SPACEX

COMMITMENT TO SPACE SUSTAINABILITY

As we have detailed in the past, SpaceX is committed to keeping space safe, sustainable and accessible, protecting astronauts and satellites in orbit and the public on the ground. We have demonstrated this commitment through action, investing significant resources to ensure that all our launch vehicles, spacecraft, and satellites meet or exceed space safety and sustainability regulations, as well as sharing best practices with other launch providers and satellite operators around the world.

Starlink satellites operate in a low Earth orbit below 600 km altitude. Atmospheric drag at these altitudes will deorbit a satellite naturally in 5 years or less, depending on the altitude and satellite design, should one fail on orbit. SpaceX proactively deorbits satellites that are identified to be at an elevated risk of becoming non-maneuverable. This proactive approach minimizes the number of non-maneuverable satellites in space. Starlink satellites are also fully demisable by design, meaning that the risk to those on the ground, in the air, or at sea from a deorbiting satellite is effectively zero as the satellites burn up during reentry.

PROACTIVE CONTROLLED DE-ORBIT

With space sustainability in mind, SpaceX has to-date initiated controlled deorbits on 406 satellites out of the nearly 6000 Starlink satellites launched. Of those, 17 are currently non-maneuverable, passively decaying, but well-tracked to help mitigate collision risk with other active satellites. The other 95% of satellites the Starlink team initiated controlled descent for have already de-orbited.

In the coming weeks and months, SpaceX will perform controlled descents of approximately 100 additional early-version 1 Starlink satellites. These satellites are currently maneuverable and serving users effectively, but the Starlink team identified a common issue in this small population of satellites that could increase the probability of failure in the future. The satellites will follow a safe, circular, and controlled lowering operation that should take approximately six months for most of the vehicles. Controlled, propulsive deorbit is much shorter and safer than a comparable ballistic deorbit from an equivalent altitude. All satellites will maintain maneuverability and collision avoidance capabilities during the descent. Additionally, these deorbiting satellites will take maneuver responsibility for any high-risk conjunctions consistent with space safety and sustainability best practices.

As we lower and deorbit our satellites, SpaceX will continue to share high-fidelity future position and uncertainty prediction information, multiple times a day, with other operators and launch providers. Accurately knowing where every satellite is and will be in orbit is critical to space sustainability. SpaceX encourages all satellite operators to proactively publish information on their satellites' future positions and uncertainties, as quickly as possible after orbital insertion, including pre-launch information for which orbits the satellites will be deployed into and throughout their service lifetime.

While this proactive approach comes at the cost of losing satellites that are serving users effectively, we believe it is the right thing to do to keep space safe and sustainable—SpaceX encourages all satellite owners and operators to safely de-orbit satellites before they become non-maneuverable. Just as importantly, even as we lower and de-orbit satellites, Starlink's customer experience will not be impacted. SpaceX has the capacity to build up to 55 satellites per week and launch more than 200 satellites per month, which allows us to continually improve our system and make it more resilient, while increasing access to high-speed, low-latency internet for more people all around the world.