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30 YEARS OF EUROPEAN EFFORTS IN DEALING WITH SPACE DEBRIS

Abstract

ESA was among of the first agencies addressing the space debris issue. In the years before US efforts were led by NASA Johnson Space Center with the key persons Joe Loftus and Don Kessler. A key moment was July 24, 1986, when Cerise, a French military spacecraft launched by Ariane was damaged when it was hit by a fragment of the Ariane rocket. Prof. Rex of the TU Braunschweig led a working group composed of European scientists and ESA staff. In November 1988 the Report from the ESA Space Debris Working Group was published (Space Debris, The Report of the ESA Space Debris Working Group, ESA SP-1109, 1988).

In 1993 the first European Conference on Space Debris was held in Darmstadt, and repeated every for years. The 7-th European Conference on Space Debris will follow in spring 2017. During four days this largest dedicated gathering on space debris will bring together scientists, engineers, operators, lawyers and policy makers.

At the global level the Inter-Agency Space Debris Coordination Committee (IADC) was formed, with currently 13 member agencies. The founding members are NASA and ESA (Rolleboise (France), 1988). In 1992 Japan and Russia joined IADC.

Unfortunately the number of man-made objects is growing – currently more than 17000 objects larger than 5 cm are in orbit. A recent example is August 23, 2016, when a solar panel the Copernicus Sentinel-1A satellite was hit by a millimeter-size particle in orbit. New developments such as the planned mega-constellations in low-earth orbit are of great concern. A significantly stonger effort is urgently needed to reduce the number of debris objects. Currently much attention is advoted to removal concepts.