

20th IAA SYMPOSIUM ON SPACE DEBRIS (A6)
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ADEO – THE AUTOMATIC DE-ORBIT SAIL SUBSYSTEM – ENABLING SPACE DEBRIS
MITIGATION FOR BIG- AND SMALLSATS, ROCKET BODIES, CUBESATS, AND
CONSTELLATIONS

Abstract

The ADEO subsystem is a fully qualified, lightweight and scalable drag augmentation subsystem using the residual Earth atmosphere present in Low Earth Orbit (LEO) to automatically de-orbit satellites and rocket bodies and any other spacecraft of any mass, orbital altitude and mission type. ADEO is available on the commercial market for sale at a price that beats any other technical means of deorbiting. ADEOs special functions allow for fully automatic sail deployment after the spacecrafts indication of mission end; just feed the unique software program also developed by HPS with specific data of your planned

spacecraft and get a precise prediction of removal time in comparison to currently unaided descent. In any case ADEO allows satellite operators and/or launch providers leave nothing but cleangreen space behind after just 3-5 years descent – instead of polluting space with junk for tens of years. Normally, the spacecraft is equipped already at launch with its own automatic ADEO dragsail subsystem. However, there is also a possibility to attach (e.g. via a robotic arm of the service satellite) ADEO on the dead target satellite in space that had not been equipped from the beginning of mission on Earth. One way or the other, at the end of the spacecrafts life circle ADEO guarantees that this had beed a sustainable, clean and green space mission. The ADEO subsystem family consists of three different modules:

ADEO-N (Nano) for S/C from 1-250 kg ADEO-M (Medium) for S/C from 100-700 kg ADEO-L (Large) for S/C from 500-1500 kg

With these three scalable products we cover every satellite and rocket body in LEO orbit. During different governmentally funded as well as commercial programs and missions the ADEO dragsail achieved its full qualification and maturity and is therefore the most advanced solution on the market. Together with our global costumers, from governmental scientific missions up to commercial constellations, we the ADEO team at HPS always find the best de-orbiting strategy for any S/C you may have.