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FOR IMMEDIATE RELEASE

NASA AWARDS PHASE I SBIR TO DEVELOP ADVANCED MANUFACTURED BEARINGS

Huntsville, Ala., Aug. 4, 2025 -- Quadrus Corporation's Advanced Manufacturing Division (QAMD) has been selected by NASA for a Phase I Small Business Innovation Research (SBIR) contract to develop and demonstrate a next-generation additively manufactured bearing solution for Extravehicular Activity (EVA) systems.

The contract aims to enhance spacesuit mobility by extending bearing service life and significantly reducing weight. The current challenge lies in titanium 6Al-4V bearings, which suffer from galling and wear under high loads, vacuums, extreme thermal cycles, and abrasive dust.

above: an example of an EVA style suit

Quadrus Corporation proposes using nitrided Scallmalloy® for the bearing race and housing. The material offers comparable hardness and wear resistance to Ti6-4 with a substantial weight advantage. Quadrus Corporation was the first North American company to be certified by APWORKS to process Scallmalloy® commercially. QAMD will apply a nitriding process to ensure surface properties match or exceed current standards. The Phase I research will establish feasibility by evaluating wear, galling behavior, and functionality in prototypical joint conditions.

NASA selected approximately 299 Phase I Small Business Innovation Research/ Small Business Technology Transfer (SBIR/STTR) awardees out of over 1,500 proposals submitted during this solicitation cycle (https://www.nasa.gov/sbir_sttr/phase-i/). Quadrus Corporation is honored to join this competitive group, bringing industry and advanced materials expertise to address the challenges facing human exploration.

"Wear and galling in EVA suit bearings are mission-critical failure points, especially for long-duration missions on the Moon and to Mars. By leveraging additively manufactured Scallmalloy® with tailored nitriding, we believe we can deliver a lighter, more durable solution that enhances astronaut mobility while reducing maintenance risk." -Dr. Joe Sims, Director of Advanced Manufacturing at Quadrus Corporation

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Quadrus Corporation is a leading provider of commercial software solutions, contract engineering services, integration, and advanced manufacturing techniques based in Huntsville, Ala.
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