

Collaborative Forest Fire Fighting Training Environment

Overview

The Civil Safety and Defense Department of the French Ministry of Internal Affairs is involved in safeguarding the population from risks that include everyday accidents, global disasters, forest fires and the protection of property from natural disasters like flooding.

It has different schools that specialize in training its members to combat a range of emergencies such as forest and urban fires, chemical leaks and flooding. Many of the trainees in these schools come from the 240,000 fire fighters in France, 80% of whom are volunteers, and who share their fire fighting responsibilities with full time jobs and careers.



The Challenge

The traditional way to train forest fire fighters is with outdoor training which is considered to be very expensive (as many vehicles and airplanes are needed) and also time consuming. In the past the Civil Safety and Defense Department has used a Flight Simulator as a tool for plane guidance training for forest fire fighting. But this method still involved too much paper-based studying and in-field simulation. They needed a more effective tool to simulate real fire fighting actions to train their personnel effectively while also keeping expenses low.



The Solution

The tools developed by ParallelGraphics were used by the EMI Informatiques company to create a complete collaborative 3D environment for forest fire fighting training. A training session involves around 20 students, each playing a role, with the training covering aspects ranging from ground navigation and map reading to planning and tactics.

All users can communicate with each other and see the fire, available transportation and the scenario unfolding (such as water planes bombing the fire) in a 3D simulation. Session managers are able to control certain parameters such as the growth of the fire, the time of day, weather conditions and many others.

Such a major shift in the training approach from traditional methods to computer 3D simulation has resulted in rapid returns for the school. The benefits include less outdoor training, more thorough training through simulations, and the ability to offer unusual experiences and scenarios (for example, training participants can take a passenger seat in a plane during the virtual operation and experience what a pilot sees in a real fire), in addition to lower training costs.



The Technology

EMI Informatiques used ParallelGraphics' Cortona SDK to integrate the Cortona 3D engine into a Microsoft Visual Basic® program that served as the core tool for building the whole application. VrmIPad was used as a 3D design tool and various third party applications were employed for terrain generation, networking and flight dynamics calculation.

The software is typically installed on 20 computers that are split into five different groups: session management, tactical displays, ground vehicles, airborne vehicles and various specific interfaces.



Application

This solution is another good example of using Cortona VRML Client and Cortona SDK in training environments. Several different technologies have been combined to create a life-like interactive simulation of real events. The flexibility of Cortona SDK is that it can be used in different programming environments and allows fully customized applications to be built that can be tailored to any needs - from products presentations to training simulations and complex Virtual Manuals. By using Cortona SDK companies can enjoy all the benefits of 3D graphics with their favorite software.

Links

Cortona SDK homepage:

<http://www.parallelgraphics.com/products/sdk>

EMI Informatiques:

<http://www.geovrml.com>

Detailed description of the environment with screenshots:

<http://geovrml.com/eng/CIFSC/index.html>

The French Ministry of Internal Affairs:

<http://www.interieur.gouv.fr>



About ParallelGraphics

ParallelGraphics is a world leader in the provision of Web3D graphics solutions with a proven track record of innovation and development over the last decade. The company's technologies and tools have been used widely in providing online training solutions, remote user support, virtual manuals for technical maintenance, and interactive applications for design and modeling. The Company's list of clients includes Boeing, NASA, Ford, MAN Roland, Siemens and Samsung. ParallelGraphics is headquartered in Dublin, Ireland with offices in New York and an R&D center in Moscow.

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