

**1. What is the maximum power draw for an Acquisition System?**

A: Acquisition Systems will be limited to a 5 Amp maximum power draw.

**2. What is the distance between the entry point and the front of the center lane in the Rally Station?**

A: There will be three feet between the entrance of the Rally Station to the six by eight foot area where your system will be installed.

**3. Can you cite a few examples of DHS use-cases relevant for the 2020 Rally Group Phase evaluation?**

A: There are a couple of different DHS use cases, such as biometric boarding where some people are open to using the biometric process and others are not, and they have the right to opt out. There are other places in DHS operations where there might be a queue for biometric screening, and a queue for people not enrolled in that program.

**4. Is the signal from the Rally Station beam break available through the API so it can be used by the Acquisition System to trigger events when the volunteer enters the station?**

A: The beam break signal is not available through the API. However, that does not preclude you from using your own beam break or some other type of mechanism at the front of your test space. I would highly recommend that you consider drawing a schematic of your six by eight foot space as part of the application package. This schematic might include things like cameras, triggering mechanisms, signage.

**5. Will wrist band scans be used to establish ground truth in the Rally?**

A: We will be scanning wristbands to establish ground truth in both Phase 1 and Phase 2 of the Rally. During Phase 1, we will scan volunteer wrist bands individually before they enter the station. During phase 2, we will scan opt-in volunteer wrist bands as they exit the station.

**6. How will the quality of images captured by Acquisition Systems be determined during the Rally? Will samples of acceptable/unacceptable quality images be provided?**

A: In Phase I, quality will be assessed based on the ability of the image you submit to generate a template using an appropriate algorithm we have at the MdTF. If it does not generate a template, we will count it as insufficient quality for matching, and that will count as a failure to acquire. During Phase 2, there's an additional requirement that the image generate a template and match at rank one a pristine same day enrollment image for the subject. We won't provide samples of acceptable and unacceptable quality for you. That's for you to judge. This is something that you must determine on your own based on your experience with biometric technology. Also, we are not using a quality algorithm as a proxy for matching performance. Quality means that we got the right matching results at the end.

**7. During Phase 2 of the Rally, will multiple individuals be present between entry and exit beams at the same time?**

**A:** Yes, for Phase 2 multiple people will be present between entry and exit beams. There will always be a small group of individuals that will be passing through the middle lane at the same time. It's up to your system to appropriately handle that small group of individuals and acquire one image, in the case of face, per individual in that small group. If your system is multi-modal, we ask that you provide one capture of either two irises or up to ten fingerprint per individual within that small group.

**8. What kind of hardware can Acquisition Systems use during the Rally (number of cameras, other sensors, etc.)?**

**A:** It is up to you as to what hardware you use. We encourage you to think about the process, think about the technology, and creatively come up with a combination of hardware that performs well on the metrics we've defined. We are describing the outcomes we're looking for and how we plan to evaluate performance, but it's up to individual companies to innovate inside your six by eight foot space. However, there is a safety requirement here as well. We want to ensure the safety of our test participants and will do checks for eye safety, sharp edges, hanging wires, enough room to maneuver in the space without tripping hazards. Each system is also required to obtain third party attestation that all components are safe from a third party, such as UL.

**9. Will all volunteers participating in the Rally be proficient in English? Should other languages be covered in Acquisition System instructions?**

**A:** Volunteers participating in the Rally will have at least some English proficiency. However, we recommend generally that any signage instruction you provide is language agnostic and easy to understand quickly.

**10. Are there any restriction on the technology that Acquisition Systems can use during the Rally (resolution, infrared etc.)?**

**A:** As long as the technologies are safe and conform to the requirements specified in this webinar. There is an additional size limit on the size of an image per biometric modality that wasn't listed in the webinar but is listed in the Acquisition System API.

**11. How will ground truth be collected at the Rally Station? Is the vendor responsible for collecting ground-truth or the testing facility?**

**A:** It's the MdTF's responsibility to collect ground truth. We will have our own systems scanning volunteer wristbands. We will track who is in the facility at any given time and who is entering each test station.

**12. Do Acquisition Systems have to collect all images in a non-contact way (e.g. fingerprints)?**

**A:** No. If you have a contact way to collect fingerprints, and you think it will perform well within the performance categories, you're more than welcome to submit that technology to the Rally.

**13. Are there any limitations as to Acquisition System camera position or placement (e.g. height, distance)?**

**A:** Cameras must be within your six by eight foot square space. There is a height limitation, but it's generally as high as the ceilings in the test Facility, which are about 10

feet. You can also not use the softwalls or other test instrumentation to mount or otherwise hold your system's equipment.

**14. Should Acquisition System Providers deploy different hardware to demonstrate that they cover various DHS use cases (Booth, Kiosk, Podium, Free-standing, E-gates)?**

A: We expect only one system to be used in both phases of the Rally evaluation. Systems should be designed so that they can meet the requirements that we've explained during the webinar. Applicants may submit more than one system for consideration. Each system should be submitted as a separate application and each system should be capable of meeting the performance thresholds of both phases. If you submit more than one Acquisition System application, you may recommend which one you prefer for selection, however DHS will determine which system meets the use case in the Rally best. You can also submit multiple Matching System applications, those will be considered separately from Acquisition System applications.

**15. How much time Acquisition System Providers have to setup our systems? Can we use additional lighting?**

A: Acquisition System Providers will have one day to install. Additional eye-safe lighting may be used.

**16. Are you looking for evaluation of specific hardware and software systems or are you also interested to software only, which is hardware independent for acquisition?**

A: For the Acquisition System evaluation, we are looking for acquisition system hardware and software. For the Matching System evaluation, we are looking at matching algorithm software.

**17. Will the opt-in volunteers pause in front of the unit to see the capture result? If they won't, what's the basis on which their feedback is considered for the usability satisfaction metrics?**

A: Opt-in volunteers will not pause in front of your system unless your system instructs them to do so. The satisfaction kiosk is there to gauge whether or not the participants enjoyed the interaction, whatever it was. So if your system requires the volunteer to perform an action, say wave their hand through a fingerprint scanner, then that will be reflected in that score. If the system is simply a portal, then that will be reported in that score. Keep in mind that the competitive frame for the systems in Phase 1 is the sixteen Acquisition Systems included in testing and each volunteer will experience each one of those systems. For phase 2 it will be the up to eight systems selected for phase 2. Satisfaction is a relative measure, meaning that participants are likely to be judging a system relative to the others that they observe during testing.

**18. Can Matching Systems refuse to generate a template for an image provided by an Acquisition System? For example, if the matching system can't detect a face in the provided image.**

A: There is an API specification at [github.mdtf.org](https://github.com/mdtf.org) that details the acceptable responses for Matching Systems. One of them is an HTTP 400 which means something is wrong with the request. For example, maybe you didn't think the image was encoded as a PNG

or couldn't find a face. This is the same specification where the limits on image size are listed as well.

**19. Will multimodal matching be performed as part of the Rally Matching System evaluation? Will Matching Systems be required to produce multimodal aggregated scores?**

A: We will not be doing multi-modal matching for the core Rally metrics. Rally Matching System metrics will be computed per modality.

**20. How big will the gallery be for the Rally?**

A: Acquisition Systems can expect that the gallery (or "array") will contain approximately 500 unique individuals.

**21. Is the Rally robustness metric a measure of inter-operability for a system?**

A: Essentially, yes. Robustness is a quantifiable, continuous measure that reflects the level of interoperability of a system.

**22. How will threshold be determined for calculating False Match Rates? Will the MdTF run a test without mates in the gallery like NIST?**

A: We will not calculate thresholds for a given FMR. We will ask Matching System Providers to calculate their own thresholds based on a list of FMRs that we will provide to them. This will occur as part of the Final Acceptance requirements.

**23. Will any Matching Systems be required to implement a specific template format (e.g. ISO for fingerprint)?**

A: For Matching Systems, there are no required template formats. The Matching System must accept a PNG image and output a template. The Matching System should be able to subsequently match the templates it produces.

**24. Is the maximum docker image size of 1.5GB a hard requirement for Matching Systems?**

A: We do not expect fitting the required components (http server and matching algorithm) within a docker container will require more than 1.5 GB. Consequently, we strongly recommend keeping within this limit. Those that cannot should reach out for further discussion.

**25. Will the scores returned by Matching Systems be normalized in some way?**

A: For Matching Systems, there are fields in the comparison response object for both normalized (between 0 and 1) and non-normalized scores. We ask that all scores, regardless of normalization technique, be similarity scores, so that higher scores indicate a greater likelihood that two images came from the same individual.

**26. Will accuracy of Matching Systems be determined during Acquisition System testing or in a later evaluation? If during testing, how will thresholds and other parameters be configured?**

DHS S&T 2020 Biometric Technology Rally  
April 7, 2020 Technical Webinar Q&A

A: We utilize commercial, high-performing matching algorithms for quantifying our effectiveness measures. We do this both in real-time and post-test for validation. Thresholds are set based on modality and common identification use cases.

**27. Will Acquisition Systems be penalized for capturing faces of opt-in volunteers prematurely?**

A: Acquisition Systems will not know who is opting in until the volunteer has entered the center lane. Consequently, capturing a face prior to the volunteer entering the center lane will be a risk. If the system happens to capture the right volunteer (opt-in), there will not be a penalty. However, if the system captures the wrong volunteer (opt-out), there most certainly will be a penalty.

**28. Will Matching Systems be evaluated only at the provided thresholds or will the MdTF estimate thresholds required for a specific False Match Rate?**

A: We will ask Matching System Providers to provide thresholds reflecting multiple levels of false match rate.

**29. Regarding Phase 2 of the Rally, will opt-in groups be controlled so that people in the group do not block each other?**

A: During Phase 1, only one volunteer will be entering a station for a given transaction. However, during Phase 2, multiple volunteers will be entering a station for a given transaction. It will be up to the Acquisition System to provide the appropriate instructions to pace them in a way that will minimize obstruction of faces.

**30. If your Acquisition System is an iris scanner, will the face images captured by the scanner be counted as part of the performance evaluation or just the iris images?**

A: The face image will be counted as part of the performance evaluation as a face image is required for each transaction.

**31. For Matching Systems, the Rally has set requirements for maximum template creating and matching times. Will template creation time and template matching time also be used as Rally metrics?**

A: We have some algorithm efficiency requirements, but they will not be used as metrics. Only the metrics presented in this webinar will be reported publicly.

**32. Are there any limitations to the volunteers' height? For instance will there be children, or people in wheelchairs?**

A: There will be no children, we will not be recruiting people in wheelchairs. Our past volunteers have spanned the full range from under 60 inches to over 75 inches in height.

**33. Will there be any specification for image quality required for Acquisition Systems? For example, restrictions on angles in tilt, pan etc. Will Acquisition Systems be notified when the backend Matching System doesn't like the quality submitted so that another image can be sent?**

A: Your Acquisition System will have to measure the quality of images independently. Responses from the Rally API will not provide success or failure status. In high-

throughput DHS use-cases, there is insufficient time to redo captures based on responses from the Matching System.

**34. During Phase 2 of the Rally, will volunteers switch between lanes while passing through Rally Stations?**

A: In Phase 2, each volunteer will be explicitly instructed to opt-in or opt-out of using your system. Volunteers instructed to opt-in will know to pass through the center lane and use your system. Volunteers instructed to opt-out will know to pass through the left or right lanes and not to use your system. Volunteers will not switch lanes during the pass as the lanes are divided by stanchions. We will record the ground-truth of who passed through the center lane at the completion of each pass.

**35. Will any of the volunteers be in wheelchairs during the Rally?**

A: We will be recruiting volunteers that are able to complete all stages of the rally. Volunteers that feel that they will not be able walk and stand for extended periods will not participate.

**36. High quality face images captured by our Acquisition System in PNG format can exceed 1 MB. Will the Rally team consider increasing Rally limits on image size?**

A: Please feel free to provide rationale for increasing image size in your rally application. We will take it under consideration.

**37. How soon will the webinar videos be published online?**

A: The video for this webinar must be edited for Section 508 compliance prior to being posted. It will be posted as soon as that process is complete. The slides are available at <http://mdtf.org>. If you have questions not addressed by the slides, please submit them by email to [peoplescreening@hq.dhs.gov](mailto:peoplescreening@hq.dhs.gov) so that we can provide a written response.

**38. During Phase 2 of the Rally, do Acquisition Systems need to submit face images in the same order the individuals enter the 6x8 area?**

A: Images for a group do not need to be submitted in the order that individuals enter your 6'x8' area. We do expect to receive one capture per individual prior to the last member of the group leaving your 6'x8' area.

**39. Will fingerprint and iris Matching Systems be evaluated using a single image (i.e. one fingerprint or one iris at a time) or will Matching Systems also be required to match sets of fingerprints and iris images?**

A: Every one of the base 64 encoded PNG images should contain a single biometric sample. Fingerprint images should not contain slaps or multiple fingers. Iris images should contain a single iris. Once individual image identification are performed, we will fuse those results to make a final identity determination that will be used to compute the true identification rate.

**40. During Phase 2 of the Rally, how many volunteers can be in a group?**

A: For Phase 2, the maximum number of individuals that could potentially be in a group is 12.

**41. Can face images submitted by Acquisition Systems be monochrome or will only color images be accepted?**

A: Face image submitted can be either monochrome or color.

**42. Will Matching Systems receive cropped face images or the whole image captured by the Acquisition Systems?**

A: Images supplied to the Matching System will be exactly as captured by the Acquisition System. The Acquisition System should mitigate any potential for multiple faces to be present in the image. The Matching System should have rules for selecting the most appropriate face to match. This will help improve total system performance.

**43. In Phase 2 of the Rally, when an opt-in volunteer walks at the border of the 6 foot zone (still inside the zone), the camera pan angle will be much larger, which may impact the match accuracy for the acquired images. How can Acquisition Systems avoid this?**

A: Acquisition System Providers should design their systems so as to maximize its chances of successfully capturing all opt-in volunteers. Opt-in volunteers will traverse the entire 8 foot length of the station, passing through 6 foot wide entry and exit thresholds. We encourage you to be creative in thinking about how to design your Acquisition System to elicit the desired behavior from the volunteers and produce a strong performance.