Ground Vehicle Coating Systems (GVCS)
Production Process Improvement

OBJECTIVE/SOLUTION:
This effort will pursue process and product improvements to reduce the costs of transitioning a survivability enhancing, Chemical Agent Resistant Coatings (CARC) compliant ground vehicle coating. Advancements in infrared (IR) optical sensing technologies have rendered mere darkness inadequate for concealment of military ground vehicles on the modern battlefield. The Ground Vehicle Coating System (GVCS) will reduce infrared detectability of vehicles, providing our warfighters the tactical advantages of IR signature management with the benefit of no additional space, weight or power requirements of the weapon system. A key component of the GVCS is the pigment flakes. The flake can be produced on machines used to produce similar pigments for civil uses. The key process is a roll-to-roll optical coating. Full implementation of GVCS for all Army ground vehicles would require six fold production increase over all current civil applications. This GVCS ManTech project will optimize the production machinery and processes for GVCS flake, which will reduce the capital required to fully facilitate GVCS production and in turn, reduce the ultimate cost to the Army.

Achievements:
• RDECOM has positioned GVCS for significant technology transfer success ($20M+ investment to date in technology development, prior to this ManTech program.)
• Completed initial cost and production capability analysis
• Designed and installed key pigment producing machinery upgrades
• Identified formulation modifications to reduce overall costs of desert GVCS color formulations (currently under test)
• Utilized other GVCS demonstration validations to optimize formulas for end-user transition
• Successfully demonstrated as a drop in replacement for CARC

Benefits:
• The incremental cost of applying GVCS instead of traditional CARC will be reduced overall by 33%, from $6,100 to $4,100.
• Significant survivability gains for treated vehicles against a near peer enemy force employing infrared targeting.
• Woodland GVCS pigment modifications were made, to provide production ready design for increased UV durability to meet CARC specification

Benefits (cont):
• Formulation modifications for desert colors have been identified that (pending qualification testing) would reduce tan and sand GVCS color cost by 50%, from $6,100 to $3,050.

Transition and Weapon Systems/Secondary Items Impacted:
• PM Bradley — target integration during future vehicle engineering change proposal upgrades (FY18)
• PM Abrams — CARC replacement target integration upon NSN finalization
• USMC PdM Tank Systems
• Future Army ground vehicle projects wanting to improve survivability
• GVCS has a high level of end-user support (includes endorsement, in-kind support, and funding from PMs)

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