

7th European Conference on Space Debris

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As the world's largest scientific gathering dedicated to space debris, The 7th European Conference on Space Debris saw best-ever attendance by some 350 participants from space organisations, academia and industry who delivered papers on the latest research into the debris threat and on new technologies aimed at mitigating debris creation and reducing the orbital debris population. The 4-day event took place from April 18 to April 21 at the European Space Operations Centre (ESA/ESOC) in Darmstadt/Germany. The conference was co-sponsored by ASI (Agenzia Spaziale Italiana), CNES (Centre National d'Etudes Spatiales), DLR (Deutsches Zentrum für Luft- und Raumfahrt), UKSA (United Kingdom Space Agency), COSPAR (Committee on Space Research), and IAA (International Academy of Astronautics).

For the first time in the 24-year history of the quadrennial debris conference series, the media briefing was attended by ESA Director General Jan Wörner and Brigitte Zypries, German Federal Minister for Economic Affairs and Energy and German national aerospace coordinator

The findings were delivered by researchers and specialists of more than 20 space-faring nations in 244 scientific papers. It became apparent that debris mitigation strategies defined long ago are important today as never before. However, the venting of residual energy from satellites and upper stages at the end of their missions to prevent explosive break-ups and the disposal of space objects through a final manoeuvre remain challenges. Numerous novel solutions were presented to support these important mitigation measures. Many authors emphasized that successful execution of these measures is becoming ever more important in view of upcoming 'megaconstellations' comprising thousands of satellites in low Earth orbit.

As postulated by our keynote speaker, Donald Kessler, already postulated decades ago, the number of space-debris objects in some orbital regions grows even if mitigation measures are applied. To prevent this uncontrolled growth, the active removal or deorbiting of selected large defunct space objects is required in addition to the full application of mitigation measures. The technology required for deorbiting is actively being studied today and the remarkable progress was displayed at the conference.

Another important field is the capacity for the surveillance and tracking of defunct space objects, which is a necessary precondition to active collision avoidance and space situational awareness. The progress made by European actors in this field is notable; space surveillance radars are currently under development in many European countries and laser technology promises high-precision tracking of space debris objects.

The proceedings are available online:

7th European Conference on Space Debris: <https://conference.sdo.esoc.esa.int/>

ESA Space Debris Office: <http://www.esa.int/debris>

Conference

Movie: http://www.esa.int/spaceinvideos/Videos/2017/04/Space_debris_-_a_journey_to_Earth