

Robot 'shadow hand'

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Credit: ESA

Picking up an apple is one of those jobs requiring the delicate touch of the human hand – or its robotic counterpart.

ESA is developing technologies for advanced human–machine interaction to transfer the human [sense of touch](#) to space.

The aim is that remote operators will feel as though they are right there with whatever they are controlling, such as planetary rovers.

Among the specialised equipment is this UK-supplied Shadow Hand, which incorporates a force-feedback sense of touch and pressure to allow high-precision, high-manipulability gripping, with the robot [hand](#) reproducing the motion of its human operator.

Based at ESA's ESTEC technical heart, in Noordwijk, the Netherlands, the Telerobotics and Haptics Laboratory already has an experiment flying in orbit: the Haptics-1 payload aboard the International Space Station. The next step is next year's Interact experiment, with a wheeled rover down on Earth being steered from the Station.

Provided by European Space Agency

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