I/ITSEC SHOWDAILY

Simulation Technology Can Help Improve Human Performance

The impact of technology on human performance, rather than the technology itself, should take center stage at I/ITSEC 2003, said Capt. Andy Mohler, commander of the Naval Air Systems Command Orlando, Training Systems Division.

The emphasis this year is different from others, Mohler told the Show Daily. "I thought that I/ITSEC was overly focused on technology, and not focused enough on the human beings who are the users of the technology."

The theme of the symposium, "25 Years of Enhancing War Fighter Performance through Advanced Learning Technologies," was developed together with the Marine Corps, said Mohler.

Capt. Andy Mohler

Oftentimes, themes do not make a difference in a show such as I/ITSEC, "but in this case the theme has had a big impact not only on the papers that are going to be presented and the tutorials, but also on the way that people will brand their displays," Mohler said.

The services and industry should not just focus on technology and "how we hook this stuff up," but they should also look at simulation as an enabler of "war fighting performance," he said.

Training through simulation technology should help measure how well an individual does a task based on his or her training, or how well groups function together, he noted.

Mohler said that he expects industry to align with this year's theme. "They will choose to brand their products or highlight certain aspects of their products to show what the customer cares about," he said. "I think if they are smart they will do that."

Industry should be emphasizing the "science of learning approach" to explain why they chose certain aspects. They also need to point to a potential market, instead of displaying "some fancy technology that looks good but does not really apply," said Mohler.

Industry representatives should expect questions from the customers about what the gains of a certain technology would be in terms of human performance. "If they can't answer or haven't put a lot of thought into it, I would say they will have a tough time selling a product," Mohler said. "That is not just because of I/ITSEC. That it is one of the reasons I chose the theme. That happens all across the Defense Department—the thinking that you have to be able to eventually measure the output of human performance."

On the government side, Mohler said the displays focus on interoperability.

"In the past, the Defense Department booth [was] in the center of the I/ITSEC display" and each service then had separate displays with "really no commonality and tie between them," said Mohler. "This year, for the first time, we are going to have a collaborative effort, again focused around the theme to say 'let's not just bring technology, because we can do it.'"

The Navy organizers are planning a joint tactical war-fighting scenario and will try to demonstrate the power of the technologies which would enable that.

At the forefront are systems that can interconnect through High Level Architecture or Distributed Interactive Simulation interfaces, "because we do not care about stand-alone simulators," said Mohler. "What we care about are simulators that can connect to other kinds of simulators and simulations."

Simulation should be an enabler of war fighting performance, according to Capt. Andy Mohler, the head of Naval Air Systems Commmand, Orlando, Training Systems Division. Here, an aviation warfare systems operator loads an M-60 machine gun during an exercise in the Atlantic Ocean. **(U.S. Navy photo by Photographer's Mate Airman Joan Kretschmer)**

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Mohler supports the idea of bringing a mix of virtual reality devices and part-task trainers as opposed to large scale, full-fidelity simulators. He stresses the need for portable and deployable systems.

I/ITSEC is going to be theme- and vignette-driven, said Mohler. A special panel will address not only technologies, but also the "science of learning goals that we want to demonstrate," he said.

The goal is to try to showcase the potential simulations that can achieve those advantages, and give people a glimpse "of what we could do," said Mohler. "We will be running these in 20 minute snap shots and asking the people to use their imagination a little bit."**—Roxana Tiron**

Cover image courtesy of Evans and Sutherland.

Joint National Training Capability:
First Event Begins in January '04

Upcoming military exercises organized under the Joint National Training Capability will emphasize war-fighting areas that commanders have identified as shortfalls in today's force.

The focal training areas are called "joint tactical tasks," and will seek to fill gaps in areas such as joint combat search and rescue, combat identification and joint air assault operation. The list, developed by the U.S. Joint Forces Command, so far includes 29 joint tactical tasks (see table).

JFCOM compiled the list based on requests from regional military commanders. U.S. forces are well trained at the operational level, commanders stress, but need to be better prepared for inter-service operations at the tactical level.

Under the $1.3 billion Joint National Training Capability program, the goal is to close the "gaps and seams" between the services in tactical operations, said Paul W. Mayberry, deputy undersecretary of defense for readiness.

A series of four JNTC events, beginning in

Paul W. Mayberry

Joint Tactical Tasks

- Tactical Airlift
- Sea and Air Deployment Operations
- Passage of Lines
- Air Assault Operations
- Amphibious Assault and Raid Operations
- Counterdrug Operations
- Countermine Operations
- Develop Intelligence
- Employ Firepower
- Close Air Support
- Interdiction Operations
- Joint Suppression of Enemy Air Defenses
- Attacks Using Nonlethal Means
- Air and Missile Defense Operations
- Coordinate Maneuver and Integrate Firepower
- Air Refueling
- Perform Logistics and Combat Service Support
- Distribute Supplies and Provide Transport Services
- Joint Logistics Over-The-Shore Operations
- Exercise Command and Control
- Establish, Operate and Maintain Baseline
- Information Exchange
- Conduct Force Link-Up
- Employ Tactical Information Operations
- Protect the Force
- Conduct Joint Personnel Recovery
- Conduct Rear Area Security
- Noncombatant Evacuation
- Combat Identification
- Operate in a Chemical-Biological Environment

January 2004, will address one or more of the 29 areas.

The January event will take place at the Western Range Complex, which includes the Army's National Training Center, the Marine Corps' 29 Palms range, Nellis Air Force Base and other sites.

The exercise will focus on joint close-air support, combat identification and information exchange.

It will be a combination of live exercises (the regular service rotations) and simulations, used to "wrap around" the events and provide "joint context," Mayberry said in an interview. "The tactical level is live, but there is also a constructive piece and an operational piece."

In the past, the joint context was provided by assigned exercise staff, who would feed information and simulate a joint cell. That will change with JNTC, Mayberry said. "What we want to do is have the planning processes taken into account, from tactical level up to requesting air services and servicing targets.

"This type of interaction and coordination, passage of intelligence, must be worked, to give the appropriate joint context to the exercises that are generally service-specific."

Traditionally, commanders in exercises rely on "yellow canaries," or yellow pieces of paper requesting information. The exercise controllers would take them back and forth. "In the real world, it doesn't work that way. You don't always get a yellow canary response," said Mayberry. For that reason, information exchange is one of the priorities of JNTC.

JNTC events are not intended to increase the training workload, but rather to enhance current exercises, he said. "We are trying to make the training more realistic. … The services want to train like what happens in the theater. Those are things that have not been routinely and consistently done in the past."

The simulations expected to be part of JNTC will include the Navy's battle force tactical trainer (which allows surface combatants to stimulate their sensors), an AWACS simulator out of Kirtland Air Force Base, N.M., and special operations aircraft simulations out of Hurlburt Field, Fla.

The expected "initial operational capability" for JNTC will be in October 2004. At that time, said Mayberry, "we will have demonstrated that JFCOM will have certified that the types of training we are doing are appropriate and responsive to the needs of the combatant commanders."

In the long term, "once we are able to provide an appropriate level of joint context, JFCOM will be in the role of accrediting and certifying these events," he said. "That is when we will have established an IOC."

JNTC also will grow in scope, Mayberry said. "We must bring our coalition allies … and other government agencies [such as] CIA, Justice, Commerce." The economic and diplomatic effects, he said, have to be reflected in training.

Eventually, "we have to capture a greater, enhanced definition of a joint training capability. It must be global. … We have forces deployed all over the world. We are going to be able to export this joint training capability to Korea, Europe, wherever our forces may be."**—Sandra I. Erwin**