



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



Slurry Dip Automation

PROBLEM / OBJECTIVE

- Catastrophic events in the manufacture of countermeasure flares at Esterline and Kilgore have injured and/or killed operators, destroyed manufacturing facilities, and cost tens of millions in litigation and disrupted deliveries.
- Slurry dipping has two steps; manually dipping up to 1,000 flares per day per operator, who manually manages the slurry level and viscosity during the daily production. Due to the proximity of the operators during these processes, and the volatility of the energetic material and its inability to be extinguished once ignited, all accidents are potentially critical.

APPROACH / BENEFITS

Approach

- Combines the material process knowledge of the manufacturer with the application experience of automation industry experts to validate the robotic dipping sub-system in a shop environment
- System will have Class I Div I safety certification, end-of-arm gripper, vision cameras, control software, and human machine interface PC.
- The slurry management sub-system will be tested first in a lab for mechanical robustness and then using the actual energetic materials at Esterline's East Camden, Arkansas, production facility.



Expected Benefits and Warfighter Impact

- Safer, undisturbed flow of flare materials.
- Surge potential based on the inherent productivity gains from an automated manufacturing process versus the current manual process.
- Prevent accidents and minimize human exposure to a hazardous environment.

POINT OF CONTACT

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