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Related Categories: Cybersecurity and Cyberwarfare; Military Innovation; Science and Technology; NATO

HONING IN ON HYPERSONICS

High speed coupled with high maneuverability make hypersonic weapons dangerous and render existing missile defenses ineffective. However, researchers at the Air Force Early Warning Academy in Wuhan, China believe they have an AI-based solution to tracking and predicting the most likely trajectory of a hypersonic missile in its final phase of flight. Reportedly, the new AI system is capable of detecting a hypersonic weapon's path and mounting a response within three minutes. The system functions by utilizing a deep learning algorithm that is fed data from early in the weapon's flight path in order to predict its terminal flight trajectory. The accuracy of the system is not yet clear, however, nor is there an announced deployment date. (*Asia Times*, June 6, 2022)

DRONES AS SECURITY CHAPERONE?

The debate about how to eliminate school shootings, or at a minimum mitigate the amount of injuries and deaths from such incidents when they occur, has grown in prominence and urgency in American society. While there so far are no easy answers, developers at Axon Enterprises have come up with an outside-the-box solution that could make a real difference: taser-armed drones. While the idea of stun weapons flying around school hallways is bound to be unnerving for some, the drones could conceivably serve as a rapid response mechanism far superior to police reaction times and tactics. Axon's CEO, Rick Smith, has outlined that drones could be designed to travel through the ventilation systems of school facilities to quickly target an assailant, and may represent a better solution than arming teachers. The company is also considering the development of taser-armed police drones. (*NPR*, June 4, 2022)

AN IRON MAN SUIT REBOOT

The U.S. Army has long dreamed of assembling a "Warrior Suit," but past attempts have fallen short of desired functionality – let alone the virtually limitless capabilities depicted in the movies by superheroes such as Iron Man. After multiple failed attempts to get a Warrior Suit off the ground, the Army Futures Command has decided to shift tactics. Rather than rush to develop a complicated, fully integrated system, the Command's new plan is to slowly build upon recent advances in technology to put together a suit using a feedback loop of insights from soldiers. Ted Maciuba, the deputy director of robotics requirements for the Command's Maneuver Capability Development Integration Directorate, has explained the approach, saying "the problem is we don't know what we don't know. It has to go out there. Soldiers have to break it. Soldiers have to use it. Soldiers have to give free feedback. And then we see how we go to that next step." Ideally, a full incrementally built suit will be complete in the 2040-time frame. (*Defense News*, June 16, 2022)

ROBOT DOGS GET THEIR SEA LEGS

Over the last several years, the use of unmanned systems in reconnaissance, disaster relief, and security has increased dramatically. One noteworthy line of development has been the robotic "dogs" produced by Ghost Robotics: land-based quadrupeds designed to carry out a series of civilian and military tasks. Now, these "dogs" have received a major upgrade. Thanks to an add-on tail kit developed by Onyx Industries, the robot dogs are now able to swim for 35 minutes at a speed of approximately 3 knots without using any of the dog's onboard power. The robots now have significantly increased functionality, with the ability to traverse deep water and check for mines, perform advanced scouting missions, and determine the best possible routes to navigate water obstacles before a manned team attempts the maneuver. (*The Drive*, June 13, 2022)

NATO CONSIDERS VIRTUAL TRAINING

The Russian war in Ukraine has prompted a revitalization of NATO, and increased the importance of training and readiness for the security bloc. Currently, in order for the Alliance's 30 member states to conduct a major training exercise, it requires a year-and-a-half of planning – a lag that simply isn't acceptable in today's fraught security environment. To address the need for better and more timely training, Robert Siegfried, chair of the NATO modeling and simulation group, has suggested incorporating more virtual training for the bloc's aligned militaries. "[W]hat we want to do is connect the national synthetic training systems so that we can train together on a daily basis," Siegfried has outlined. While developing a secure and interoperable environment for 30 countries will not be an easy task, the benefits would be undeniable. Such an environment would allow for an easier exchange of tactics, reduce the stress cost of mobilizing military equipment, and more frequent contacts and trainings. (*National Defense*, June 10, 2022)