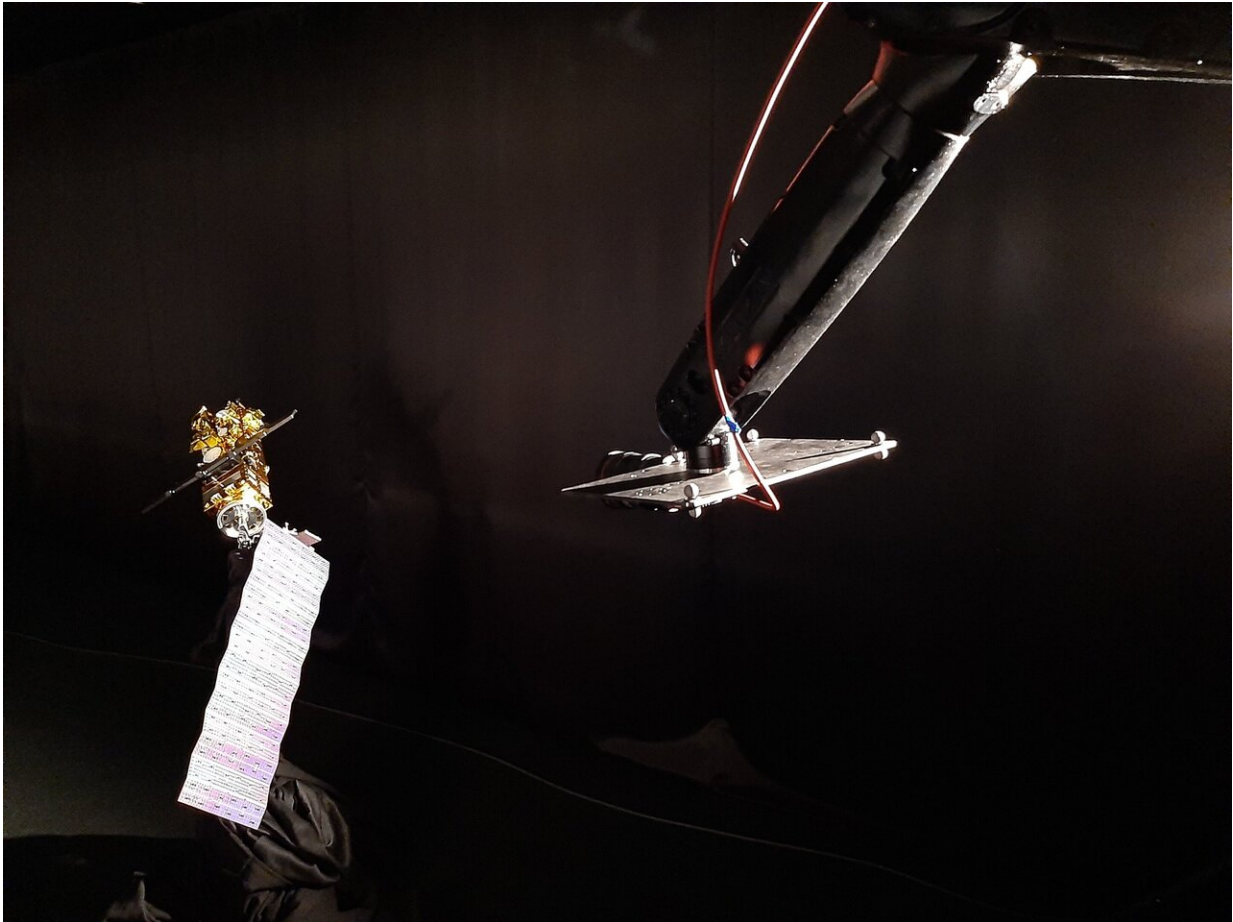# Image: Simulated satellite rendezvous

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Credit: ESA-M Schwendener/L Pasqualetto-Cassinis

A camera closes in on a detailed model satellite, to simulate the extreme "guidance navigation and control" (GNC) challenge of rendezvousing with an uncooperative target, such as a derelict satellite or distant

asteroid.

This scene takes place in ESA's GNC Rendezvous, Approach and Landing Simulator, or GRALS, based at the ESTEC technical center in the Netherlands, which is used to test vision-based navigation algorithms as well as cameras in development for future space debris removal, as well as the Hera asteroid mission for planetary defense.

GRALS is the Agency's single longest lab, incorporating a 33-m long railing. Camera-carrying robotic arms can be mounted onto this railing to mimic the entire cycle of closing in upon a rendezvous target.

ESTEC is ESA's largest establishment, the technical heart of the Agency. The site is devoted to program management, technology development and satellite testing.

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