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GreenForces is a consortium of technology and manufacturing companies that provides product development services from concept through production and all phases in between. With a core group of proven companies, GreenForces brings the agility and fast pace of a small business with the combined capabilities of a large organization.

Whether working with one individual member of the group or working with the team, our customers have taken advantage of reliable and consistent response and have had us support everything from small prototype development up to large production runs. Our members maintain attention to detail which has been reflected in our maintenance of an AS9100C / ISO9001:2008 quality standard. This attention to detail carries through our rigorous design approach as well as our machining and manufacturing processes.

Functioning as a prime contractor to the US Department of Defense and its major military commands, as a subcontractor to OEM's, or supporting small businesses and entrepreneurs, GreenForces provides both turn-key solutions as well as portions of the design and fabrication process across a broad spectrum of markets, customers, and products.

Company Designations

DUNS Number: 042754464
CAGE Code: 839S0

NAICS Codes

336112 – Light Truck Manufacturing
336412 – Aircraft Engine & Parts Manufacturing
336413 – Other Aircraft Parts & Aux. Equipment
541330 – Engineering Services
541380 – Testing Laboratories
541512 – Computer Systems Design Services
334419 – Other Electronic Component Manufacturing
332710 – Precision Turned Product Manufacturing
325211 – Plastics Material and Resin Manufacturing
326130 – Laminated Plastics, Plate, Sheet, and Shape Manufacturing
336992 – Military Armored Vehicles and Tank Component Manufacturing
334412 – Bare printed circuit board manufacturing
334513 – Instruments and Related Products for Measuring, Displaying and Controlling
334515 – Instruments for Measuring and testing Electronics and Electrical Signals
334519 – Other Measuring and Controlling Device Manufacturing

The GreenForces team employs a staff that has a variety of skill sets and experience, including: mechanical engineers and designers, electrical engineers, RF Engineers, metallurgical engineers, programmers and software engineers, quality engineers, test directors, test engineers and technicians, mechanics, machinists, solderers and board assemblers, tool designers, composite fabricators, welders, and administrative and support staff. Various members also have the ability to work with proprietary, confidential, and classified information.

The collective team background encompasses professional expertise in the fields of military vehicles, track systems, professional motorsports, commercial trucks and chassis, consumer automotive, aerospace, off-highway equipment, marine systems, armor, aircraft components and structure, antennas and modulators, data acquisition, engine testing, electronics and PCB development, and high volume manufacturing.

End-to-End Product Development

The foundation that makes the core of the existence of GreenForces is the collective ability within the organization to do full end-to-end product development. This includes developing ideas and napkin-sketch concepts into fully engineered designs, performing prototype fabrication, testing and integrity checking, performing first article production, and finally moving into long term manufacturing. Our team maintains niche expertise across all of these areas to provide state of the art solutions that are economically effective.

The goal of the consortium is to utilize the skills, resources, and technical expertise of the member companies to provide complete solutions to customers while still maintaining the quick reactive capability that small businesses

have. At the same time, the consortium organization gives the client one entity to interface with instead of a large string of suppliers.

Primary areas of expertise include aerospace and defense related equipment. However, our group has devised solutions for consumer goods, medical devices, energy systems, and automated machinery. And, because of our structure, we are equipped to take on small-to-medium parts of the product development – be it design and test or low rate initial production – as well as the whole end-to-end product.

Engineering, Design, and Analysis Services

The beginning of most product development efforts starts with design and engineering. GreenForces maintains an engineering team of over 100 engineers of different expertise and disciplines across a variety of industries.

Mechanical & Electrical System Design and Engineering Services

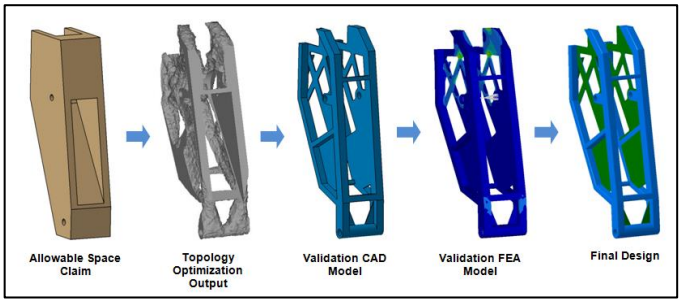
The Greenforces group provides mechanical and electrical design in support of commercial and military transportation markets. Incorporating advanced 3D design tools such as Creo/ProE, CATIA, Solidworks, Siemens NX, AutoCAD, and other mechanical CAD systems provides the capability to deploy multiple advanced modeling packages as required, effectively accomplishing a top-down design philosophy while maximizing the ability for future modifications.

The Greenforces organization also has the capability to support electrical designs for custom electronic systems, wire harnesses, circuit boards, and enclosures. These components are seamlessly integrated or routed into the customer's specific vehicle, aircraft platform, or product using their preferred CAD packages. Within the organization, Greenforces has produced low-level custom printed circuit boards up to high level complex electronic systems with embedded software and custom logic

In addition, GreenForces offers reverse engineering services utilizing multiple technologies from CMM to 3D scanning for the purposes of CAD model generation, product inspection and validation, and product baseline for future development. With advanced expertise in lightweight component structural design, the organization has successfully conducted weight and cost reduction initiatives, working to achieve aggressive threshold and objective weight targets.

Structural Analysis & Optimization

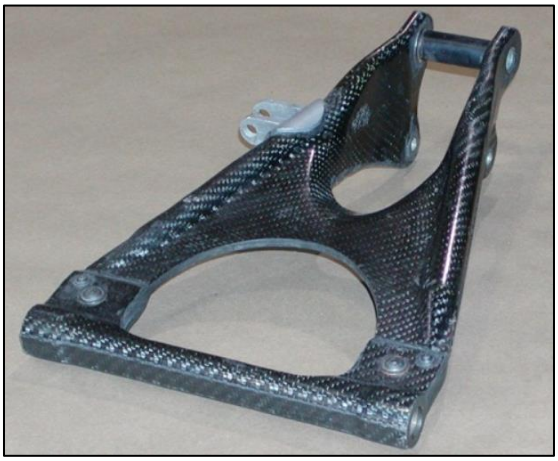
Additional experience and demonstrated capabilities resides in the area of Finite Element Analysis (FEA) in achieving an optimal balance of mass, strength, and packaging in customer solutions. Our analysis staff employs multiple techniques to simulate, optimize, and fully evaluate all components and systems. Methods commonly implemented include linear and nonlinear static stress analysis, structural optimization (including topology and shape optimization), and fatigue analysis ranging from relatively simple stress-life calculations to more complex strain-life and fracture mechanics techniques, linear dynamics, and explicit dynamics.



Software packages used to perform these tasks include Altair Hyperworks (including Hypermesh, Optistruct, and RADIOSS), ANSYS, and MathCAD. Analysis techniques and methodologies are tailored to simulate industry specifications such as transportability (MIL-STD-209K), vehicle roof crush performance (FMVSS 216), restraint

anchorage integrity (FMVSS 210), trailering (SAE J847), service brake performance (FMVSS 121/SAE J2115), and customer-specific standards to quantitatively assess designs against these requirements.

Advanced Material Development & Integration



Advanced material development programs have been a core of our product and production development initiatives. Our team currently supports products that use Metal Matrix Composites (MMC's), traditional resin based composites, and other light-weight materials.

We combine epoxies, polyesters, urethane, vinyl esters, phenolic, and thermoplastics with reinforcements and adhesives to customize the material solution to meet performance objectives. We use Kevlar, nylon, and fiberglass reinforcements and also integrate composites with other materials such as Nomex, foams, and balsa wood.

In many cases, performance requirements dictate the use of an epoxy resin for its mechanical properties and the only resin available is in prepreg form, but other factors preclude the use of prepreg. In conjunction with resin formulators and manufacturers, we often develop custom systems to allow the resin to be processed economically while still meeting the performance requirements.

Our work in armor development and manufacturing has led to experience designing & selecting ceramics for ballistic resistance, wear reduction, and electromagnetic behaviors, among others. These include Silicon Carbide (SiC), Alumina, Boron Carbide (B4C), and their various alloys.

GreenForces' advanced material capabilities include expertise in failure analysis. Our group has access to spectrographic equipment, electron and scanning microscopes, and other strain/shear/stress data acquisition equipment to fully analyze material properties and identify non-conformance. This has allowed us to perform multiple failure analyses for both military and commercial rotorcraft, leading to characterization of failure root cause, ultimately supporting recommendations for the product improvement cycle.

Manufactured Component Production

Once an idea has been developed and designed, the next phase is its prototype fabrication and eventual long term production. GreenForces is set up with a variety of low-volume/high mix fabricators that specialize in both prototype development and custom component work. Our team can produce everything from single units to 1000 unit/month volumes depending on size and scope of the component.

Machining and Finishing

Greenforces brings precision machining for a variety of metals and other materials with 3, 4, and 5-axis CNC capability. Our machining and finishing processes include working with exotic metals like Titanium and Aluminum as well as Magnesium. This also includes standard aluminum, copper, bronze, steels, and stainless steel.

In house capabilities also include water jet and laser cutting, turning, fixturing, stamping / forming, and straightening. Our floor has multiple Bridgeport manual machines plus Haas and Hyundai machining centers as well as an EDM. To verify and inspect components, we use a suite of inspection and verification tools including a Brown and Sharpe CMM, digital gages, FARO arm scanner, and handheld surface finish gages/profilometer.

Post machining processes include polishing and painting including MIL-SPEC and CARC coatings, polyurethane, and other automotive-style paints. Utilizing a host of strategic vendors, we integrate anodizing, grinding, electro-polishing, laser etch, plating, and heat treating.

Composite Fabrication

GreenForces member Creative Composites provides expertise and capability in composite manufacture. Whether it be RTM, VARTM, hand layup, Prepreg, Vacuum Bag Consolidation, or Compression Molding, our capabilities drive us to fit the materials & processes that result in the best value for the customer. A majority of our tooling and molds are developed in-house, ensuring that we control the entire fabrication process, start to finish.

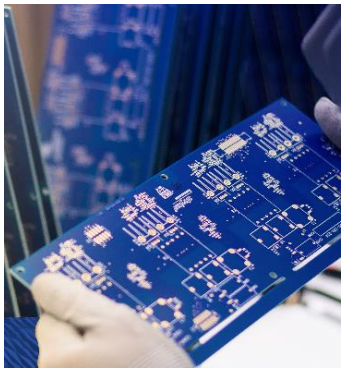
Our process considers all factors, engineering & economic, to provide the best fit for material and process. Our wide range of "Out of Autoclave" systems means that we can accommodate the overwhelming majority of needs by accounting for part thickness, dimension tolerance, mechanical and physical properties, production quantities, surface finish.

Welding

With staffing that includes both certified welders and certified weld inspectors, our team can provide precision welding for a variety of materials including aluminum, stainless steel, and carbon steels. We do both MIG and TIG welding to AWS standards and provide both welding and inspection services.

Electronics and Electronic Assembly

To complement our mechanical fabrication set, Greenforces brings high reliability electronic fabrication and assembly to the table. With a complete on-shore American printed circuit board (PCB) manufacturer, our circuit boards are found in applications demanding zero failures, zero downtime, and require lifetime performance. This includes everything from industrial controls, power grid management, life support, medical diagnostics, avionics, aerospace, and military equipment.



Our group also supports electronic assembly with specialty in boards for harsh environment and small packaging constraint. We embed electronic assemblies into small space areas including the inside of a piston head, the wall of an engine block, or the front of the shaft of a turbine engine.

Prototype to Production

GreenForces supports a wide range of prototype part and low / high volume production. Along with internal capabilities, GreenForces has utilized: casting, forging, extrusions, machining, welding and other fabrication methods to integrate components into higher level systems. Manufacturing programs supported range from one-off hydraulic test systems to DX and DO rated programs with significant production support.

Often GreenForces is utilized as a source to ramp-up on fast reactionary efforts, being tasked with reverse engineering, mechanical design, analysis, and manufacture of multiple components and sourcing of complementary systems. Its engineers and manufacturing team have also provided on-site support for prototype

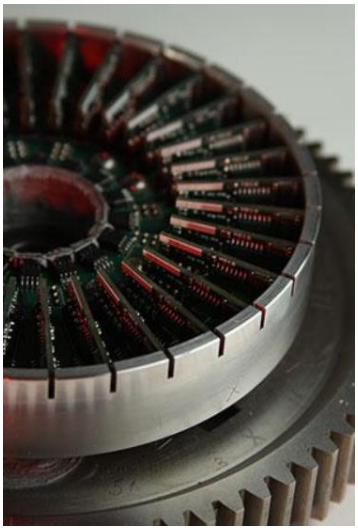
builds at customer facilities, assisting with installation and verification of design intent and proper function. With such a variety of program objectives and deliverables, the group has built up a significant resource pool that has successfully supported a wide range of components that have been installed and tested on multiple military, vehicle, and heavy equipment platforms.

Testing & Instrumentation

Product development testing is an absolute must in order to verify function and meeting of all design requirements. GreenForces provides full system verification testing for all components that they design. Testing to Mil-Std-810, DO-160, Mil-Std-461/464, and other environmental testing is done with a mix of in house and outside partners. Greenforces also brings special testing capability as outlined below.

Wireless Data for Engines and Reciprocating Equipment

Wireless measurement systems and associated instrumentation are one of the niche test and measurement capabilities of GreenForces. Our transmitters, receivers, and software operate cohesively and have been refined over decades and thousands of projects. By developing all aspects of the technology, we provide a complete system and remain the leader in wireless data acquisition.



These systems are designed around high-speed, harsh environment, reciprocating components. Our acquisition systems take temperature measurements from piston crowns to strain measurements on crankshafts. We can measure engine torque, speed, temperature, stress, and a variety of other engineering parameters.

Each wireless test system and setup is configured for a customer's unique requirements and packaging needs. By combining engineering expertise with our advanced software and telemetry hardware, we ensure the success of each project. By reviewing each application carefully and recommending options for battery or inductive power for transmitters, we can provide the optimal hardware configuration to get the data needed. Using multi-channel infrared or radio (microwave-band) transmitters, we can guarantee data acquisition at high frequency response rates.

Vehicle and Aircraft Testing

In support of standalone efforts, or coupled with efforts from its other business units, GreenForces offers many types of testing and validation activities. This includes vehicle testing and instrumentation at its member owned purpose-developed facility, as well as onsite at government and private test facilities. Test support has included turnkey vehicle tests from the initial planning stage, through logistical planning to the actual instrumentation and test execution.

Our testing includes both paved and off road courses at its 500-acre facility. Testing has including paved dynamic events for suspension and tire testing including: Double Lane Change, Constant Radius Steer, Sine Steer, J-Turn, and Braking. Paved 1” and 2” RMS courses are also utilized to evaluate suspension performance, complemented by obstacles including: 16” & 24” vertical steps, frame twist, fording area, 8” & 10” half rounds, 20%, 30% & 40% side slopes, 60% longitudinal grade, and a 20-ton stability tilt table. Endurance test activities are conducted on customizable courses containing multiple

segments of primary, secondary, cross-country, trails, and urban rubble terrains, capable of tailoring to match mission profile requirements.

Collaborative Work with Research Institutions

GreenForces is proud to have Michigan Technological University (MTU) as its partner in the consortium who brings in high caliber research and development capabilities as well as resources not available to many businesses. Our projects include a variety of interaction with departments and faculty at MTU for both use of facilities and equipment as well as consulting and research.

Representative Projects

- **S-2 Aircraft Wheel Reverse Engineering.** GreenForces team members performed a reverse engineering and manufacturing effort for the California Fire S-2 aircraft. This included doing a full metal inspection, scan, and design of the casting and finishing of the main landing gear wheels for the S-2. This included the design of the manufacturing process for tolerances and metal processing that could conform to the aircraft wheel and brake specification that the original aircraft met. The design also included improvements in metal alloy and analysis as well as testing and verification of the wheels.

- **Composite Medical Trailer.** GreenForces developed a composite-based, shock and vibration isolated medical transport trailer for loading injured patients from a ground vehicle into a helicopter. The system exceeded the desired threshold for vibration damping and has been through prototype and into initial production.

- **Turbine Engine Data Acquisition System.** Greenforces team has developed a high speed, high channel, compact data acquisition system for data acquisition in a 20,000 RPM turbine engine for the United States Air Force Research Lab. This system has been designed to be a universal front end for strain gauge, pressure transducer, RTD, and thermocouple inputs while giving flexibility on a per channel input. The system provides simultaneous sampling and data reporting in near real time with the ability to continuously monitor input channels through the acquisition process.

Key Contact(s)
Jason Mack – Executive Director – jason.mack@greenforcesllc.com

- Jason joined GreenForces after a successful tenure at a Fortune 50 aerospace corporation. Jason leads GreenForces' initiatives in aerospace, focusing on his background in avionics and aircraft systems. He also brings forth a unique technical aptitude in mechanical systems which allows for full product life cycle support. Jason has led a wide range of programs throughout his career including avionics, test systems, and areas within automotive. Jason has both a Bachelor's degree Mechanical Engineering and an MBA.

Member Contacts:
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Glen Barna – IR Telemetrics, President – irtel@irtelemetrics.com