

IED disposal robots

The next generation of dexterous systems

Under-actuated robotic fingers in a robotic hand allow significant reduction in manufacturing cost and control complexity. Fingers are designed for rapid repair and low cost following damage sustained in the field. The development of under-actuated systems is a recent development that will allow a range of objects to be grasped with ease.

Technological advantages

- Fully configurable to handle a wide range of shapes
- Compact three fingered design, with minimal number of individual actuators
- Low mechanical complexity, with interchangeable parts
- Sensors can be located away from the finger tips to improve reliability and robustness

Technology roadmap

Following the development of the Whole Arm Manipulator with its anthropomorphic five fingered hand, a number of design variations have been studied or prototyped.

Collaboration opportunity

The time and cost for systems will vary based on requirements. An example could include the development of a small robotic gripper using a research assistant for 12 months at approx. £80K together with hardware and software costs typically in the order of £20K.

Fundamental research, for example developing a fully functional dexterous hand, could be conducted by a research student over three years, into control including the development of sensors, particularly to improve overall performance and increase autonomy which typically costs £80k a year.

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