MICE

DESIGN FOR REMOVAL

SPACE

Mechanical Interface for Capture and End-of-life

A mechanical interface for removal

What is *MICE*?

MICE is a (single-part) mechanical interface designed to enable safe capture and removal of satellites at their End-of-life. MICE supports cooperative and non-cooperative capture by compatible grippers (e.g. CAT system) by establishing a firm grappling fixture on the equipped satellite.

MICE is an open ICD, space qualified part adopted as ESA's basline for ADR of the Copernicus Sentinel Expansion mission satellites.

For further information:

If you have an application for MICE and would like more information or to discuss your requirements, please contact the team: **robotics@gmv.com**
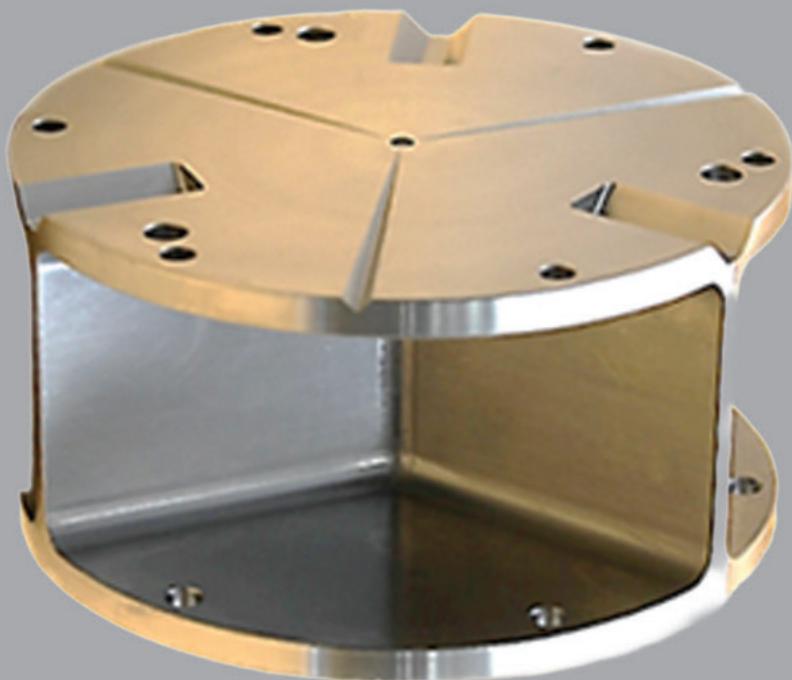
How does *MICE* work?

MICE enables your satellite to be ready for safe, reliable, capture and removal at End-of-Life.

MICE is designed to be installed on the spacecraft's LAR face within a cylindrical keep-out of zone of Ø250 mm. Once in place, it provides a robust and standardized grappling interface, allowing any compatible gripper or capture device to securely grab and manipulate the satellite.

Main features:

- Passive and durable single-part component.
- Light (< 720 g) .and low impact installation.
- Designed to withstand orbital conditions up to End-of-Life.
- Large load capacity up to 850N and 180 Nm.
- Allows capture before contact.
- Open ICD. Designed for interoperability with different capture concepts and gripper implementations.

Product roadmap

- TRL-9.
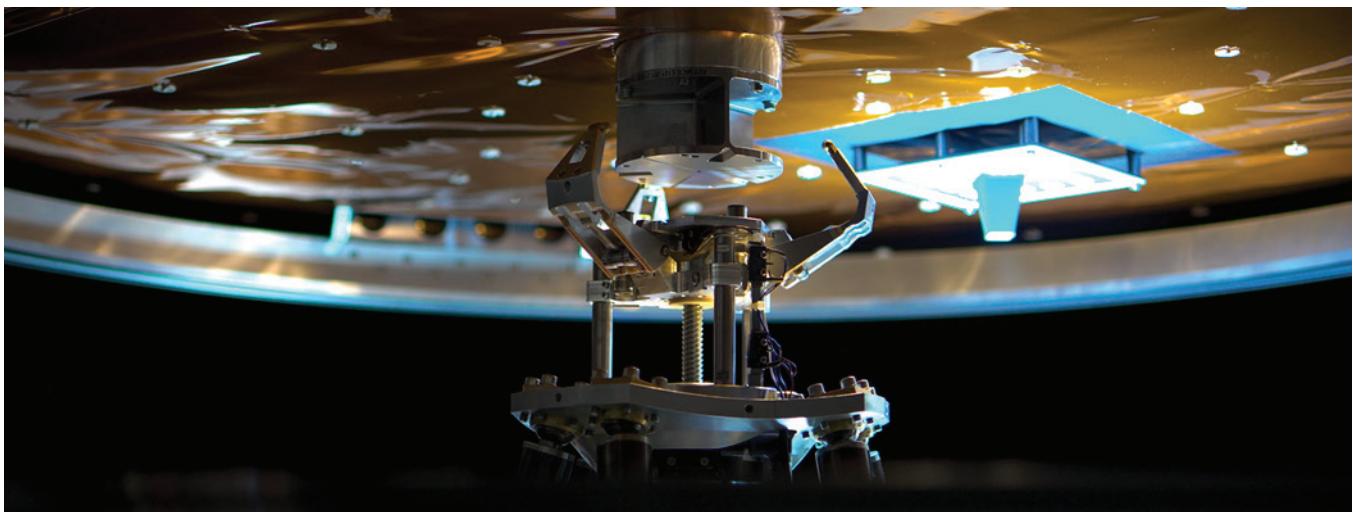
Data sheet

Type	Single part, no movable components
Mass	0.719 kg
Outer diameter	Ø98 mm
Height	50 mm
Material	Stainless Steel 15-5 PH H1025
Load Capacity	850 N & 180 Nm & extreme temperatures (± 160°) at End-of-life
Coating	No tribological coating. Top surface sand-blasted to minimize reflections
Working range	Max. tolerable misalignments between gripper and MICE: - Translation error: ± 20 mm (along all axes) - Rotational error: ± 30 deg (along all axes)
Keep out zone	Cylindrical keep-out zone of Ø250 mm

MICE is a single-part mechanical interface that prepares your satellite for removal at EoL at:

- Low cost and installation impact.
- No impact on mission risks (fully passive and wide environmental compatibility).

Latest news

Four of the Copernicus satellites are already regulated by the ESA's design-for-removal interface requirements document, and they are already being equipped with the equipment known as *MICE*, along with a series of navigation assistance devices.

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