

Meteor – MITRE's Entry in the DARPA Grand Challenge

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Other

Problem

“It shall be a goal of the Armed Forces to achieve the fielding of unmanned, remotely controlled technology such that --

- (1) by 2010, one-third of the operational deep strike aircraft of the Armed Forces are unmanned; and**
- (2) by 2015, one-third of the operational ground combat vehicles of the Armed Forces are unmanned.”**

-- Senate Armed Services Committee Bill S.2549,
Authorization Act for FY 2001

National Defense

- Significant technology advances are needed to achieve this goal.**
- The DARPA Grand Challenge focuses on challenges in sensing, obstacle avoidance, and system robustness.**
- The specific challenge will be to autonomously navigate roughly 175 miles of desert roads.**

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Background

Grand Challenge 04 Route



MITRE

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Objective

- The MITRE team will integrate mostly COTS sensors and a commercially available vehicle to provide a platform for algorithm development in sensing and avoiding obstacles.
- The platform, named Meteor, will be capable of autonomously navigating 175 miles in 10 hours by traveling from waypoint to waypoint while sensing and avoiding obstructions.

Activities

- **By early May, when DARPA pays a site visit to MITRE, most of Meteor's functionality will be implemented.**
- **We will test and refine algorithms from then until the competition begins on 8 October.**

Updated picture of Meteor will want to insert at last minute

Highlight

This will be a picture of the view of the lamp post from the radar, Stereo vision, LMS and camera with an overlay of the display

Highlight/Demonstration

This will be pictures from recent a recent test run

Impacts

- **The Grand Challenge will provide technologies and innovations to DoD sponsors as they move toward greater reliance on unmanned vehicles.**
- **This activity provides MITRE with additional opportunities to develop our unmanned vehicle expertise while offering a significant system and sensor integration challenge.**
- **We have a platform for investigating TSA, Army, USMC, Border Security, and DHS capabilities.**

Future Plans

- **Competition 8 October FY05**
- **Apply technology to sponsor applications**
- **Potential applications: Army, TSA, USMC, Border Security and DHS capabilities**