Blunt Impact Technologies

Non-Lethal Weapons Research and Technology Development

Industry Day

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http://jnlwp.defense.gov

Background

- Non-lethal blunt impact munitions have been widely used by law enforcement and military throughout the world.
- Blunt impact munitions suppress individuals by countering motivation.
- The main limitations of current blunt impact munitions:

  (1) the natural trade-off between increased effective range (min and max) and the risk of significant injury.

  (2) accuracy/dispersion at longer ranges.
- The JNLWP is interested in developing technologies to address these limitations and continuing to develop the blunt impact injury model and instrumented test target as needed.

Technical Objectives

- Develop and demonstrate new blunt impact munitions and/or launchers to address current performance limitations
  - Logistics and supportability issues associated with enabling technology could also be a future development focus.
- Improve capabilities of the blunt trauma test target
  - E.g., develop method to measure aim-point accuracy
- Update blunt impact model as needed to simulate new materials, projectile designs, include impacts with extremities, etc.

Relevant Work

- The JNLWP, working with the Human Effects Center of Excellence (HECOE), developed the Advanced Total Body Model over the span of several years.
  - This computational model can simulate projectile impacts with the human body to predict the probability of causing significant injuries.
  - Industry Performer: L-3 Communications/Jaycor
- JNLWP/HECOE developed an instrumented blunt trauma test target to collect blunt impact data
  - Industry Performer: L-3 Communications/Jaycor
- JNLWP & Naval Surface Warfare Center – Dahlgren designed and tested new 12 gauge blunt impact rounds made from Zorbium® visco-elastic material.

Research & Development Tasks

General types of tasks that may be required for Blunt Impact Research and Development:

- Test target development/improvement

- Prototype development, testing, and demonstration of new projectiles and/or launching systems
  - E.g., new materials, variable velocity launchers, etc.

- Modeling and simulation to predict blunt impact risk of significant injury

- Systems engineering and technology integration

Capabilities

General capabilities and expertise that may be required to execute planned R&D blunt impact technology tasks:

- Engineers/Scientists with expertise in electronic instrumentation, ballistics, mechanics, materials and systems engineering
- Facilities and equipment to build and test prototype systems
- Computational scientists and engineers to build/improve computer based models and run simulations

Questions?

Please submit questions by 29 June 2012:

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