

Manufacturing Technology Improves Affordability of the Spider Grenade Initiation Module (GIM)

PROBLEM / OBJECTIVE

The XM-7 Network Command Munition (Spider) is a hand emplaced, remotely controlled anti-personnel munition system which can launch miniature grenades for both lethal and non-lethal response. The Grenade Initiation Module (GIM) is the electronic initiator for the Spider and was found to be one of the most difficult items to produce due to the amount of manual assembly required. The objective of this effort was to automate the process to make it more producible and reduce labor costs.

ACCOMPLISHMENTS / PAYOFF

Process Improvement:

This Army ManTech effort used an approach that met both the cost and schedule constraints of the program to improve GIM production. The effort developed a bending fixture and automating the GIM encapsulation process.

Process improvement results:

- Increased production line first pass yield rate from 89% to 97%
- Increased production rate from 20 units per hour to 50 units per hour (150% increase)
- Reduced production cost by 40%

An internal process team consisting of ARDEC and ATK engineers enabled quick validation and approval of the new production process.

Implementation and Technology Transfer:

A Technology Transition Agreement (TTA) was signed with PM CCS (Close Combat Systems) and PM Scorpion in May 2009 that assisted planning for production process transfer and implementation.

The process was implemented on the production line in June 2011, three months ahead of schedule. The Spider Milestone Decision Authority is expected to make a full-rate production decision during FY13.



Initiation Module

Spider System

Expected Benefits and Warfighter Impact:

The Spider system provides a remotely controlled, Man-in-the-Loop (MITL) anti-personnel munition system which enables the US to meet the 2010 International Landmine Policy. Benefits to the Warfighter associated with this ManTech effort include a more affordable system which can be manufactured more efficiently and reliably.

In addition to the tactical systems, the PM is planning on procuring thousands of non-lethal grenades which provide additional.

Actual documented cost savings to date include \$390K with a projection of \$1.21M through FY13. Future production will increase cost benefits.

TIME LINE / MILESTONE

Start Date	October 2009
End Date	September 2011

FUNDING

U.S. Army ManTech	\$1.2M
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PARTICIPANTS

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