Frequently Asked Questions

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***New questions are marked in blue.**

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General

Q: Foreign Participants: Can non-US persons and organizations participate?
A: Yes. As stated in the DTC BAA (HR001123S0011), "non-U.S. organizations and/or individuals may participate to the extent that such participants comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances." In addition, as stated in the terms and conditions "An individual, organization, or sponsor is not eligible to apply or participate if they are on the Specially Designated Nationals list."

Q: When is the deadline to qualify as a competing team in the Triage Challenge?
A: The deadline for Year 1 has passed (November 18, 2023). For qualification in future year events please check our website for announcements or subscribe to the newsletter.

Q: Is it possible for a self-funded team to become DARPA-funded at a later date? What is the process to get on contract?

A: DARPA would work with any teams that are selected for a contract to get the appropriate paperwork completed.

Q: Do we expect down-selects each year for DARPA-funded teams?
A: Yearly down-selects are built into the challenge. Criteria are based in part on objective measures (score), as well as more subjective features such as overall performance on deliverables, event participation and user interface.

Q: How many teams will progress to Phase 2?
A: At this time the number is still pending.

Q: What are the eligibility requirements for a team?
A: Complete eligibility requirements for teams will be posted on the DTC website, when available (triagechallenge.darpa.mil). General eligibility terms will be similar to previous DARPA challenges, and are as follows:

The DARPA Triage Challenge is open to all teams and institutions, subject to the caveats below.

A. All participants under 18 years of age require the authorization by a parent or guardian.

B. U.S. Government organizations and FFRDCs may participate in the DTC but are not eligible for prizes. To the extent there is a limit on the number of participating teams, the participation by Government organizations will not prevent non-federal entities from participating in the Challenge. Government organizations that plan to participate in the DTC in any manner are encouraged to reach out to DARPA for clarification on these Terms.

C. DARPA employees and DARPA support contractors and their spouses, dependents, and household members are not eligible to participate in the DTC.

D. Federal employees and contractors acting outside the scope of their employment should consult their ethics official and appropriate management before participating in the DTC.

Q: Are interactions between the 5 different tracks allowed and/or encouraged?
A: Yes, one of the goals of the DTC is to foster increased interactions within the medical triage community.

Q: We are working on algorithm development for another DoD program, does this affect our ability to apply to DTC.
A: No.

Q: What is the relationship with DARPA In the Moment (ITM) program?
A: ITM and DTC are separate and complementary programs in two DARPA technical offices. The two programs address different aspects of medical triage. Analysis of sensor data in DTC could be used by and/or informed by the sorts of algorithmic decision-makers being developed in ITM.

Q: We are interested in participating in your competition, but we find the information regarding the prize money distribution somewhat ambiguous. You mention a total prize

fund of up to $200,000, but it is not clear how this amount is divided. Could it be split into multiple parts?
A: Prize money for year 1 and 2 would be divided among the top 3 self-funded teams provided they are within the top 5 over all for that competition.

Q: For Dr. Kozar's talk during the Kick-off meeting, what were the citations for data presented?
Zeineddin, Ahmad, et al. "Prehospital continuous vital signs predict need for resuscitative endovascular balloon occlusion of the aorta and resuscitative thoracotomy prehospital continuous vital signs predict resuscitative endovascular balloon occlusion of the aorta." Journal of Trauma and Acute Care Surgery 91.5 (2021): 798-802.

Melinosky C, Yang S, Hu P, Li H, Miller CHT, Khan I, Mackenzie C, Chang WT, Parikh G, Stein D, Badjatia N. Continuous Vital Sign Analysis to Predict Secondary Neurological Decline After Traumatic Brain Injury. Front Neurol. 2018 Sep 25;9:761. doi: 10.3389/fneur.2018.00761. PMID: 30319521; PMCID: PMC6167472.

Q: When will the datasets be made available?
A: Training data is anticipated to be made available to qualifying competitors within the first month of each phase.

Q: Are there publication restrictions? Can we publish results? Are there IP restrictions?
A: DARPA-funded teams should reference their contract for any publication restrictions and/or required review processes. Self-funded teams do not have publication restrictions. If no restrictions, the team would still appreciate reviewing a copy as a professional courtesy and to ensure performer messaging is aligned with that of the agency.

Q: How many prizes will be available?
A: DARPA is currently planning for 1st, 2nd, and 3rd place for each Competition. Please see the latest Rules document for more detail.

Q: Are there any plans for work developed through the DARPA Triage Challenge to move forward with a transition partner and move past research and development?
A: DARPA has connected with various stakeholders. DARPA currently plans to have stakeholders invited to the Challenge Events and meetings to engage and learn about the technical developments the teams are developing. DARPA also encourages teams to network and find interested parties.

Q: Can we suggest modifications to the scoring metrics?
A: Please send your suggestions to the TriageChallenge@darpa.mil mailbox.

Team Qualification

Q: When applying, it says list team members and affiliations, we anticipate adding more people with time. Can I change the number of team members after applying?
A: Teams will have the opportunity to add members up until the Event Qualification before each event, provided they meet the qualifications listed in Terms and Conditions.

Q: Is it possible to include a high school student as a team member for the competition? Additionally, can they use this competition project to also serve as their science fair project?
A: Yes. As stated in the Terms and Conditions:

"The DTC is open to individuals and team members of all nationalities and of all ages, with the following exceptions: All participants under 18 years of age require parental or guardian authorization." for more specifics on who may participate and requirements to participate please refer to the Terms and Conditions.

While the algorithms and the process to develop them is open to present at a science fair, the actual raw data is protected

"Competitors acknowledge DARPA's mission-requirement and intent to safeguard privacy and civil liberties, and that sensitive or identifying data (including personally identifiable information (PII) or protected health information (PHI)) is not relevant to the DTC activities and that DARPA-provided datasets supporting those activities have been intentionally de-identified to ensure—to the greatest extent practicable—that there is no reasonable basis to believe that the data could be used to trace a specific identity or present a risk of harm to any individual. Accordingly, the DTC competitors agree they will not intentionally attempt to download, re-identify, share, or re-use DARPA-provided data."

Q: Do teams have to compete in Year 1 to be eligible to compete in later rounds?
A: No, each year has separate qualifications.

RITMO

Q: What types of interactions do DTC competitors have with RITMO performers? Can a DTC competitor suggest what new data should be collected?
A: There will be multiple opportunities for DTC competitors to engage with RITMO performers. These interactions will provide critical insights for model development and interpretation based on RITMO performer's expertise in the patients, physiology, practices, and sensors reflected in their data. Additionally, feedback to RITMO performers could potentially guide adaptive changes to RITMO approaches. However, DTC competitors should not plan on their suggestions being incorporated into RITMO plans.

Q: Is it too late to apply to RITMO?
A: Yes, source selection for RITMO has concluded.

Q: Who is responsible for cleaning the data, organizing it into a usable format?
A: Data will be organized and checked for imputing and linkage errors. However, an important part of the Challenge is handling the inherently messy aspects of physiological data recorded in real or simulated trauma settings. Competitors should use methods that provide real-time decision support based on the imperfect inputs expected in military and civilian mass casualty settings.

Systems Competition

Q: Is the focus going to be mainly military? Or civilian?

A: The goal of DTC is to address the widespread need for improved triage. There will be both military and civilian scenarios.

Q: Can we use outside Gov't equipment (e.g., furnished by a finished program)?
A: There is nothing explicit in a challenge that would prevent this. Rules for use of equipment acquired for other contracts would depend on that contract.

Q: Do you anticipate an API / standard output separate from the UI for scoring? Like a JSON file with location coordinates and assessment details? An API we have to call when detections are made?
A: DARPA expects to publish an API for interfacing with the DARPA reporting and scoring servers.

Q: For the Systems event, can you please clarify how the actors / patients will provide accurate signatures (e.g., thermal, breathing rate, pulse, visual paleness, etc.) associated with their simulated injury storyline for the sensors to detect and the algorithms to process against.
A: DARPA expects to make the Systems scenarios as realistic as possible using both actors and manikins, which will create many opportunities for collection of relevant data through responsiveness, movement (walking, crawling, etc.), posture, anatomy and visible injury patterns, chest motion (e.g., reflecting respiratory or cardiac activity), thermal or other features. Actors will have monitors attached to them to provide accurate ground truth measures.

Q: What is the expected Emergency Stop (E-stop) behavior?
A: DARPA expects to release more information on E-stops at a later date. Please check back.

Q: Is there a minimum distance a UAV needs to be from a casualty?
A: The minimum distance is weight-based, please refer to the Rules for the current requirements.

Q: Is manual control of platforms allowed? How many platforms can one operator control?
A: Yes, manual operation is allowed in year 1. For UAS, each pilot may control one platform.

Q: Will DARPA be requiring time stamps for sensors?
A: Sensor time stamps will be reviewed to verify report time was accurate.

Algorithm

Q: Which algorithmic approach is more likely to succeed?
A: DARPA will not comment on likelihood of success for specific approaches or technologies. Proposed algorithms must fit within the scope and spirit of the DTC Program.

Q: How big are the training datasets for Data Competition?
A: Few hundred GB for TATRC (real-world video) and ARA (virtual world).

Q: Will camera metadata and camera info will be given for the TATRC training data?
A: Yes.

Sensors

Q: Do we need to use commercially available sensors?
A: As the primary focus of the DARPA Triage Challenge is the development of physiological signatures and analytical algorithms, not hardware, proposers are encouraged to use COTS, or near-COTS sensors, and robotic platforms. However, if a proposing team has an aforementioned component under development that could be modified within the duration of the program and used in the challenge events, it can be included in the proposed approach.

Q: How much of our effort can be devoted to sensor development?
A: The challenge is focused on signature identification not sensor development. While we understand there may need to be some sensor development, the program has a tight timeline. If proposing sensor development, teams are encouraged to include milestones on the path to fielding the sensors for data collection as well as risk mitigation steps.

Q: The Systems Competition of the DTC seems to be focused on only non-contact sensors. Would a contact sensor approach be completely outside the scope of the challenge?
A: Developing contact sensors is out of scope for the DARPA Triage Challenge.

Q: Will video training data provided by TATRC be available to all tracks?
A: Yes.

Q: Can we use a visible spectrum laser as part of our sensor suite?
A: Laser based sensors are permissible provided the laser is class 1 or class 2 (eye-safe), and does not illuminate large portions of the casualty.

Communication Systems

Q: Will DARPA provide any infrastructure for competitors?
A: DARPA will provide hard-wired networking for on-course report submissions from base stations for scoring. We are considering providing a wireless network for on-course comms to base station.

Q: What are the limitations on communication systems? Are there specific frequency bands or protocols that we should adhere to, or are we free to choose our communication technology?
A: We are currently planning to allow teams to select their own communication technology with the caveat that they many need to shift channels to deconflict and they will not be allowed to use open LTE or 5G. The selected solution must be NDAA 2023 Section 817(a) - compliant. The signals must be encrypted. We may be providing a closed WIFI network for teams that choose to use WIFI.

Q: Is there going to be an RF-free zone?
A: DARPA isn't currently planning to insert frequencies as a challenge element, but may not be able to block all frequencies that may reach the course.

GPS Usage

Q: Is GPS allowed? Do teams need to design systems for GPS-denied navigation as well?
A: GPS will be allowed in year 1. In future years courses may include indoor components which would degrade GPS in these conditions. Teams will have access to an IPS solution, still to be determined.

Area Coverage and Time Frame

Q: How big are course areas that needs to be covered during the competition and what is the time frame in which teams are expected to complete this task?
A: The size of the course will be different for each year. Current guidance for year one is that a course W100ft x L100ft x H100ft in dimensions with a course run time between 15 and 60 minutes. Please check Rules for details.

Q: Regarding visual occlusions, will casualties be accessible or completely buried?
A: Full occlusion is possible in later challenge years. For year one, casualties will be assessable from multiple angles.

Q: Are the values of the features on the manikins changing with time? Do we need to align our system's time with challenge's time?
A: There are time-variable physiology engines in the manikins, vitals will trend with scenario settings (casualty cards). Timestamp on the casualty report will be evaluated for accuracy and timestamp on when the report was received will be evaluated for golden window bonus points (see Rules).

Casualty Detection

Q: For Systems platforms, can teams interact with people who are injured (e.g., talk with them, ask them to move)?
A: Yes, non-contact interaction is a possible approach.

Q: What conditions are you looking for in DTC? What about alive or dead?
A: We are not asking to report on whether the casualty is alive. Please check Rules for details.

Q: Why are you not looking at localization and rate of detection in year 1?
A: The goal in year 1 is to focus on challenges for physiological sensing.

Q: How do we reconcile manikin physiology (ie – breathing detected but HR=0)?
A: Within the realm of what's feasible – manikins are a little removed from reality. Explicit identification of manikin from humans is not required.

Q: How is the mannequins HR being generated?
A: There's no actual heartbeat for the manikins. Manikin HR will not be detectable by standoff sensors. We expect only actors and virtual humans will have HR. Respiration rate in manikins is mimicked by chest expansion movement.

Q: What is the number of casualties we are expected to detect during the competition?

A: The number of casualties will increase each year. Expect to start with approximately 10-12 per course in year 1.

Q: The initial triage seems to assume static patients, should we expect this?
A: For Challenge 1, the casualties will not be ambulatory.

Q: For casualties that move, will the April Tag move?
A: For year 1, everything will be stationary.

Data Display

Q: Are teams required to display the data collected over a mobile ground control station (GCS) or a stationary one?
A: The GCS may be either mobile or stationary. Data collected will be sent over a wired network to the evaluation team.

Human Interface and GUI

Q: Could you clarify which elements of decisions are being made by humans during the triage challenge.
A: For the Systems Competition, systems should be autonomous for sensing and analysis. There can be no human input. Team members are present for safety and oversight to ensure systems/transmissions are working as intended.

Q: What are the requirements for the graphical user interface (GUI)? What are some desired functionalities?
A: While a human interface is required, it will not be part of the scoring at events. However, there will be stakeholders at events that will have opportunities to look at the GUI and potentially give feedback. Usability of the GUI may affect the likelihood of future investment in the system by stakeholders after the DTC ends.

Q: Is BATDOK a requirement for the user interface portion of the challenge?
A: It is not a requirement but would be considered a useful feature. Other considerations are easy interpretability of the data for emergency medical personnel and providing scope on the scale of the mass casualty scene.

Q: Is the person at the base station making decisions a member of the competition team or from DARPA?
A: At the team base station there will be a team member who monitors data transmission but is not interacting with the autonomous processes.

Scoring Metrics

Q: How is each casualty scored if we are not asked to localize them?
A: Each casualty will have a AprilTag located near it to disambiguate between casualties. Please see Rules for more details.

Q: Will the reports need to be automated? No human is involved in generating them? Will reports be submitted in real time?
A: Yes, reports need to be automated. Operators cannot alter automatically generated reports. Please see the Rules document for reporting and time-stamp details.

Q: For systems track, what is the verbal score? Will the casualty be making noise or talking? Should we prompt first or will they make sound or speak themselves?
A: The casualties will be making noise e.g. breathing, moaning, gasping. They will not be likely to talk without prompting.

Q: What is the motor alertness score?
A: Casualties will be making some movement but can be prompted to do additional movement (no walking in year 1).

Q: Can we play audio to the casualty or verbally interact?
A: You can play audio, and verbal communication is allowed. However, these procedures need to be automated.

Q: What are some example cues for actors on courses?
A: Responsive, less responsive, trying to walk. We may ask them to slow their breathing or hold their breath for a brief period.

Q: What is the emphasis on false alarms? What if we see blood on the arms but the injury was actually on the chest?
A: All actors and manikins will be clothed. Our approach is to develop casualty reports for defensible categories so there's unambiguous ground truth.

Q: For the virtual competition, can you make more reports than the number of casualties?
A: Yes, we will count the last report as your final report for each casualty.

HSR

Please refer to Kick Off Meeting slides (Day 2) for guidance on HSR

Q: Given the rule that Self-Funded teams are prohibited from the collection or use of any other human subject data as part of their involvement in the DTC, are we allowed to bring previously developed algorithms that were trained on human subject data that fell under an IRB protocol?
A: You may bring algorithms developed prior to DTC under approved IRB protocols.

Q: For Systems competition, there's IRB from the DARPA's side. Will we get to see the protocol? Do we need to keep data offline that we collect during the workshops?
A: Yes, we will provide the IRB protocol. For data collected during workshops, you are not permitted to share that data. TATRC will amend the protocol if competitors have sensors outside the scope of their IRB.

Q: Can we use HSR data we collected before for training?
A: No. All HSR datasets used must go through HRPO approval.

Q: If we use volunteers from the lab to test our equipment / algorithms does it count as HSR?
A: Yes, using volunteers from the lab to do testing would still count as HSR.

Q: Do we have to use our internal IRB?
A: No, but internal IRB is usually less costly compared to commercial IRBs.

Q: Do team members who are just working with a robot and not working with any data need to do the CITI training?
A: No.

Virtual Competition

Q: What will the Virtual Competition consist of? Will it be another data driven event or will there be some simulation of the collection of data (e.g., robotic autonomy, etc.)?
A: DARPA is funding the development of a virtual world to support the Virtual Competition. There will be simulation of the collection of data. It is anticipated that the complexity of the world and scenarios of the world will develop over the course of the challenge.

Q: What is the difference between virtual humans and avatars?
A: An avatar is a very human looking 3D mesh. A virtual Human is an Avatar with physiology added to it.

Q: How do we account for the differences between virtual humans and actors/manikins?
A: There will be limits to what the virtual casualties can do. We want to hear which signals you are looking for so that we can research ways that we may be able to represent them.

Q: Can we interact with the virtual humans to uncover / move rubble?
A: No, similar to the Systems tracks the requirement is for teams to do evaluations as standoff.

Q: How realistic is the "simulation framework' presented by ARA? While the visuals are impressive, have they performed any validation?
A: We are adding information to these MetaHuman meshes. A good example is how we take data from BioGears then animate nodes like Subsurface Scatter to mimic heart beats per minute. These slight changes can be detected by rPPG.

Q: When will the Virtual Platform be available?
A: First release is anticipated 3 months after Kickoff.

Q: Is the simulation going to be similar to the Systems course?

A: Weare striving to have similar synergistic elements in the two competitions during the course of the Triage Challenge.

Q: Are there limits on the number of platforms teams can use?
A: The plan for year one is that teams will be limited to one platform.

Q: Do we need to use all the channels that are provided to compete (eg. RGB, audio and IR)?
A: DARPA expects teams to develop individual / unique solutions which may use 1, 2 or all of the channels provided depending on their design.

Q: Will there be more sensor configurations added?
A: It is anticipated that additional configurations will be added in future years.

Q: When sending information back to the Base Station, do we need to take into account packets being dropped? Is there noise in the comms or delay?
A: Assume comms work, this is not a networking challenge

Q: Will degraded sensing be simulated in year 1?
A: It is not anticipated that there will be much in year 1.

Q: Will DARPA provide sensors and will they be synchronized?
A: Yes, for year 1

Q: Is autonomy required for year 1?
A: Teams will submit their algorithm for evaluation on a test scenario. No manual navigation will be possible in year 1.

Q: Can we play audio to the casualty or verbally interact?
A: The virtual humans can be programmed for slurring, speech, or answer a series of standard questions with different responses.

Data Competition

Q: Will DARPA provide any infrastructure for competitors?
A: DARPA expects to provide cloud computing resources (AWS) for the Data Competition.

Q: Do you anticipate there would be a subset of LSIs that are rare in the RITMO data, or that are administered with little or no previous clinical data for the patient?
A: Yes, challenge scoring will consider the frequency of specific LSIs in the data and availability of preceding data for predictive model development.

Q: We currently have an algorithm that works really well at predicting LSIs but it requires a specific data type or sensor, how do we apply if we don't know if that data type is available?

A: The goal of DTC Data Competition is to promote the discovery of novel signatures that enable algorithms to predict LSIs using a variety of different data sources. We expect successful approaches will leverage multiple data sources from a variety of sensors and will be robust to drop outs of any given data source.

Q: Is there a potential that manually recorded data may not sync up well with automatically recorded data?
A: Yes, there is a potential for this to happen. Algorithm development should consider the data-collection challenges in trauma settings.

Q: For the Data Competition, will the metric of predicting LSIs administered consider the fact that in the real-world data, some LSIs may not have been administered when they were needed?
A: We will not determine case-by-case whether LSI should have been implemented in the real-world data. Useful models should take this and other real-world considerations into account.

Q: Each unit of blood transferred – does it count as separate LSI?
A: Yes.

Q: Is LSI event documentation in real time? Video recorded? Expo facto? What's the error window in reporting?
A: These are real life resuscitations; documentation is secondary to saving lives. Algorithms will need to accommodate sometimes 20-30 LSIs stacked on top of each other if they are documented at the same time. Video recordings of procedures will not available for year 1 but is planned to be added to the RITMO dataset in later challenge years.

Q: Are we getting FAST, eFAST, do we need to ID those types of interventions?
A: Those systems are not included in the dataset.

Q: While working with the RITMO data, what do we do if we see Protected Health Information (PHI)?
A: Please contact the DARPA team and we will remove it.

Q: For the RITMO data, will we have example file or readme?
A: We will provide a data dictionary.

Q: To interpret blood pressure data, do we have information on the patient's pose?
A: Patients are all initially supine upon arriving at the trauma bay, after a first 5 min assessment, patients typically sit up, injury allowing. There's no way to know their position when the data was taken.

Q: Can R and Python be used in the Data Competition?

A: Python and C++ are native to the AWS environment. R may be used if you bring in an RStudio license. Matlab cannot be used in Sagemaker for DTC at this time.

Q: Can we sync through Git?
A: Yes, Git commits go through a tunnel from the secure environment to the web for algorithm development.

Q: Can we generate synthetic data?
A: Yes. Publicly available synthetic datasets can also be used.

Q: Can we download derived data from AWS (statistics, analytics)?
A: Export buckets for derived data will be examined and exported upon approval by the IV&V team.

Q: What data description should we use for RITMO when publishing?
A: The RITMO and IV&V teams are working on a RITMO data description competitors can cite in their papers.

AWS

Q: What's the storage limit per team?
A: Not determined at this point.

Q: Can RITMO data be downloaded from the AWS workspace?
A: You may use a GitHub repo to access the data. One cannot move data out of AWS environment. APL will set up extraction buckets to be scanned and checked before export.

Q: For Sagemaker, what are the compute resources we have?
A: We limit instances you can spin up. Team members can share the same instance.

Q: Are we limited in our compute credits? Can we purchase additional compute?
A: Teams are limited to what DARPA has provided. Teams may not purchase additional AWS resources.

HSR

Please refer to Kick Off Meeting slides (Day 2) for guidance on HSR

Q: Per the NIH Investigator Manual for Human Subjects Research: "IRB approval is not needed for secondary research when biospecimens and/or data are fully de-identified/anonymized by removing all identifiers and re-coding or disposing of the code key AND no one collaborating will have any way to re-identify the materials. Can we propose use of these datasets in our technical approach?

A: As all such datasets would require IRB and HRPO review to determine that they are indeed fully deidentified, self-funded teams would not be able to bring in deidentified datasets. DARPA will provide access to MIMIC III/IV datasets as additional training data for all teams.

Q: The Data competition involves human medical data from the RITMO program; do we need a human subject research (HSR) plan?
A: No, the medical data will be collected by RITMO performers for the purpose of supporting this Challenge. RITMO data will be deidentified prior to release to DTC competitors.

Q: In the Data competition, is all data provided by DARPA or we will have the chance to do some testing for data generation?
A: Self-funded teams are prohibited from the collection or use of any other human subject data as part of their involvement in the DTC because DARPA HSR supervision is not feasible for teams not under DARPA contract.

Q: If we have public, deidentified patient dataset our local IRB determined not HSR, can we use it?
A: Please send us the protocol, IRB determination to get HRPO approval for use. Until HRPO approval has been granted, you cannot use the dataset for DTC.

Q: Can we use algorithms from previous work trained on other data?
A: Yes.