

**ASTM International Committee on Homeland Security Applications;  
Operational Equipment; Robots (E54.08.01)**

**Location:** Grand Hyatt San Antonio  
San Antonio, TX  
(Main committee meetings)  
*and*  
Southwest Research Institute  
6220 Culebra Road (Bldg. 9800)  
San Antonio, TX  
(Validation of test methods and robot data capture for reproducibility)



**Date:** January 25-27, 2010 (Mon-Wed), 9:00 am – 5:00 pm

The goal of the upcoming meeting of the ASTM International standards committee on Homeland Security Applications; Operational Equipment; Robots (E54.08.01) is to provide an update on each working group's efforts with an emphasis on getting the bulk of the existing test methods to ballot. Draft standard texts and apparatus design specifications will be reviewed along with robot demonstrations and data collections. Bill McBride and his team at **Southwest Research Institute** have replicated many of the draft apparatuses in their robot test facility to support this meeting and to perform ongoing testing of robots. We will use these apparatuses to begin capturing "reproducibility" test data, to validate prototype test methods, and to generally support detailed discussions of procedures and metrics. SWRI will host our meeting on Monday afternoon and all day Tuesday at their facility (directions will be provided separately).

Initially on Monday morning, we will meet in the hotel conference room provided by ASTM for our committee. We will begin discussions and cover issues that don't directly involve test apparatuses or robots such as terminology, cache packaging, etc. After lunch on Monday, we will reconvene at the SWRI facility for the remainder of the afternoon. On Tuesday we will meet at SWRI all day. Then on Wednesday morning we will meet at the hotel for the Main Committee Meeting followed by a wrap up of all outstanding issues and discussion of next steps.

Since the Disaster City event is only six weeks away on March 8-12, 2010, we expect only a subset of our emergency responder advisory panel, maybe 5 or so, to provide feedback on our discussions.

**Note to robot developers:** As always, you are invited to bring your robots with you. For some of you, this can be an opportunity to practice in the test methods, or maybe to provide an example of best-in-class performance in the test methods. Others may want to be subjected to more formal testing to be included in Technical Assessment Reports which will be posted to the Responder Knowledge Base SAVER website for general dissemination. This is the way responders will be reviewing robot performance to support robot procurement decisions. The first such use of these draft standard test methods to guide a DHS procurement was just completed for the METROTECH National Capital Region Bomb Squad Working Group which purchased \$1M of robots based on the results of their performance tests within the draft standard test methods and some operational task demonstrations. If you are scheduled to complete or re-run some these tests, you are invited to come out early or stay late with your robot to continue testing without the audience.

As always, we will be briefing the entire standards committee on our progress, but the real work at these events gets done in the “breakout meetings.” These breakout meetings will focus on accomplishments that each working group is ready to discuss and allow us to dig deeper into issues and ideas. We will also refine future directions. Everyone is welcome to attend ALL the breakout meetings to contribute or simply to watch. There are often good lessons to learn from other groups further along the standards process. Since many players are involved in multiple working groups, we do these meetings sequentially as show below:

SUNDAY, JANUARY 24 LOCATION

Sun 5:00 pm (*rally*) Bar Rojo, Grand Hyatt San Antonio  
Sun 7:00 pm (*dinner*) Place TBD while sampling Rojo brews.

MONDAY, JANUARY 25 LOCATION

Mon 9:00am – 9:30am GRAND HYATT ROOM 540  
**TOPIC: TERMINOLOGY (Hui-Min Huang)**  
Discuss ASTM requirements for repeatability and reproducibility of standard test methods.  
Discuss proposed naming conventions for the various suites of test methods.

Mon 9:30am – 10:00am GRAND HYATT ROOM 540  
**TOPIC: LOGISTICS (Ann Virts)**  
Discuss recent changes to the Cache Packaging form, robot configuration identification, targeted video capture of battery changes, manipulator removal, etc.

Mon 10:00am – 12:00pm GRAND HYATT ROOM 540  
**TOPIC: REPEATABILITY DATA CAPTURE (Adam Jacoff)**  
Discuss aggregate robot test results from recent Metrotech bomb squad robot procurement process. Ten robot configurations subjected to roughly twenty draft standard test methods.

Mon 12:00am – 1:30pm TBD or ON YOUR OWN  
**LUNCH AND TRAVEL TO SWRI**

Mon 1:30pm – 2:00pm SWRI BLDG 9800  
**TOPIC: SAFETY/ENVIRONMENT (Mark Micire)**  
Discuss new wash-down procedure and apparatus for decontamination.

Mon 2:00pm – 4:00pm SWRI BLDG 9800  
**TOPIC: SENSORS (Adam Jacoff, Ann Virts, Rick Norcross)**  
Discuss new apparatus section for Visual Acuity test method, demonstrate new Directed Search test method apparatuses, demonstrate Two-Way Audio test method, and new Audio Spectrum test method.

Tue 4:00pm – 5:00pm SWRI BLDG 9800  
**TOPIC: MANIPULATION (Adam Jacoff)**  
Discuss and demonstrate modified test apparatus including weighted pick and place cylinders (wood, aluminum, and steel), and reach obstacles (open, side-roll ramp). Demonstrations???

Mon 7:00 pm (*rally*) Bar Rojo, Grand Hyatt San Antonio

TUESDAY, JANUARY 26

LOCATION

Tue 8:00am – 9:00am

GRAND HYATT ROOM PRESIDIO B

**TOPIC: E54.08 Committee Meeting – Operational Equipment**

Adam will represent us (I'll ask to go first so I can leave). Others are welcome, but not required to attend. Go directly to SWRI instead.

Tue 9:00am – 12:00 pm

SWRI BLDG 9800

**TOPIC: MOBILITY (Bill McBride)**

Inspect new apparatus construction. Review draft standard documents for Slaloms (Yellow, Orange, Red terrains), Inclined Plane, Gap, Pipe Step, Stairs (wood/metal/wet). Demonstrate tether routing issues when applicable using the VGTV Extreme or other robot.

Tue 12:00pm – 1:00pm (*lunch*)

SWRI CAFETERIA (OR TBD)

Tue 1:00pm – 2:30 pm

SWRI BLDG 9800

**TOPIC: ENERGY (Karl Reichard)**

Discuss and demonstrate the first 20 laps with the data logger on either the Talon, Packbot, or Matilda. Plan for first comprehensive test in cold chamber with desktop cycling.

Tue 2:30pm – 4:00pm

SWRI BLDG 9800

**TOPIC: HRI (Adam Jacoff)**

Discuss Random Maze Search test method procedure, recent results. Demonstrate new Navigation test method. Inspect new Underbody Search apparatus and demonstrate with VGTV Extreme. Identify checklist items for interface and other system capabilities.

Tue 4:00pm – 6:00pm

SWRI BLDG 9800

**TOPIC: MAPPING (Chris Scrapper, Alex Kleiner)**

Discuss maps generated earlier with new map fiducials inserted into the Random Maze, new Hallway Labyrinth, and new Feature Maze apparatuses.

*Alternate/Fill-in Discussion***TOPIC: RADIO COMMS (Galen Koepke)**

SWRI BLDG 9800

Discuss and demonstrate new test method stations using figure-8 path with video/audio targets

Tue 7:00 pm (*rally for dinner*)

Bar Rojo, Grand Hyatt San Antonio

**TOPIC: Discussion: anything but standards!**

WEDNESDAY, JUNE 10

LOCATION

Wed 8:00am - 11:00 am

GRAND HYATT ROOM REPUBLIC A

**TOPIC: E54.08.01 Subcommittee Meeting – Task Group on Robotics**

- Our entire group is involved in this meeting
- Common Issues (ASTM content requirements, etc.)
- Scheduled Events (document schedule, Response Robot Exercises, next ASTM mtg)
- Working Group status reports to reflect summary of breakout meeting discussions
  - 15 min Intro (Terminology, Logistics)
  - 15 min Sensors
  - 15 min Radio Comms
  - 15 min Safety/Environment
  - 15 min Mobility
  - 15 min Power/Energy
  - 15 min Manipulation
  - 15 min HRI

Wed 11:00am – 12:00pm

GRAND HYATT ROOM REPLUBLIC A

**TOPIC: E54 Main Committee Meeting**

- Phil represents us. All the rest of us can go to lunch.

Wed 12:00pm – 3:00pm

GRAND HYATT ROOM 540

**TOPIC: ADDRESS COMMENTS**

Discussion of comments/feedback from others at the main committee meetings. Also, any outstanding issues, or test method demonstrations, practice, training.

Wed 5:00pm (*rally for dinner or fly out*)

Bar Rojo, Grand Hyatt San Antonio

**TOPIC: Discussion: anything but standards!**

## Driving Directions To Southwest Research Institute (15-20 minutes):

**A** Grand Hyatt San Antonio  
 600 East Market Street, San Antonio, TX 78205 - (210) 224-1234

1. Head **east** on **E Market St** toward **Convention Way** go 0.3 mi  
total 0.3 mi
2. Merge onto **I-37 S** via the ramp to **I-10 S**  
About 2 mins go 1.5 mi  
total 1.8 mi
3. Take exit **139** for **I-10 W/I-10 E/US-90 W/US-90 E/US-87 N/US-87 S** toward **El Paso/Houston** go 0.2 mi  
total 1.9 mi
4. Keep **right** at the fork, follow signs for **I-10 W/US-90 N/US-87 N/El Paso/Del Rio** and merge onto **I-10 W/US-87 N/US-90 W**  
About 2 mins go 1.8 mi  
total 3.7 mi
5. Continue onto **US-90 W**  
About 4 mins go 4.5 mi  
total 8.2 mi
6. Slight **right** at **TX-151 W** (signs for **TX-151/Sea World**)  
About 2 mins go 2.2 mi  
total 10.4 mi
7. Take the exit toward **Pinn Rd/Military Dr** go 0.2 mi  
total 10.6 mi
8. Merge onto **Texas 151 Access Rd W**  
About 2 mins go 1.3 mi  
total 11.8 mi
9. Turn **right** at **Pinn Rd** go 400 ft  
total 11.9 mi
10. Take the 1st **right** onto **W Commerce St**  
Destination will be on the right  
About 1 min go 0.4 mi  
total 12.3 mi

**B** 9800 W Commerce St, San Antonio, TX 78227

