



## **VBS2 is interactive, highly realistic 3D simulation system intended for tactical training and exercising operation procedures**

VBS2 is a flexible, customizable and interoperable system, which offers a wide range of combat training scenarios using different battle configurations and environments. Among others it includes: mission simulations, fire control exercises, navigation, tactical exercises and training, combat analysis... VBS2 is widely used by armed forces in USA, Canada and some of the NATO members. It has a proven track record as a training solution, and in combination with traditional training enables more efficient and rational combat training. S&T Slovenia offers full support with consultation, installation, customization, use and maintenance of the VBS2 combat training system.

- Increased efficiency of combat training
  - Reduced costs of combat training
  - Increased level of task automation
  - Improved battlespace awareness
- before a mission**

## VBS2 Purpose

### Widely applicable combat training solution

VBS2 is a 3D, interactive combat training system, which through highly developed real virtuality 3D engine, graphics, modularity, flexible and customizable architecture, interoperability and networking enables a wide range of combat trainings:

- Mission rehearsal and familiarizing with the terrain
- Tactical trainings from Squad to Company levels
- Combined Arms and Joint Training
- Convoy training
- Options analysis (offence, defense)
- Support for decision-making
- Fire support/ FAC training
- Support for development and exercising the SOP or coordination of vehicle crews
- Navigation (day, night diverse weather conditions, seasons)
- Preparation for field exercise
- Precise monitoring of individuals and their decisions in larger groups (Squad, Company)

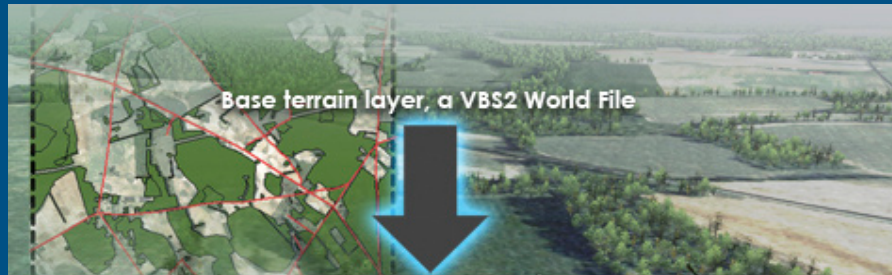


## VBS2 Graphics engine VTK

### Highly realistic 3D graphics and precise physics

3D graphics engine »Virtual Reality engine 2« is capable of rendering large virtual terrains of up to 100x100 km, populated with over a hundred thousand 3D objects such as buildings, vegetation, road infrastructure etc. It precisely simulates time, sunrise/sunset, accurate star field (stars correspond to geographical location and season) and time-lapsed weather. VBS2 simulates a variety of weapons, vehicles and other armed systems. The engine consistently simulates external ballistics (materials penetration, object and terrain deformations at detonations). Open architecture enables creating and adding customized infrastructure, vehicles, weapons, terrain and physics. Highly capable graphics engine can render high-fidelity terrain graphics, supports 3D sound and networking.

## VBS2 Structure



### Terrain Editor

Terrain Editor offers to users the option to generate own virtual areas. It supports importing the DTED and VMAP terrain data, satellite and air imagery, and auto-generation of vegetation, based on imported geographical data.



### Scenario Editor

Scenario Editor enables development of different training scenarios, ranging from simple animations to supplement studies, to complex missions, intended for testing and exercising the SOPs, or coordinating a specific task. A trainer can use editor during a field exercise and interactively adapt the course of training to help commanders develop their decision-making capabilities.



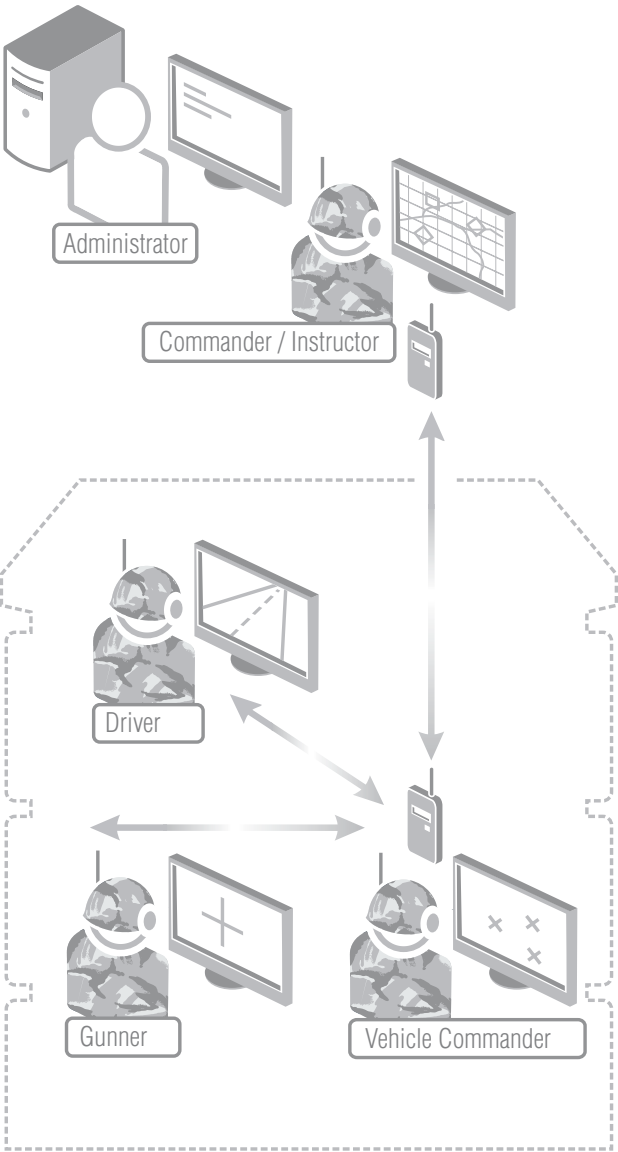
### Runtime Scenario

Runtime Scenario Trainer serves for running different combat training scenarios in diverse environments and battle configurations. The VBS2 network enables common unit training for units in remote home bases, joint training, and interoperability of the system enables connection with other simulation systems.



### After Action Review Module (AAR)

AAR module is one of the key tools, which enables learning through experience. This differentiates the VBS2 from first-person shooter games. The AAR module precisely records the course of the simulation and enables accurate, interactive recreation of events from different points of view, including recordings of voice communication in the radio network.

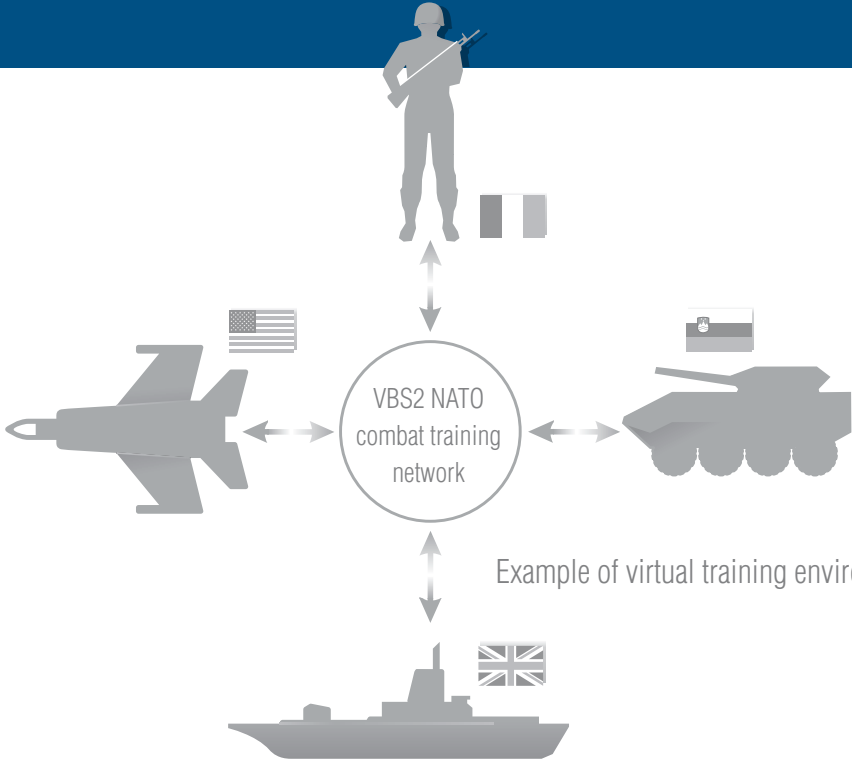


Example of virtual training environment: Armed vehicle

## VBS2 Examples of training environments

**Countless training combinations and environments**

VBS2 can be used or customized for numerous combat training scenarios in diverse environments and battle configurations, different software and hardware equipment, such as BMS, SitaWare, weapon systems and radio devices, virtual helmets, projectory systems for highly realistic fire control, etc. The training simulator can be used for common unit training in remote home bases and joint arms forces with option for connecting to NATO network.

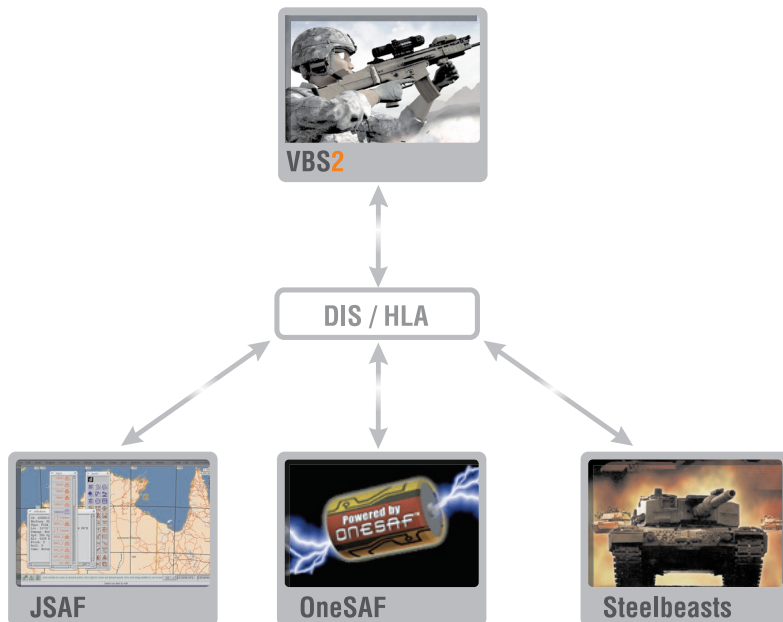


Example of virtual training environment: Joint forces of NATO

## VBS2 Interoperability

### High connectivity

VBS2 employs the DIS / HLA protocols to connect with other simulators such as “Joint Conflict and Tactical Simulation (JCATS)”, “One Semi-Automated (OneSAF)”, “Joint SIGINT Avionics Family (JSAF)”. The system sends and receives various input/output data (coordinates and unit orientation in the field, troop movement, message transfers, information on fire and detonations etc.), thus integrating the VBS2 into larger virtual combat training environment. With the DIS / HLA protocols it is possible to connect several VBS2 servers into network.



## VBS2 Efficiency in use

### Proven as efficient and economic training system

VBS2 simulator does not aim to replace the traditional form of combat training, but rather to supplement it. It has proven itself as an excellent teaching tool, which can shorten the time period required for training and improve success of training through right combination and utilization. It aids the logistics and cost-cutting, as the simulator reduces the need for expensive field training. This is backed up with the results of a Canadian study\*, where the army assessed the cost efficiency of the training simulator and the percentage of successfully performed tests in training course for Leopard 2 tank and Coyote reconnaissance vehicle crews.

#### VBS2: 1 day/ Field: 5.5 weeks

Fuel:	53.130,22 \$
Misc food:	29.094,28 \$
Field allowance:	31.012,80 \$
<b>Total cost:</b>	<b>113.107,30 \$</b>

#### VBS2: 2.5 weeks / Field: 3 weeks

Fuel:	29.756,35 \$
Misc food:	19.830,24 \$
Field allowance:	14.398,80 \$
<b>Total cost:</b>	<b>63.985,39 \$</b>

#### Total savings: 49.121,91 \$

	VBS2 1 day Field: 5.5 weeks	VBS2 1 day Field: 5.5 weeks	VBS2 2.5 weeks Field: 3 weeks
Performance on first test	0 %	30 %	67 %
Performance on second test	61 %	72 %	100 %
Final performance	72 %	83 %	100 %

\* Canadian Combat Training Centre (CTC)

## VBS2 Features

### VBS2 Desktop Trainer

The core of the VBS2 VTK, the Desktop Trainer, is a game-based, cutting-edge visualisation engine that supports full scale battlefield environments including individuals, ground/air/sea vehicles, animals, geospecific and geotypical environments, and much more.

### VBS2 Engine

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, the Desktop Trainer meets most modern simulation requirements.

### Scenario Editor

A well designed exercise is essential for effective training. Our Scenario Editor sets the standard for scenario creation: it is fast and easy to use with the capability of developing scenarios that simulate complex actions and events. It provides feature rich capabilities and a scripting sub-layer that can accomplish sophisticated missions.

### Content Libraries

Hundreds of units, weapons and vehicles have been modelled for the VBS series including USMC, ADF, US Army, NZDF, Incident Response, Eastern European and Middle Eastern representations.

### Additional content

Additionally, we provide a wide range of geotypical structures and vegetation that can be used to populate custom locations. Most of these assets have unique behaviours and features that simulate the real world equivalent, allowing immediate generation of environments and scenarios.



## VBS2 S&T Support and development

### Highly qualified technical team

S&T Slovenia offers full support with consultation, installation, customization, use and maintenance of the VBS2 combat training system, and support with integrating military hardware and software in various configurations of the combat training systems (parallel training in tactics and weapon systems), development and upgrade of the system according to specific requirements (modeling a specific terrain, military equipment, physics...). The company offers the option to set up a combat training simulator classroom or larger, networked combat training systems. They also lease their own VBS2 combat training course, fully configurable to meet customer requirements. The Defence Program Department is a team of highly trained experts in the fields of information technologies, telecommunications and military sciences (internationally trained staff - SAF, US Marines, US Army, practical experience with operations in Bosnia, Kosovo and Cyprus).

### S&T Slovenia d.d.

Leskoškova cesta 6

SI-1000 Ljubljana

Tel. +386 (0)1 5855 200

Fax +386 (0)1 5855 201

[info@snt.si](mailto:info@snt.si)

[www.snt.si](http://www.snt.si)

