



USSOCOM SBIR Transition Success Story



Innovative Technology

Topic Number | SOCOM07-001

Topic Title | Advanced Lightweight Vehicle Components and Materials

As additional armor and equipment continues to be added to the military's High-Mobility, Multi-Purpose Wheeled Vehicles (HMMWVs) and modified HMMWVs, the performance of the existing power train, suspension, steering and chassis components are not sufficient. The challenge for GS Engineering was to develop lightweight components using advanced materials and manufacturing techniques for near term implementation. The resulting technology innovation on the GS Engineering designed components was threefold. (1) GS Engineering successfully integrated lightweight materials throughout all facets of the design while capturing cost-effective manufacturing and assembly methodologies. (2) Careful application of these innovations and technologies resulted in a significant weight reduction, above the threshold requirement for program success, when compared to the equivalent legacy vehicle components. (3) The achieved weight reduction provided multiple areas of benefit as well as significant return on investment when considering tangible improvements in vehicle performance and reliability across multiple operational metrics including but not limited to vehicle speed, fuel mileage, and reduced maintenance. Overall, the company's components exceeded program goals and are at least cost-neutral.

Company and Contact Information

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Military and Commercial Significance

The company has received a \$25 million Indefinite Delivery/Indefinite Quantity (IDIQ) for systems test support services of Ground Mobility Vehicles (GMVs). Other vehicle platforms including military and commercial All Terrain Vehicles (ATVs) have benefited from integration of similar components developed on this SBIR effort. Other tactical military vehicles have also received technology insertions of this SBIR technology and these vehicles have been fully tested and await reset opportunities.

GS Engineering's innovation has led to Phase III SBIR funding of nearly \$6 million for GMV Light weight components under contract number H92222-11-D-0005 with the Department of Defense.

In addition to the GMV effort, GS Engineering has worked with the Marine Corps to reduce the weight of tracked vehicle road wheels by 33%.

In July 2012, GS Engineering was selected as Track Technology Integrator by General Dynamics for the Ground Combat Vehicle (GCV). Future developments will include technology related to roadwheels, idlers, complete track systems and sprockets.

These lightweight component designs will have dual use applications for weight sensitive vehicles including off-road enthusiasts, forestry equipment, oil exploration equipment and load limited class 8 trucks.

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