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THE NEW GREEN‘ NEAR-SPACE ECONOMY‘

Abstract

Since 1998 the InternationalSpaceStation has proofed that a global cooperation of nations with issues on Earth, can be though accomplished in Space. During the last two decades the InternationalSpaceStation is operated in an institutional manner. Various ideas from space hotels to 3D garages have emerged to transform the usage of the space station into a more commercial hub. Now the time is here to realize a more practical, commercial usage of the outpost of human kind by setting up a new global propulsion standard. Key issues concerning the usage of near space orbits are the saturation with spacecrafts (satellites and spaceships) and its restricted lifespan. Thus a new GreenSpace approach needs to be considered that realizes a better usage of given natural resources and ensures an end of space as dumpsite. Setting a compulsory standard with a known and though new propulsion system is key.

My hypothesis concentrates on the electric mobilisation of spacecrafts and its recharge in orbit via the InternationalSpaceStation. A global movement is ongoing about the best kind of mobility on Earth and electric vehicles are in the driver seat today. The entire automotive industry got disrupted by new market entries and their wish for a green attempt to realize more sustainable mobility on the planet. The airline industry is facing a similar scenario that drives them to demonstrate that electric flying is possible. Space operations start facing similar issues still on an early stage but growing. Thus the transformation of todays' conventional fuel based spacecraft propulsion towards an electrical rechargeable regime would really improve the environmental footprint and reputation of space missions and its industry.

This would allow the truly commercialization of the InternationalSpaceStation by generating a new business model based on energy and on-orbit-servicing. Satellites at end of their life cycle become partly space debris. The chance to recharge, upgrade and even update them would be a new service that the InternationalSpaceStation could execute while creating really sustainability. Spacecrafts need to be fully electric. 'Energy-Drones' with a battery payload docked for recharge at the ISS should via induction during fly-by processes recharge and update operating satellites or even constellations. Than returning for recharge to the InternationalSpaceStation and repeat the process. On Earth the car industry starts operating with roads prepared for recharging cars while they drive. In Space this technology needs to be applied as new business model for a sustainable and green future.