



# Defense-Wide Manufacturing Science & Technology (DMS&T) Program



## Cast Steel for Force Protection and Lethality

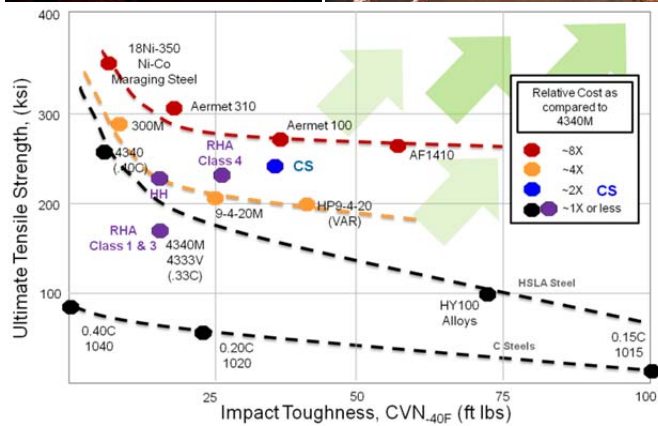
### PROBLEM / OBJECTIVE

- The majority of today's fighting vehicles are legacy vehicles with insufficient underbody protection
  - To have sufficient protection, underbodies either become too heavy or consume space that is not available due to underbody accessories, exhaust, and drive train components, etc
  - Fabrications from plate that meet volume requirements contain weld joints that present points of vulnerability
- The majority of today's wide area munitions do not meet the DoD policy on cluster munitions
  - Current solutions for replacing noncompliant cluster munitions are expensive

### APPROACH / BENEFITS

#### *Approach*

- Establish cast steel metallurgy to maximize strength and ductility for maximum protection and lethality
- Develop integrated computation based casting process and high fidelity performance simulations for the cast underbody protection system
- Implement lower hull direct integration technique to minimize vulnerability and reduce integration time
- Formulate net shape cast steel technology to increase manufacturing yield and reduce product cycle time
- Integrate the cast steel technology directly with cast steel industrial base to maximize high payoff potentials



### ***Expected Benefits and Warfighter Impact***

- Defeat the combat vehicle underbody threats
- 20% cost reduction target thru lower hull underbody assembly enhancements
- Affordable cross-platform combat vehicle underbody protection
- 35% minimum cost reduction thru net shape cast munitions

### **POINT OF CONTACT**

Government Point of Contact: Kyu C. Cho  
 410-306-0820  
[kyu.c.cho2.civ@mail.mil](mailto:kyu.c.cho2.civ@mail.mil)

88ABW-2013-4576

<https://www.dodmantech.com/>