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Delta Development is an innovator and manufacturer of ruggedized thermal systems, specializing in military applications. Our firm has experience-based knowledge designing cooling and heating systems for extreme environments. Delta's expertise in rapid prototyping of machines brings manufacturable designs to life with a foundation of quality and reliability.

DIFFERENTIATORS

- ▲ Veterans building for warfighters
- ▲ Partnerships with academic institutions
- ▲ On-site test and evaluation capability
- ▲ In-house embedded controls engineers
- ▲ In-house engineers
- ▲ Digital and analog circuit board expertise
- ▲ Solar photovoltaic capable designs
- ▲ Familiar with military "system-of-systems"
- ▲ In-house manufacturing capability
- ▲ Established network of commercial component suppliers

CORE COMPETENCIES

- ▲ Thermodynamic analysis and design
- ▲ Control Area Network, J-1939 machine communication
- ▲ Custom designed embedded systems microcontrollers
- ▲ Finite element analysis
- ▲ CAD design for manufacture
- ▲ 3D printing for rapid prototyping
- ▲ Thermal and power test & validation
- ▲ DC and AC power systems design including solar PV
- ▲ Application of safety standards to design
- ▲ Contract management and administration

Refrigeration Design and Build

Our staff has decades of refrigeration expertise including Principal Investigator roles on multiple government refrigeration R&D and design-build projects. Areas of advanced technology include transcritical CO2, multistage economized systems with electronic controls and refrigerant transition planning.

Prototyping and Manufacture CAD Expertise

Our in-house CAD experts have thousands of hours of SolidWorks experience including sheet metal and molded part design. We routinely conduct stress and thermal finite element analysis, with the capabilities to rapidly evaluate concepts then build reliable prototypes and products.

Military "System-of-Systems" Knowledge

Experience has taught us that any new component introduced onto the battlefield must be compatible with the existing infrastructure while accommodating future resets and upgrades. From communications, power and user interface, we understand the requirements for system compatibility to ensure warfighter capabilities. Soft-starting, microgrid communications and part communality are attributes of our system designs.

Testing & Validation

Our walk-in thermal chamber is capable of performing extreme temperature testing from -40 °F to 160 °F at a wide range of controlled humidity with functioning systems under test. The LabView based data acquisition system collects both external measurements as well as the systems own CAN based data stream. We have experience in the requirements and procedures involved for testing at government facilities such as the Aberdeen Test Center.

Power Systems

We design and build advanced direct current power systems for integration of solar photovoltaics, batteries and variable speed drives into refrigeration or heating systems. The resulting high efficiency system couples with battlefield microgrids as an intelligent load.

Major References

- ▲ Army. Natick Soldier Research, Development & Engineering Center. Combat Feeding Directorate
- ▲ Marine Corps Power Systems Command. Logistics Combat Element Systems
- ▲ Navy. NAVFAC Expeditionary Program Office (NEPO)
- ▲ Navy. Manned System and Platform Branch, G81 NSWC-Dahlgren Division

North American Industry Classification System

333415 – Air-Conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing
 335210 – Electric comfort heating equipment, portable, manufacturing
 423740 – Refrigeration equipment and supplies merchant wholesalers
 541715 – Research and Development in the Physical, Engineering and Life Sciences

Product & Service Codes

AG72-R&D Energy: Solar/PV Applied research and exploratory development.
 L041-Technical Representative Refrigeration, A/C, and Air Circulating Equipment.