Synergism in Simulation

Description

IÃ¢â‚¬â„¢m a computer game fan. IÃ¢â‚¬â„¢ve played plenty of flight simulators and first person shooters over a few decades. The more realistic the simulation, the happier I am. I like as real as it can get.

Now, a Ã¢â‚¬Å“your tax dollars at work story.Ã¢â‚¬Â• In the Mid-90Ã¢â‚¬â„¢s I was sent to a command where we were maintaining various computer programs, mostly all for Navy combatant (Crusiers, destroyers and frigates). We also had some tasking for development of new programs, but that wasnÃ¢â‚¬â„¢t the main mission of the command. We had 60 military and 300 civil servants working there.

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One of the projects that was in development, different from the vast array of ones being maintained was Battle Force Tactical Trainer (BFTT). The goal of this program was to allow ships, planes, submarines and shore bases to run realistic training scenarios. It was a unique project for its time, as the program manager had a the foresight to find out what other developed, or in development, programs were around that contained parts that could be woven together in order to save funds by not re-inventing the wheel, as it were. That was unusual at the time, as program managers for just about anything else being developed, jealously guarded their developments, and their funds, being afraid that they would have to admit a weakness in their organization, if they couldnÃ¢â‚¬â„¢t do it themselves. IÃ¢â‚¬â„¢m also convinced that they were scared that if they showed some of the working details, someone else may tell them (or worse yet show them) a better way, which would make them not look all knowledgeable.

Anyhow, BFTT was an ambitious project, in funding and schedule, and I watched, at close range, some incredible innovation to make it happen. The project has been absorbed at the joint level, so all services can share in the technology development, and subsequently, save lots of money (and thatÃ¢â‚¬â„¢s a good thing that has been done for us taxpayers, in the name of reason). The BFTT was essentially a central control system, that would interface with simulators and real equipment to present a coherent picture to operators, so their reactions would be properly developed. In this scheme, units could be connected via the Defense Simulation Internet (DSI) and live radio signals, while BFTT managed the responses of the many training modules, imbedded in various systems.

The way information was conveyed between units was via data Ã¢â‚¬Å“packetsÃ¢â‚¬Â• which were in the Distributed Information System (DIS) format. The Ã¢â‚¬Å“packetÃ¢â‚¬Â• would define an entity in the battle space, to include the characteristics to allow the training systems portray it properly to the operators. An entity could be a .50 caliber machine gun bullet, a Nimitz Class Aircraft Carrier, or a SCUD missile. The idea was to put sufficient information in a format that a sensor display would show the operator what he may see if the entity would have been real.

Pretty innovative, and complex engineering went into this, all in the name of creating a virtual reality to train war fighters. Somehow, and IÃ¢â‚¬â„¢m not sure how the connection came to be, the console game developers caught wind of the work the Department of Defense was doing in this Ã¢â‚¬Å“virtual

realityÃ¢â‚¬Â• modeling. Since they were also trying to replicate the real world in their game consoles and computer games, they ended up at the DIS protocol meetings and became active players in helping design the standards for the DIS data packets.

This interaction between game developers and the military training simulating community has helped to provide us with the richness of the games we see in the Xbox, Play Stations and PCs today. The military training is superior as a result as well, resulting in tremendous reduction in training costs, and an increase in realism.

To take the synergism a bit further, after I completed the tour with the software development command, I reported to the Navy Operational Test Force, where the mission was to design and run test programs to make sure the top level procurement programs had in fact created systems that did what the military contracted them to do. As systems were becoming more complex, and budgets getting tighter, I walked into the early stages of the development of the use of modeling and simulation to verify equipment met the design specifications. The prior work of the BFTT and associated training programs became a building block to leverage from to help move more testing from the real world ranges to the internals of computers, at a quality to assure systems worked.

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The next time you load up your simulation games, know some far sighted military and civil servants helped put your tax dollars to use to make your games really rock.

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