

# Supporting Tactical Wheeled Vehicles .... Today and Tomorrow

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## An evolution from a *Logistics Vehicle* to a *Combat Platform*

This equates to an increased need for:

- Protection
- Fuel Efficiency
- Power
- Mobility



**ECV (1993-Present)**  
 6.5L Turbo Diesel Engine  
 Suspension Upgrade  
 Armor Capable  
 1,800 – 5,100 lb. Payload  
 GVW: 12,100 lb.  
 Current Op: >16,500 lb.  
 ECV = Expanded Capacity Vehicle



**A2 Series (1994-Present)**  
 6.5L Diesel Engine  
 4 Spd Electronic Transmission  
 3,520 - 4,400 lb. Payload  
 GVW: 10,300 lb.



**A1 Series (1991-95)**  
 Improved Driveline  
 Improved Suspension  
 2,500 – 3,632 lb. Payload  
 GVW: 10,000 lb.



**A0 Series (1984-93)**  
 6.2L Diesel Engine  
 3 Spd Transmission  
 2,500 – 3,632 lb. Payload  
 GVW: 7,700 lb.



M1151A1 w/ FK7 & OGPK

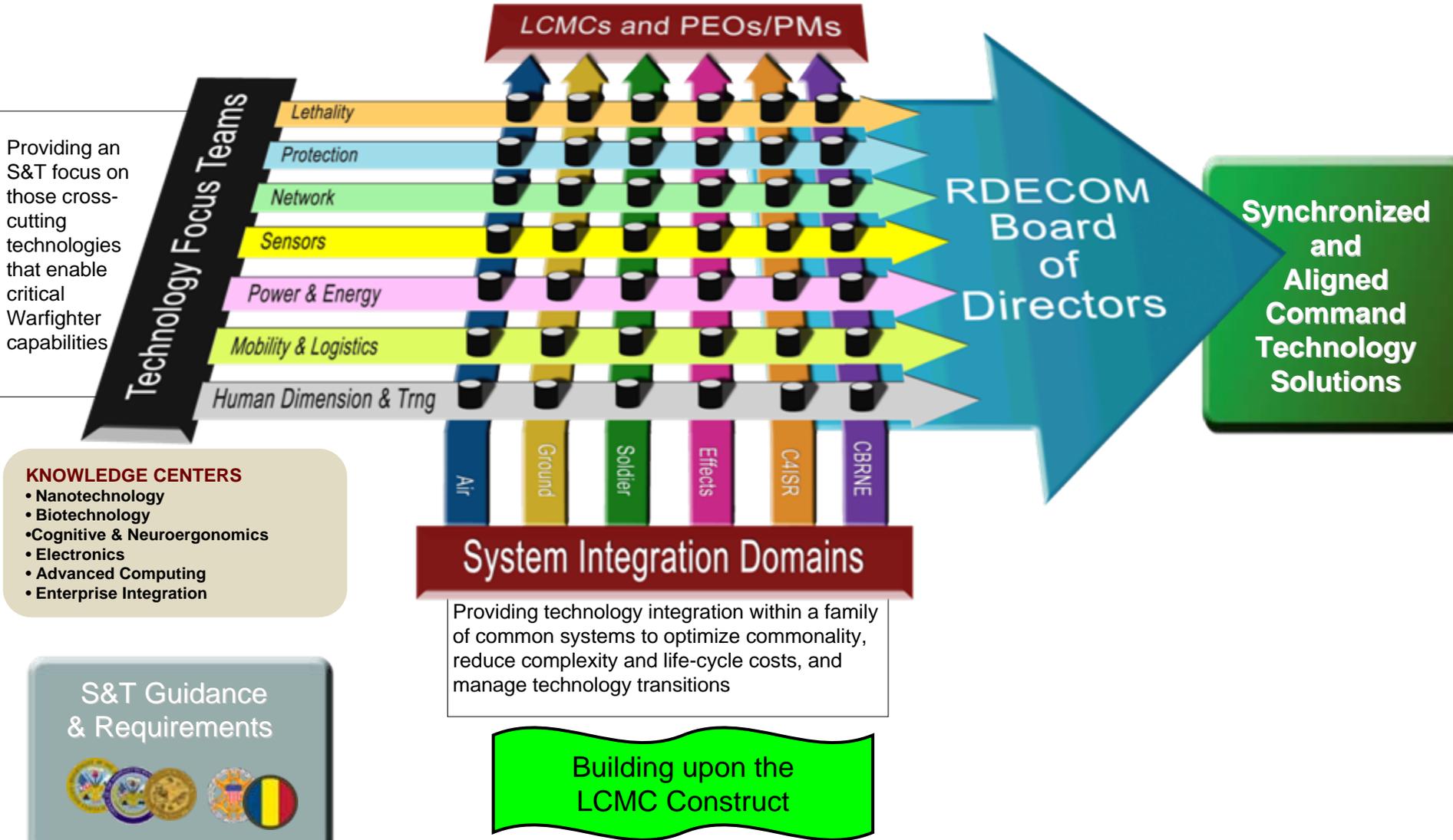


M1151A1 w/ FK6 & OGPK

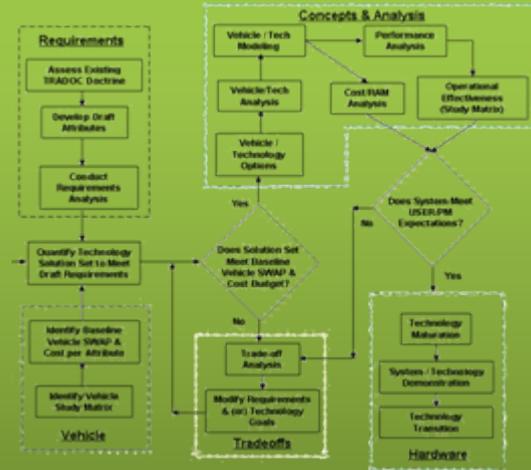
*Provide bridge between requirements and technology*



- Identify space, weight and power impacts on platforms and technologies
- Provide Feedback to Combat and Material Developers as well as Tech Base on System Impacts/Trades
- Provide Vehicle Characteristics for input into Modeling and Simulation Tools
- Develop "Smart Buyer" for supporting future projects



## 1. Institutionalizing the processes, business models & culture required for transformation



## 2. Systems-focused with analytical underpinning

## 3. Robust ground systems integration capabilities

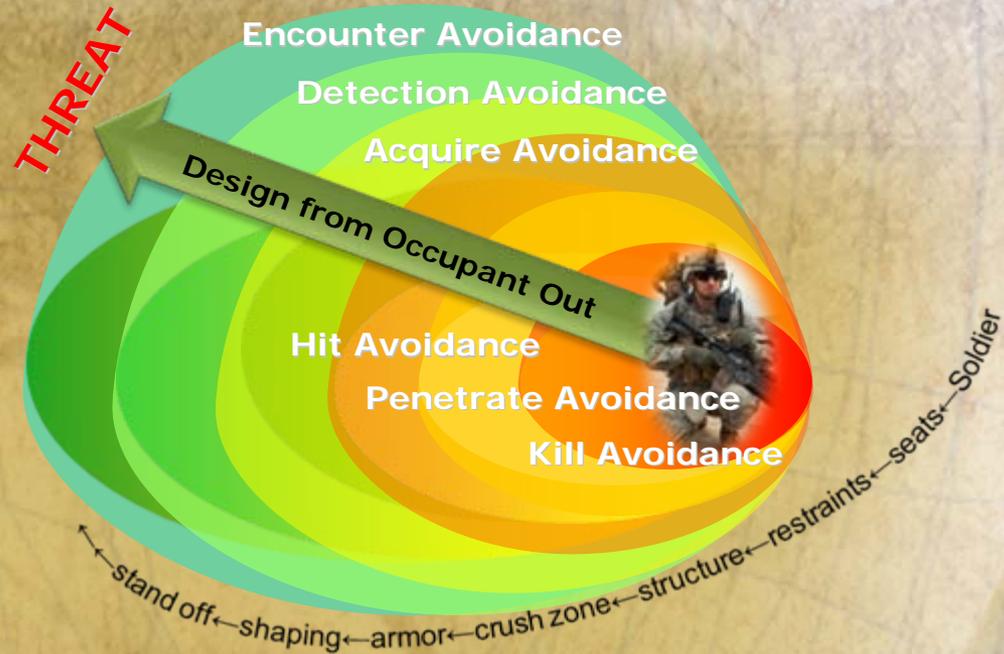
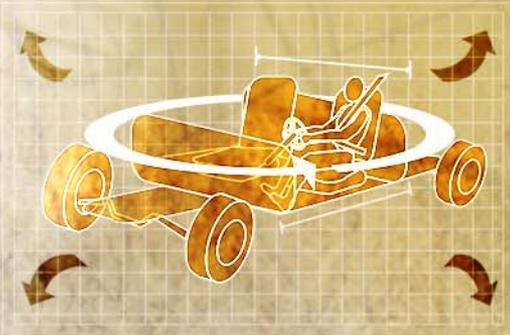
### *Demonstrated Core Competencies*

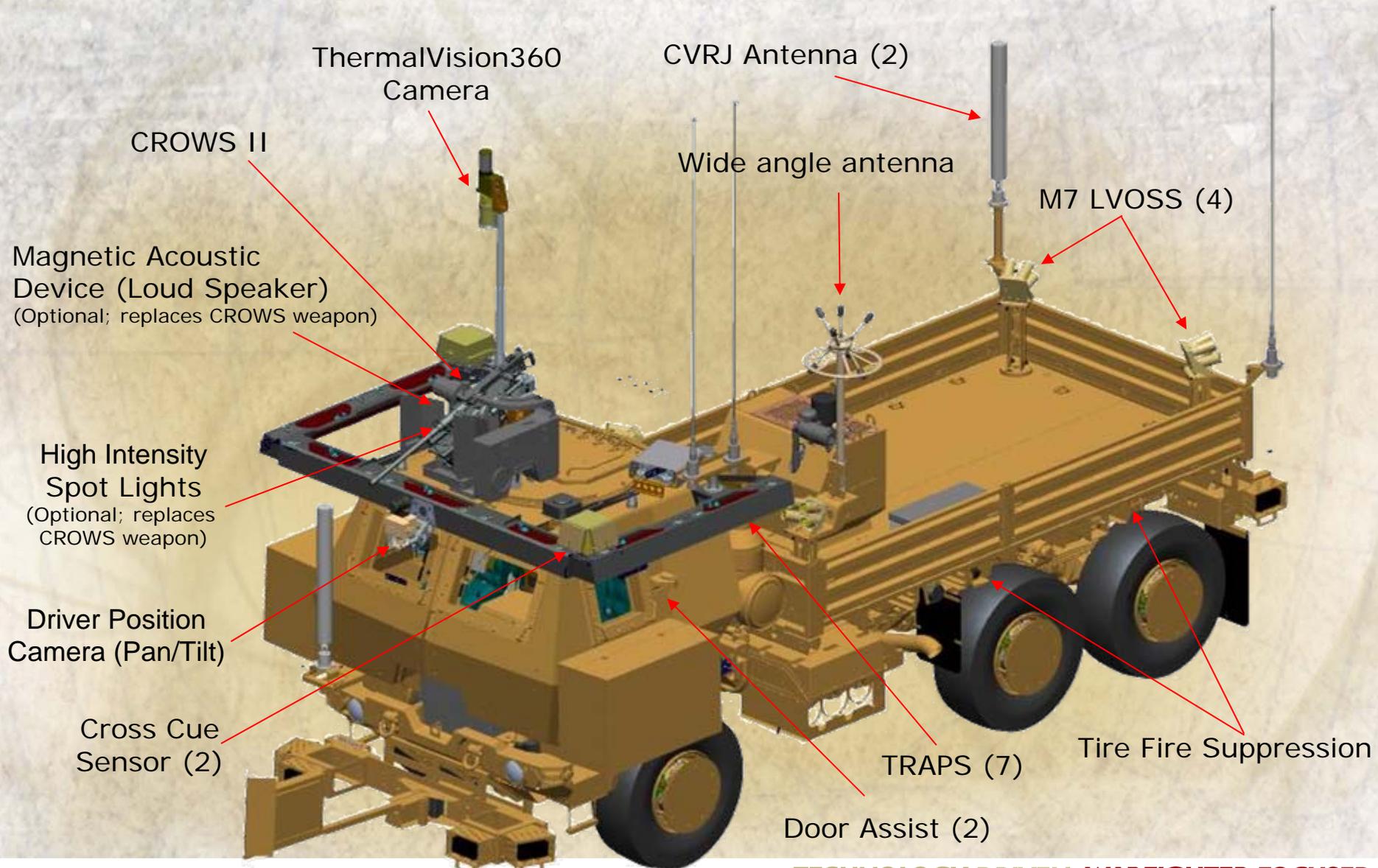
- Integration of systems, sub-systems or platforms
- Requirements, data collection and data management
- Configuration management
- System Engineering Analytical processes
- Interfaces with PEOs and OEMs
- Leveraging partnerships with academia and industry

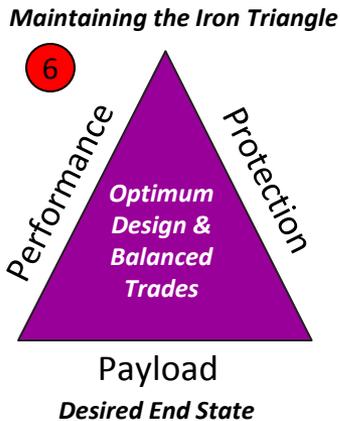
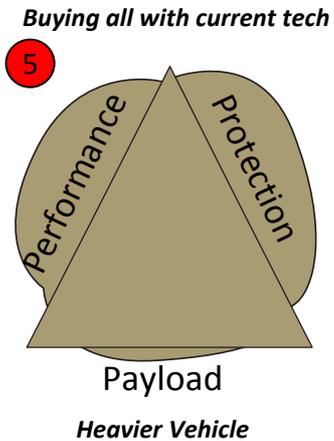
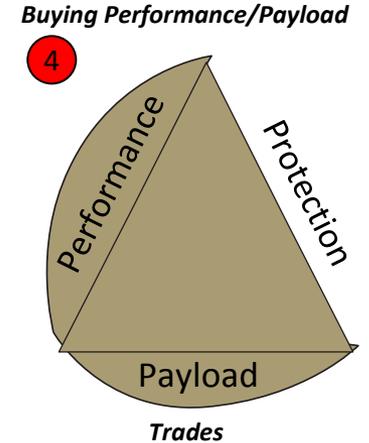
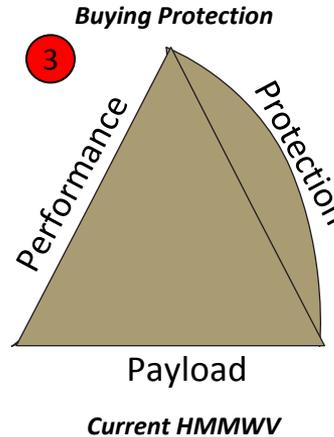
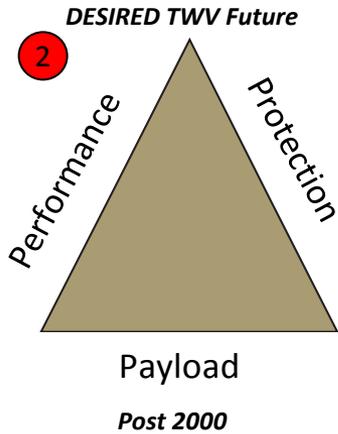
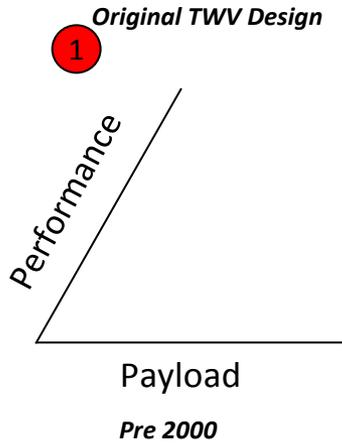


Outside In

Inside Out







Periodic Table of Elements

1	IA																2	0
1	H																	He
2	Li	Be											B	C	N	O	F	Ne
3	Na	Mg											Al	Si	P	S	Cl	Ar
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	*La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	+Ac	Rf	Hs	106	107	108	109	110	111	112	113	114	115	116	117	118

\* Lanthanide Series

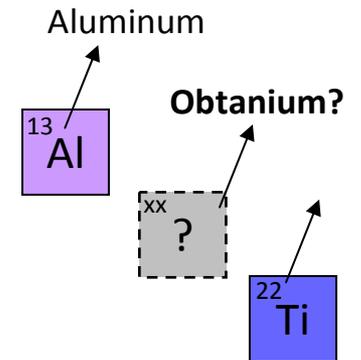
58	59	60	61	62	63	64	65	66	67	68	69	70	71
Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu

+ Actinide Series

90	91	92	93	94	95	96	97	98	99	100	101	102	103
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

Legend - click to find out more...

H - gas	Li - solid	Br - liquid	Tc - synthetic
Non-Metals	Transition Metals	Rare Earth Metals	Halogens
Alkali Metals	Alkali Earth Metals	Other Metals	Inert Elements



S&T needs to define/achieve "Obtanium" for Light Weight Armor that is affordable



## *R&D Achievement (RDA) Awards*

- Convoy Active Safety Technology (CAST)
- Elastomer Improvement Program (EIP)
- Ground Vehicle Control Aids for Improved Mobility with Indirect Vision, Drive-By-Wire Crew Stations (collaboration with ARL)
- High-Pressure Jet Propellant-8 (JP-8) Evaporation and Combustion Variances in Comparison to Diesel Fuel Number 2 (DF-2)
- Lightweight Vehicle Underbody Protection System (LVUPS)

## Support to the Warfighter

- Thrown Object Protection System
- MRAP Gunner's Restraint
- M939 Gunner's Restraint
- M-ATV Enhanced Vision Kit
- Overhead Wire Mitigation Kit
- Electronic Tip-Over Antennae System
- MRAP Egress Trainer



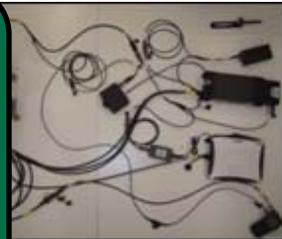
## *Army M&S Awards*

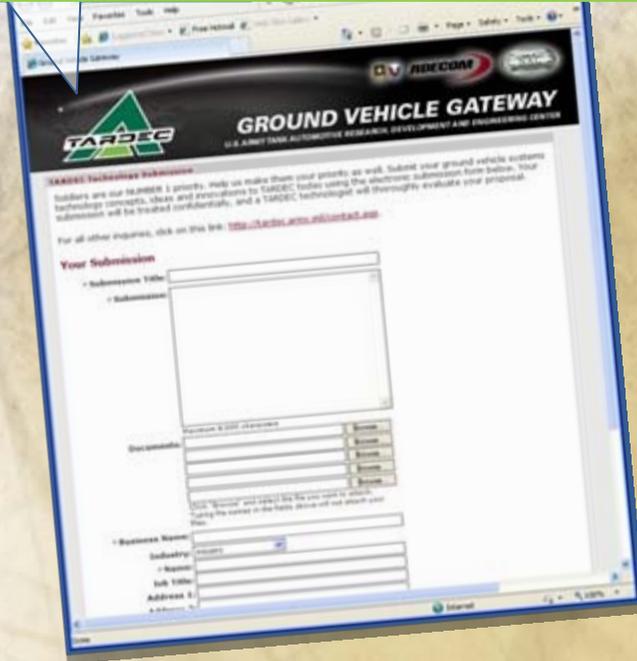
- Duty Cycle Experiments (DCE)
- Vehicle Propulsion System Evaluation Tool (VPSET)



## *Army's Greatest Invention (AGI) Awards*

- MEAP Add on Armor Kit
- System Remote Video Terminal A-Kit





TARDEC's Ground Vehicle Gateway is *YOUR* entry point!

Submit your technology for review at:  
<https://tardec.groundvehiclegateway.com>

## Small Business Innovation Research

- Congressionally Mandated Program
- 10.2 Topic/Phase I Schedule 2010
  - 10.2 Solicitation Pre-Release 21 APR-18 MAY
  - <http://www.dodsbir.net/solicitation/>
  - 10.2 Solicitation Opens 19 MAY
  - <http://dodsbir.net/submission>
  - 10.2 Solicitation Closes 23 JUN
- Phase II is by Invitation or Fast Track
- ONLY Phase I Awardees are eligible to receive Phase II

## Cooperative Research and Development Agreement (CRADA)

- Can be utilized to create innovative collaborative arrangements

## Test Services Agreement (TSA)

- Technology transfer mechanism that allows work for hire
- All inventions and data belong to the TSA partner
- Allows industry partners to leverage TARDEC's unique capabilities

## TARDEC Omnibus

Awarded August 2009  
 5 Year IDIQ Contract  
 Provides a wide variety of services  
 Will augment existing TARDEC capabilities

## TARDEC's priority – Support the Fight!

**Our Mission is to develop, integrate, and sustain the right technology solutions for all manned and unmanned DOD ground systems and combat support systems to improve Current Force effectiveness and provide superior capabilities for the Future Force.**

**Continue fostering relationships with the TACOM-LCMC, Industry & Academia.**



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