



**RDECOM**



## GROUND VEHICLE **POWER & MOBILITY**

DRIVING THE **ARMY** FORWARD



## Non-Primary Power Systems Team

The TARDEC Ground Vehicle Power and Mobility Non-Primary Power Systems (NPS) Team **MISSION** is to:

- Analyze, assess and develop the Electrical Power Architecture (EPA) and NPS for both Current and Future Force ground vehicles.
- Research, develop, integrate, test and transition EPA and NPS technologies to support the acquisition life cycle of Current and Future Force ground vehicles.

**TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.**



## Application Areas

The TARDEC Ground Vehicle Power and Mobility NPS Team has applications that:

- Manage power generation, energy storage and power control/distribution components to maximize efficiency, increase reliability, reduce crew burden and ensure propulsion and ancillary systems receive their required power based on crew (or robotic) input, mission-derived priorities, system health and/or tactical environment. Components include voltage regulators, energy management systems, electrical power switches/converters/inverters, power buses, power management software, fault tolerant control/status networks and reconfigurable power system architecture. Generate/provide on-board electrical power for ancillary systems and exportable power functions during engine-off operations. Components include small engines, generators, fuel cells and batteries.
- JP-8 Reformation – develop systems to clean and convert JP-8 into a hydrogen-rich gas stream to enable fuel cell power generation systems to provide electrical power off of logistic fuel.
- Fuel Cells – militarize commercially and federally developed fuel cells and integrate them with logistic fuel reformers to provide non-primary electrical power systems for vehicles that enable true silent watch.
- Modeling and Simulation – develop a clear picture of power demands required by ground vehicles, which will facilitate efficient power management and optimized non-primary power.
- Electrical Power Architecture Systems Integration Laboratory – provide cost-effective (14VDC to 42VDC and 120VAC) environment to design, develop, integrate and test advanced power management technologies for ground vehicle platforms.
- Laboratory testing of fuel cells and reformers – evaluate non-primary power fuel cell devices, utilizing various load characteristics.

## Services

The TARDEC Ground Vehicle Power and Mobility NPS Team provides technical expertise in the following:

- Program management
- Program support
- System engineering
- Hardware engineering
- Software engineering
- Technology integration, testing and evaluation
- Standardization

## Major Programs & Initiatives

The TARDEC Ground Vehicle Power and Mobility NPS Team is engaged in the following major programs and initiatives:

- Power and Thermal Management – develop integrated power and thermal management architecture and improve the efficiency of power components.
- NPS – develop non-primary electrical power solutions for ground vehicle platforms during engine-off operations (i.e. silent watch, mounted surveillance).

