New DARPA Efforts Turn Tech into Capabilities for National Security

To make breakthroughs, it has to be adaptive and agile.

Amanda Ziadeh
Wed, 09/05/2018 - 15:56

DARPA Director Steven Walker at DARPA’s 60th Anniversary Symposium in Maryland on Sept. 5. Photo: Amanda Ziadeh/GovernmentCIO Media

The Defense Department’s emerging tech arm has had the same mission for decades — develop breakthrough tech for national security — but the world around it hasn’t been constant, which has posed some real challenges that will pivot the agency’s future strategic priorities.
That’s according to Defense Advanced Research Projects Agency Director Steven Walker, who kicked off DARPA’s 60th Anniversary Symposium in Maryland on Sept. 5, outlining the impact of new and emerging tech.

“The world has seen some remarkable scientific and technological achievements . . . at the same time, the world is experiencing significant technological, economic and geopolitical shifts that pose real threats,” Walker said, and those threats cause major challenges for the agency:

- Maintaining technological superiority in a world where advanced tech is global, and weapons technologies are commodities. Advanced tech is no longer enough against adversaries, and needs to quickly be turned into real capabilities.

- The democratization of communications capabilities makes it easy to influence large populations of people through social media.

- Synthetic biology and biotech remain specialized domains for now, but genetic tools could be easily accessible in the future too, elevating biodefense concerns.

- DARPA also faces economic and geopolitical challenges stemming from population shifts, urbanization in developing countries, religious and cultural differences, resource and balances involving energy and water, and the growing potential for natural or manmade pandemics.

And how these “dueling trends,” as Walker called them, of opportunity and jeopardy affect national security in the future is driving DARPA’s strategic priorities going forward. The tech behind these challenges “can also be part of the solution,” Walker said, “helping to ensure these trends to not undermine American stability.”

It’s not that DARPA hasn’t been making significant strides in these technological areas, because it has. But to have true breakthroughs, Walker said DARPA has to be highly adaptive and agile.

Agile enough to anticipate these threats, bring in the right people in science and
engineering, and to turn their ideas into capabilities. “Only then can DARPA truly remain the global vanguard leading in science and technology,” Walker said.

So, to meet this expectation, Walker introduced DARPA’s four new strategic imperatives:

- Defend the nation against existential threats (and biothreats) using a wide variety of new capabilities, from autonomous cybersecurity to weapons of mass destruction sensing. This means understanding and building the counters to adversarial and competitor capabilities, too.

- Provide the solutions to deter and prevail in large-scale conflicts against high-end adversaries, which will require a new way of thinking, and a focus on warfighting assets as responsive options that enhance lethality. This means finding new capabilities in land, sea, air and space.

- Find ways to effectively pursue stabilization efforts (rather than just continuing to fight terrorism worldwide) with capabilities to address “phase 0” conflict, large-scale urban warfare, and design models to better understand the societies the U.S. engages with. DARPA also needs to develop the tech that gives the military a significant performance advantage in operating environments.

- Continue to win the important tech races of this century in areas like artificial intelligence, advanced microelectronics, synthetic biology, neurotechnology, new computing methods and advanced social sciences.

“We need to be the first to understand these new technologies, to inform our policymakers and the warfighters on their potential use and/or misuse,” Walker said, and then apply them to the nation’s defense.

View printer friendly version
DARPA
AI
cyber
emerging tech
agile
Federal Cybersecurity
national security