ESA's Asteroid Impact Mission, being studied for a 2022 arrival at the Didymos double asteroid, involves not just one but four spacecraft.

The main spacecraft (seen here towards bottom left) would carry a small lander (seen here in dark on the asteroid) to touch down on the 180 m-diameter secondary asteroid, or 'Didymoon'. It would also release at least two CubeSats (seen at the top left and towards the right of the image).

These multiple spacecraft would allow AIM to test deep-space intersatellite relays, while the lander would gather experience in low-gravity proximity operations.

Then, in 2022, NASA’s Double Asteroid Redirection Test (DART) would arrive and slam at high speed into Didymoon, with the quartet providing multiple viewpoints of this unique event and its aftermath.

AIM and DART would together form an international mission called Asteroid Impact & Deflection Assessment, or AIDA.