

Lockheed Martin And British Army Unveil The World's Most Sophisticated Simulation System

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The world's largest and most sophisticated simulation system was unveiled to the media today by UK Minister for the Armed Forces, Adam Ingram.

The Combined Arms Tactical Trainer (CATT), designed and built by Lockheed Martin, will revolutionize armored battlegroup warfare simulation. It consists of a highly advanced, networked suite of nearly 170 combat vehicle simulators -- covering an area equivalent in size to three soccer fields -- in which 700 troops and commanders or more will be able to hone their battle skills prior to undertaking live training in the field. The CATT is the only simulation system capable of networking this number of devices for a single training activity. While other networked systems exist, none is capable of training on such a grand scale.

The simulator, worth 250 million pounds sterling, is located at two facilities in purpose-built simulator halls -- one in Warminster, England; the other in Sennelager, Germany. The CATT simulators faithfully replicate the interiors of UK armored vehicles such as Challenger II main battle tanks, Warrior Infantry Fighting Vehicles and Scimitar armored reconnaissance vehicles. Soldiers can train against other soldiers in simulators or they can engage computer-generated forces. Following an exercise, the entire battle can be replayed in a lecture theatre for post-exercise analysis and assessment for After Action Review (AAR).

Adam Ingram, Minister for the Armed Forces, said: "This state-of-the-art simulator network provides an unprecedented level of reality -- soldiers say the only thing missing is the smell of cordite. While it is no substitute for exercises in the field, CATT ensures that our forces go into live training better prepared.

"And with CATT, the Army can train under any conditions almost anywhere in the world at the flick of a switch -- without environmental impact on training sites or the cost of moving men and equipment over long distances."

Graham McIntyre, Managing Director of Lockheed Martin UK -- Information Systems, said: "CATT has been a very successful program and we are very proud to deliver this state-of-the-art system to the British Army."

Realism is the key to CATT's success and it gives the British Army the ability to train to levels previously unachievable. The interiors of the vehicles are replicated in detail, all interconnected by a Wide Area Network linking the two sites together to create a single virtual world, where the actual players are in fact hundreds of miles apart. The terrain database itself accurately replicates an area of 35,000 square kilometers, with areas such as Salisbury Plain, Northern Europe and a generic desert location being reproduced. The system generates a level of fidelity that enables trainees and Commanders to use real world topographical maps and intelligence data in mission rehearsal.

Battlegroup training is becoming increasingly more difficult to plan and manage. Bringing together many hundreds of vehicles and people for field exercises requires months of careful planning, great expanses of real estate and enormous cost. With CATT, exercise planners and commanders need not worry about environmental pressures, manpower demands or even requests for costly external assets and, of course, the system enables repeat training to perfect skills and tactics.

Rick Perez, Lockheed Martin's CATT project director, added: "The CATT synthetic environment puts a premium on reality: engines overheat if left idling too long; repairs are needed if vehicles are damaged, and supplies have to be brought up if the battlegroup is to be kept fighting. In addition, infantry commanders can disembark from their vehicle simulators and climb into an infantry simulator to continue the battle on foot -- exactly as they would do in a live situation."

The standards of testing are incredibly demanding with some 5000 individual requirements needing

to be demonstrated. Overall the trials program has included six months of rigorous testing over a 14-month development period, which equates to 44,000 man-days of evaluation -- an unprecedented amount.

CATT will allow many other simulators to be integrated, thus creating a complete three-dimensional virtual battlespace. Other synthetic training systems, which might be linked to it in future, include: Medium Support Helicopter; Hawk Synthetic Training; Close Air Defence Detachment Engagement Trainer and the Apache Attack Helicopter trainer.

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