



DARPA TRIAGE CHALLENGE

Challenge Event 1 Operations Guide

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1. Overview

This document serves as the Operations Guide for the DARPA Triage Challenge (DTC) Challenge Event 1 being held September 28-October 5, 2024, at [Guardian Centers](#) in Perry, Georgia, USA.

This Operations Guide is intended for Systems, Virtual, and Data Competition teams who qualified to participate in Phase 1 of the DTC. **The purpose of this document is to provide details regarding (1) challenge activities, (2) event logistics and operations, and (3) supporting information to ensure a safe and successful event.**

2. Team Participation

As detailed in the [Event Qualification Guide](#), all Systems, Virtual, and Data Competition teams must have completed two types of qualification – a Team Qualification for DTC Phase 1, and a Challenge Event 1 Qualification – in order to participate. Teams were notified directly of their qualification status.

Data Competition Teams will submit their solutions as docker containers images to AWS. Virtual Teams' candidate solutions should be submitted by uploading docker container images to ARA's Amazon ECR repository. Submissions for Data and Virtual Competitions will be run offline against the unreleased Challenge Event 1 scenarios. The solution submission windows for the Virtual and Data Competitions open August 1, 2024, and close August 30, 2024. The submissions will be evaluated, and the results will be announced alongside the Systems Competition results. Virtual and Data Competition Teams are invited to attend the Challenge Event 1 Awards Ceremony and Seminar at Cross Point Perry in Perry, Georgia on October 5, 2024. Virtual and Data Teams may also participate remotely, as the event will be live streamed. Virtual and Data Teams are not permitted to be on site at Guardian Centers during any Systems Competition dates and times.

The DTC Challenge Event 1 will be governed based on the rules as outlined in the [Competition Rules](#), so teams should reference that document for additional technical rules and restrictions. Questions related to the rules and any information provided in this Operations Guide may be submitted to the [DTC Community Forum](#).

3. Systems Competition Task Operations

Systems Teams will be scored on multiple courses throughout their time at Guardian Centers. Teams will be assigned three (3) 15-20-minute scored runs with a 30-minute setup for a total of up to 50-minute time slots. The courses are 8,000 – 15,000 square feet and 100 feet (30.5 meters) in height. Courses are *not* necessarily a standard shape such as a square or rectangle.

Team Tents (work areas) will be within walking distance of the Courses and Practice Area (see Figure 1). Teams will be responsible for providing transportation of their systems between their Team Tent and the Courses as needed. Per the [Competition Rules](#), all system elements together must pack down to be carried by a single vehicle (car, sports utility vehicle, pickup truck), with individual components being easily portable by a single person.

Operational details can be found in Section 9, System Competition Rules, in the [Competition Rules](#) document. Teams should note that no team members will be permitted to enter the Course during a run. Once a run has finished and the course is clear, up to two (2) team members will be permitted by the Course Official to retrieve any UxSs that remain on the course. Safety is one of the most important facets of the event and the Chief Official will have the final authority to determine if any team is operating in an unsafe manner or is not operating in the spirit of the DTC.



Figure 1: Guardian Centers Site Map

4. Schedule

All Systems Competition teams participating in Challenge Event 1 will be divided into two groups for arrival at the event. Group 1 teams should plan to be at Guardian Centers in Perry, Georgia 8:00 a.m. ET Saturday, September 28 through 5:00 p.m. ET Tuesday, October 1. Group 2 teams should plan to be at Guardian Centers 8:00 a.m. ET Tuesday, October 1 through 5:00 p.m. Friday, October 4. All teams are encouraged to have team representatives attend the Awards Ceremony and Seminar on Saturday, October 5, 8:00 a.m. - 4:00 p.m. ET. Scheduled makeup runs on Tuesday, October 1 and Friday, October 4 will be used as weather or technical delay back-ups. Teams will be notified which group they are in by Thursday, August 1.

All planned activities will take place at Guardian Centers except for the Awards Ceremony and Seminar on Saturday, October 5, which will be held at Cross Point Perry, across the street from the Guardian Centers main entrance.

Schedule Overview

Saturday, Sept. 28	Sunday, Sept. 29	Monday, Sept. 30	Tuesday, Oct. 1	Wednesday, Oct. 2	Thursday, Oct. 3	Friday, Oct. 4	Saturday, Oct. 5
Group 1 Team Orientation and Move-in	Group 1 Scored Runs	Group 1 Scored Runs	Group 2 Team Orientation and Move-in Group 1 Makeup Runs (as needed)	Group 2 Scored Runs	Group 2 Scored Runs	Group 2 Makeup Runs (as needed)	Awards Ceremony & Seminar

5. Location

Challenge Event 1 will be held at Guardian Centers in Perry, Georgia.

[Guardian Centers](#)
600 Perry Parkway
Perry, GA 31069

Teams are not permitted to contact Guardian Centers for information related to the DTC or the facilities. All questions about the Guardian Centers or Challenge Event 1 should be submitted to the [DTC Community Forum](#).

The Challenge Event 1 Awards Ceremony and Seminar will be held at Cross Point Perry Church in Perry, Georgia.

[Cross Point Perry](#)
645 Perry Pkwy,
Perry, GA 31069

6. Registration

Systems Competition Teams are limited to ten (10) members in attendance at Challenge Event 1. Each individual participant must register on the website below by 11:59 p.m. ET Saturday, August 31, 2024. Systems Team Leads must register their robotic systems separately to their individual registration. All platform types intended to be used in Challenge Event 1 must be submitted via the [Team Portal](#) by 11:59 p.m. ET Tuesday, July 30, 2024 to meet the Event Qualification requirements. Team Leads should include updated narrative descriptions and demonstration videos of the platforms successfully completing the qualification tasks listed in Section 5 of the [Event Qualification Guide](#).

Virtual and Data Competition Team members planning to attend the Awards Ceremony and Seminar *in person* must register on the website below by 11:59 p.m. ET Saturday, August 31, 2024. Registration is *not* required for team members planning on joining via live stream. The live stream link will be distributed to all Team Leads in the days leading up to the event.

Registration Website: <https://events.sa-meetings.com/DTCEvent1>

Username: DTCE1

Password: Perry102024

7. Systems Team Orientation

All registered team members are required to attend the Team Orientation before participating in any other event activities. Orientation for Group 1 teams will take place Saturday, September 28, 2024, 8:30 a.m. – 9:30 a.m. ET and orientation for Group 2 teams will take place Tuesday, October 1, 2024, 8:30 a.m. – 9:30 a.m. ET. Venue access and check-in will begin at 8:00 a.m. each day. The orientations will be held at Guardian Centers in Building 101, Classroom 5 (see Figure 1).

During the Team Orientation, teams will receive:

1. Overview of Challenge Event 1
2. Staff introductions
3. Information on move-in and move-out procedures
4. Information on systems and network checkout procedures
5. Challenge details

6. Safety brief

8. Systems Team Tents

Teams will be provided a tent in a gravel parking lot as their team work area for their time at Challenge Event 1. Teams will be able to access their Team Tent from 7:30 a.m. – 6:30 p.m. on event days *after* they have attended team orientation. Each tent will notionally be 20 feet (6.1 m) x 30 feet (9.1 m) and will have opaque plastic siding. Each Team Tent will be outfitted with fourteen (14) banquet tables and ten (10) chairs. No computers, monitors, or power distribution equipment will be provided. Team Tents will be located outdoors and will not be air conditioned. Teams may bring and utilize their own air conditioners or fans; however, teams will receive limited power and will be responsible for prioritizing their power needs. Teams are not permitted to bring gas or diesel fueled generators.

Teams may operate ground robots within their assigned Team Tent as long as operations are deemed safe as determined by DTC Staff and such operations do not interfere with adjacent teams. Teams operating multirotors or other aircraft should note that such aerial vehicles are not permitted to launch or fly in or around the Team Tents. DARPA will not control wireless interference in the Team Tents. A single, wired Internet connection will be provided to each team. Teams are permitted to bring their own, unmanaged switches to expand ports available. Teams are prohibited from using wireless access points (APs) and other wireless connections in their Team Tent, including but not limited to: any Wi-Fi/802.11 connection, cellular hotspots, and Wi-Fi tethering. Cellular service will be available throughout the venue.

DARPA will provide power to the teams in the following locations: Team Tents, Practice Area, and in the Course Staging Areas. Each Team Tent will have two (2) 120V, single-phase, 20A circuits and NEMA 5-20R T-slot receptacles. Teams should plan accordingly to have the correct adapters, chargers, and power strips to match their individual team needs. International teams should pay special attention to voltages common in the United States and bring any necessary equipment. If teams have additional power needs/requests, they should notify DARPA via TriageChallenge@darpa.mil before August 1, 2024.

Teams are only permitted in the Course Staging Areas during their scheduled runs and must otherwise remain in their Team Tents while on site. DTC Staff will be available during all event hours in the Team Tent area to answer questions or assist with on-site issues.

9. Systems Team Systems/Network Checkouts

Prior to operating their systems on the designated Courses or in the Practice Area, teams will be required to complete a Systems/Network Checkout. Time will be allocated for each team to complete these tasks within the first two days of their arrival. If a team fails to successfully pass their systems and network check, they will be required to use their scheduled runs to complete this task.

Teams should plan for the following during the Systems/Network Checkout:

- Confirmation of platform roster and qualifications based on the [Event Qualification Guide](#)
- Successful operation of the Tier 1 and Tier 3 E-Stops (see Section 10)
- Successful demonstration of the following fail-safes in the Practice Area:
 - o Geofence (DARPA will provide GPS coordinates to define a geofence for Courses and Practice Area)
 - o Loss of communications
 - o Low battery
 - o Manual takeover from hand controller
- Demonstration of connectivity between Operator Control Station (OCS) and systems

- Test network connectivity between OCS and Command Post (CP) by successfully submitting a casualty report to the Titan server

10. Systems Team E-Stops

DARPA has established a set of emergency stop (E-Stop) requirements to ensure the safety of personnel, equipment, and the Course environments. These requirements are designed to address common and/or anticipated modes of failure and provide a consistent, predictable method to disable equipment without creating additional hazards. All systems participating in Challenge Event 1 will be required to demonstrate and utilize a Tier 1 wireless emergency stop and Tier 3 on-platform emergency stop as described in the [Competition Rules](#). The Tier 2 recovery wireless emergency stop is encouraged but not required for UASs. The Tier 2 recovery wireless emergency stop is required for UGVs.

11. Systems Team Staging Areas

All systems will be required to start in the Staging Areas at the entrance to the Courses. The Staging Areas will include a 10'x10' tented and netted space for the team operator. The launch area will be 5' from the netted team staging area. The launch area itself will be 30'x30' where 5 total vehicles (UAS or UGV) may occupy/launch. In the Staging Area, teams will be provided 2.5 banquet tables, six (6) chairs, and one (1) 120V, single-phase, 20A circuit with NEMA 5-20R T-slot receptacles. Teams are permitted up to six (6) personnel in the Staging Areas; these personnel are designated as the Pit Crew. See the [Competition Rules](#) for Pit Crew details.

DARPA will be responsible for moving data from the Team OCS to the CP screens. Teams will provide these data streams to DARPA via hardware connection in their OCS. DARPA will connect from there to the CP and have them on screens during their course days. DARPA will work with teams while on site to make the appropriate connections and verify them before their first scored run.

12. Systems Team Practice Area

Teams will be assigned one (1) 30-minute time slot in a Practice Area where they can test their systems (see Figure 1). Additional practice times will be available by sign up, weather permitting. The space is approximately 100 feet (30.5 m) long x 100 feet (30.5 m) wide and 100 feet (30.5 m) in height. The Practice Area will include a 10'x10' tented and netted space for the team operator and a 10'x10' space for launching platforms. In the Practice Area, teams will be provided three (3) banquet tables, six (6) chairs, and one (1) 120V, single-phase, 20A circuit with NEMA 5-20R T-slot receptacles.

In the Practice Area, teams may operate all their systems, both air and ground. Platforms will be able to take off and fly within the Practice Area for practice flights. Teams are required to have a Safety Officer who is responsible for preserving the safety of personnel and property during all practice runs. No personnel are permitted to be inside the Practice Area while systems are active. Personnel will operate and monitor their active systems outside of the outlined Practice Area.

13. Travel

The [Hartsfield-Jackson Atlanta International Airport](#) is the closest major airport to the Challenge Event 1 venue. It is a one hour, thirty-minute (1 hr, 30 min) drive to Guardian Centers in no traffic. Hartsfield-Jackson serves more than 150 US destinations and more than 70 international destinations in 43 countries.

14. Area Maps

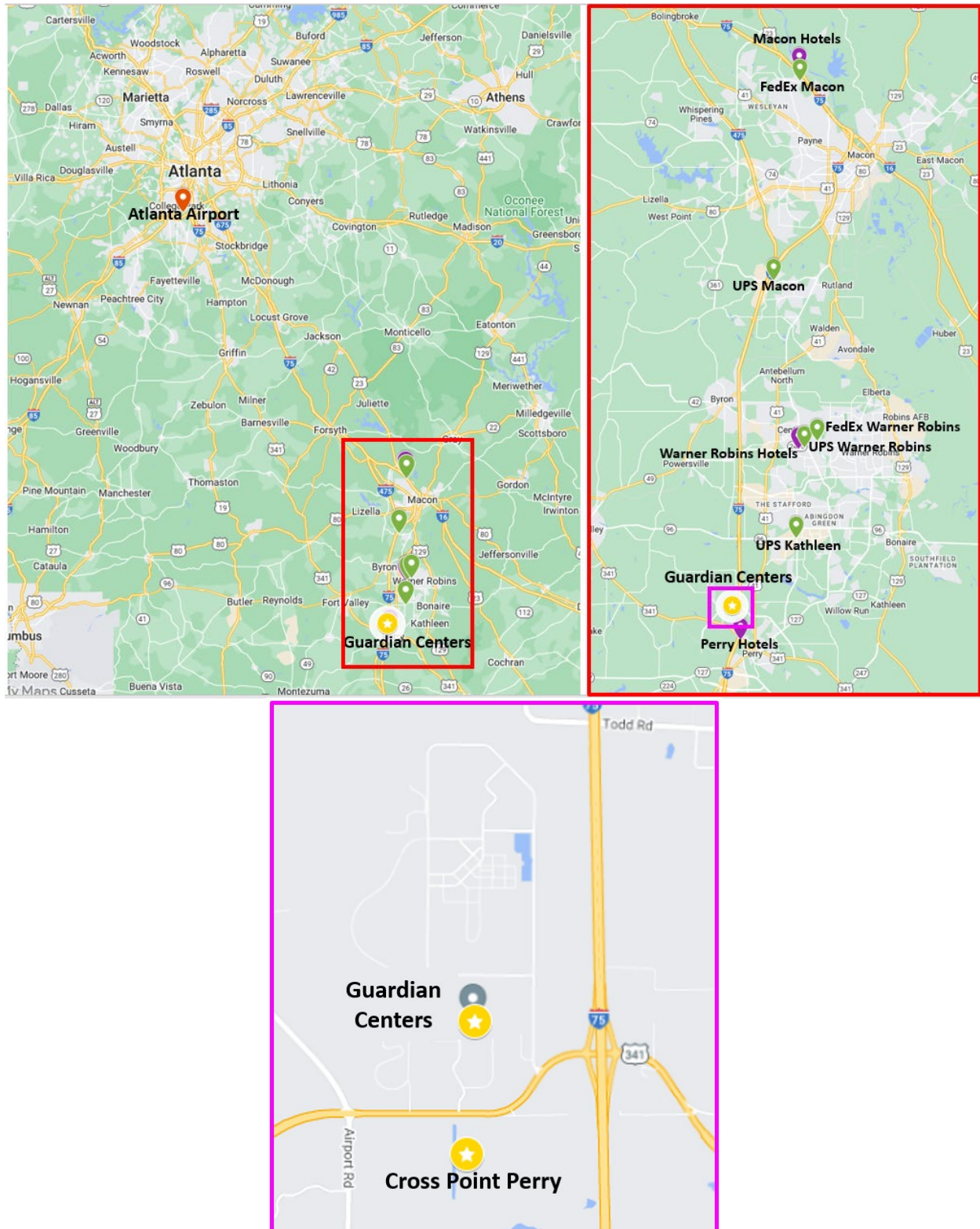


Figure 3: Area Maps with Key Locations

15. Lodging

Teams are responsible for making their own hotel reservations or sleeping arrangements. Local hotels and distances to Guardian Centers are listed below. The hotel list is provided solely for informational purposes for the convenience of the teams. DARPA does not promote or prefer any of the hotels listed below.

Name	Address	Phone	Distance to Venue
Holiday Inn Express Perry	1502 Sam Nunn Blvd, Perry, GA 31069	478-224-3000	2.5 miles / 6 min drive
Hampton Inn Perry	102 Hampton Ct, Perry, GA 31069	478-987-7681	2.8 miles / 6 min drive
La Quinta Inn & Suites Perry	102 Plaza Dr, Perry, GA 31069	478-287-4431	3.6 miles / 8 min drive
Best Western Plus Warner Robins	1056 GA Highway 96, Warner Robins, GA 31088	478-313-5700	7.6 miles / 11 min drive
Holiday Inn Express Warner Robins	4020 Watson Blvd, Warner Robins, GA 31093	478-333-2737	11.6 miles / 16 min drive
Hampton Inn Warner Robins	4000 Watson Blvd, Warner Robins, GA 31093	478-953-9443	11.7 miles / 15 min drive
Fairfield Inn & Suites Warner Robins	221 Margie Dr, Warner Robins, GA 31088	478-953-4200	11.7 miles / 18 min drive
Home2 Suites Warner Robins	205 Willie Lee Pkwy, Warner Robins, GA 31093	478-333-2954	11.8 miles / 16 min drive
La Quinta Warner Robins	4080 Watson Blvd, Warner Robins, GA, 31093	478-285-9623	11.9 miles / 15 min drive
Hilton Garden Inn Warner Robins	207 Willie Lee Pkwy, Warner Robins, GA 31093	478-971-1550	12.0 miles / 17 min drive
Candlewood Suites Warner Robins	110 Willie Lee Pkwy, Warner Robins, GA 31088	(478) 333-6850	12.1 miles / 15 min drive
Courtyard Warner Robins	589 Carl Vinson Pkwy, Warner Robins, GA 31088	478-602-6200	13.3 miles / 20 min drive
Hampton Inn & Suites Macon	5010 Eisenhower Pkwy, Macon, GA 31206	478-803-4900	23.6 miles / 25 min drive
TownePlace Suites Macon	1550 Mercer University Dr, Macon, GA 31204	478-812-8522	25.4 miles / 25 min drive
Marriott City Center Macon	240 Coliseum Dr, Macon, GA 31217	478-621-5300	29.5 miles / 30 min drive
Residence Inn Macon	3900 Sheraton Dr, Macon, GA 31210	478-475-4280	32.3 miles / 32 min drive
Home2 Suites Macon	3963 River Pl Dr, Macon, GA 31210	478-803-5300	32.4 miles / 31 min drive
Fairfield Inn & Suites Macon	4035 Sheraton Dr, Macon, GA 31210	478-738-9007	32.4 miles / 31 min drive
Courtyard Macon	3990 Sheraton Dr, Macon, GA 31210	478-477-8899	32.4 miles / 31 min drive
SpringHill Suites Macon	4630 Sheraton Dr, Macon, GA 31210	478-803-9100	34.0 miles / 32 min drive

Teams also have the opportunity to utilize Guardian Centers' [on-site lodging](#). Lodging options and pricing are listed below. Teams will need to coordinate directly with Guardian Centers to check availability and book on-site lodging by contacting Doug Lang at DLang@guardiancenters.com and referencing the DARPA Triage Challenge. Teams staying on site at Guardian Centers will not be able to

access their Team Tent, the Practice Area, or the Courses after 6:30 p.m. each evening or before 7:30 a.m. each morning.

- Cabins \$85 per night (single occupancy; 2 bedrooms/shared common space/shared bathroom)
- Cabins \$65 per night (double occupancy; 2 bedrooms/shared common space/shared bathroom)
- Enhanced \$55 per night (single bed with foot locker or side table in open bay room (6-12 pax per room))
- Open Bay \$45 per night (single cot in open bay room (3-100+ pax per room))

16. Systems Team Move-in/Move-out

Teams will move into their Team Tents at Guardian Centers in two groups. Group 1 will move in on a staggered schedule from 10:00 a.m. – 11:30 a.m. Saturday, September 28, and Group 2 will move in on a staggered schedule from 10:00 a.m. – 11:30 a.m. Tuesday, October 1. A detailed move-in schedule will be provided closer to the event date. Move-in times will also align with the systems and network checkout schedule, so teams are asked to not arrive before their assigned time slot.

Teams must check out with the Team Liaison when they are departing the venue for the day (each day).

Teams must return their workspace to its original condition and check out with the Team Liaison on or before 6:30 p.m. Friday, October 4.

17. On-site Parking

Guardian Centers

Each Systems Team is permitted to bring up to five (5) total vehicles to park at Guardian Centers. Teams are permitted to park two (2) vehicles and one (1) trailer (up to 20 feet) in the designated Team Parking Lot near the Team Tents (see Figure 1). These vehicles should be used to transport platforms between the Team Tent and Courses. The three (3) remaining team vehicles must be parked in the Overflow Parking Lot (see Figure 1). All team vehicles parked on site should fit in a standard parking spot. Parking passes will be distributed to the identified Team Lead at Team Orientation.

Cross Point Perry

Systems, Virtual, and Data Competition teams are permitted to park as many vehicles as needed in the parking lot surrounding Cross Point Perry. No parking passes are required.

18. Shipping

Teams are responsible for shipping their equipment to an outside provider as well as pickup and transfer of the equipment to and from Guardian Centers. Due to liability reasons, Guardian Centers staff will be unable to receive or sign for any team shipments. Local shipping centers are listed below and illustrated in Figure 3. DARPA does not promote or prefer any shipping provider below.

Name	Address	Phone	Distance to Venue
The UPS Store - Kathleen	1114 SR 96 Ste C-1, Kathleen, GA 31047	478-988-1124	7.2 miles / 11 min drive
The UPS Store – Warner Robins	2929 Watson Blvd #2, Warner Robins, GA 31093	478-953-5746	12.4 miles / 19 min drive
The UPS Store – Bonaire	530 GA-247, Bonaire, GA 31005	478-551-4491	13.1 miles / 22 min drive
FedEx Print and Ship Center – Warner Robins, Inside Walmart	2720 Watson Blvd Warner Robins, GA 31093	478-333-4532	13.2 miles / 21 min drive

The UPS Store – Macon	4339 Hartley Bridge Rd, Macon, GA 31216	478-781-6066	18.6 miles / 20 min drive
FedEx Print and Ship Center – Macon	181 Tom Hill Sr Blvd, Macon, GA 31210	478-474-1246	32.6 miles / 32 min drive

19. Systems Team Operational Considerations

Teams are responsible for assessing the potential dangers and/or real-world limitations of their technical solutions to be tested, in the context of safety, to both personnel and equipment. If a team is unsure if a specific piece of equipment is allowable, the team should check with DARPA via the [DTC Community Forum](#) prior to arrival at the event.

Standard radio frequencies (i.e., ISM bands) are permitted for use in and around the site. Teams should note that technologies that either require amplification or non-standard frequencies may be limited to within the Courses and possibly not be allowed for use within the Team Tents. If communication interference is discovered between systems, priority will be given to the team experimenting on the Course.

Teams may only conduct flight operations in the following locations at Guardian Centers: the Practice Area(s) and the three (3) Courses, including the Launch Areas.

Platforms that rely on fuel-based power sources are not permitted at Challenge Event 1.

20. Systems Team Safety

DARPA will provide a safety brief at the Team Orientation. No manual physical intervention or entry by any (human) team members on the Courses will be permitted during a run. Once a run has finished and the course is clear, up to two (2) team members will be permitted by the Course Official to retrieve any UxSs that remain on the course.

DARPA will provide reflective safety vests, hard hats, and protective eyewear that will be required to be worn in the Course Staging Areas and Launch Areas, and in the Practice Area(s) at all times. Team members are also required to provide and wear their own long pants and closed-toed shoes in these areas.

DARPA encourages teams to devise their own battery safety protocol to follow on site. When not in use, teams should store lithium batteries in fire retardant battery bags, no more than five (5) batteries per bag. Batteries should be stored at room temperature between 40°F (4°C) and 70°F (21°C).

21. Security

Guardian Centers is a fenced in facility with 24-hour gate security. In addition, DARPA will provide security to monitor the DTC event areas, to include the Team Tents, after event hours (6:30 p.m. – 7:30 a.m.). Systems Teams are encouraged to secure their equipment when they are not in their Team Tents or bring their equipment with them if leaving the venue.

Team Tents are open spaces. Teams must respect each other’s privacy and property. If Systems Teams do not want their systems viewed, they are encouraged to bring covering material for when they are being transported or stored in their tent.

DARPA is not responsible for any lost or stolen equipment. Nevertheless, acts of theft or sabotage will not be tolerated and will result in immediate disqualification.

22. Photo/Video Collection

DARPA intends to capture photographs and video during Challenge Event 1 for use in production materials and to provide situational awareness of progress throughout the Courses. Systems Teams may collect video and photographs of their systems operating within the Courses, Launch Areas, Practice Area(s), and their Team Tent. Teams are not permitted to take photographs or video of other teams' equipment or operations without explicit permission. Teams are also not permitted to take photographs or videos of other groups or events at Guardian Centers.

The Awards Ceremony and Seminar on Saturday, October 5 at Cross Point Perry will be live streamed. Teams may collect video and photographs at this event.

23. Food & Beverage

Guardian Centers provides a full service on-site commercial dining facility. Systems Teams are encouraged to utilize the on-site dining facility, bring food with them each day, or travel off site to purchase food and beverage. There are many food outlets within short driving distance (15 minutes) of the venue.

Guardian Centers dining facility meals must be purchased no later than 10 days in advance and prices are in accordance with prevailing U.S. General Services Administration (GSA) rates: \$13 for breakfast, \$15 for lunch, and \$26 for dinner. Standard availability includes: one hot option, soup/salad, sandwiches, chips, dessert, and a drink. Boxed (to go/delivered) options are available. If Systems Teams choose to utilize the on-site dining facility, they are responsible for coordinating directly with Guardian Centers by contacting Doug Lang at DLang@guardiancenters.com and referencing the DARPA Triage Challenge.

No food will be provided by DARPA at the Awards Ceremony and Seminar on Saturday, October 5 at Cross Point Perry. Teams will need to depart the facility for lunch off site.

Water will be provided by DARPA each day at Guardian Centers and at Cross Point Perry.

24. Weather

The weather in early October in Perry, GA is warm, with temperatures fluctuating between an average low of 56°F (13°C) and an average high of 80°F (26°C). In October, the average relative humidity in Perry is 65% and the average chance of precipitation is 17%. All team event activities at Guardian Centers will be located outdoors. Participants should be prepared for all types of weather by bringing layered clothing, umbrellas, rain jackets, sunscreen, fans, etc.

The Awards Ceremony and Seminar on Saturday, October 5 at Cross Point Perry will be located indoors.