



CAE GESI-SiTA Classroom Education



Your worldwide
training partner
of choice



Meeting New Demands

Today's armed forces are facing a multitude of different and complex challenges, with an increasing demand on operational readiness at any place and at any time. Thus, the importance of comprehensive and operation-specific training becomes more critical. At CAE, our entire focus is on creating simulation-based solutions that address these evolving and emerging mission training requirements. From traditional training for combat readiness to non-traditional roles such as operations other than war (OOTW), peacekeeping and humanitarian assistance, military operations in urban terrain (MOUT), joint and multinational operations, and more, CAE is supporting defence and homeland security forces worldwide through innovation and technology.

The CAE GESI-SiTA Classroom Application

By evolving CAE's renowned CAE GESI constructive simulation system, CAE has created a highly flexible simulation tool called CAE GESI-SiTA (Simulation-based Tactical training for military Academies) to optimize student education in the classroom environment.

The CAE GESI-SiTA classroom application offers a unique foundation to experience and learn tactical basics at the highest level of detail and interactivity. Specifically designed for military academies, CAE GESI-SiTA allows the student to become more immersed than ever before in real-world battlefield scenarios and in in-depth tactical training. For the first time, clear and comprehensive illustrations of complex tactical situations are available, showing the relationship between forces, time and terrain. This makes CAE GESI-SiTA the ideal tool for in-depth learning in a classroom environment.

Core Technology

CAE GESI core technology provides the platform for CAE GESI-SiTA and helps students meet the challenges from the most basic to the most complex of simulated military operations.

Key features include:

- Fully customizable by the end-user (including weapons, scenarios and more);
- Field-of-vision algorithm;
- Display of weapon range and effects;
- Route calculation algorithms;
- Workflow models for logistics and medical services for holistic mission readiness;
- Single entity resolution with thousands of elements and multiple parties;
- Operation, barrier and fire plan overlays;
- Weather modelling affecting battlefield operations;
- Simulation of an extensive range of missions (including joint operations, OOTW, MOUT and more);
- Interoperability to operational command and control systems;
- Cost-effective and training efficient.

These features provide a comprehensive battlefield representation of modern warfare and include specific details that are particularly relevant in a classroom environment. Exercises evolve in real-time and with real-world realism, considering weapon system capabilities and environmental factors.

Transparency and Dynamic Interaction

Using modern simulation technology, the tactical content expands upon previously limited teaching methods to deliver a higher level of transparency by visualizing the possibilities and restrictions on the battlefield. Comparisons can easily be drawn between opposing forces at any time via statistics or simulation replays, thus delivering better user understanding and comprehension. The classroom system allows for review of entire battles and illustrates key criteria such as force ratios, losses, lines of sight, logistic situations among other relevant data of the involved parties. The detail provided through CAE GESI-SiTA reveals the fundamental reasons for tactical developments in battlefield scenarios. Consequently, results become retraceable and credible with the tactical outcomes more comprehensible.



Who is supporting defence and homeland security forces worldwide through innovation and technology?

We are.

Education Plan

Students can easily navigate through lessons using the education plan, based on the didactical architecture derived from tactical training at military academies. All contents are only a mouse click away, whether displaying an operation plan overlay on the map or launching a workgroup simulation to explore different solutions for a mission. The education plan allows the student to easily open documents such as PDF files, network and web content or simulation-based applications by just clicking on the related menu item. Each item can be deactivated or made accessible by the instructor at any time, providing students with a clearly arranged didactical path and allowing instructors the opportunity to combine classical documents and simulation resources in one easy-to-use navigation tool.

Feedback and Presentation

Results and highlights of simulation-based missions in workgroups or single-user mode can be analyzed, discussed and prepared for presentation using the After Action Review tool.

Key features include:

- Recording of complete exercises to debrief optimization;
- Creation of event bookmarks (manually and automatically) during the exercise for easy retrieval and analysis;
- Creation of tactical situation graphics, either as snapshots or dynamic replays including full simulation functionality;
- Extensive statistical overviews;
- Assembly of presentations.

Educational Network

The educational network links student tactical workstations to the instructor's desktop, thus enabling the instructor to monitor the work of each individual student. Using the educational network, the speed of the entire training event can be synchronized to the individual progress of students, giving the instructor transparency regarding where students stand, how workgroups elaborate solutions and where support is required. In order to gain full attention, the instructor can clear and deactivate all desktops with just one push of a button. Additionally, the network can be used to display the screen contents of individual student workstations using a projector for a subsequent discussion of results and solutions with the entire class.



System Configuration

The system configuration tool provides an easy way to determine and store different classroom setups as well as workgroup configurations and individual settings for the involved workstations. The configuration tool further defines whether students work on single or team simulations and provides a complete overview of the classroom setup at any time.

User Interface

Tactical markers and symbols on dynamic maps are used for the graphic display of the combat situation. The system is operated by means of an easy to use graphical user interface. Together with the use of standard military maps on the screen, a quick identification and familiarization is ensured, especially for military users.

CAE GESI-SiTA is optimized for use as a classroom education and training tool at military academies to bring officer cadets and junior officers up to tactical speed.



One Simulation, Multiple Applications

The CAE GESI constructive simulation system is the baseline for multiple CAE applications, including CAE GESI-SiTA Classroom Education. Following is a brief overview of how the CAE GESI system is being used for different applications.

CAE GESI - Command and Staff Trainer and Beyond

Today's armed forces are facing complex challenges with increasing demand on operational readiness at any time and any place. Missions not only include traditional multi-domain military actions force-on-force, but also humanitarian assistance and stabilization operations, operations other than war (OOTW), joint and multi-national operations, network centric warfare, military operations in urban terrain (MOUT), asymmetric warfare, catastrophe relief operations, and more. New factors such as social media (with local and worldwide impact) and cyber warfare play an increasing role.

CAE's GESI is an advanced, multi-purpose constructive simulation system for comprehensive training, wargaming, decision support, concept development & experimentation (CD&E) and beyond.

It is designed to run complex and comprehensive exercises from a company up to division level, both in a computer-assisted exercise (CAX) and classroom environment, ultimately improving commanders and their staff in their decision-making capabilities. Using the CAE GESI system, commanders and their staff can conduct training exercises in their regular command posts using original equipment in a most cost-effective and efficient manner.

CAE GESI-EM - Emergency Management Training

Analyze, decide and command – efficient emergency management requires decision makers to anticipate the potential consequences of crisis situations and to use any available resource effectively to bring the situation under control.

The multitude of possible threats and risks make achieving this task a serious challenge to governmental institutions, aid agencies, local authorities and corporations, in particular those managing critical infrastructures. The best measures to prepare for crisis situations are emergency plans that answer the question "what if" and are supported by a team of well-trained crisis and emergency managers.

CAE's GESI Emergency Management (EM) simulation environment is an essential aid to meet these challenges. It simulates comprehensive emergency situations, providing an environment to develop emergency plans, and to train/prepare crisis and emergency managers. Its layout and functionality is continuously updated concurrently with the development of the CAE GESI core application.



The GlobalSim Solution

CAE and ROLANDS & ASSOCIATES (R&A) collaborated to develop a federated constructive simulation solution called GlobalSim. The GlobalSim solution combines CAE's GESI command and staff training system with R&A's Joint Theater-Level Simulation (JTLS).



GlobalSim

The GlobalSim solution from CAE and R&A is a unique combination of two well-established systems, providing a comprehensive constructive simulation environment from the theater-level down to the tactical simulation level. Users can train in an integrated constructive simulation environment without requiring separate solutions for the “big picture” operational environment and the detailed tactical-level environment.

GlobalSim can be used for command post exercise support, contingency/management plan testing, coalition training among both military and civil agencies, budget-based wargaming, decision support, decision analyses, experimentation, and emergency preparedness training.

GlobalSim uses an open architecture and industry standards for interfacing with other systems to allow integration and experimentation with operational components.

Some of the key features of GlobalSim include:

- Tightly linked and integrated federation between a theater-level aggregate simulation (JTLS) and a tactical, entity-level simulation (GESI);
- Supports the industry standard High-Level Architecture (HLA) to facilitate integration and interoperability;
- Combination of two of the world's leading constructive simulation solutions:
 - JTLS models the full spectrum of warfare, including land, air, naval, intelligence, logistics and special forces;
 - GESI is a high resolution synthetic environment entity-level simulation to model missions such as close combat, operations-other-than-war (OOTW), military operations in urban terrain (MOUT), and asymmetric warfare;
- Flexible and situation-dependent multi-resolution modeling of forces.

Some of the key benefits of the GlobalSim solution include:

- Integration of theater/strategic level operations with tactical unit operations thus allowing theater-level scenarios with tactical-level inserts;
- Single, integrated and more realistic view of the complete operational environment;
- Generation of realistic and unexpected consequences as well as other synergetic effects by combining the strengths of JTLS and GESI into one exercise;
- Easy-to-use exercise editors and comprehensive after-action review capability;
- Open architecture and standards for ease of integration and experimentation;
- Optimization of the number of operators and operating expense.

CAE GESI User Community and User Conference



The CAE GESI-SiTA classroom application has been in use at the Norwegian Military Academy in Oslo since 2006. Since then, other countries joined the CAE GESI-SiTA community, including Germany and Finland. The CAE GESI-SiTA application is continuously updated in line with the development of the CAE GESI core application.

The annual CAE GESI user conference facilitates the dialogue and exchange between the CAE GESI users. This unique conference is a popular platform for the exchange of experiences, ideas and information and is organised at one of the customer's training sites. The conference is not only accessible for CAE GESI users, but also for anybody interested in constructive simulation, education and training.

The CAE GESI-SiTA application is part of a comprehensive portfolio of products and services CAE offers related to training. CAE GESI-SiTA makes even complicated tactical issues easy to understand and speeds up the learning process significantly. With the CAE GESI-SiTA system, the instructor saves time and more importantly, has the ability to cover more advanced topics and teach to higher learning objectives. With CAE GESI-SiTA, instructors can ensure that students are better prepared to achieve mission readiness.

About CAE Defence & Security

CAE's Defence & Security business unit focuses on helping prepare our customers to develop and maintain the highest levels of mission readiness. We are a world-class training and mission systems integrator offering a comprehensive portfolio of training and operational support solutions across the air, land, sea and public safety market segments. We serve our global defence and security customers through regional operations in Canada; the United States/Latin America; Europe/Middle East; and Asia-Pacific, all of which leverage the full breadth of CAE's capabilities, technologies and solutions.

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