

# PASSIVE DETECT and/or TRACK sUAS - PRIZE CHALLENGE QUESTIONS

[www.teamwerx.org/detect](http://www.teamwerx.org/detect)

An important consideration is that this is an experimental prize challenge by Science and Technology. Everything from the timeline to the amount of government support to the novelty and risk of the tech selected is meant to provide operators, program management and leadership with non-traditional technology solutions to future capability concepts.

## Submissions

1. What time are submissions closing? **11:59 PM ET on 14 August**
2. Are we expected to share any details (trade secrets) of how our technology operates?  
**No**
3. Can we be assured that our proposals will not be shared with other contestants or entities competing to bring similar products to market? **Yes**
4. Can a single submission offer man-packable, vehicle and FOB-based solutions or do you want to see them in separate submissions? **Government would prefer three separate submissions unless the technology is similar-yet-scalable.**
5. Is preference given to systems that can detect and track? **All evaluation criteria will be utilized. Preference will be given to novel and risky potential solutions. Detection + Tracking is ideal, but a penalty will not be invoked if \*only\***
6. We have submitted ours already and may want to retract for some modification after this call. Can we do that? **Yes, submissions may be edited via the website. If you experience issues, please re-submit.**
7. Are there any requirements for angular resolution or range resolution? **Not at this time.**
8. Can we submit an existing system that in promote stages of integration and testing?  
**Yes, if it meets the novelty and other requirements.**
9. Foreign companies can register as well? **Yes, foreign companies may register and submit.**
10. Is there a particular focus on consumer or military sUAS? **No**
11. Are there detection range threshold and/or objectives that need to be met within the first 30-day period? **No. Though the scalability would be part of any demonstration and should be noted in the white paper.**

## sUAS

1. What type/size of vehicle is the sUAS? **Group 1 or Group 2.**
2. What is the height above ground and distance desired to identify and/or track an sUAS? **No requirements as of yet, the greater the altitude and distance, the better.**
3. What is envisioned in terms of tracking; are the UAS past flight path, most likely future trajectory, or current bearing of interest? Any combination of these? **All are on the table. Expectations are present position with a cache of previous positions**
4. What deficiencies in current systems are you looking to improve (e.g., Pd/Pfa, low-flying sUAS and ground clutter, harsh weather, etc, SWAP)? And what is the most important one? **The deficiency of not being able to passively detect or track UAVs.**
5. Is it required to track multiple objects simultaneously? **Not for the demonstration, but I would expect that there is a pathway delineated at the demo for scalability to multiple objects (for a SWAG, let's say 50.)**
6. Is degradation of the detection/tracking range with adverse weather conditions acceptable? **It can be considered.**
7. Please clarify passive (non-emitting) as the power supply for such a device has some degree of emission, among other things. **Please include how you, or your company, think you can accomplish what was laid out in the prize challenge in your conceptual white paper. For instance, if you think your device will emit from the power supply, perhaps you can explain what measures you could take to help mitigate that.**
8. Do you have a target detection range? For what specific target (e.g. DJI Phantom or similar)? **Group 1 or 2, and range will be considered among a series of factors (for instance, I would expect that man-portable detection range is << FOB-based)**
9. Which UAS group sizes are considered sUAS? **Groups 1 and 2 above.**  
[https://en.wikipedia.org/wiki/U.S.\\_military\\_UAS\\_groups](https://en.wikipedia.org/wiki/U.S._military_UAS_groups)
10. Can you provide details about the UAS? **No, but broadly imagine that this is in a future environment where surety of communications cannot be assumed. Make and model may be anything from UAVs organic to SOF units to peer nation technology.**
11. What size range sUAS should be considered for detection? **Group 1 and Group 2, but if FOB-based ones discuss Group 3 they will be considered.**

**Table 1: UAVs Classification according to the US Department of Defense (DoD)**

Category	Size	Maximum Gross Takeoff Weight (MGTW) (lbs)	Normal Operating Altitude (ft)	Airspeed (knots)
Group 1	Small	0-20	<1,200 AGL*	<100
Group 2	Medium	21-55	<3,500	<250

**Table 1: UAVs Classification according to the US Department of Defense (DoD)**

Category	Size	Maximum Gross Takeoff Weight (MGTW) (lbs)	Normal Operating Altitude (ft)	Airspeed (knots)
Group 3	Large	<1320	<18,000 MSL**	<250
Group 4	Larger	>1320	<18,000 MSL	Any airspeed
Group 5	Largest	>1320	>18,000	Any airspeed

\*AGL = Above Ground Level

\*\*MSL = Mean Sea Level

Note: If the UAS has even one characteristic of the next level, it is classified in that level.

Source: "[Eyes of the Army](#)" U.S. Army Roadmap for UAS 2010-2035

## Demonstration

1. What is expected on Demo Day & Prototype Deployment? **That a rudimentary demonstration of your technology is shown, to a point that an operator or program manager can see scalability. If (for instance), your demonstration shows that you can detect a UAV passively from 10 feet away, I would expect that demo combined with some math to show scalability to longer distances (e.g., "for a 100-meter standoff power consumption would be X and size would increase to Y volume and Z mass").**
2. Is there a specific CONOPS challenge or Performance test? **No**
3. The word prototype carries varying meaning when framed as something on the road towards a completed system. Can you define what success (better yet, what winning looks like) in terms of the competition. I'm assuming it means something beyond the mere demonstration of a concept or feature. Could you please elaborate on that some? **I mean demonstration of a concept or feature that shows what is included in your conceptual white paper. The success metrics for the conceptual white paper are as listed on the evaluation tab.**

## Prototypes

1. Does SOCOM intend to keep the prototype box used for the demo or will the developer be able to retain possession? **The government will do an independent military evaluation of any prototypes deemed successful.**

2. Are prototypes taken for user evaluation going to be kept by the end user or will they be returned to the contractor? **See above.**
3. Does the customer expect to take custody of any prototype materials brought to the demonstration? **See above.**
4. Are there objective SWaP-C requirements? **This is a demonstration of novel technology and therefore there are no SWaP-C requirements at this time.**
5. What is the difference between the Prototype Demonstration phase and the Deployment of the System phase? Deploy to where? **Field-like conditions for testing, and the potential for follow-on contracting.**
6. Is it acceptable for the prototype demonstration to have sensors only which collect data which is then post-processed? Or does the system need to demonstrate real-time detection and tracking? **While novel solutions will be considered, it is anticipated that non-real-time will not be acceptable.**
7. The accuracy of localization and tracking required varies widely with the intended countermeasures planned or allowable. Any guidance on accuracy desired? **No, but please include your proposed suggestions on what you can accomplish in your conceptual white paper.**
8. Please expound on the exact meaning of ""GPS not available"" and ""Non-permissive RF and Comms environment""? **You can't rely on GPS or RF communications.**
9. What is the available 12V DC amperage in the vehicle scenario? **In your White Paper, please state your requirements for demonstration and, if selected, we will try very hard to accommodate.**
10. Can you please elaborate on the statement in the Use case "Unique Conditions: Ability to use GPS or visual cues is not available"? Does this mean weather is so adverse that sUAS would not be visible to the naked eye? **Potentially. Additionally, GPS may not be available to track your system.**
11. Are the Sept dates for the Phase II and Phase III in 2020 or 2019? Unclear how Phase 3 could start 4 days after Phase 2.? **All phases occur in 2019. Phase III starts 4 days following Phase II deliverables.**
12. Would a distributed sensor network be considered if it met the requirements and was easily deployable? **Yes, if it's passive.**
13. Will the prototype be a deliverable item? **Yes, for a limited time.**
14. Open to government or industry only? **The prize challenge is open to Industry and Academia**
15. What level of prototype demonstration must be conducted? Bench top / lab level detect and track? How rugged must the prototype system be? **Bench-top/lab demo is acceptable for the 30 days. It is not anticipated that there will be ruggedization of any demonstrator Sept 26.**

16. If a system is deemed to perform well, are there potential buyers associated with this event? **There are acquisition strategies in place, depending on the submissions received and tested.**
17. What clearance levels will be required of participating personnel if our technology is accepted? **No clearance required for the challenge or demo.**
18. Will a schedule be published regarding upcoming and future events that will allow personnel to adequately schedule ""around"" other upcoming or already known events on our already robust calendar? **Once winners are selected, the schedule will be shared. The dates are otherwise tentative until confirmed.**
19. Will any international travel or exposure to foreign government officials be required of participating personnel if our technology is accepted? **No.**
20. Will exposure to the SOF community incur a classification level upon our company, thereby creating difficulty in sales or demonstrating our technologies to foreign government officials? **Unknown. However, the purpose of this challenge is to find non-traditional developers of high-risk technology that, if successful, would increase capability of SOF. If your business development plan requires being unclassified or working with foreign government that may not be amenable to SOF, that is suboptimal.**
21. BLOS is desired. What is the minimum distance? **There is not a distance requirement. Discuss your technology and relevant trades in the white paper.**
22. Will/what testing will be used to measure false positives? **Testing protocols are TBD.**
23. Other than constraints published, what about a tethered device? **Please feel free to submit information on the tethered device as well.**
24. If said solution requires several man-packable items, as opposed to a single item, to increase accuracy and reach, does that solution exceed the constraints published? **No. Discuss the constraints and trades.**

## Prizes

1. Will two winners be splitting a total of \$120k? **Phase 1 is \$10k each to two winners. Phase 2 has a prize pool of \$100k, and the splits are TBD based upon submission winners.**
2. Is the \$100k award for developing prototypes per awardee, or shared between all awardees? **Shared, portions are TBD based on submissions.**
3. Are the \$10k and \$100k awards meant to be payment for prototypes that will then be owned by SOFWERX, or does the developer retain ownership of all hardware/software/IP? **Developer retains ownership of all IP. Hardware will need to be tested by the GOV though which will take approximately 30 days (at the conclusion of Phase II)**