



DEFENSE TECHNOLOGY MONITOR

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April 7, 2016 **Richard M. Harrison, Paige Rotunda**

Related Categories: Islamic Extremism; Terrorism; North America

PENTAGON EYES NEXT GENERATION WEAPONS

The Pentagon is serious about the future of warfare, and is demonstrating this priority by putting its money where its mouth is. In addition to seeking an extra \$71 billion in research and development for its 2017 budget, the Defense Department has released information about new weapon systems being created in its Strategic Capabilities Office - capability geared toward escalation dominance in a complex, technologically sophisticated war fighting environment. These include swarmbots (large fleets of tiny autonomous planes/boats to attack enemies), smart bombs (bombs using cellphone-like cameras to self-navigate to targets), mini railguns (guns that fire shells at hypersonic speed), and arsenal planes (large planes serving as launch pads for weapons once air defenses are defeated). (International Business Times, February 4, 2016)

COMBATTING TERRORISTS ON SOCIAL MEDIA

Terrorist groups have become increasingly tech-savvy in recent years, and now broadly utilize social media platforms as both recruitment and propaganda tools. However, governments and the private sector are beginning to push back. According to a new research study carried out by terrorism experts J.M. Berger and Heather Perez for George Washington University's Program on Extremism, the suspension of pro-jihadi accounts on social media platform Twitter has been surprisingly effective in curtailing the scope and reach of their message. The researchers report that they "found suspensions typically had a very significant detrimental effect on these repeat offenders, shrinking both the size of their networks and the pace of their activity." Since mid-2015, Twitter has reportedly suspended 125,000 accounts for terrorist-related activity. (The Atlantic, February 19, 2016)

A DIFFERENT KIND OF COMPUTER LEARNING

Flight school (and perhaps other complex tasks) may soon become a little easier to master. In a study conducted by HRL Information System Sciences Laboratory, the organization outfitted novice pilots with rubber caps on their heads for transcranial stimulation. Essentially, the team used recorded brainwaves from seasoned military and commercial pilots to hasten the learning process for the students by sending the brainwaves directly into their skulls. The prospective pilots who received the stimulation performed 33% better than those with the placebo while undertaking controlled landings under various conditions. Though the technology is in embryonic form, the an evolved version could rapidly enhance language learning and a large array of other possibilities.

HRL is not the only player in the transcranial learning field, however. The U.S. military (and specifically the Defense Advanced Research Projects Agency, or DARPA) is also pursuing ways to benefit from brain-machine interfaces. In a more invasive study to the one conducted by HRL, DARPA is implanting "stentrodes" (paper clip size objects) in sheep to better understand how to control voluntary movement. Previous studies required researchers to crack open the skull of a patient in order to insert computer chips; the current DARPA study, by contrast, inserts the electrodes through the neck. If it proves successful, it would illuminate a much safer way to insert computer chips into the brain for the purpose of rehabbing troops to control prosthetic devices, among other uses. (Gizmodo, February, 8, 2016; Discovery News, February 29, 2016)

AFTER DPRK TEST, NEW MISSILE DEFENSE MOMENTUM IN SEOUL AND TOKYO

Just over a month after carrying out yet another controversial nuclear weapons test, the North Korean regime has launched a satellite in a move widely seen as a pretext for a long-range missile test. As a result, the U.S. and South Korea have rekindled their discussions about the installation of an anti-missile system on the Korean Peninsula to counter DPRK aggression, and are rumored to have already selected a site for the deployment of the Terminal High Altitude Area Defense (THAAD), which is proficient at destroying short and medium range missiles by destroying them just outside Earth's atmosphere.

Japan, meanwhile, is also considering the addition of THAAD to its defensive capabilities. Doing so would create a three-tiered Japanese missile defense system to defend against North Korean missiles, supplementing already deployed PAC-3 and Aegis systems. (Reuters, February 9, 2016; Japan Times, February 15, 2016)