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**PRESS RELEASE**

**Cleaning up the Earth’s orbit: Italian aerospace engineer selected as a finalist at European Inventor Award 2023**

* **Luca Rossettini and his team invented a device to move a satellite to an unused part of the orbit or even return it to Earth in a controlled manner**
* **With thousands of satellites orbiting Earth, over 500 collisions, explosions and accidents have occurred in space so far**
* **This system decreases the total mission cost by 10%, while building a circular economy in space**

**Munich, 9 May 2023** –More than 15,000 satellites have been launched into Earth’s orbit since the first satellite launch in 1957, according to the European Space Agency (ESA). More than **600 collisions, explosions and accidents in space** have broken many of these satellites into pieces and ESA estimates that, as a result, more than **36,500 objects larger than 10cm are hurtling around Earth**. Italian inventor Luca Rossettini and his team have worked to solve this issue by creating a system that **manoeuvres satellites more accurately and efficiently into their orbital slots and then propels them safely out of Earth’s orbit once they are no longer of use.** **Luca Rossettini and his team are finalists in the ‘SMEs’ category of the European Inventor Award 2023**. They were selected from over 600 candidates for this year’s edition.

**Multiple solutions for clear skies**

When space debris collides with other objects, it creates even more debris. This raises the likelihood of further collisions, potentially putting satellites and space missions at risk, and increases the number of objects in space that could fall to Earth. **Rossettini and his team at D-Orbit created a system to manage both the repositioning and the removal of satellites in orbit.** Once they take satellites out of Earth’s orbit, they can burn up in the atmosphere and disintegrate in a designated, safe space.

Known as the D-Orbiter Decommissioning Device (D3)™, the company’s device is a small independent, smart rotor attached to a satellite before its launch. It is equipped with its own propulsion, fuel, remote-control system and telecommunications unit. The device remains dormant until it detects an issue with a satellite’s function and warns satellite operators on Earth. D-Orbit have also created a solution for **last-mile delivery in space** called ION Satellite Carrier, which is based on the inventor’s patented method for safe release. ION is a multi-purpose space vehicle that can transport satellites in orbit and release them individually exactly where they need to be to begin their mission in optimal operational conditions and perform several other advanced services like testing third-party payloads in orbit, during the same mission.

The D3 offers an economical solution for satellite companies to reduce waste in space, given the total cost of protecting missions from debris and decommissioning the satellite at the end of its life can be as much as one-tenth of the total mission cost.

Rossettini and his team have been named one of three finalists in the ‘SMEs’ category for this year’s European Inventor Award, recognising outstanding inventors with inventions patented in Europe**.** **The winners of the 2023 edition of the EPO’s awards will be announced at a hybrid ceremony on 4 July 2023** in Valencia (Spain). This ceremony will be broadcast online [here](https://inventoraward.epo.org?mtm_campaign=EIA2023&mtm_keyword=EIA-pressrelease&mtm_medium=press) and open to the public.

**Reaching for the stars**

Rossettini’s invention is the result of his longstanding passion for space and sustainability. After serving as an Airborne Officer with the Italian military, he completed a Master’s Degree in Aerospace Engineering from Politecnico di Milano. He worked for a year in a US research lab on nanotechnologies applied to space propellants before returning to Europe to complete another Masters in Strategic Leadership Towards Sustainability. He later gained a PhD in Advanced Space Propulsion also at the Politecnico di Milano, and following an internship position at NASA Ames Research Center, Rossettini co-founded D-Orbit in Italy in 2011.

The company develops solutions for space logistics and transportation and aims to build a space logistics infrastructure that enables service providers to **streamline satellite launches and reduce the amount of space junk in orbit.** *“If you really want to have a sustainable circular economy in space in the future, the number one problem is going to be space debris”,* Rossettini explained. *“Today, we have hundreds of fragments in orbit that basically represent the biggest threat for satellites. We don’t know where they are. So, every time you send a satellite, you bet on the lottery not to be hit by one of these. And you understand that if the number of satellites keeps increasing as they are now, you cannot keep betting on this lottery, especially if you want to build a business in space.”*

Find more information about the invention’s impact, the technology and the inventors’ stories [here](https://new.epo.org/en/news-events/european-inventor-award/meet-the-finalists/luca-rossettini?mtm_campaign=EIA2023&mtm_keyword=EIA-pressrelease&mtm_medium=press&mtm_group=press).

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**About the European Inventor Award**

The European Inventor Award is one of Europe's most prestigious innovation prizes. Launched by the EPO in 2006, the award honours individuals and teams, who have come up with solutions to some of the biggest challenges of our time. The finalists and winners are selected by an independent jury comprising former Award finalists. Together, they examine the proposals for their contribution towards technical progress, social and sustainable development, and economic prosperity. All inventors must have been granted a European patent for their invention. Read more [here](https://new.epo.org/en/news-events/european-inventor-award?mtm_campaign=EIA2023&mtm_keyword=EIA-pressrelease&mtm_medium=press) on the various categories, prizes, selection criteria and livestream ceremony to be held on 4 July 2023.

**About the EPO**

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