

Image: New European rack delivered to ISS

July 9 2020



Credit: ESA/NASA

After a successful launch aboard the Japanese HTV9 cargo vehicle, a new experiment facility was recently installed in the European laboratory Columbus as part of a comprehensive upgrade of Europe's International Space Station module.

NASA astronauts Bob Behnken and Doug Hurley (imaged above) manoeuvred the fridge-sized European Drawer Rack Mark 2(EDR2) to its new position. EDR2 is designed to run in parallel with the original European Drawer Rack, providing even greater opportunities for science in [space](#).

A feat that would be much more difficult on Earth, installing EDR-2 in weightlessness was not exactly physically taxing, but required careful manoeuvring in the limited space. Watch a video of the installation.

EDR2 is a flexible experiment facility, able to support a wide range of experiments and technology demonstrators. It supports experiments by providing power, data communication, cooling and nitrogen, and venting waste gasses. The rack is designed to accommodate many types of instruments with different dimensions and masses. EDR2 can even support experiments nearby but not inside the experiment rack, so long as these are hosted inside the Columbus cabin.

The first three experiments planned for installation in EDR-2 include a metal 3D printer, an instrument investigating granular materials (VIP-GRAN) and a facility looking into [heat transfer](#).

ESA intends to use the 3D printer to produce [metal parts](#) through additive manufacturing – a process considered the next important step in building structures and parts in space.

The VIP-GRAN experiment will investigate how particles behave in microgravity to understand the underlying physics in detail. This involves looking at how particles jam together as they flow through small openings.

The Heat Transfer Host experiment will continue ESA's investigations into convection – how heat is transferred through air and liquids.

EDR-2 arrived to the International Space Station on 20 May on a Japanese HTV-9 cargo vehicle and took the place of the European Transport Carrier (ETC); having served its time as a workbench and stowage facility, ETC was transferred to the HTV 9 spacecraft and will now be trashed.

The EDR-2 and most of its experiments and technology demonstrators will be operated from CADMOS, the French User Support Operations Centre located in Toulouse, France.

Provided by European Space Agency

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