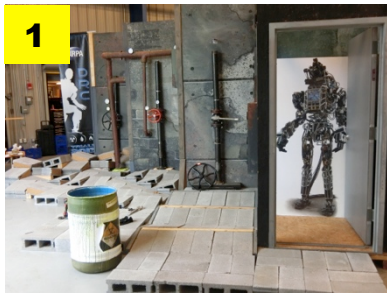
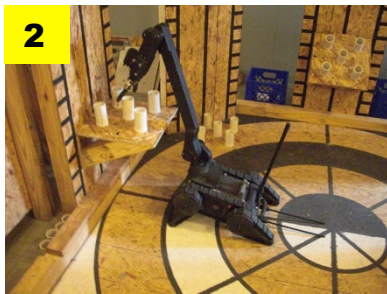
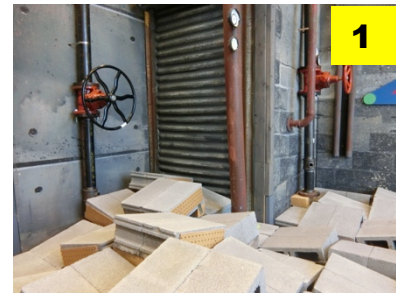


Robotics Test Facility Tour

Our local **Montgomery County Fire Marshal Bomb Squad** will use their roster of robots to demonstrate how standard test methods help focus training and measure operator proficiency for bomb squads across the country. Battalion Chief Kevin Frazier will be available to discuss this approach and how they have helped guide \$75M in robot purchases of various sizes. Some “stick time” will be available with robots operating in the basic skills suites.



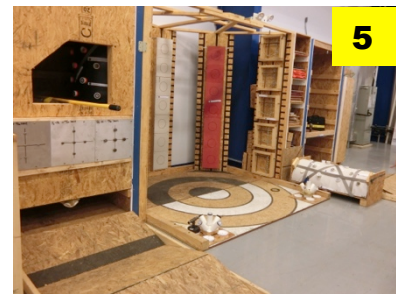
The DARPA Robotics Challenge (DRC) theme focused on emergency tasks at nuclear facilities (1). Reconfigurable terrain complexity challenges basic dexterity tasks such as inspect, touch, rotate, and extract. This approach also works for valves at various elevations and orientations. These were just a few of the 8 test methods used to evaluate international teams at the DRC.



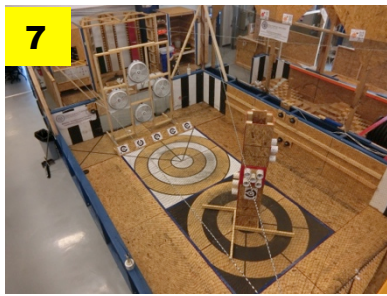
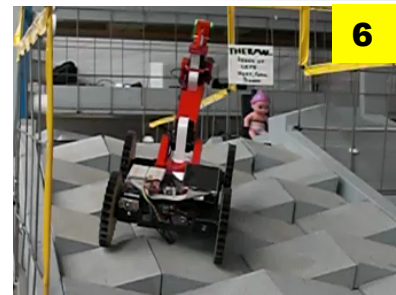
Many of the standard test methods are useful as training tasks. The suites of basic dexterity tasks (2), terrains, and obstacles (3) are particularly useful as repeatable tasks. Any operator can compare their rate of performance to that of the “expert” provided by the robot developer.



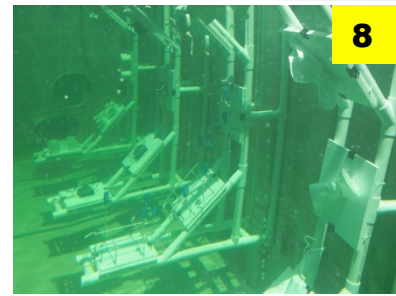
Application specific test methods leverage, extend, or combine, apparatuses to form more complex tasks. Advanced mobility terrains (4) affect performance of all tasks contained within. In another example, vehicle-borne improvised explosive device tasks (5) require dexterity with extended reach and strength in confined spaces.



Small scale versions of the standards (6) help inspire confined space capabilities and emerging 3D printed robots. These mini-arenas are used by STEM robot competitions to guide development and measure progress in 3D printed robot designs.

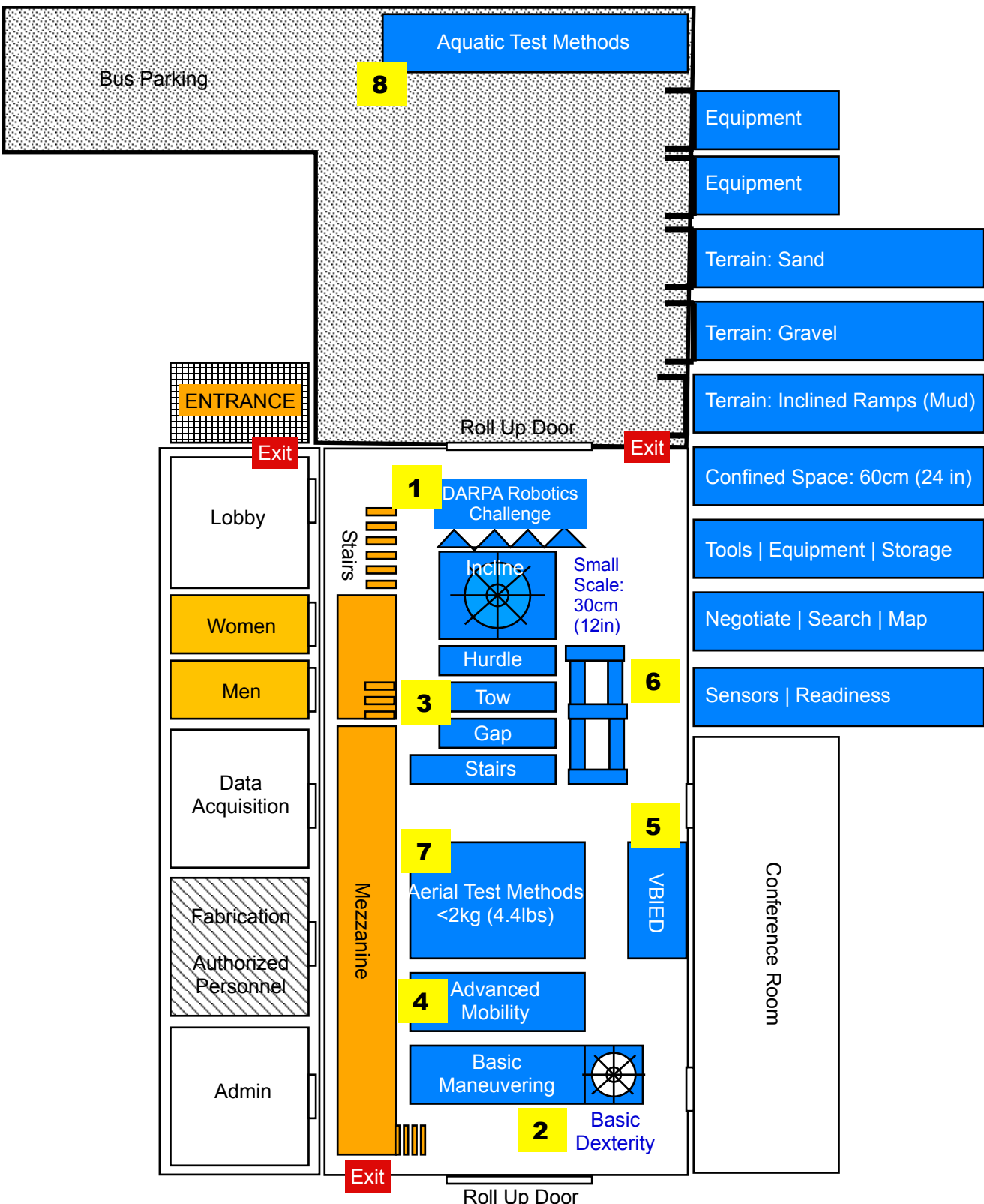


Aerial test methods (7) will enable users to evaluate airworthiness and safety, guide purchases, and help operators measure and improve their proficiency before flying in the national airspace. All testing is conducted indoors or in tents when GPS functionality is involved. Similar tests are being developed for aquatic vehicles within a water tank (8).





NIST's Robotics Test Facility (Bldg. 207) is an incubator for developing and validating standard test methods for response robots that can be disseminated throughout a network of collaborating facilities worldwide.



Along with disseminating the standards to other test facilities, the test method apparatuses can be embedded into more operationally significant training scenarios to measure operator proficiency and help identify gaps in capabilities either due to training or equipment.

