Overview:

VBS2 is a fully interactive, three-dimensional, game-based synthetic environment providing you a virtual sandbox suitable for a wide range of military (or similar) training, mission rehearsal and experimentation purposes.

Training

VBS2 is an out-of-the-box training solution capable of simulating a wide range of real-life situations. End-users operate virtual avatars in a run-time scenario, and collectively interact with the virtual environment in accordance with the training need.

The training content is generated using the intuitive Offline Mission Editor, which allows almost any imaginable tactical situation to be created. This is supported by a Development Suite that allows geo-specific terrain to be rapidly imported.

Training is enhanced through the Real Time Editor, which allows instructors to modify scenario elements while training is being conducted, and of course the After-Action Review (AAR) that accurately replays a scenario so that learning points can be highlighted.

Development

In addition to providing a training tool, VBS2 can be used as a development platform to address a wider range of training or experimentation needs.

The Development Suite, including the tools Visitor 4 and Oxygen 2, can be used to import new terrain and 3D models (e.g. new objects, vehicles or characters), and a wide range of configuration options allow new platforms to be simulated with relative ease.

The VBS2 scripting language can be used by developers to influence all aspects of the VBS2 run-time scenario, as well as create complex weapon platforms including new user interfaces.

The Application Scripting Interface (ASI) allows developers to create plug-ins that interact with VBS2 through the scripting language.
Run-time Scenario

The core of VBS2 is the run-time scenario, based upon a cutting-edge game engine that supports full scale battlefield environments including individuals, ground/air/sea vehicles, animals, geospecific and geotypical environments, and much more. The engine is capable of displaying sophisticated technologies, such as Night Vision and IR display, ballistic projectile trajectories, sound attenuation, terrain deformation, physics based simulation, to name a few. Capable of large-scale terrain and high detail environments, VBS2 run-time scenario capability meets most modern simulation requirements.

Offline Mission Editor (OME)

Fast and easy to use, our Offline Mission Editor sets the standard for developing scenarios that simulate complex actions and events. It provides feature rich capabilities and a scripting sub-layer that can accomplish sophisticated missions.

Real Time Editor (RTE)

The RTE enables instructors to adjust scenarios on the fly or inject new and changing conditions to challenge trainees with unexpected situations, as they would be in real-world missions. The instructor can create, delete, modify, move, kill and resurrect objects and entities in the game, including those being played by humans. The changes are adopted instantaneously without interruption to the scenario.

After Action Review

A robust AAR capability enables instructors to reinforce learning points by recording network traffic received on the VBS2 server and replaying saved data on the AAR interface. With the ability to be viewed from any perspective, including first person, the AAR provides a comprehensive tool for analysing, and learning from, all decisions and actions made during a training scenario.

Content Libraries

Vast content libraries of assets with unique and realistic behaviors and features enable users to rapidly generate environments and scenarios. Models for hundreds of units, weapons and vehicles for most ABCA Armies, Incident Response, Eastern European and Middle Eastern representations are available. A wide range of geotypical structures and vegetation can be used to populate custom locations.

CNR Sim Lite

Calytrix's Combat Net Radio Simulator (CNR-Sim) is a software-only radio/intercom simulator. It is an affordable, easy to use, cross-platform tool that allows teams to communicate over a simulation network. Its simple push-to-talk interface supports multiple teams and switches quickly between any number of configurable communication channels. CNR-Sim Lite also enables replay of recorded voice traffic during the VBS2 AAR.

LVC Game: HLA / DIS Gateway

Calytrix's LVC Game is an HLA/DIS gateway for connecting VBS2 with existing HLA/DIS defence environments like JSADF and JCATS. This middleware supports full bi-directional interoperability and also enables constructive simulations like OneSAF to leverage the VBS2 visualization engine.
**Oxygen 2: Model Editor**

Oxygen 2 is a modeling and texture-mapping tool for users to generate new 3D models or import and export models between Oxygen 2 and other modeling platforms. It includes a 3D viewer that shows a real-time render of the model with full textures and materials using the core VBS2 graphics engine.

**Finite State Machine (FSM) Editor**

Highly complex artificially intelligent behaviors, such as crowds, ambient activity, and enemy behavior, can be created with the FSM Editor. AI is configurable through a flowchart interface, making AI decision trees easy to understand and define.

**Application Scripting Interface**

Powerful, inherent scripting capabilities, enable the further development of scenarios and missions with varying levels of complexity. Examples include setting up a firing range, enabling units to conceal weapons, scripting artillery/air strikes or reviving AI units. Customizing the VBS2 user interface or creating entirely new user interfaces can also be done through the ASI.

**Visitor 4: Terrain Importer**

Visitor 4 provides users an easy method to create their own environments by generating terrains imported from terrain formats such as GeoTIFF, Shapefile, DEM or DTED. Geo-specific terrains can be rapidly developed from these source data formats.
Benefits:

- **A flexible, networked training environment**
  Combat teams of infantry and armored elements can practice maneuvers with human-operated aircraft and artillery in support in the VBS2 virtual environment or by linking with other HLA/DIS compliant applications.

- **Collaboration**
  A VBS2 International User Group provides a forum for collaboration and support. Active members generally receive new VBS2 capabilities from BISim at no extra cost.

- **Value Added**
  VBS2 is a package of solutions. Extend the platform through VBS2Fusion, integrate with other HLA/DIS compliant programs and customize all aspects of VBS2 to meet your training requirements.

- **Return on investment**
  Customers realize an immediate ROI through the ability to rapidly simulate complex training exercises that would be too costly in real world conditions.

- **Flexible support options**
  Customers can choose from various support packages, participate in VBS2 training courses and commission Bohemia Interactive for development work, engine modification or hardware integration.

- **Protecting your investment**
  Customers are guaranteed that all new versions and updates contain application compatibility with earlier versions of scripts, models, and terrain.

Use Cases:

VBS2 is an out-of-the-box training solution capable of simulating a wide range of situations at the tactical level. The HLA/DIS gateway facilitates interoperability with other HLA compliant simulations, further expanding the range of training solutions.

Specific applications include:

- Mission rehearsal and/or AO familiarization
- Tactical training up to Combat Team level
- Combined Arms or Joint Training
- Convoy training (including integration of virtual reality technology)
- IED defeat
- Analysis of options (decision support)
- Fire support / forward air controller training
- Complimentary virtual environment for live and constructive simulation or crew procedural trainers
- Navigation
- Mission simulation (for example aviation elements practicing LZ procedures)
- Vehicle checkpoints and area control
- Helicopter loadmaster training
- Procedural training for UAV operators
- Cultural awareness training
- Visualization of weapon effects
- Weapon (or platform) familiarization or experimentation
- Training in urban environments (eg MOUT)

See the image for visual representations of use cases.

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