



## **AEROWORKS: Collaborative Aerial Robotic Workers**

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University of Twente, the Netherlands

University of Edinburgh, UK

University of Patras, Greece

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# Automating Infrastructure I&M

- Annual investments on the infrastructure sector:
  - 3.9% of the GDP for the old EU states
  - 5.07% of the GDP for the new EU states
  - 9% of the GDP for China



- To **automate infrastructure inspection and maintenance**, AEROWORKS introduces a new concept for service robotics:
  - Collaborative **Aerial Robotic Workers**
  - A new class of aerial robots with the perception capabilities, the manipulation dexterity, the autonomy levels and guaranteed safety to conduct high fidelity inspections, risk assessment and meaningful maintenance tasks.



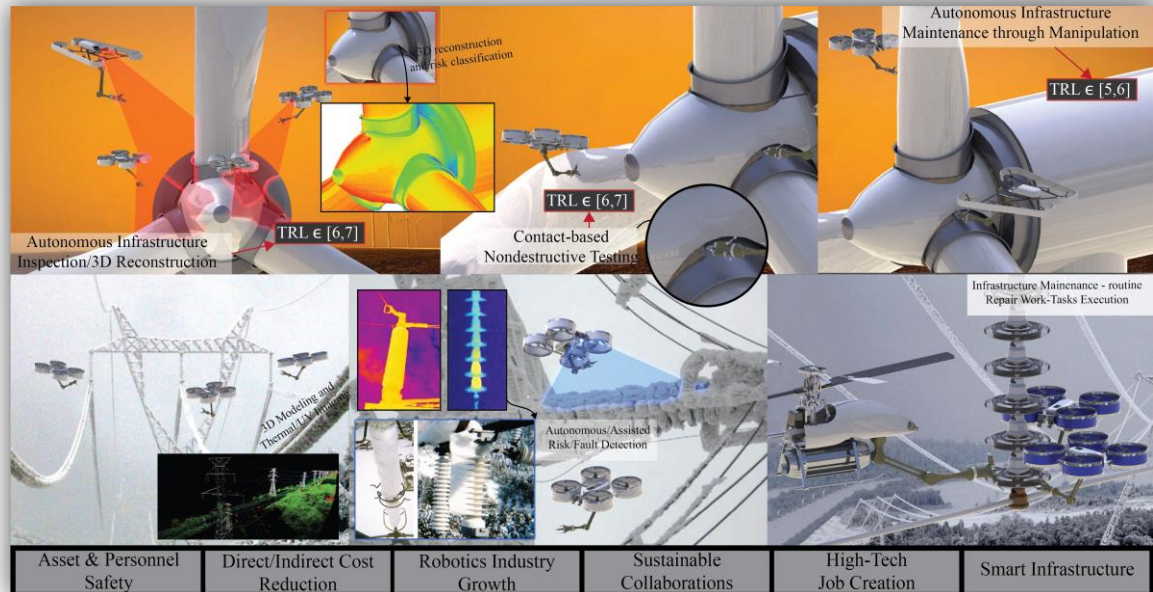
# AEROWORKS Approach

- Beyond-the-state-of-the-art in the fields of robotic vision and dense reconstruction, lightweight manipulator design, aerial manipulation control, path planning and autonomy as well as multi-robot mapping and collaboration.
- Tightly integrated approach between all the “traditionally individual components” (e.g. vision and path planning) towards superior performance and robustness.
- Emphasis on superior autonomy and robust, fail-safe operation.
- Progressive and extensive evaluation rounds and public demonstration events of skills and capabilities related with infrastructure inspection and maintenance.



# The AEROWORKS Impact in a nutshell

- **S1:** Wind Turbines Inspection
- **S2:** Power Network Inspection
- **S3:** Pipework Inspection
- **S4:** Power Plants Inspection
- **S5:** Water Dam Inspection



- **Short-term:** utilization of the AEROWORKS robotic team by two end-users
- **Mid-term:** wide integration of robotic products based on the AEROWORKS contributions to the infrastructure service business.
- **Main goal:** strengthening of the European Service Robotics Sector
- Check out: website [www.aeroworks2020.eu](http://www.aeroworks2020.eu) with publications list, code releases, videos, open datasets and more already coming!



A black and white photograph of a drone flying in front of a construction site. The drone is in the foreground, slightly to the left of the center. It has a white, dome-shaped cover on its top. The background is a blurred construction site with several cranes and building structures. The text "Thank you!" is overlaid on the drone in a large, white, sans-serif font.

**Thank you!**

Please ask your question!