

**SHERLOCK**



PROJECT ID 820689  
H2020-EU.2.1.5.1. - Technologies for Factories of the Future

Seamless and safe human - centred robotic applications for novel collaborative workplaces.

From 01/10/2018 to 30/09/2022

**Project details**

Total costs: EUR 7 939. 022,50	Topic: DT-FOF-02-2018 - Effective Industrial Human-Robot Collaboration (RIA)
EU contribution: EUR 7 939. 022,50	Call for proposal: H2020-NMBP-FOF-2018
Coordinated in: Greece	Funding scheme: RIA - Research and Innovation action

**Objective**

Human robot collaboration (HRC) has evolved to address the need for flexible production, presenting however drawbacks such as: Inability to cover all applications, Low performance/quality of collaboration and Complexity. SHERLOCK aims to introduce the latest safe robotic technologies in production environments, enhancing them with smart mechatronics and AI based cognition, creating efficient HRC stations that are designed to be safe and guarantee the acceptance/wellbeing of operators.

SHERLOCK's objectives are driven by production requirements involving:

1. Soft Robotics Collaborative Production Station: Starting from a human safety basis:
  - AURA a high payload collaborative manipulator
  - Smart exoskeletons with adjustable operation
  - Safe mobile dual arm manipulators
2. Human - centred interaction, collaboration and awareness by developing
  - Interfaces inspiring trust/familiarity, allowing seamless HR interaction
  - Methods for assessing user impact of HRC systems
  - Design principles/standards to maintain operator psychological safety/wellbeing in HRC
  - Production setups for people with special restrictions exploiting the robot's cognition
3. AI enabled cognition for autonomous HRC applications: enabling robots to understand their environment, reason over it and adapt by:
  - Multi-level perception for process and environment assessment
  - Safe workspace monitoring systems
  - Autonomous planning and coordination of human robot tasks
  - Interactive learning, adapting to operator and simplifying teaching of new tasks
4. Modules for design and certification of Safe HRC applications:
  - Automated Risk Assessment tools within design/simulation packages
  - VR/AR tools for validating collaborative operations - reducing certification time
  - Software tools for Formal on-line safety assessment
  - AR/VR training methods specialized for HRC

SHERLOCK will demonstrate its result in 4 sectors: elevators, industrial modules, aeronautics structures and machine tools production.

**Coordinator**



PANEPISTIMIO PATRON  
UNIVERSITY CAMPUS RIO PATRAS

EU contribution: EUR 1 139 375  
Activity type: Higher or Secondary Education Establishments

**Participants**



COMAU SPA

EU contribution: EUR 918 750  
Activity type: Other



VDL INDUSTRIAL MODULES

EU contribution: EUR 307 000  
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)



UNITED TECHNOLOGIES RESEARCH CENTRE IRELAND, LIMITED

EU contribution: EUR 749 815  
Activity type: Other



SOFITEC AERO SL

EU contribution: EUR 254 257,50  
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)



FIDIA SPA

EU contribution: EUR 405 562,50  
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)



PILZ INDUSTRIELEKTRONIK SL

EU contribution: EUR 307 250  
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)



DEBBACHE-LAGIOS EE

EU contribution: EUR 304 375  
Activity type: Other



INTRASOFT INTERNATIONAL SA

EU contribution: EUR 646 250  
Activity type: Other



LIGHT AND SHADOWS

EU contribution: EUR 406 500  
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)



FUNDACION TECNALIA RESEARCH & INNOVATION

EU contribution: EUR 785 500  
Activity type: Higher or Secondary Education Establishments



FRAUNHOFER GESELLSCHAFT ZUR  
FOERDERUNG DER ANGEWANDTEN  
FORSCHUNG E.V.

EU contribution: EUR 612 912,50  
Activity type: Higher or Secondary Education Establishments



CRANFIELD UNIVERSITY

EU contribution: EUR 396 150  
Activity type: Higher or Secondary Education Establishments



UNIVERSITY COLLEGE DUBLIN,  
NATIONAL UNIVERSITY OF IRELAND,  
DUBLIN

EU contribution: EUR 458 750  
Activity type: Higher or Secondary Education Establishments



MCI BENELUX SA

EU contribution: EUR 246 575  
Activity type: Private for-profit entities (excluding Higher or  
Secondary Education Establishments)

