Army developing self-aware, decision-making network

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The U.S. Army is developing [1] a “self-aware, decision-making network” that will ultimately reduce human decision-making requirements and increase network performance.

The ~~Skynet~~ Cognitive Algorithm & Network Design Experiment (CANDE) was designed to enable easier network maintenance, reduce human decision-making requirements, increase network lifetime, transfer data with less delay, and reduce energy consumption. Nowhere does it specify the directive “exterminate all humans,” but that could be coming.

“It's important that we apply learning and reasoning because currently, there's no 'intelligence' in the network. Therefore, we're developing capabilities that will aid the network in taking on this adaptive layer of learning and information sharing to reduce the complexity in managing the network,” said Sharon Mackey, chief for the Network Design and Cognitive Networking Sciences branch of U.S. Army Research, Development and Engineering Command’s (CERDEC [2]) Space & Terrestrial Communications Directorate.

(Left to right) Mitesh Patel, technical lead for the Cognitive Algorithm & Network Design Experiment, and Eric Williams of C4ISR & Network Modernization inspect radios during an E11 test.
The CANDE algorithm can determine which tactical radio signal has the best bandwidth or least traffic before transmitting data.

Adds Mitesh Patel, S&TCD technical lead for CANDE (emphasis mine), “A Soldier has to keep track of a lot of things to maintain the network such as network constraints, requirements and objectives. With cognitive algorithms, the network is more intelligent and self aware thus reducing resource management in the network.”

This all sounds really ominous, but CANDE won’t be enslaving humanity or creating robotic endoskeletons that resemble a former Austrian bodybuilder anytime soon. From what I could gather, CANDE will be making mostly low-level decisions concerned with optimization and efficiency. And this isn’t the first “self-aware” military computer system.

The Phalanx Close-in Weapon System (CIWS [3]) is an autonomous anti-ship missile defense system. CIWS automatically detects incoming threats and defeats them with the attached M61 Vulcan Gatling-style rotary cannon firing 20 mm rounds at a rate of 4,500 rounds per minute. The system is radar-guided and completely autonomous (i.e., able to function without human input).

The Phalanx Close-in Weapon System (CIWS).

The Army deployed a ground-based variant of CIWS, the Centurion C-RAM [4], to Iraq in 2005. C-RAM protects forward-operating bases (FOBs) and other sites from incoming artillery, rockets and mortar rounds. Like its shipboard cousin, C-RAM is autonomous.

Raytheon is currently developing SeaRam [5], which will serve as a companion system to CIWS. SeaRam will be able to defeat supersonic and subsonic threats via an 11-missile RAM launcher assembly.

CANDE isn't the first autonomous military computer system. Nor is it even remotely the most dangerous.

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