

Advanced Munitions Technology Transfer via TIME

PROBLEM / OBJECTIVE

The Army needs a solution for the replenishment and rapid buildup of munitions during times of national emergencies while shrinking its manufacturing base. By utilizing the Totally Integrated Munitions Enterprise (TIME) concept, state-of-the-art engineering, and web-based collaboration software tools are being evaluated, validated and implemented. These tools, for demonstration purposes, captured manufacturing processes from a munitions manufacturer, transmitted processes, and assisted with the rapid production of M42 prototype grenades at the non-munitions manufacturing site.

Manufacturing data from both sites was analyzed to determine what information would be required for any future technology transfers.

ACCOMPLISHMENTS / PAYOFF

Process Improvement:

A military contractor, Primex Technologies, participated in a technology transfer demonstration by transferring proprietary grenade production data over a secure web portal to a non-munitions manufacturer, General Motors PowerTrain-Machine Tool Operations (GMPT-MTO). The Louisiana Center for Manufacturing Sciences (LCMS) developed technology transfer concepts, identified and validated tool sets and the task and identified several key characteristics that were dependent upon the required response from the non-munitions manufacturer for any munitions technology transfer.

Implementation and Technology Transfer:

By validating the technology transfer process between Primex Technologies and GMPT-MTO, the Army will be able to use pre-certified commercial manufacturers to produce munitions in sufficient quantities to meet the Army's requirements in times of national emergency. Some of the integrated software tools used in this task included, CAD/CAM/CAE systems, a web-portal, and multimedia shop instructions. LCMS administered the technology transfer demonstration.



This task was funded by and demonstrated to the US Army Tank-Automotive and Armaments Command-Armament Research, Development and Engineering Center (TACOM-ARDEC) as an element under the TIME contract, under which LCMS is the prime contractor. As a result from this validation of the improved TIME tools sets defense/munitions manufacturers have collaborative engineering software tools left at their facilities and the TIME program continues to build on the gained knowledge to further advance the Army's capability to respond to and meet their munitions manufacturing needs.

Expected Benefits:

The use of these technology transfer processes, will enable the Army to meet its requirements and reduce its stored manufacturing base, while maintaining required munitions reserves and improving the manufacturing rapid ramp-up. The munitions manufacturer will benefit by discovering alternative manufacturing processes from the non-munitions manufacturer through the collaboration sessions. Also, this demonstration identified business processes, which would have to be modified. The non-munitions manufacturers should be able to increase their effectiveness using the collaborative capabilities identified as a part of this effort. This allows a Win-Win environment for the Army, munitions manufacturers and non-munitions manufacturers.

TIME LINE / MILESTONE

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End date: February 2001

FUNDING

Army ManTech Funding: (Actual <\$300K)

PARTICIPANTS

Louisiana Center for Manufacturing Sciences
GM PowerTrain – Machine Tool Operations
Primex Technologies
TACOM-ARDEC