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TAKING A SELFIE IN SPACE: AN OVERVIEW ON A SPACE SELFIE STICK FOR SMALLSATS  
AND NANOSATS

**Abstract**

For the companies building and operating these satellites, it is important to have images of their satellites in space for marketing and trouble shooting purposes. The current solution to troubleshoot satellites in orbit is only via sensor data from the satellite. This is problematic as only equipment which have a well-established flight record are considered for future space missions by manufacturers and service providers. Acquiring proof of a system's performance, be it series of photos or video footage, therefore becomes of crucial importance to New Space players. A picture of a satellite in space displaying a particular functionality is, for example, both irrefutable and invaluable to those involved in its development. For marketing material, often only CAD renders and artist impressions can be used as there is no way to take pictures from the ground or from other satellites as the distances between the camera and the subject are too high. DcubeD developed a Space Selfie Stick specifically designed for Nano and SmallSat applications, the idea was to mount a camera on the end of a deployable structure, from which it will be able to take pictures of either part or the entire satellite, depending on the length and orientation of the structure. During launch, the deployable structure is stored rolled up inside the satellite. Following an activation signal, the deployable structure is released from its initial position, extending out of the satellite to place the camera in the required position to get suitable images. This paper will give an overview on possible applications, summarizes the design and outlines the result of the In-Orbit Demonstration onboard a 3U cube satellite launched by SpaceX in June 2021.