

## ***Desktop Trainer Concept for Armored Fighting Vehicle Crews***

Since 2002 eSim Games has expanded its original armor simulation game *Steel Beasts* into a full-featured training solution which is currently employed by more than a dozen armies on four continents. *Steel Beasts Professional* is a PC based virtual and constructive simulation, suited for the training and education of crews of armored fighting vehicles in a wide spectrum of everyday training situations.



A company-scale classroom with Desktop Trainer Stations

It covers basic and advanced gunnery training and crew procedure training for currently 75 different armored combat and combat support systems. All this is being presented in a tactical context of up to battalion level task force strength. This is provided by a powerful yet easy to manage constructive simulation. It has, in total, close to 500 different semi-automated at the mission designer's disposal for realistic medium and high intensity combat scenarios involving armored and mechanized forces.



Desktop Trainer Station with Control Handle Replica, Battlefield Management System

Typical Desktop Trainer Stations will consist of a commercial off-the-shelf gaming PC, a 3<sup>rd</sup> party control handle replica, and one or more instrument replicas in the approximate location of the actual vehicle interior. These may be repurposed original spare parts, replicase with articulated switches, or simply touchscreens. Some stations are also equipped with battlefield management system devices, providing

an opportunity to practice using these systems for reporting and situation updates in a tactical context.

Steel Beasts Professional has also been successfully integrated into new or refurbished crew trainer cabins for more than half a dozen combat systems.

In close cooperation with its customers eSim Games has developed a solution where a microcontroller is programmed to transmit the system state of the simulator cabin to *Steel Beasts Pro* and to receive sta-



Simulator Cabin, Leopard 2A5

-tus updates from the simulated fire control system to activate control lights or to cue other system events in the hardware. This has been a solid basis for such projects in the past, and in current projects.

Each simulation session – be it in solitaire training mode, or as a collective training in a network environment – starts with a planning phase where the crews can reconnoiter the virtual environment prior to executing their mission, and to develop a battle plan where appropriate.

The planning phase is then followed by an execution phase where the fire, maneuver, and communication with other virtual units are being practiced. This is a challenge to all participants – for the gunners to perform target identification, shooting, shot observation and correction, and of course the proper communication drills within the crew. It challenges the drivers to bring the vehicle in tactically sound movement to the desired location, and to help the turret crew with observation. It is a challenge for the vehicle commanders to coordinate the actions of the vehicle crew, and to maintain communications with other units and their chain of command. Finally, it can be a challenge for troop leaders at platoon, company, and battalion level to orchestrate the maneuver of different combat and combat support elements in order to accomplish the mission given in the mission briefing and operations order.

Each exercise ends with the After-Action Review (AAR). The AAR starts with presenting the instructor with a pre-screening of gunnery performance which can be filtered and reviewed for each student to identify key elements

like laser range finder usage, aim at the moment of weapon release, impact location analysis, and eventually the procedures to correct the aim. Once that the pre-screening is complete the AAR for the whole audience can start (or be saved for later). Eventual comments on the pre-screened events can now be seen as well as all tactical events and the flow of forces in the map view as well as the virtual environment.

Finally, *Steel Beasts Professional* creates a tabular overview over the logistical footprint of an exercise as well as a complete and detailed event list which can be accessed with a normal web browser or a spreadsheet calculation which allows the customer to pull the relevant information into a training database for further statistical analysis.

As a desktop trainer *Steel Beasts Professional* offers a wide range of functionality at an unprecedented price point of under 15,000.- EUR per workplace, including PC hardware and gunnery handle replica. This enables to use the solution as a supplement to traditional simulator training for better crew preparation prior to simulator rotations, and better retainment of acquired know-how and skills after simulator training, or even during deployment where patrol and guard duty might otherwise result in a deterioration of skills in medium and high intensity combined arms operations.

### **About eSim Games**

eSim Games is an independent software developer from Mountain View, California. After debuting the consumer market with the armor simulation *Steel Beasts* in 2000, a strategic pivot was made to cater to the market for military training and simulation by introducing *Steel Beasts Professional*.

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