



## INFANTRY WARRIOR SIMULATION (IWARS) | TSPID

### GENERAL DESCRIPTION:

The IWARS is a constructive, force-on-force model for assessing the combat worth of systems and sub-systems for both individuals and small unit dismounted warfighters in high-resolution combat operations. IWARS is being co-developed by the Natick Soldier RD&E Center (NSRDEC) and the Army Materiel Systems Analysis Activity (AMSAA). The IWARS is PC-based software, coded in C++, that will give analysts a robust capability to model lethality, survivability, mobility, sustainability, and C4ISR during Military Operations in Urban Terrain (MOUT). IWARS is using the best of the Natick Integrated Unit Simulation System (IUSS) Version 4 and the AMSAA Infantry MOUT Simulation (AIMS) models.

### OBJECTIVES:

To provide a robust modeling capability needed to conduct integrated, multi-domain analyses that allow the complex relationships between soldiers, their equipment, and the battlefield environment to be explored. To enable program managers to make more informed decisions through the application of Simulation and Modeling for Acquisition, Requirements and Training (SMART) and Simulation-Based Acquisition (SBA) to reduce the overall acquisition time, avoid program costs, reduce program risk and to support development of better equipment.

### FACTS:

Within the US and the international warrior systems modeling communities, the IWARS software is acknowledged as being a highly capable tool able to support detailed research, development, and acquisition (RDA) analyses of individual warrior systems throughout the materiel acquisition life cycle. The IWARS provides Project, Product, and Program Managers with a unique and powerful tool to assess candidate systems, subsystems, and components for further development. The IWARS also offers a capability to provide needed analysis where live fire or large-scale testing would be prohibitive.

Based upon the successful completion of a detailed Verification and Validation (V&V), the Directors of the AMSAA and Natick have approved the IWARS for use in analysis pertaining to





Soldier lethality, survivability, sensor performance, and limited situational awareness and battle command applications. As a result, IWARS can now be used to support Analysis of Alternatives of materiel development programs.

Force structure, equipment distributions, combat threats, measures of performance and effectiveness, component system specifications, and scenario vignettes act as inputs to the analyses throughout the integrated materiel evaluation process. Moreover, analyzing data from IWARS simulations will allow analysts to gain insight on how changes to doctrine could improve tactics, techniques and procedures (TTPs).

IWARS will enable the assessment of C<sup>4</sup>ISR technologies through the use of an "Intelligent Agent" architecture that is focused on the individual and small unit. These intelligent autonomous agents can sense and effect changes in their environment, acting on their perceptions of current world "state" instead of "ground truth." This architecture will greatly enhance our ability to include important real-world characterizations and the impacts of C<sup>4</sup>ISR technologies on lethality, survivability and mobility.

**SCHEDULE:**

The IWARS is available for use and upgrades will continue to be incorporated. Near-term work on IWARS will focus on improved MOUT and human behavior representation to allow for more robust assessments of the combat worth of C<sup>4</sup>ISR technologies, sensors, displays, netted fires, and computer network systems. Regular technical interchanges will be held with numerous agencies in an effort to leverage other M&S programs and substantial ongoing research in support of the Soldier. Work is also being conducted to link IWARS with other simulations (e.g.; COMBAT<sup>XXI</sup>).

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