

# Can your Response Robot really do that?



Homeland Security

Science and Technology

## PROCUREMENT SHOULD NOT RELY ON ADVERTISING CLAIMS

When a task is too dangerous for humans, robots are increasingly valuable to first responder teams and law enforcement. *Capable robots help people save lives.*

Robot manufacturers, naturally, are in the business of selling robots. To do so, they create promotional materials explaining the capabilities of their systems. Verifying those claims can be challenging. Often, the capabilities of different robots have been hard to compare. How can a procurement office choose the best robot, especially when the technology is rapidly evolving?

## COMPARING APPLES TO...APPLES

First responders and others in the market for response robots needed a way to compare the actual abilities of those robots. The Department of Homeland Security Science and Technology Directorate's Office of Science and Engineering's Systems Engineering and Standards Division (SES) and the National Institute of Standards and Technology (NIST) stepped in to make this evaluation of robots possible by creating a suite of Robot Standard Test Methods.

These test methods, based on input from many federal agencies and academic and professional organizations, and published through ASTM International, help organizations compare various robots against each other based on concrete, uniform testing with predictable, repeatable and measurable results. Instead of comparing apples to oranges, purchasers can select the right robot, with confidence.

## SIMPLE, STANDARDIZED TESTS YIELD CLEAR DATA

During the initial robot tests, customers and manufacturers were unfamiliar with the concept. Test grounds were set-up at robot conferences, where manufacturers could put their robots through simple, standardized tests in competition with other robots.

It was observed that standardized tests make it easier to determine which robot best suits their mission need.

Manufacturers found that standardized testing across the industry allows them to see how their products compare with those of other manufacturers. Healthy competition has encouraged robot manufacturers to advance robotics science, to maintain their edge in the marketplace.

SES has set up "Standards Testing-in-a-Box" kits for bomb squads at police departments in large, American cities. Smaller departments can visit the nearest testing facility to try out several possible robots before investing in them. Many response robot operators found these test methods also helpful in training scenarios.



## PARTNERS/CUSTOMERS

- Federal Emergency Management Agency
- Federal Aviation Administration
- Defense Advanced Research Projects Agency
- FBI special agent bomb technicians and divers
- National Bomb Squad Commanders Advisory Board
- First responder teams in cities across the United States and other nations

