Overview

The Joint Conflict and Tactical Simulation (JCATS) is an interactive computer software tool developed by Lawrence Livermore National Laboratories (LLNL) and is used by various U.S. Government and Military security agencies to assess and or improve security through analysis and training. JCATS is a real-time, human operated combat simulation instrument that is complementary to the other Vulnerability Assessment (VA) tools such as Force-on-Force exercises, tabletop analysis, and ASSESS. Many iterations of JCATS can be conducted in a short time period without operational impact or safety concerns.

Capabilities & Benefits

The backbone of JCATS is its robust databases that contain real-world information pertaining to elements such as terrain, munitions, sensors and weapons effects. Simulations are conducted at the entity-level, with each individual entity modeled to accurately represent the same size, weight, shape, speed and capabilities of its real-world counterparts.

JCATS has multiple uses to include training and analysis. For instance, JCATS can be used by security forces trying to develop new tactics or procedures to optimize site security. Suppose a protective force wishes to gauge the effectiveness of weaponry or tactical upgrades. This is the ideal situation for the use of JCATS where a baseline adversary, adversary timeline, and current protective force attributes are used to achieve baseline simulation results. Further simulations are run with upgrades to Response Force (or adversary) capabilities, determining the effectiveness or ineffectiveness of upgrades.

Warrior Code

JCATS scenarios are conducted in accordance with the Sandia National Laboratories (SNL) Warrior Code Methodology developed by the International Weapon Security, Vulnerability Assessment Team. The Warrior Code Methodology utilizes two operators, one controlling the Response Force, and the other controlling the Adversary team. Operators are responsible for entity movement to include posture and speed, as well as weapon engagement. Response Force and Adversarial teams are modeled in accordance with DBT information to include force size, position, weaponry, etc.

The JCATS system allows for the replication of specific events to determine if there are trends, or if changes in compositions, weaponry, and/or tactics will alter the outcome. Multiple runs are

required to eliminate one-time anomalies that can results in any stochastic process. As such, all JCATS information is thoroughly scrutinized to ensure the results reflect applicable and realistic information. JCATS simulations are a structured and objective process that ensures quality analysis and results.

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