

Back to the Future 11 – AEROWORKS

21. September 2015



Collaborative Aerial Robotic Workers: AEROWORKS envisions a novel aerial robotic team that possesses the capability to autonomously conduct infrastructure inspection and maintenance tasks, while additionally providing intuitive and user-friendly interfaces to human-operators.

AEROWORKS Aim – UAV interaction, perception & planning intelligence

With ageing infrastructure in developing-and-developed countries, and with the gradual expansion of distributed installations, the costs of inspection and repair tasks have been growing vastly and incessantly. To address this reality, a major paradigm shift is required, in order to procure the highly automated, efficient, and reliable solutions that will not only reduce costs, but will also minimize risks to personnel and asset safety.

Autonomously executing Unmanned Aerial Vehicles

The AEROWORKS robotic team will consist of multiple heterogeneous “collaborative Aerial Robotic Workers”, a new class of Unmanned Aerial Vehicles equipped with dexterous manipulators, novel physical interaction and co-manipulation control strategies, perception systems, and planning intelligence. This new generation of worker-robots will be capable of autonomously executing infrastructure inspection and maintenance works. The AEROWORKS multi-robot team will operate in a decentralized fashion, and will be characterized by unprecedented levels of reconfigurability, mission dependability, mapping fidelity, and manipulation dexterity, integrated in robust and reliable systems that are rapidly deployable and ready-to-use as an integral part of infrastructure service operations.

Direct exploitation in the UAV infrastructure services market

As the project aims for direct exploitation in the infrastructure services market, its results will be demonstrated and evaluated in realistic and real infrastructure environments, with a clear focus on increased Technology Readiness Levels. The accomplishment of the envisaged scenarios will boost the European infrastructure sector, contribute to the goal of retaining Europe’s competitiveness, and particularly impact our service and industrial robotics sector, drastically changing the landscape of how robots are utilized.

European Robotics Forum 2015 – Presentation & Pitch talk at [Robohub](#):

<https://youtu.be/q0qqYUre-YY>

Primarily for civil infrastructure services

The application domain that inspires the AEROWORKS research and innovation activities is that of civil infrastructure services, and its detectable growing necessity for high automation, improved Quality of Services (QoS) and capital-saving maintenance cycles, while retaining – or maximizing– safety and reliability. In order to clearly define the research activities and technological developments, and confine them within focused and specific boundaries, the project consortium has gathered experts from academia, robotics innovation enterprises, as well as key end-users, and aims to provide solutions to the specific –yet wide and challenging– area of civil infrastructure (power generation and distribution, oil & gas, water supply etc.) inspection and maintenance operations.

AEROWORKS – Collaborative Aerial Robotic Workers

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 - **Founding source:** European Commission
 - **Funding:** 5.2 Mil. Euros
 - **Website:** <http://www.aeroworks2020.eu/>
 - **Status:** to started early 2015
 - **Contact:** <http://www.aeroworks2020.eu/contact-us/>

Tags: [UAV Research and Development Projects](#), [UAV for Asset and Utility Inspection](#), [UAV for Maintenance and Servicing](#), [UAV Technology Trends and Visions](#)

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