

Sustainable Space, Sustainable Earth

UNOOSA - Promoting Space Sustainability Virtual Event



DEFENCE AND SPACE

Silvio SANDRONE, Vice President New Programmes, Space Exploration
09 February, 2021

AIRBUS

A Spot On Space Debris

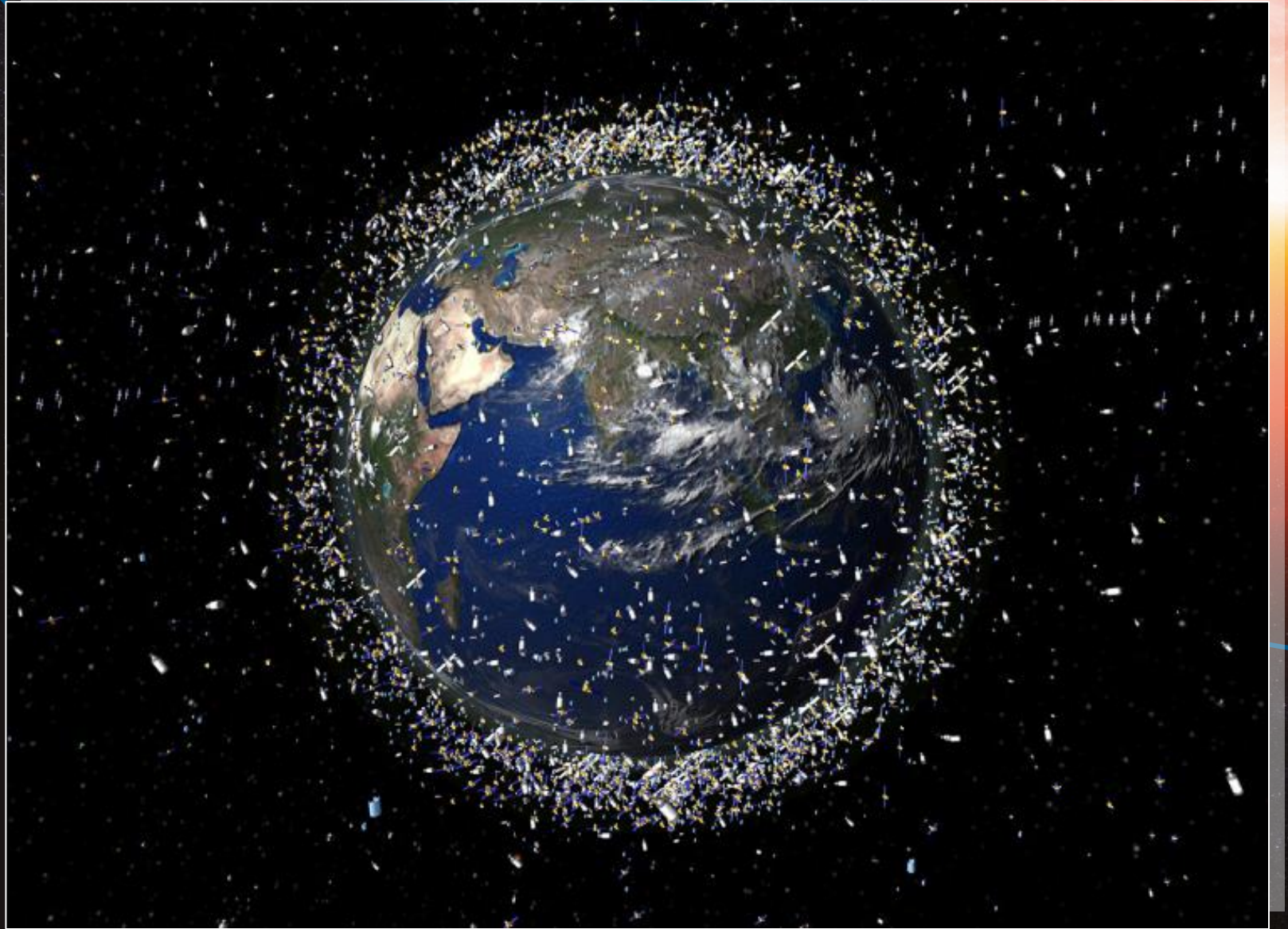


Image credit: Science Photo Library

From Sourcing to the End-of-Life Sustainability Examples in Space Programmes

ECO-DESIGN

Sustainability by design through environmental impact assessment and improvement from early design stages



SPACE DEBRIS

MITIGATION

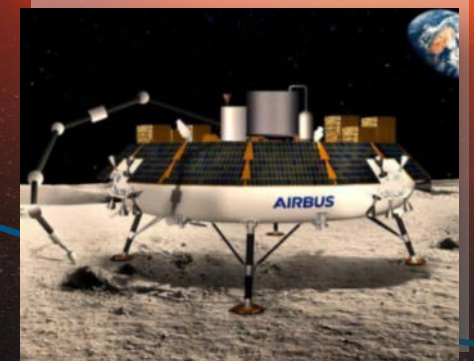
De-orbiting systems and re-entry strategies, satellite power and propulsion passivation

AVOIDANCE

Space situational awareness and space traffic management for object surveillance and tracking and collision avoidance

REMOVAL

Advanced debris removal systems



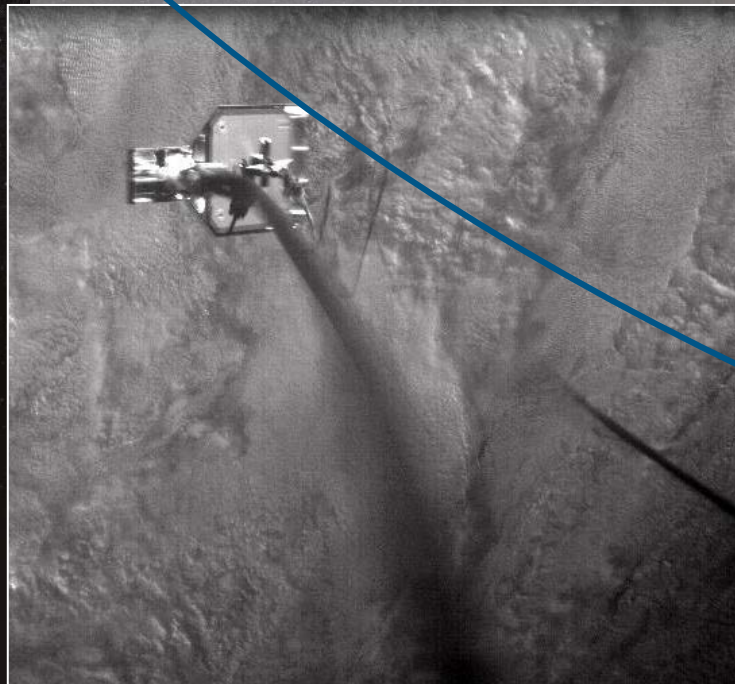
IN-SPACE RESOURCES

In-space manufacturing (ISMA) with recycling approaches, in-space resource utilisation (ISRU), On-Orbit Services

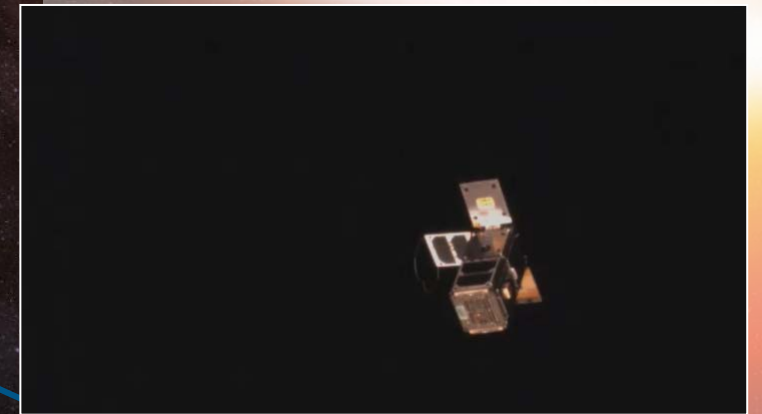
A Series of Experiments from The RemoveDEBRIS Mission



A cube sat targeted and captured by THE NET, then deorbiting together.



Fired at a speed of 20 metres per second, THE HARPOON penetrated a target at 1.5 m distance.



The VISION-BASED NAVIGATION (VBN) tested 2D cameras and a 3D LIDAR (light detection and ranging) technology to track a cube sat as it moved away after being deployed from the main spacecraft.

The RemoveDEBRIS Project is co-funded by the European Commission and the research leading to the results have received funding from the EU FP-7.

A Common Endeavour for All Mankind Sustainable Space, Sustainable Earth

Space Sustainability is key for the long-term sustainability not only of the Space industry itself, but – more importantly – the significant downstream segment and the societal benefits it brings.

“ From a technology viewpoint, it is clear that environmental sustainability must be the common denominator for aviation but also for space as well, where we’re making and sending a constellation of hundreds of satellites into orbit. [...]



Continuing to invest money into monitoring debris is not sustainable. I think we have a duty to the next generation of leaving not only a better planet, but also a better space around it.

We need to start looking actively into cleaning up space. Proximity management at seven kilometres per second is quite a challenge!”

Grazia Vittadini, Airbus CTO

The top half of the image is a composite space-themed background. It features a curved horizon of Earth with blue oceans and white clouds on the right side, transitioning into a dark space filled with a grid of small, light blue diamond shapes. In the center of this grid, a small, dark sphere representing the Moon is visible. The bottom half of the image is a solid dark space background with a few scattered stars.

THANK YOU

Airbus Space Systems

space@airbus.com

www.airbus.com/space.html

AIRBUS