



# THE MOVES INSTITUTE

NAVAL POSTGRADUATE SCHOOL

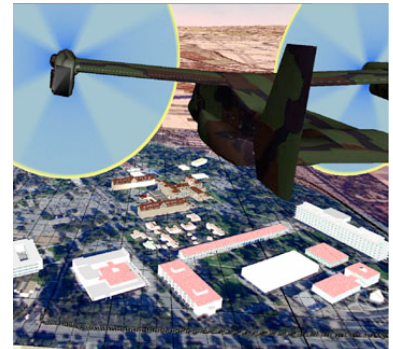
Modeling and Simulation is a critical element of most Defense related programs. Yet many technical problems persist -- and more importantly, modeling and simulation products often do not meet practical requirements for mainstream use, greatly limiting their effectiveness. Founded in 1996, MOVES is addressing the most critical problems in modeling and simulation towards bringing M&S products to their full potential for training, analysis, and acquisition. Our areas of concentration include training, networked visual simulation, computer-generated autonomy, human performance engineering, game-based simulation, and combat modeling and analysis. MOVES is also a graduate degree program for military officers and civilians. Their expertise and practical know-how make MOVES special and help us to work towards bringing simulation and training products to every day use for the warfighter. This is a sample of MOVES projects. For more information, please visit <http://www.movesinstitute.org>

-- Rudy Darken, Director

### Extensible Modeling & Simulation Framework

Define a composable set of standards, profiles and recommended practices for web-based Modeling & Simulation (M&S), enabling simulations to interact directly and scalably over a highly distributed network, achieved through compatibility between a web framework and networking technologies. (DMSO)

-- Don Brutzman [brutzman@nps.edu](mailto:brutzman@nps.edu)

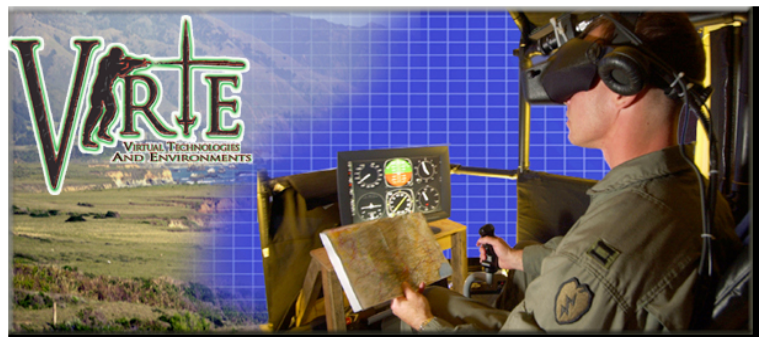


### VIRTE:

#### Virtual Technologies & Environments

Develop deployable training solutions for the fleet. We are prototyping and experimenting with a wide variety of deployable training systems for helicopter pilots and crew, Marine Corps infantry and Forward Observers. (ONR)

-- Bill Becker [wjbecker@nps.edu](mailto:wjbecker@nps.edu)



### Understanding for Autonomous Agents

To build autonomous agents for virtual environments that understand the situations they find themselves in to an unprecedented degree, and leveraging this into the ability to understand natural language. Modeling elements of subconscious cognition such as associative memory, perception, and motor processing and rigorous characterization of the developed techniques. (NAVMSMO) -- Chris Darken [cjdarken@nps.edu](mailto:cjdarken@nps.edu)

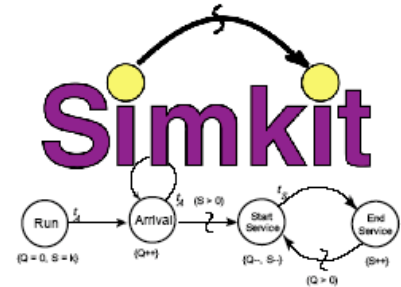


### Simkit

Simkit is an Open Source package for creating Discrete Event Simulation (DES) models written in Java 2™. Simkit is used at NPS and MOVES to teach DES. The labs and tutorials are available on-line. You can download the distribution at

<http://diana.gl.nps.navy.mil/Simkit>.

-- Arnie Buss abuss@nps.edu



### Online Mentors

Develop an exemplar training scenario using standards-based approach for use in language and cultural familiarization across DoD and US Government departments. The vision of vast numbers of trainees receiving this vital training anywhere, anytime is achievable through this cooperative development. (JADL-CoLab) - Don Brutzman brutzman@nps.edu

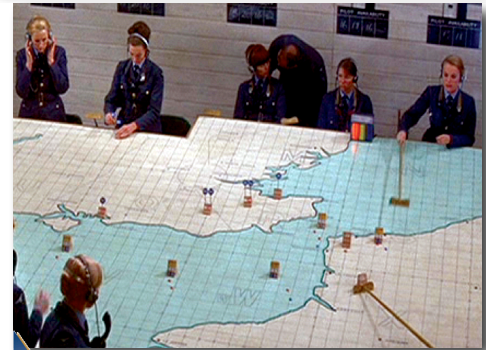


### AEGOS:

#### Automatic Evolutionary Scenario Generation

Use genetic processes to evolve batches of scenarios using preferences obtained from users. Leverages earlier work on red-team intent, cognitive blending, and multi-agent systems. This work is essential to the development of readily available training systems so that scenarios will not be repeated, maximizing the variability of the training experience.

-- John Hiles jehiles@nps.edu



### Delta3D: Open Source Game & Simulation Engine

Develop an Open Source game engine that is robust, full-featured, general purpose (cross-genre), and supportable for Defense training and education. Delta3D radically changes the business model of training system development by commoditizing the run-time environment. It is fully Open Source encouraging maximum reuse of code and models.

(NETC, NAVMSMO, JNTC)

-- Perry McDowell mcdowell@nps.navy.mil



## The MOVES MS Program\* 18-24 Months (Depending on background)

### First Year

- Object-Oriented Programming
- Probability and Statistics
- Human Factors System Design
- Simulation and Training
- Joint Combat Modeling
- Network Communications for Simulation
- System Simulation
- Artificial Intelligence
- Computer Graphics Programming, Modeling

### Second Year (choose 3 focus areas)

- Combat Modeling
- Networked Visual Simulation
- Web-Based Simulation
- Agents and Cognitive Modeling
- Training Systems
- Human Factors
- Management and Acquisition
- Physically-Based Modeling
- Optimization

\* PhD program also available