



DEFENSE ADVANCED RESEARCH PROJECTS AGENCY
3701 NORTH FAIRFAX DRIVE
ARLINGTON, VA 22203-1714

September 30, 2003

Grand Challenge Entrants and Participants,

Welcome to our new teams! The number of applicants continues to grow along with the level of excitement generated by the Grand Challenge event. As recently as our February Competitors' Conference, I considered 20 participating teams a success. Today, I am pleased to announce that 71 teams have officially entered. Additionally, thanks to early submission of technical papers, two of our teams have been elevated to "Participant" status, and more than 10 other teams are close to reaching this point. We encourage others to follow their example.

Congratulations to:

SciAutonics I – RASCAL: <http://www.sciautonics.com/>

Team Caltech: <http://team.caltech.edu/>

Today's memo addresses five key areas:

- First, the Bailment coordination has proceeded very well. We will have the revised document ready for everyone's signature no later than November 5 at the Vegas Entrants' Conference.
- Secondly, the technical papers are coming in at a steady pace and look good. We appreciate your getting these papers in early.
- Third, we are currently looking at revising the rules in order to update those areas that need more clarity.
- Fourth, I will begin to describe some of the obstacles and boundaries you can expect to see on the road. It is critical that each of you prepare for these navigational challenges.
- Finally, our plans for the upcoming competitors' conference are taking shape, and we have initial details on the event.

Bailment Coordination

We appreciate the feedback that was received from the example bailment that was sent out on September 15. We are making some minor revisions and will send an updated version for your signature. Among other things, this document will allow us to issue government-furnished equipment to you, which is why it will need to be signed prior to receiving the E-Stop, currently scheduled for delivery at our November Conference.

Technical Papers

The October 14 deadline is drawing near. Our review team is working hard to review all technical papers that have been submitted. If your team submitted a technical paper, you should have received confirmation of its receipt within a few days. If not, please send an email to grandchallenge@darpa.mil.

Rules Revisions

The following revisions to the Rules are under consideration:

6.4.2.1 Audible Warning – Vehicle Operating

- Reduce the minimum sound pressure level required to 116dB (from 119dB)

2.3.16 Route Definition Data File

- Change waypoint lat/long to decimal degrees with seven decimal places
- Delete the remarks field
- Include a few example lines

1.5 General Procedures

- Change date for DARPA Tech event to March 10, 2004 (from March 11)
- Change requirement in first paragraph to “Participants may have the opportunity to display their vehicles at DARPA Tech” (from “Participants will display...”)

2.1.3 Safety Vehicle

- Change name to “Control Vehicle”, also in 6.4.3.2

5.1.3 Sponsorship

- Delete “and Safety Vehicles” since teams are no longer required to provide Safety (Control) Vehicles

4.3.3 Technical Paper

- Reword the third paragraph to be less ambiguous: “DARPA will treat the technical papers as team proprietary information in their entirety until the conclusion of the 2004 Challenge, at which time the papers will be available to the public. If a technical paper contains an attachment of information that is designated by the Team as proprietary information, that attachment will not be made public with the technical paper.”

8.7 Passing

- Add the sentence “The burden of responsibility for collision avoidance shall fall primarily on the vehicle that is attempting to pass.” to the second paragraph

If you have any questions or issues with these, please send an email to grandchallenge@darpa.mil

Course Obstacles and Road Boundaries

Challenge Vehicles will face the following obstacles or boundaries along the route, some of which will be duplicated or simulated at the QID:

- Power Line Towers
- Barbed Wire Fences
- Gates
- Underpasses
- Railroad Crossings
- Highway Guardrails
- Plastic construction fencing (which we have referred to as “snow fencing”)
- Concrete Barriers
- Metal Chain-linked Fences
- Metal Barrels
- Road Edge (both paved and dirt roads)
- Bushes and Plants indicating the road edge

While this is not a comprehensive list, it is intended to give you a better idea of some of the environmental things Challenge Vehicles will need to sense in order to be successful, some of which were referred to in the February conference. Most of these will be a natural consequence of the Route, but some will be in place in order to assist the Challenge Vehicle or for safety. As described in the Rules, the lateral boundaries will define the area where a Challenge Vehicle will be allowed to operate, however, in order to be successful the Vehicle will at times need to find the road or trail within the lateral boundaries and stay on it.

In some areas, there will be much latitude for the vehicle to choose its own path, such as open areas or dry lake beds. In these areas the lateral boundaries will be correspondingly wide. In other areas, the Challenge Vehicle will be constrained to a particular road by narrow lateral boundaries. In these circumstances, the lateral boundaries will match the detectable road edge as close as possible. In areas where we feel there is not sufficient environmental queues to denote the road edge, we intend to place a manmade barrier, such as plastic construction fencing (snow fencing) or concrete barriers, the latter being the primary choice where safety is a concern.

Examples of the terrain, road types, and natural road boundaries were given at the February conference and can be found online in the conference archive (under Schedule/Events) at: http://www.darpa.mil/grandchallenge/conference_la.htm. We realize that some of this is ambiguous and subject to interpretation, therefore more information will be presented at the November conference and time will be given for discussion.

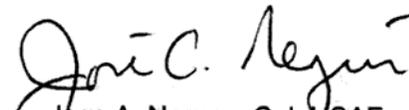
Competitors' Conference

The next competitors' conference is tentatively scheduled for November 5 thru 7th at the Orleans Hotel in Las Vegas. Teams with approved technical papers will have the opportunity to meet with Grand Challenge organizers, learn more about the event and get answers to their questions about rules and other issues.

We have scheduled the competitors' conference during the convention of the Specialty Equipment Market Association (SEMA), a major show for automotive aftermarket suppliers that we thought many of you will be interested in attending. SEMA has agreed to schedule a press briefing on Thursday, October 6 from 1:00-1:30 as part of its agenda of media events, which will offer a great opportunity for exposure with the automotive press. Teams are welcome to participate in the press briefing. Please note that in order to accommodate the 1:00-1:30 press briefing slot assigned to us by SEMA, the Thursday afternoon session of the competitors' conference originally scheduled from 1:00-5:00 will now take place from 2:00-6:00.

Further information on the competitors' conference agenda is forthcoming, and we welcome your suggestions on the event. As always, if you have any questions, concerns, or general feedback, my staff and I can be reached at grandchallenge@darpa.mil, or toll-free at 1-866-DARPA-GC (1-866-327-7242).

Sincerely,



Jose A. Negrón, Col, USAF
DARPA Grand Challenge Program Manager