



## **BILATERAL PROJECT AGREEMENT A-PA-222-0098 WITH THE NETHERLANDS FOR INFANTRY WARRIOR TOOLKIT ENHANCEMENT | TSPID**

### **GENERAL DESCRIPTION:**

This Bilateral Project Agreement was officially signed by the US on 30 July 2004, covers a 7-year period, and will allow the US and the Netherlands to continue the productive relationship started within the NATO Working Group of Experts 4 (WGE4) on Assessment and Modeling of Soldier System Performance. WGE4 produced a comprehensive evaluation of NATO requirements of, and models appropriate for, dismounted warrior operations analysis, an improved STANAG (Standardization Agreement) on Urban Zones, and a review of Bone and Tissue simulants necessary for casualty assessment and simulation. This Agreement and will build upon the WGE4 assessment results.



### **OBJECTIVE:**

The objective of this Project Agreement is to collaborate in the development of modeling, simulation, and assessment technologies to enhance Combined Arms Dismounted Combatant operations.

### **MAJOR TASKS:**

To accomplish this objective, the following tasks will be performed: 1) Define metrics for Combined Arms Dismounted Operational analyses, 2) Develop operational use cases, 3) Conduct laboratory and field experiments, 4) Develop algorithms and software modules for the Soldier Domains (based on results from experiments/field trials), 5) Develop standardized operational analysis procedures, 6) Integrate these algorithms and associated software into the Infantry Warrior Simulation (IWARS), 7) Verify and Validate IWARS, and 8) Document results in interim and final reports.

### **FACTS:**

- Netherlands' experts have endorsed IWARS as the preferred analytical tool for evaluating combined arms dismounted warfighter operations, capabilities, and requirements.
- On 13-14 DEC 2006, a workshop was held at Natick with USARIEM to discuss a way forward for incorporating physiological modeling capabilities into IWARS. We jointly recognized that performance degradation in a physiological sense often refers to the composition of fluids and tissue states in the body, whereas in IWARS performance degradation refers to degraded capabilities such as movement speed, firing accuracy, and decision-making speed/accuracy.
- We defined "degradation of performance" as the limitations to perform physical and cognitive soldier tasks, and we focus on degradation caused by heat strain. We would like to describe the link between heat strain and soldier operational performance, and would like to enable a simulated soldier entity to begin a scenario in a degraded state. In IWARS, heat strain will be most noticeable while soldiers are wearing Mission-Oriented Protective Posture (MOPP) gear, while it will be less of an issue with body armor and other clothing (during short term scenarios in environments that are not extreme).
- We next defined a framework for instantiating physiological models in IWARS and began to define, obtain, and implement those models. Potential partners were identified (HRED, ARIEM, TNO, NSC) and we discussed methods for approaching these organizations to develop the necessary collaboration. Ultimately, we would like IWARS to show degradations in cognitive and physical capabilities, such as increases in time required to accomplish tasks, decreases in accuracies, decrease in speed and soundness of decision-making, and decreases in motivation.
- The next meeting PA meeting will be hosted by the Netherlands in Delft, 5-7 June 2007.

### **POINT OF CONTACT:**

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