Lockheed Martin Develops Tool to Maximize Overall Human-System Performance During Critical Tasks

September 18, 2008

CHERRY HILL, N.J., Sept. 18 /PRNewswire/ -- Kirk had Spock. The Lone Ranger had Tonto. And Holmes had Watson. Now you have SMART, the software sidekick that always has your back.

Developed by Lockheed Martin (NYSE: LMT) Advanced Technology Laboratories (ATL), SMART is system software that uses cognitive neuroscience to maximize overall human-system performance on multiple, stressful, complex tasks, because it senses when you're overloaded, distracted, tired, and/or inattentive.

SMART monitors your cognitive activity during tasking and identifies times when you may perform sub-optimally. It then lets developers implement strategies, processes, or designs to avoid or mitigate poor performance. These could include relieving an informational overload by delegating tasks to a peer, presenting vital new information in multiple modalities - audio and visual alerting - when sensors indicate boredom/drowsiness, or collecting relevant information into an easy-to-understand summary panel to support rapid, time-sensitive decision-making.

SMART non-invasively measures electrical activity in the brain with other physiological recordings to monitor cognitive activity in real-time. Previous methods of assessing cognitive workload were subjective and/or intrusive and produced infrequent measurements. SMART provides second-by-second objective, application-independent measures of mental state, including cognitive workload without interrupting performance.

"Our technology can help develop revolutionary human-computer interfaces, dramatically improve human performance, and help reduce performance errors," said Polly Tremoulet, ATL principal investigator. "One can use SMART on many civilian or military applications where an operator's ability to multi-task effectively is essential for the safe operation of critical components or systems, like air traffic control, traffic management, and power management."

For example, human factors engineers may need to test an alternate design of a human-computer interface for an advanced fighter jet. Among other things, SMART could provide views of multiple, real-time streams of sensor data as the pilot interacts with the interface. It can provide guidance to improve existing interfaces by comparing the pilot's mental workload when performing the same tasks with new versus baseline interface designs.

SMART follows from multi-year development in augmented cognition that resulted from several programs funded by the Defense Advanced Research Projects Agency and Office of Naval Research - the last of which was Improving Warfighter Information Intake Under Stress in 2006.

ATL is looking to use SMART to improve the effectiveness of training simulations by customizing them to each student based on their current cognitive state.

Headquartered in Bethesda, MD, Lockheed Martin is a global security company that employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2007 sales of $41.9 billion

For additional information on Lockheed Martin Corporation, visit our website: www.lockheedmartin.com

```
SOURCE  Lockheed Martin
    -0-                          09/18/2008
    /CONTACT: Stephen P. O'Neill, +1-856-792-9815, soneill@atl.lmco.com/
    /Company News On-Call: http://www.prnewswire.com/gh/cnoc/comp/534163.html/
    /Web site:  http://www.lockheedmartin.com /
    (LMT)

CO:  Lockheed Martin
ST:  New Jersey
IN:  ARO STW CPR
SU:  PDT

MF-SP
-- NETH011 --
1601 09/18/2008 09:00 EDT http://www.prnewswire.com
```