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FOLDABLE NEWSPACE NEXTGENERATION RADIATOR FOR CUBESATS (FENNEC): ADVANCING THERMAL MANAGEMENT FOR SMALL SATELLITES WITH HIGH-POWER PAYLOADS

Abstract

Small satellites with high power payloads, such as GPUs for on-board image processing and classification or transceivers for IoT applications, face significant heat dissipation challenges. To address this issue, German Orbital Systems is developing thermal interface designs for CubeSats with high power, with our partner Dcubed is responsible for the radiator panel materials and deployment system for the FENNEC (FoldablE Newspace NextgEneration radiator for Cubesats) system. FENNEC is a modular system designed to provide efficient heat transfer through deployable radiator panels for small satellites. Its elegant and lightweight design increases the available radiative surface area and optimizes heat dissipation. In-house prototyping, testing, and manufacturing ensure optimal performance for the FENNEC system. This development has significant implications for various industries, and the project has received financial support from the European Space Agency. The findings will be presented at the IAC conference.