



A new project is gathering Europe's leading robotics experts to create hands that can learn fine manipulations and adapt to different manual tasks much like humans can.

The €6.35m (£5.61m) HANDLE project gathers partners from Germany, Spain, France, Portugal, Sweden and the UK.

UK partner the Shadow Robot Company was established in 1987 and has been developing dexterous robotic hands for the past five years.

Speaking to *The Engineer*, Rich Walker, Shadow's director, said that there were still many challenges facing robotics researchers in this area.

'HANDLE is about looking at how humans learn to do manipulation and how can we transfer that to robot hands and what tips and tricks do humans use.'

'We knew there were challenges in manipulation that humans can do relatively easily but that are incredibly difficult for robots to do at the moment — for example, right now I'm twiddling a pen around my fingers.'

Part of the project involves looking in detail at how humans naturally do these tasks.

The team has a unique experimental set-up that includes a special glove with fingertip sensors to measure precise contact points when handling objects and head tracking to ascertain where attention is directed.

The objects themselves also have sensors to gauge where subjects are making contact with the object and how hard.

While HANDLE is not focused on any industrial or consumer applications specifically, Walker said there would be some obvious opportunities if the technology comes off.

‘There’s some interest in remote maintenance-type tasks where at the moment you can use a machine with teleoperation, but it’s really hard work, a highly skilled job, and it would be a lot better if you could show the machine how the task was done — or at least the key aspects — and have the machine perform those tasks effectively by itself.

‘Of course, you might command it at a slightly higher level, so you might say “unscrew that connector” or “pull out that lead”, but even that is a big, big step-up.’

Read the complete article at <http://www.theengineer.co.uk/sectors/electronics/news/robotics-experts-team-to-create-human-like-hands/1009365.article>