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14. ABSTRACT

This report examines how modeling and simulation (M&S) improves the initial design phase optimizing telemetry antenna placement. This multi-physics software is used to create antenna modeling, placement, and radiation pattern. Ultimately, the software facilitated the trade-off analysis between three predetermined antenna placement locations. In order to demonstrate the benefits of M&S, three distinct antenna positions analyzed optimal placement with a focus given to ground plane. The goal of the simulations was to optimize radiation pattern uniformity coupled with the best usable beam angle. The result of this M&S work identified an optimized location for antenna placement resulting in a pod modification to support the new location with low cost and timesaving.

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