

## SCALABLE Releases New Cyber Training System

*– Network Defense Trainer (NDT) is a live-virtual-constructive environment that seamlessly integrates physical/kinetic training systems with a virtual cyber range for effective mission planning and rehearsal –*

**Culver City, CA** (30 June 2014) -- SCALABLE Network Technologies, Inc. ([SCALABLE](#)), the leader in network virtualization technology for planning, testing and training, today announced the release of Network Defense Trainer (NDT) cyber training system. NDT integrates realistic cyber effects into physical/kinetic mission planning and mission rehearsal exercises.

- Trainees learn to effectively execute their roles in a mission despite being under various types of cyber-attacks
- Network engineers and operations planners can investigate different network configurations and functional procedures for optimizing mission objectives
- Training exercises can include both wired and wireless elements, such as radios, satellites, sensors and mobile data devices, and accurately represents vulnerabilities in the network transport fabric as well as the servers, applications and end-points

Network Defense Trainer is a live-virtual-constructive (LVC) cyber training system. The US military has been transitioning to LVC integrated architectures over the last several years for all of its operational training programs. The release of Network Defense Trainer marks the first time that cyber training is available in this manner, offering the opportunity to create a single training environment that encapsulates the land, sea, air and space, and cyber domains.

“Both military and commercial environments have used simulation-based training systems for many years with great success, due their inherent flexibility and cost-effectiveness,” stated Dr. Rajive Bagrodia, SCALABLE founder and CTO. “More recently, there have been a number of major initiatives to deploy sophisticated cyber ranges to teach ‘cyber warriors’ about the principles and mechanics of cyber-attacks and cyber defense. Our new cyber training system integrates the two disciplines for the first time. Whatever the primary training objectives may be in a training simulator, trainees can now also experience realistic cyber effects as part of that process. This adds an important new dimension of realism and enables trainees to gain vital skills.”

One of the first users of Network Defense Trainer is a major global defense contractor. Their requirement was to add high fidelity cyber effects to a number of existing combat training systems in order to effectively gauge the impact on situational awareness. Trainees are evaluated on their ability to recognize when they are under various

forms of cyber-attack and to successfully work around the issues and complete their objectives. The results of a set of exercises are then analyzed to determine if changes to standard operating procedures are warranted.

Another of the NDT field trial sites and now a production environment is the University of Delaware in Newark. “We are currently building a series of exercises in NDT to support an undergraduate class entitled ‘Simulation-based Cybersecurity’ that will be offered this fall,” said Professor Chien-Chung Shen of the Department of Computer and Information Sciences at the University of Delaware. “Students will be able to experience in a practical manner the actual speed and impact of the various types of cyber-attacks that they first learn during lectures. By the end of the semester we will have groups of students team up to play out different scenarios as either attackers or defenders, and we will use the NDT After Action Review functionality to analyze the effectiveness of different cybersecurity strategies that the students choose to leverage.”

### **Network Defense Trainer Highlights**

- Cyber effects can be integrated into traditional kinetic training environments such as [VT MAK VR-Forces](#) and [Presagis STAGE](#) by federating simulation systems via standard HLA and DIS protocols
- Training scenarios can include complex mobility of wireless equipment
- Virtual network models can scale to thousands of nodes, and the wireless elements can be augmented with accurate representations of various propagation effects such as path loss, weather impact, terrain interactions, and urban density signal disruption
- Virtual host models, placed as nodes at appropriate locations in the overall network model, can be constructed to replicate a wide range of host vulnerabilities and corresponding exploitation consequences
- Live network equipment, radios, mobile devices, hosts and virtual machines (VMs) running applications, and other types of physical devices can be integrated with the virtual network models via a system-in-the-loop network emulation interface
- Screen shots and keyboard/mouse clicks are captured from every trainee system, and are available as both real-time “over the shoulder” displays for the Exercise Controllers and the basis for a customizable After Action Review (AAR) performance evaluation process
- Scenarios can have pre-defined cyber-attacks occur at specific points, and the Exercise Controller and the red-force participants can launch ad hoc attacks
- The underlying network virtualization technology is based on 14 years of development for high fidelity mission-critical network design & analysis tools

### **Availability**

NDT is available now directly from SCALABLE and via authorized reseller and systems integrator partners around the world. NDT is offered as either a one-time purchase of a perpetual license, plus a yearly software maintenance

and support fee, or as an annual subscription. Professional services for system installation, implementation, user interface and workflow customization, and curriculum development are available separately.

For more information on SCALABLE solutions, contact the company at [info@scalable-networks.com](mailto:info@scalable-networks.com) or call +1.424.603.6361.

#### **About SCALABLE Network Technologies**

Based in Culver City, California, SCALABLE provides network design and analysis tools and cyber training systems that enable customers to develop, test and deploy large, sophisticated enterprise and wireless networks and new communications equipment, and train personnel on cyber defense.

SCALABLE also provides specialized software solutions and engineering support services to major aerospace and defense contractors, the US Department of Defense, mobile network operators, research agencies and universities around the world.

More information on the company is available at [scalable-networks.com](http://scalable-networks.com).

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