



Qualification Guide

September 8, 2026

Version 1.1



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1 Introduction

1.1 Background

The DARPA Surgical Competition (DSC) seeks to identify emerging technologies and further develop capabilities for autonomous robotic surgical assistance. The competition's primary objective is to develop a minimum viable product for scalable trauma surgical robotics. This system must be capable of safely and collaboratively assisting with trauma surgery while rapidly learning new capabilities to gain trust and independence as a reliable surgical assistant.

The DARPA Surgical Competition aims to evaluate the integration of rapidly developing technologies to create an autonomous robotic surgeon. The competition will initially assess the key components required for robotic surgical assistance, focusing on a platform's ability to communicate, rapidly learn, and safely interact with medical instruments and soft tissue. Upon successfully passing these component gates, platforms will be evaluated on both their collaborative and independent surgical capabilities—two operational configurations that any human surgeon must competently master.

1.2 Qualifications

This document describes the Qualification guidelines and submission instructions for the DARPA Surgical Competition. Prospective teams are required to demonstrate performance capabilities to be eligible for competition participation.

The DARPA Surgical Competition has a defined qualification window from September 10th, 2026, to October 30th, 2026. Qualification is assessed by potential teams submitting a detailed technical whitepaper with links to demonstration videos. Qualification packets are submitted via the DARPA Surgical Competition Qualification Portal hosted and monitored by Government support partners Naval Air Warfare Center Training Systems Division (NAWCTSD) and Central Florida Tech Grove.

DARPA shall select up to 10 teams who successfully qualify for the Competition. Qualifications for the Competition will be on a “rolling” basis where materials submitted during the open qualification window will be assessed as they are received and DARPA will select up to 10 teams that qualify. DARPA will review all the materials submitted by the Qualification deadline before finalizing the number of qualified teams for the event.

All teams are required to complete Competition Qualification to officially participate in the DARPA Surgical Competition as a participant and attend the Workshop and scored Competition events.

1.3 Further Information

This document will cover the Competition Qualification and explain Competition Timelines (see figure 1).

This document is subject to change and may be superseded by later versions. The latest official versions of all documents will be posted to the DARPA Surgical Competition website. Significant revisions from past versions in this document are indicated by **blue** text. Teams are encouraged to closely review the entire document.

<https://www.darpa.mil/research/challenges/surgical>

2 Qualification Schedule

Competition Qualification submissions will be reviewed on a rolling basis and must be submitted no later than the listed deadlines to be eligible to participate in the events. DARPA will review the submissions and notify teams of qualification status within ten (10) business days after the qualification deadline. Teams are encouraged to submit their materials well in advance of the qualification deadlines. DARPA may request additional information or a teleconference with a team to discuss their submitted materials.

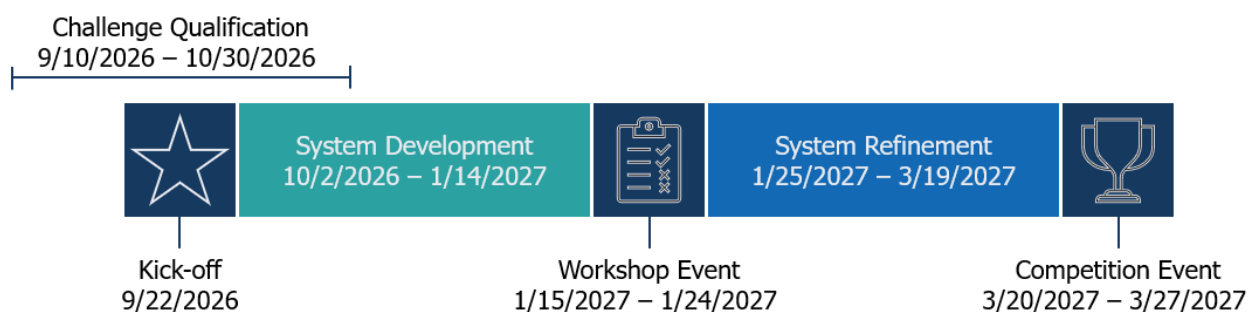


Figure 1: Competition Timeline. Dates for Qualification windows and Events.

2.1 Event Qualification Deadlines

Prior to competing in the DARPA Surgical Competition teams will be required to submit Competition Qualification proposals to demonstrate surgical applicability and capability. All qualification materials must be submitted via the DSC Qualification Portal. Qualifications officially close at 16:00 EST on October 30th, 2026. Accepted competitors to the competition will be allowed to participate in a Workshop event from 1/15/2027 to 1/24/2027 and the scored Competition event from 3/20/2026 to 3/27/2026. This single qualification window qualifies for participation in both events.

Event	Event Qualification	Event Date
Workshop	9/10/2026 – 10/30/2026	1/15/2027 – 1/24/2027
Competition	9/10/2026 – 10/30/2026	3/20/2026 – 3/27/2026

3 Human Subjects Research (HSR)

For the DARPA Surgical Competition, competitor teams must be included in the Independent Verification and Validation (IV&V) team's Institutional Review Board (IRB) protocol to access training data provided by the IV&V team. Use of training data provided by DARPA does not constitute HSR. Teams are prohibited from the collection or use of any other human subject data as part of their involvement in the DSC because DARPA HSR supervision is not feasible for teams not under a DARPA contract. Teams should carefully consider this limitation and should take this into account in their technical approach, leveraging other strategies as appropriate (e.g., simulations, non-human subjects data).

3.1 Definition of Human Subjects Research (HSR)

The term “human subject” can be applied to research efforts that meet **either** of the following criteria:

A living individual about whom an investigator (whether professional or student) conducting research:

- Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or
- Obtains, uses, studies, analyzes, or generates identifiable private information, personally identifiable information, or identifiable biospecimens.

Human Subjects Research involves:

Activities that include both a systematic investigation designed to develop or contribute to generalizable knowledge and involve a living individual about whom an investigator conducting research obtains information or biospecimens through intervention or interaction with the individual, or identifiable private information, or biospecimens.

4 Competition Qualification

To qualify teams must complete a set of qualification tasks and submit a narrative description of their approach. Submissions will be reviewed for validity. Qualifying competitors will be notified within ten (10) business days after the qualification deadline.

It is anticipated that **up to** ten (10) teams may successfully qualify for the Competition. Qualifications for the Competition will be on a “rolling” basis where materials submitted during the open qualification window will be assessed as they are received and DARPA will select up to ten (10) teams that qualify. DARPA will review all the materials submitted by the Qualification deadline before finalizing the number of qualified teams for the event.

Required submission packet must include:

- Narrative description of proposed system in PDF format as described in section 4.1
- Link to video of proposed system's capabilities as described in section 4.2

Qualification Packets must be submitted via the Central Florida Tech Grove DARPA Surgical Competition Qualification Portal. Further online submission instructions can be found on the DARPA Surgical Competition Tech Grove website.

Competition Website: <https://www.darpa.mil/research/challenges/surgical>

Qualification Portal: <https://centralfloridatechgrove.org/darpa-surgical-competition/>

4.1 Narrative Description

DARPA will use the narrative description to evaluate the team's overall approach and potentially inform additional follow-up questions and/or tasks. Please submit a PDF format document. The narrative description must include the following sections:

Part 1: Team Information

- Team Name
- Team Organization(s)
- Team Point-of-Contact (name, email, phone number, address)
- Team Roster, i.e., list of all team members, their affiliations and email. If foreign nationals are members of the team please specify here.

Part 2: Technical Approach (500 words max per subsection, images encouraged)

For each element of the Technical Approach below, DARPA will assess whether the plan is consistent with the rules and can safely and successfully compete in the DARPA Surgical Competition.

- **Experience:**
 - Note any relevant experience in surgical robotics, teleoperative robotics, and/or autonomous robotic platforms.
- **Robotic System**
 - Description of the proposed robotic system
 - If multiple systems are proposed to be implemented, specify here.
 - Description of parts / subcomponents
 - Weight and size of platforms
 - Power requirements of full system (including end-effectors & peripherals). Specify if proposed solution will run on wall power or battery.
 - Estimated force / torque outputs from system.
- **End-Effector(s)**

- o Description of the proposed robotic end-effector(s).
 - o If multiple end-effector designs are proposed to be implemented, specify here.
 - o Description of parts / subcomponents
 - o Weight and size of end-effector(s)
 - o Estimated force / torque outputs from the end-effector(s).
- **Perception / Sensing**
 - o Description of sensors proposed for the robotic system.
 - o Description of implementation of the proposed sensors into the design of the robotic system.
- **Teleoperation**
 - o Description of the teleoperation control framework
 - o Description of emergency stop (E-Stop) and safety features
 - o Description of hardware enabling teleoperation
 - o Description of user interface.
- **Autonomy**
 - o Description of high-level software architecture for autonomy.
 - o Description of algorithms enabling autonomy
 - o Description of features the sensors & algorithms are identifying to enable autonomous capabilities.
- **Compute**
 - o Description of local compute hardware.
 - o Description of network architecture.
- **Positioning & Safety Plan**
 - o Diagram of system placement around the operating table
 - o Safety plan for collaborative operations with human surgeons
- **CIDR Block Information**
 - o Organization's Static IP Address to be allowed whitelist access to data repository (see section 5)

4.2 Competition Qualification Tasks

4.2.1 Demonstration videos

- Links to unlisted YouTube videos
- Short Description of each video (100 words max per video)

The demonstration videos must include at least the qualification tasks listed in Section 4.2.2 but may also include additional videos that the teams feel will support their submission.

DARPA may choose to request additional demonstration videos, a follow-up teleconference, or in-person visit to a team's site. Teams should be prepared for possible visits, if needed. Only materials received by the qualification deadline will be considered.

Any significant changes in technical approach after initial qualification must be disclosed to DARPA and approved in advance of each event. Examples of significant changes could include different robotic hardware, end-effector hardware, and/or system design. DARPA may require additional demonstrations and/or safety inspections before a new system type may be used in a competition event.

All qualification materials must be submitted via the DARPA Surgical Competition Team Portal. The narrative description should include links to any videos that are intended to be included as part of the submission. All videos should be posted to YouTube with the privacy setting set to "Unlisted." Narration of the videos is allowed.

4.2.2 Robotic Tasks

4.2.2.1 Robotic Motion

Teams must provide video evidence of their proposed robotic system demonstrating safe motion. Teams must also demonstrate evidence of their proposed end-effectors similarly safely operating. Systems and end-effectors may either be teleoperated or moved through autonomous control. End-effectors are not required to be fully integrated with the robotic platforms at the time of qualifications; however, an integration plan must be included in the qualification narrative.

4.2.2.2 Emergency stop

Teams must demonstrate emergency stop capability for all robotic systems. All systems participating in the Surgical Competition must utilize an on-board hardware emergency stop or prove they can otherwise stop all robotic motion with a hardware kill switch.

4.2.2.3 Surgical Capability

Teams must demonstrate the ability for their robotic system to perform three skills off the following list of surgical capabilities:

- Retract tissue
- Suction fluid
- Irrigate with water
- Adjust lighting
- Pass surgical instruments
- Cauterize tissue
- Suture tissue
- Clamp vessels
- Incise skin
- Lift tissue

Simulated tissue for the video demonstrations may be low-fidelity and conducted on plastic, rubber, silicone, or similar simulated stand-ins for tissue (e.g., plastic tubing to simulate vessels, rubber mats to simulate skin, foam or chicken to simulate soft-tissue). The goal is to demonstrate the robotic motion capabilities necessary for these surgical skills. Demonstrations may be teleoperated or autonomous.

For any special-case considerations, teams may send inquiries to:
SurgicalCompetition@darpa.mil.

5 CIDR Block Request Information

DAPRA is partnering with the MIT Lincoln Laboratory (MIT-LL) to host Government Furnished Information in the form of surgical datasets to be provided to qualified competitors via the AGENT RAPIDS data repository.

The AGENT RAPIDS site is an Impact Level 4 (IL4) environment hosted on AWS Gov Cloud. Due to the Lab's security posture and the nature of the data on AGENT, we need a sponsoring agency to identify organizations that need access. We then need organizational-level IP addresses (CIDR blocks) to whitelist traffic from those organizations.

Organizations with static IP addresses can get their information from the following links:

- <https://checkip.amazonaws.com/>
- <https://api.ipify.org/>
- Checking both links helps to ensure we capture any IPs/Networks traffic origins
- Individuals will need to visit those URLs from the same network they plan on accessing AGENT RAPIDS from. For instance, they should ensure they are connected through their organization's VPN before trying to determine their IP address.

We will need to coordinate directly with the organization's IT personnel if the organization uses dynamically allocated IP addresses.

IT personnel should be able to assist if people have issues with the instructions above.

Please note that it takes our security personal about 2 weeks to approve a whitelist request once it is received.