

Project acronym: EuRoC
Project full title: European Robotics Challenges
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Project Coordinator: Prof. Bruno Siciliano (Università di Napoli Federico II)
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Beneficiaries:

- C.R.E.A.T.E. Consorzio di Ricerca per l'Energia e le Applicazioni Tecnologiche dell'Elettromagnetismo (Italy)
- Alstom Inspection Robotics AG (Switzerland)
- Ascending Technologies GmbH (Germany)
- Centre National de La Recherche Scientifique (France)
- Deutsches Zentrum fuer Luft - Und Raumfahrt E.V. (Germany)
- Eidgenoessische Technische Hochschule Zurich (Switzerland)
- Innocentive Emea Ltd (United Kingdom)
- Fraunhofer-Gesellschaft zur Foerderung der Angewandten Forschung E.V. (Germany)
- KUKA Laboratories GmbH (Germany)

The European manufacturing industry needs competitive solutions to keep global leadership in products and services. Exploiting synergies across application experts, technology suppliers, system integrators and service providers will speed up the process of bringing innovative technologies from research labs to industrial end-users. As an enabler in this context, the EuRoC initiative proposes to launch three industry-relevant challenges: 1) Reconfigurable Interactive Manufacturing Cell, 2) Shop Floor Logistics and Manipulation, 3) Plant Servicing and Inspection. It aims at sharpening the focus of European manufacturing through a number of application experiments, while adopting an innovative approach which ensures comparative performance evaluation. Each challenge is launched via an open call and is structured in 3 stages. 45 Contestants are selected using a challenge in a simulation environment: the low barrier of entry allows new players to compete with established robotics teams. Matching up the best Contestants with industrial end users, 15 Challenger teams are admitted to the second stage, where the typical team is formed by research experts, technology suppliers, system integrators, plus end users. Teams are required to benchmark use cases on standard robotic platforms empowered by this consortium. After a mid-term evaluation with public competition, the teams advance to showcasing the use case in a realistic environment. After an open judging process, 6 Challenge Finalists are admitted to run pilot experiments in a real environment at end-user sites to determine the final EuRoC Winner. A number of challenge advisors and independent experts decide about access to the subsequent stages. A challenge-based approach with multiple stages of increasing complexity and financial support for competing teams will level the playing field for new contestants, attract new developers and new end users toward customisable robot applications, and provide sustainable solutions to carry out future challenges.