNINA	ABB
DC6	System for active vibration control using robot drive motors	TUDa	ADA
DC7	Health monitoring supported by virtual sensing	LBF/TUDa	ADA
DC8	Methodology development of ML-based digital twins	ECL	ADA
DC9	Multi-objective path planning	TUDa	ABB

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Research Projects: Weight reduction and structural optimisation



Candidate	Topic	Academic Partner	Industrial Partner
DC1	Structural optimisation and sustainable manufacturing of a harmonic drive	UNINA	EOS
DC2	Lightweight and additive manufacturing for optimised cycloidal reducers	UNINA	EOS
DC3	Kinematics analysis and optimisation of cycloid drives	ECL	PWF
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DC7	Health monitoring supported by virtual sensing	LBF/TUDa	ADA
DC8	Methodology development of ML-based digital twins	ECL	ADA
DC9	Multi-objective path planning	TUDa	ABB



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Research Projects: Modelling and geometric optimisation



Candidate	Topic	Academic Partner	Industrial Partner
DC1	Structural optimisation and sustainable manufacturing of a harmonic drive	UNINA	EOS
DC2	Lightweight and additive manufacturing for optimised cycloidal reducers	UNINA	EOS
DC3	Kinematics analysis and optimisation of cycloid drives	ECL	PWF
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DC7	Health monitoring supported by virtual sensing	LBF/TUDa	ADA
DC8	Methodology development of ML-based digital twins	ECL	ADA
DC9	Multi-objective path planning	TUDa	ABB



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Research Projects: Operational Strategies



Candidate	Topic	Academic Partner	Industrial Partner
DC1	Structural optimisation and sustainable manufacturing of a harmonic drive	UNINA	EOS
DC2	Lightweight and additive manufacturing for optimised cycloidal reducers	UNINA	EOS
DC3	Kinematics analysis and optimisation of cycloid drives	ECL	PWF
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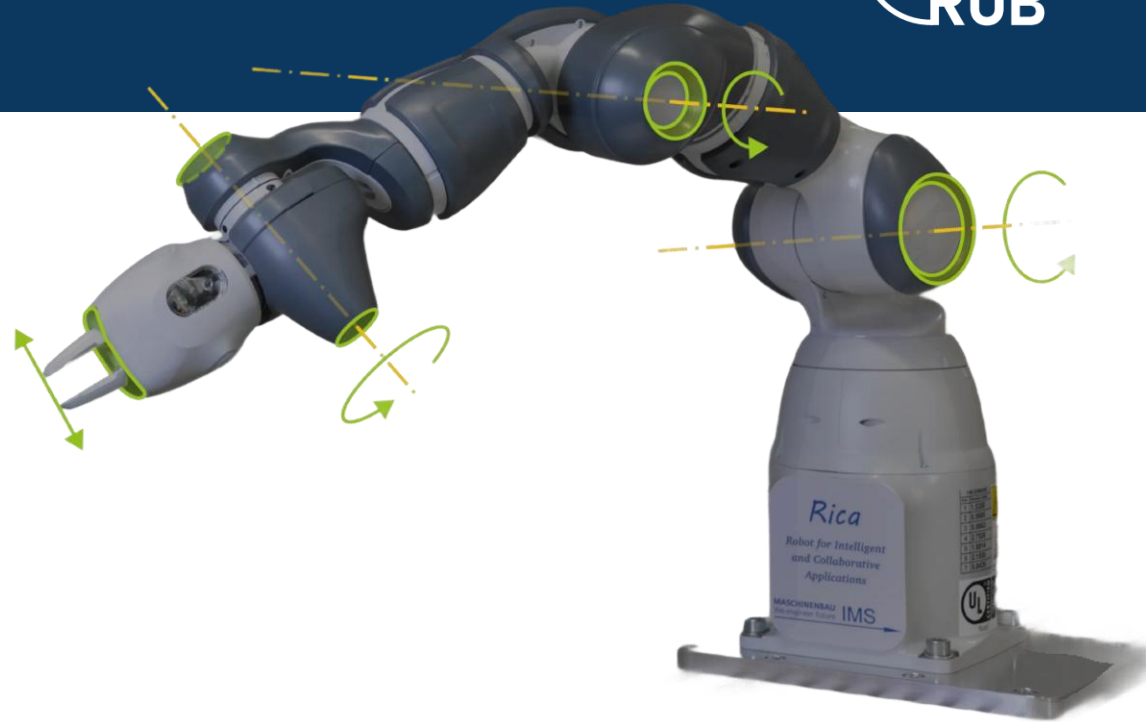
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Training Events



Event	Theme	Location
ITTW 1	Robotics for Manufacturing	Darmstadt (DE)
ITTW 2	Engineering sustainable materials	Naples (IT)
ITTW 3	Reduction drives and gearing dynamics	Lyon (FR)
ITTW 4	Smart Sensing	Darmstadt (DE)
ITTW 5	Additive Manufacturing	Naples (IT)
ITTW 6	Digitalisation in mechanical engineering	Lyon (ECL)
ITTW 7	Wrapping up your PhD	Darmstadt (DE)

Thank You!



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