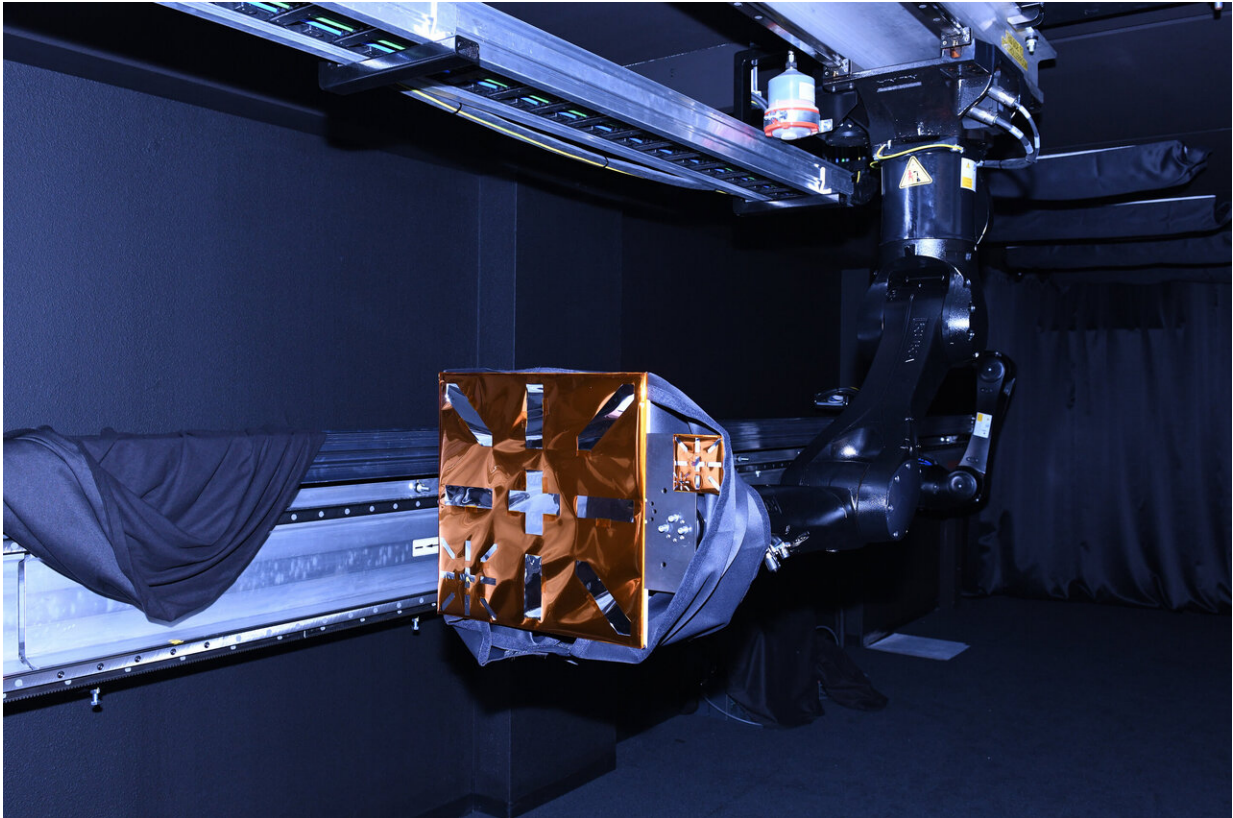


Image: Testing satellite marker designs

April 25 2019



Credit: European Space Agency

Akin to landing lights for aircraft, ESA is developing infrared and phosphorescent markers for satellites, to help future space servicing vehicles rendezvous and dock with their targets.

Developed by Hungarian company Admatis as part of an ESA Clean

Space project, these markers would offer robotic space servicing vehicles a steady target to home in on, providing critical information on the line of sight, distance and pointing direction of their target satellite.

Initial testing of these 'Passive Emitting Material at end-of-life' or PEMSUN markers took place at the end of March 2019 inside ESA's GNC Rendezvous, Approach and Landing Simulator, part of the Agency's Orbital Robotics and Guidance, Navigation and Control Laboratory, at its ESTEC technical centre in Noordwijk, the Netherlands.

"The idea itself is not new, but this is the first time we've manufactured and tested sample patches, cut into spacecraft multi-layer insulation covering," comments ESA Clean Space trainee Sébastien Perrault. "For the design we've looked into one larger pattern incorporating smaller versions for when the space servicing vehicle comes close enough that its camera's field of view is filled.

"These markers would be very useful during eclipse states for instance, when Earth obscures the Sun in low Earth orbit, to allow the chaser [vehicle](#) to stay fixed on its target, potentially in combination with radio tags."

ESA is studying [space](#) servicing vehicles to carry out a wide range of roles in orbit, from refurbishment and refuelling to mission disposal at their end of life.

Provided by European Space Agency

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