NIST NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY U.S. DEPARTMENT OF COMMERCE

Science and Technology

Fly Drones in Tests and Scorable Scenarios for Open, Obstructed, and Confined Environments

Monday Jan. 23, 2023 4 pm – 8 pm

- Day and night familiarization flight demonstrations.
- Open to regional responders and the public.
- Everybody can watch and learn about the tests.
- FAA Part 107 license required to fly your own drone.
- Food served at sunset.

Hosts:

Adam Jacoff, NIST and ASTM E54.09 Standards Committee.
Kai-Dee Chu, Science and Technology Directorate, DHS
Sgt. Daniel "Justin" Anders, SAPD sUAS Program Manager

Location:

San Antonio Police Department Training Facility
12200 SE I-410 Access Rd, San Antonio, TX 78221

RSVP to RobotTestMethods@nist.gov *so we can facilitate parking and food service.*

Test Methods for Evaluating Aerial Drones

Safety | Capabilities | Proficiency

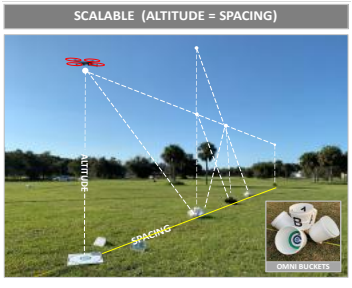
RobotTestMethods.nist.gov

LEVEL 1, 2, 3

OPEN Test Lane and Related Scenarios

- Position
- Traverse
- Orbit
- Inspect
- Recon

SCALABLE ALTITUDES

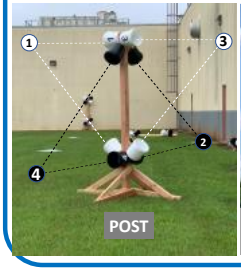


LEVEL 4

OBSTRUCTED Test Lane and Related Scenarios

- Perch
- Wall
- Ground
- Alley
- Post

CLOSE PROXIMITY

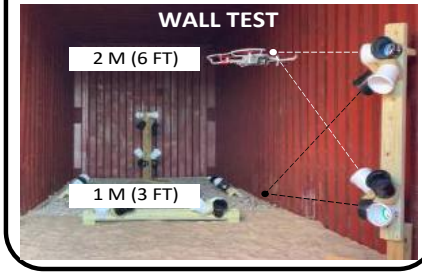


LEVEL 5

CONFINED Test Lane and Related Scenarios

- Perch
- Wall
- Ground
- Alley
- Post

INDOOR or GPS DENIED



Users of aerial drones weighing less than 25 kg (55 lbs) at takeoff, also known as small unmanned aircraft systems (sUAS) or remotely piloted aircraft systems (RPAS), need ways to measure whether a particular drone can perform specific missions in unstructured, complex, and often hazardous environments. These missions require various combinations of elemental capabilities. Each capability can be represented as a test method with an associated apparatus and procedure enabling repeatable and reproducible measures of performance with objective results. These test methods can be conducted individually or in operationally relevant sequences and combinations to evaluate drone capabilities and remote pilot proficiency. The results measure the reliability of the drone and remote pilot to perform the essential mission tasks. A series of complementary test lanes enable users to evaluate a wide spectrum of intended missions. This event will include familiarization flights with test methods and scorable scenarios developed for Open, Obstructed, and Confined environments. Bring a drone if you want to fly, or just come watch. The event is open to regional emergency responders and the public

	Levels of Evaluation For Different Missions
LEVEL 1	**OPEN Test Lane** **Basic Proficiency/Safety Checkride** Evaluate positive aircraft control in quick trials for novices and recreational pilots using the first 2 of 5 flight paths. • *10 minutes (5 minutes each)* • *40 Alignment Points*
LEVEL 2 M	**OPEN Test Lane** **Maneuvering Trials** Evaluate open area maneuvering around ground objects using all 5 flight paths with no additional pilot workload. • *25 minutes (5 minutes each)* • *100 Alignment Points*
LEVEL 3	**OPEN Test Lane** **Payload Functionality Trials** Evaluate open area maneuvering while controlling zoom and exposure to identify ground objects using all 5 flight paths. • *25 minutes (5 minutes each)* • *50 Alignment Points | 50 Acuity Points*
LEVEL 4	**OBSTRUCTED Test Lane** **Payload Functionality Trials** Evaluate maneuvering in close proximity to objects while controlling zoom and exposure to inspect from 6-10 ft standoff. • *25 minutes (5 minutes each)* • *50 Alignment Points | 50 Acuity Points*
LEVEL 5	**CONFINED Test Lane** **Payload Functionality Trials** Evaluate maneuvering while controlling zoom and exposure to search room to room and inspect from 3-4 ft standoff. • *25 minutes (5 minutes each)* • *50 Alignment Points | 50 Acuity Points*