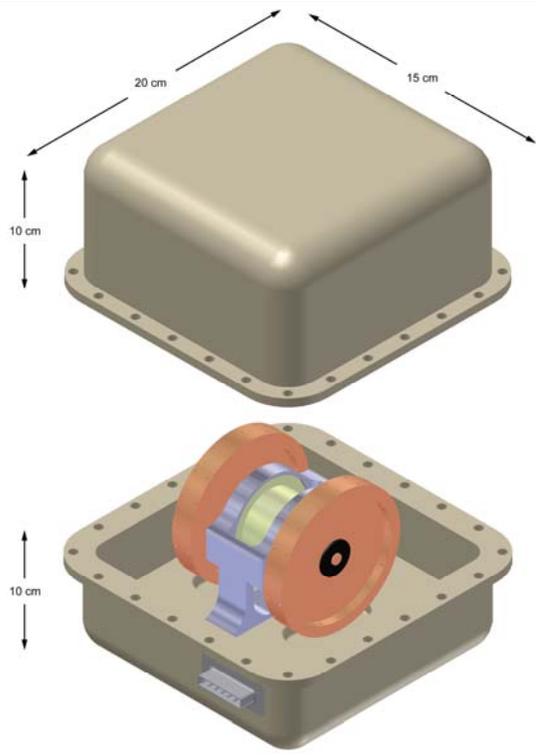


**BRIEFING CHART**

<p>NASA SBIR/STTR Technologies          Miniature Reaction Wheel for Small Satellite Control          PI: Robert J. Kline-Schoder/Creare Incorporated, Hanover, NH 03755          Proposal No.: 09-S4.05-9224</p>	
<p><b>Identification and Significance of Innovation</b></p> <ul style="list-style-type: none"> <li>• NASA’s space-based observatories, fly by spacecraft, orbiters, landers, and robotic and sample return missions require robust command and control capabilities.</li> <li>• Advances in technologies relevant to guidance, navigation, and control are sought to support NASA’s goals because existing reaction wheel technologies are either too large and heavy or provide too little control authority to achieve the mission goals.</li> <li>• Creare proposes to design, build, test, and deliver a miniature reaction wheel with high torque and low vibration whose performance is optimized for small and nano satellite missions.</li> </ul> <p>Expected TRL Range at the end of Contract: (5–6).</p>	 <p style="text-align: center;">Creare’s Miniature Reaction Wheel for Small Satellite Control</p>
<p><b>Phase I Technical Objectives</b></p> <ul style="list-style-type: none"> <li>• Define performance and cost requirements for miniature reaction wheels.</li> <li>• Demonstrate performance of miniature reaction wheel with laboratory tests.</li> <li>• Prove feasibility of overall miniature reaction wheel design for NASA and DoD applications.</li> </ul> <p><b>Phase I Work Plan</b></p> <p>Task 1—Define Specifications          Task 2—Design and Fabricate Miniature Reaction Wheel Prototype          Task 3—Demonstrate Reaction Wheel Prototype          Task 4—Develop Phase II Design          Task 5—Manage and Report</p>	<p><b>NASA Applications</b></p> <ul style="list-style-type: none"> <li>• High resolution Earth observation.</li> <li>• Atmospheric and environmental monitoring.</li> <li>• Poling of unattended sensors.</li> </ul> <p><b>Non-NASA Applications</b></p> <ul style="list-style-type: none"> <li>• Military science and technology.</li> <li>• Intelligence, surveillance, and reconnaissance.</li> <li>• Remote site communications.</li> </ul> <p><b>Contacts</b></p> <p>Dr. Robert Kline-Schoder; Creare Incorporated;          rjk@creare.com; 603-640-2468.</p>