

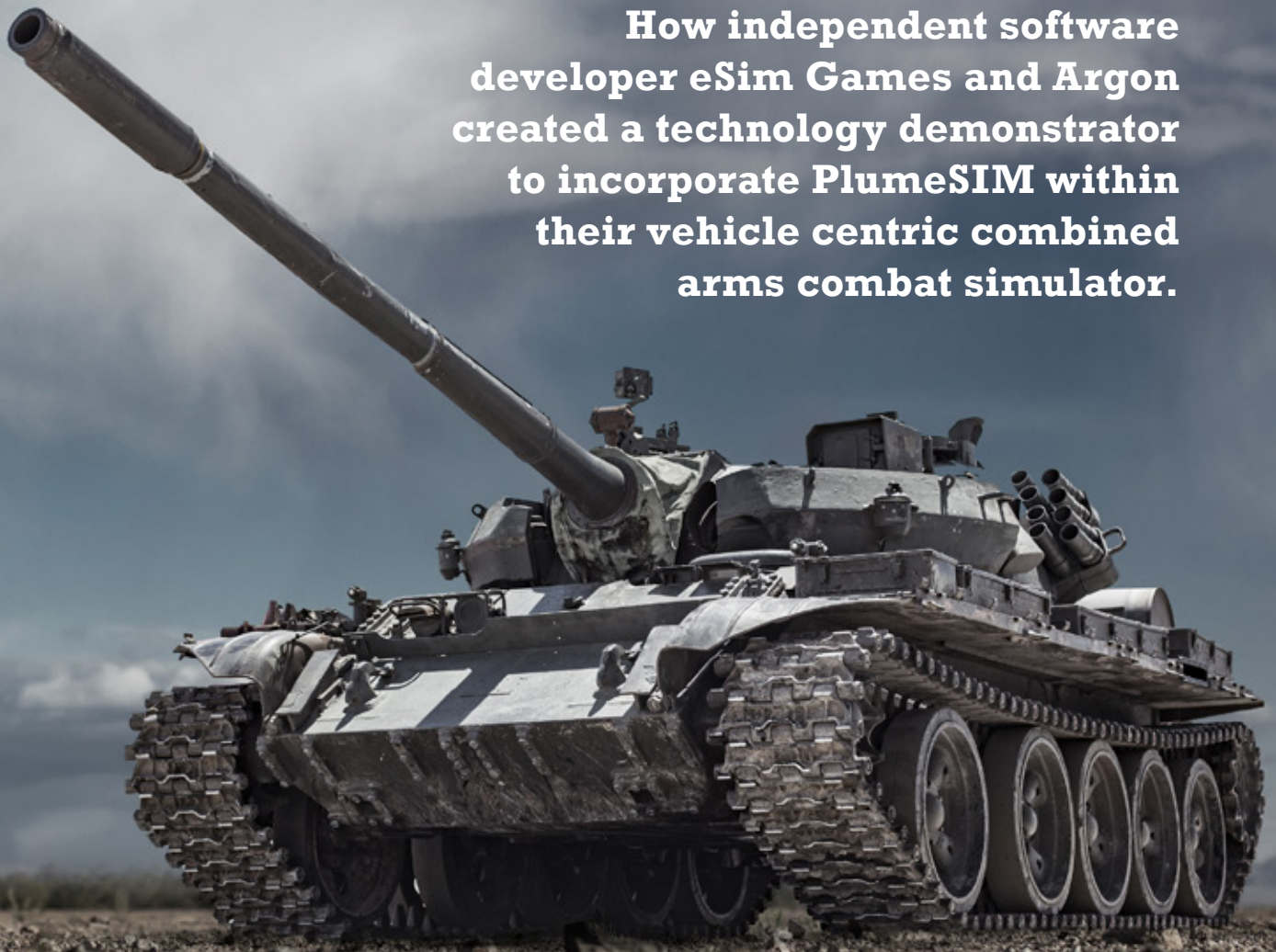
case study

ARGON™

World leaders in CBRN/  
HazMat training systems

# Steel Beasts Meets PlumeSIM

How independent software developer eSim Games and Argon created a technology demonstrator to incorporate PlumeSIM within their vehicle centric combined arms combat simulator.



## Introduction

**With the growing risk worldwide of chemical and radiological threat within both military and civilian settings, there is an increasing need for an engaging, high-quality and cost-effective means of incorporating support for CBRN and HazMat Hazards into existing training systems.**

In some cases, this CBRN Hazard capability can be achieved by standalone technology such as that provided by the wide-area, instrumented training system PlumeSIM.

In other cases it can be helpful for users to be able to simulate a scenario that replicates a combination of hazards that includes, but isn't necessarily limited to, specific CBRN threats.

In addition it can also be beneficial for users to be able to incorporate additional CBRN hazard capability into their own existing simulation system.

This was the exciting opportunity that was presented to CBRNe/HazMat training solutions provider Argon Electronics when it was approached by a customer of independent software developer eSim Games.

## About Steel Beasts Pro

eSim Games are the creators of the vehicle-centric combined arms combat simulation and crew procedure training tool Steel Beasts Pro.

The collaboration between Argon and eSim Games began when an existing Steel Beasts Pro user expressed a desire to incorporate Argon's CBRN simulation capability within exercises and to be able to see a concept demonstrator.

Steel Beasts Pro is currently used by the military in over 10 countries. It is a collective military training system that integrates with battlefield management systems, containerised crew simulators and real combat vehicles.

With Argon's assistance, the goal was to be able to incorporate a range of CBRN hazards, including chemical and radiological threats, into the existing Steel Beasts Pro environment.

Understanding the need, and with full awareness that it is not necessarily practical for individual organisations to develop such systems, Argon Electronics created the PlumeSIM API (Application Programme Interface.)

## Argon's PlumeSIM API

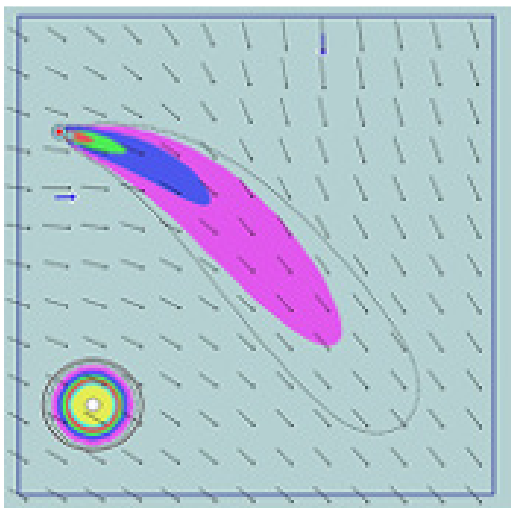
Argon's PlumeSIM API is a software component that enables the PlumeSIM training system to be interfaced to a third party, Live and Virtual simulation system and to import and display CBRN plumes and the associated threat data in real-time.

This added capability also means that trainees using Steel Beasts Pro can, with further development, recognise and respond to CBRN hazards, with all of the information presented in a compatible and seamless format within their own in-service simulation system.

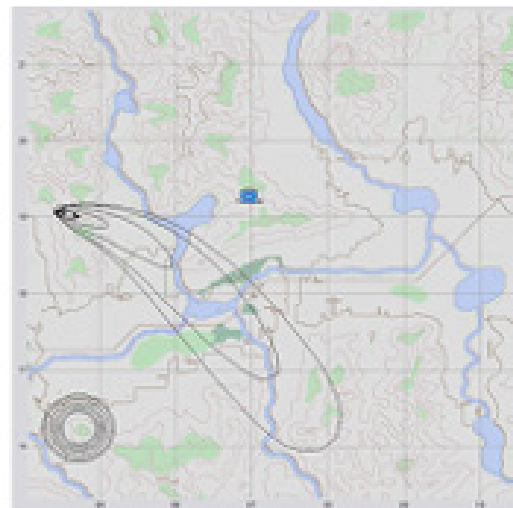
The PlumeSIM API interface is bidirectional, meaning there is the potential for the plumes to be able to respond to any specific meteorological condition that is applied within the Steel Beasts Pro simulation.

Similarly too, it is possible to determine a participant's current (and cumulative) exposure to the hazards, based upon their individual position and route.

That exposure can then be reported to Steel Beasts Pro which can apply a suitable Damaged/Disabled status and display an animated response within the simulation.



▲ Primary CWA plume and radiological Hot Spot generated by PlumeSIM



▲ CWA and radiological Hot Spot dispersion recreated in real time within Steel Beasts

## Feedback from eSim Games

Director of eSim Games, Nils Hinrichsen, explains:

*"We are excited to see this expansion of functionality. We have always been interested in cooperation with industry partners, and this looks like a perfect example where both partners and our customers will gain a lot through cooperation."*

*"The market is eager for a quality solution at an affordable price tag which exposes combat troops in their scenarios to incidents involving chemical and radiological threats. We have just demonstrated that we are ready to deliver such a solution."*

## Feedback from Argon

Argon has also used the PlumeSIM API as a core component in the development of a fully compliant High Level Architecture/Distributed Interactive Simulator (HLA/DIS) interface, which is a standard for communication between simulation systems hosted on multiple platforms.

Speaking about the project, Argon founder Steven Pike says:

*"This was an interesting project and once again demonstrated the flexibility of PlumeSIM and our ability to cooperate with third party vendors to provide customers with an effective training capability."*

*"This integration will enable further CBRN/HazMat training capabilities to be developed for Steel Beasts in both the virtual reality and by interfacing physical Argon's simulator and augmented reality environment."*

## About eSim Games

eSim Games LLC is an independent software developer specialising in vehicle-based tactical simulations. Their primary product is Steel Beasts Professional which utilizes gaming technology to create a high-fidelity, low-cost solution that is suitable for a wide range of applications. eSim Games is headquartered in Mountain View, California, with an additional office located in Hannover, Germany.

## About Argon Electronics

Established in 1987, Argon Electronics is recognized as a world leader in the development and manufacture of hazardous material detector simulators for use in the fields of military chemical, biological, radiological and nuclear (CBRN) defence. Argon simulation systems are designed and developed using a proprietary common technology platform providing an integrated approach to instrumented training.

**“There is an increasing need for an engaging, high-quality and cost-effective means of incorporating support for CBRN and HazMat Hazards into existing training systems.”**

