



RDECOM

Technology Transition Initiative (TTI)

Tactical Idle Reduction for Heavy Tactical Vehicles



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

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Jonathan M. Cristiani

*Tactical Idle Reduction for Heavy Tactical Vehicles TTI Technology Manager
US Army Communications-Electronics Research Development Engineering Center
Command and Control Directorate – Army Power Division – Power Technology Branch
Aberdeen Proving Ground, Maryland*

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

- **Technology:** Idle reduction equipment for heavy tactical trucks are needed to meet standby power and energy demands so that idling engines can be powered off; thereby conserving fuel
- **Deliverables:** Transition tactical auxiliary power unit (APU) and aux. environmental control unit (ECU) for the M915A5 and Line Haul Replacement Tractor family of vehicles.
- **“So What”:**
 - 15M gpy of fuel could be conserved
 - M915’s are starving for power to meet emerging C4ISR demands

- Power assessment of fielded fleet of M915, M916, and M917 vehicles
- Fuel savings and life cycle cost analysis
- Developmental stand-alone prototype development, test, and evaluation by CERDEC
- Operational integrated prototype development, test, evaluation, and demonstration to users
- Waiver from Dept. of Defense Project Manager Mobile Electric Power (PM MEP) for non-standard power source
- Transition specification to Product Manager Heavy Tactical Vehicles (PM HTV) for use in procurements

Fort Leonard Wood, MO Electrical Load Profile

23 April 2008

- **M915A3 Vehicle:**

- Hotel Loads + A/C Units = 20.62 Amps (.557 kW)
- Hotel Loads + Heaters = 21.89 Amps (.612 kW)

- **M916A3 Vehicle:**

- Hotel Loads + A/C Units = 42.82 Amps (1.198 kW)
- Hotel Loads + Heaters = 45.01 Amps (1.260 kW)

- **M917A1 Vehicle:**

- Hotel Loads + A/C Units = 39.41 Amps (1.105 kW)
- Hotel Loads + Heaters = 38.67 Amps (1.069 kW)

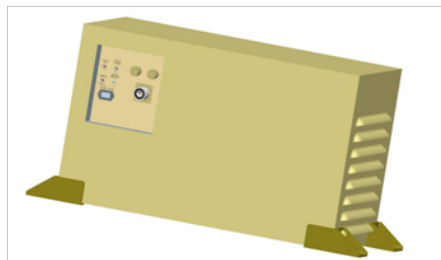
NOTE: Another ~30 Amps will be needed for communications and improvised explosive device (IED) defeat equipment



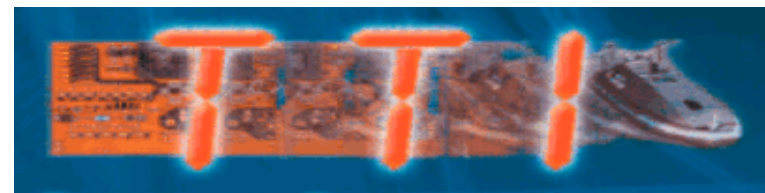
- AMSAA installing 15 data loggers in theater
- Information collected will be used to:
 - Determine current and future power requirements for development of APU and ECU for idle reduction
 - Confirm that upgraded equipment being fielded is capable of meeting the current need
- The DC data logger gathers information on:
 - Alternator voltage and current
 - Battery voltage and current
 - Engine speed (in some cases)



TTI for Idle Reduction Stand-alone Prototypes



**Power
Generation**





M915A3 / M915A4



M916A2 / M916A3



M917A1 / M917A2

- See solicitation #W909MY-08-R-TIR on fbo.gov
- 2 x APU and 2 x ECU prototypes to be integrated onto 2 x government-furnished M915A5 trucks
- Integrated systems will undergo operational test in either Death Valley, CA or Aberdeen Proving Ground, MD in Summer 2010
- Integrated systems will be demonstrated to user community at Fort Lee, VA (Transportation School) and Fort Irwin, CA (National Training Center) in Summer 2010