Simajin/Archos Military Training Simulation

RhinoCorps’ Simajin/Archos Military Training Simulation provides a fully automated simulation environment for conducting dynamic stand-alone or collaborative training exercises and tools to support After Action Reviews (AARs). Simajin/Archos integrates live, virtual and constructive (LVC) simulation elements to produce a comprehensive and robust training and exercise system.

At the foundation of the Simajin/Archos product is the Simajin® Application Suite. Simajin is a proven, general purpose, commercially available simulation toolkit that has been used for many different applications over a wide range of scope and fidelity, and is based on over 35 years of experience and application. The Simajin simulation is used by the U.S. Department of Defense, U.S. Department of Energy, National Nuclear Security Agency, and the UAE Armed Forces General Headquarters to simulate high fidelity, force on force engagements.

Simajin is a low overhead, highly capable simulation used to model and capture complex interactions between simulated human players, vehicles, weapons and their surroundings. Simajin’s high fidelity behavior models ensure users only need to provide high-level orders to stimulate forces. This dynamic, non-scripted behavior minimizes long-term cost of ownership and number of training staff while maximizing trainee realism, confidence and resultant learning.

The Archos interface leverages the proven Simajin engine and models to provide a rich constructive training environment in which students and instructors can interact with fully automated or semi-automated simulation players. RhinoCorps’ commercial engine ensures well-proven system maturity across a number of use cases, with a diversity of customer input continually advancing the product. No other simulation includes the rich human behavior models that allow simulated players to autonomously execute complex orders. Traditional products that use scripted actions or only allow for semi-automated forces require significant numbers of operators to execute missions and thus decrease the training opportunities while increasing operating cost.

Archos allows instructors to compose combat teams, edit/develop training missions that include enemy and civilian responses, modify tactical data and execute training missions all inside the constructive simulation environment. Archos simulates realistic reactions to orders, detection opportunities, communications and weapons effects that enable students to train realistically and efficiently. Both instructor and student interfaces are simple to use, powerful and provide the flexibility required to support the training objectives. Further, Archos includes extensive post-exercise support tools that include both the ability to playback or restart a simulation as well as standard and custom report options (i.e. shot plots, lethal engagement reports, etc.) designed to support AARs. The built-in network-based radio system allows students to communicate during the exercise, while recorded radio traffic is correlated to the simulation playback.
The Simajin/Archos Military Training Simulation was designed for decision makers in the military command staff (including Battalion, Company, and Platoon Leaders) and provides a set of features that make the world’s most sophisticated war-gaming environment. A summary of the key capabilities is as listed below:

**Automated Behavior:** high fidelity behavioral models maximize trainee realism, confidence and resultant learning all while minimizing simulation over-head.
- Human model provides foundation
  - Moving in complex spaces; driving and riding in vehicles
  - Operating weapons, explosives and picking up and dropping equipment as needed
  - Working collaboratively with other players
  - Self preservation
  - Communicating status and intelligence information
- Extensive task library (including offensive, defensive forces and civilian behavior)

**Multiple Training Modes:**
stand-alone and collaborative team training modes offer more learning opportunities to include self-study as well as a team environment.
- Stand-alone and team
- User/Instructor can control situational awareness level
- Commander(s) provides network-based radio orders to automated subordinates
- Instructors can inject ad hoc situations to stress student learning

**Task Library**

The current task library includes many complex tasks and is easy to extend or modify to capture specific tactics techniques, and procedures.
**Highly Configurable and Flexible Models:** flexible modeling of vehicles, weapon systems, interactions (sensing and communications), terrain, and structures provides realism in force representation.

- Vehicle and weapon platform database
- Users configurable weapon effects
- Detailed sensor representation, including human audio and visual sensors
- Terrain editing and construction tools

**After Action Review Tools:**

in school and take-home package includes detailed geospatial, graphical, and tabular reports to support the learning experience.

- Exercise playback with communication overlay
- Save and resume exercises
- Configurable graphical and tabular reports
- Sensor coverage analysis
- Weapon effects analysis

**Easy to Use and Integrate:**

standardized and easy to use interfaces support quick start up for students, instructors and system administrators.

- Easy to use mission editor with standard military symbol overlay maps
- Reduced life cycle cost and low overhead operation of system
- Supports DIS and HLA network protocols
- Comprehensive electronic and paper documentation

Combining the Human Model that enables the automated behavior and the ease at which exercises can be modified there are significant life cycle cost savings associated with Archos as opposed to traditional human-driven or semi-autonomous simulations. Unlike many other simulations, the instructor personnel required to execute training events only includes the actual instructor and student(s), and in the stand-alone mode only a student is actually required. This allows execution of many more exercises than traditional training methods, and at significant cost savings, and provides a means to allow the users and trainees to independently practice and exercise the skills associated with the training course.