

BattleTek

Product White Paper

BattleTek 4

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1. INTRODUCTION

Armed Forces face multiple challenges in meeting the high levels of training required for operational excellence and mission success. They are under constant pressure to reduce operating costs whilst improving performance and maintaining a high state of readiness.

Today's war fighters must train across all warfare phases for a variety of complex and diverse missions, including counter-terrorism, asymmetric threats, traditional threats, reconstruction and humanitarian assistance missions, each necessitating its own set of competencies. Similarly, war fighters must train for operations with multiple partners and allies, including the various Arms of Service in Joint Interagency Intergovernmental and Multinational (JIIM) operations.

The opportunities to conduct live training, particularly large-scale live exercises, are dwindling due to the high costs of fuel & ammunition, environmental constraints at training centres and the need to minimize the wear-and-tear on weapon platforms and equipment, stressed by repeated deployments. Furthermore, training-systems and -programs are challenged to remain current with the rapid rate of technological advancements often accompanied by changes in doctrine and tactics.

BattleTek is a comprehensive constructive simulation software solution for joint training and war gaming that support a wide range of capabilities, ranging from doctrinal testing and evaluation, training, and mission rehearsal.

BattleTek is designed to support initial, continuation and refresher training of Commanders at the tactical and operational level of war. BattleTek is a cost-effective system that can simulate a full spectrum of operations at all levels, ranging from Platoon to Brigade type operations.

2. BACKGROUND

Saab offers a constructive simulation system that is flexible and deployable to make training available to commanders even in the area of operations. BattleTek is adaptable to suit any doctrine and can be utilized by Armed Forces all over the world

BattleTek helps to improve Leadership competencies and to practice the "Art of War". The objectives of BattleTek on the various levels of command are to exercise:

- Combat decision making on all levels of command,
- Functioning and execution of C² measures,
- Planning and execution of Staff and Headquarters procedures, and

- Execution of battle control.

BattleTek provides comprehensive simulation support in terms of land, air and naval-based warfare activities. An outstanding characteristic of the system is the flexibility in application, the ease of software maintenance and expansion, and the utilisation of standard hardware components.

BattleTek is WISE compliant and can be utilised as an exercise or scenario stimulator for HLA, MIP and DIS compliant systems. BattleTek has been developed to support command and control training and can be seamlessly integrated with different Command and Control systems. BattleTek stimulates C4ISR systems with simulated data for more realistic information flow during training.

BattleTek is a constructive simulation system tailored to be integrated with live- and virtual-simulation systems to provide an all-encompassing LVC (live, virtual, constructive) experience. BattleTek can be optimised to meet specific training requirements and budgets.

BattleTek applies the latest technology and simulation - and behaviour models to create immersive and realistic environments for every level of training where learning and understanding can take place through constructivism.

Collaborating during the After-Action Review provided by BattleTek, enables commanders to construct their own understanding and knowledge through experience. By reflecting on their experiences, commanders can increase the complexity of their ideas and improve their ability to integrate new information on potential battlefields.

BattleTek assists commanders and all levels of staff to prepare for a range of operational scenarios and is optimized for use at the strategic and operational level of war through complex and comprehensive exercises from company to division.

3. BATTLETEK OVERVIEW

3.1 BattleTek features

- Immersed commanders' view. Commanders are immersed into the battlefield experiencing the real sense and urgency of the battle. The commander has a virtual geographical view of the battlefield from his battle location.
- Comprehensive behaviour models up to division level. Allows subordinate commanders to execute their orders in accordance with military doctrine.

- Easy set-up and operation. Utilising intuitive responses, commanders can issue orders to their subordinates quickly and effortlessly with C-BML format messages via the user interface or voice commands.
- Less than one (1) day for terrain and scenario preparation.
- Military operators trained within six (6) hours.
- Support for air, land, and sea operations.
- Support for very large scenarios.
- Intuitive and easy-to-use graphical interface.
- After Action Review.

3.2 BattleTek benefits

- Allows for realistic commander training.
- Low cost and adaptable.
- Can be embedded and employed with operational C2 systems.
- Proven Track Record.
- MIL-STD-2525B / APP6 Compliant.
- Scalability - Single Entity to Aggregated Groupings.
- Uses COTS Hardware.
- Distributed simulation capability.
- Well trained, prepared and rehearsed command cadre that can face conventional-, peace-, and complex-operations.
- Ease of set-up, flexibility to cater for any scenario and the intuitive interface that does not require technical operators, but can be operated by military staff.

3.2 BattleTek design

BattleTek is designed to integrate the inherent capabilities of several systems to provide an immersive commander training experience where the commander will be

able to experience the realism of forces on the ground and warfare in a live environment.

4. TECHNOLOGY OVERVIEW

4.1 System Overview

BattleTek Constructive Simulation System caters for simulation exercises on the Tactical to Operational Levels of War. The system helps to improve Leadership competencies and to practice the “Art of War”. It is used for the Evaluation of Plans and Decision Support. The system is also used to test and improve Standard Operational Procedures (SOPs), Doctrine and Procedures. **BattleTek** can be used as an exercise or scenario stimulator utilizing HLA compliant systems. (This supports the mantra: “Train as you Fight and Fight as you Train”). The ORBAT is based on JC3IEDM and C-BML is used for tasking, that enabled commanders to issue commands via C-BML compliant command & control systems. **BattleTek** caters for Multi Player, Multi Forces (Red, Blue and Neutral) and has a comprehensive After Action Review capability. It is scalable (up to 200 clients) and has a fully integrated Geographic Information System (GIS) functionality with 2D and a 3D map view

BattleTek utilises a sophisticated terrain representation system. This allows the loading of any standard, commercial electronic terrain (GIS) data or scanned-in maps (geo-referenced), satellite images (geo-referenced), etc. for terrain display purposes. The underlying GIS data and terrain modelling allows realistic movement simulation, as well as observation modelling. New terrain data can be imported and scenarios generated offline, in an easy to use application.

5. BATTLETEK DEPLOYMENT

5.1 BattleTek for Higher Tactical Level Training

Brigade Tactical Headquarters and Tactical / Alternative Tactical Headquarters have a view of own position or can be equipped with a combined view in case of a scaled down exercise. **BattleTek** can be used for Force Preparation & Mission Preparation. It also caters for the Evaluation and Optimization of plans. The “Jump in time” function makes it possible to implement “Black Holes” during exercises.

5.2 BattleTek for Operational Level Training

BattleTek caters for operational level war exercises through real-time intervention during the simulation of the turn. The Simulation Pause makes provision for entering pre-planned sequential activities. Multiple-day cycle turns can be played at a speed of

up to 60 times, real-time. It makes provision for land operations, air interdiction, air support and naval operations.

5.3 BattleTek for Lower Tactical Level Training

Sub-unit commanders have a view from own position and can see forces under command and opposing forces if they are within range and there is inter-visibility. Sub-sub-unit commanders interact with simulated forces (forces under command) by tasking individually or aggregated groupings. The simulated forces provide feedback by visual and audio cues. **BattleTek** is used for evaluation and training of quick attacks and deliberate attacks inside a conventional or peace support scenario (Peace Missions).

5.4 BattleTek Deployment Overview

The layout below shows a typical deployment during a Command Post Exercise (Please note that **BattleTek** can be deployed from Company to divisional level). The Battalion commander uses a combination of simulated radios and C2 systems to command and control sub-unit commanders.

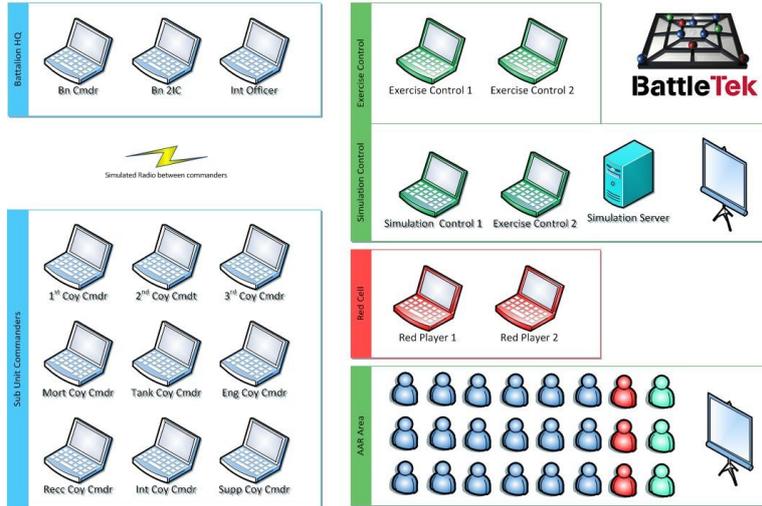
Sub-unit commanders execute commands by issuing commands via C2 systems that will communicate to BattleTek with CBML messages, in order to execute (simulate) the commands. If the sub-unit commander does not have a C2 system, commands will be issued directly to BattleTek 5 via the intuitive BattleTek interface.

Exercise Control Staff will monitor the flow of the operation and will make notes that are time-stamped and geo-referenced and can be used as Lessons Learnt in the After Action Review Area.

BattleTek is designed to accommodate Battalion vs Battalion Command Post Exercises or where the red force is under control of the exercise control staff to attain training objectives.

The Simulation Control Cell is typically manned by technicians that can manipulate the system so that all training objectives can be reached.

Typical Layout of BattleTek 5 on Battalion Level



Typical Layout of BattleTek

BattleTek comes with a comprehensive After Action Review tool and capability to record all events and actions during gameplay. The simulation can be paused and restarted at any timestamp during the execution.