

## Questions:

1. **Are solutions based on the deployment and use of drones/UAS with substantial stand-off distance considered responsive to these TLD needs?**

As a solution no. However, UAVs are expected to be part of the ecosystem this device operates in.

2. **1-SOO-TLD-V4.2-31MAR2020 Section III. OVERALL OBJECTIVES states "The military personnel using the device is expected to be mobile immediately before and after determining a coordinate, and thus any potential solution requiring use of a stationary tripod is expected to be operationally unacceptable."**

**Is there any autonomy involved in the TLD (SUAS, MTUAS, autonomous ground vehicles)?**

Negative, more in line with question 1 response.

3. **Is the TLD designed to be a man portable unit?**

Yes, very specifically man portable. RFI details that..

4. **I have formerly submitted Target Location Devices data to SOCOM. I was funded and had a budget line number assigned. It was approved up to the point of scheduling. Do I have to start all over?**

Discuss with what agency in SOCOM you submitted to and presumably they will have you submit what you have done thus far. If there is a reason you were told not to submit, please let us know.

5. **Is this expected to be a leave behind device? If so, how long would SOCOM like it to operate for?**

Not at all... it is an enduring piece of hardware.

6. **Is the device going to be continuously operating?**

As per RFI, yes... current threshold is 2 hrs continuous with 30 targeting sequences.

7. **If awarded a contract, how long is the period of performance prior to doing the phase 1 demo?**

It depends... We haven't seen the schedule that vendors plan to use for the system. If there is something available now, it would be a much shorter PoP. If this is to be a pure development effort, it would take longer.

8. **Can we assume the device will have limited/intermittent comms to control the operation of the device and to transmit coordinates?**

I believe that is a question about the stay behind system, which was deemed not suitable for this application.

9. **How should the device interact with "map data"? Will there be a blue-tooth link or cable connected? Could we have an estimate of how accurate the map data is?**

CoTs message format with ATAK.

If Bluetooth is used, it has to be approved connecting to the end user device (EUD).

The map data, for this problem set, should be assumed it will always have CAT 1.

**10. Please explain the anticipated environment. What size of an object need detected?**

As stated in the RFI, the size of a person.

**- What is the anticipated device SWAP?**

If not answered in the RFI, which most were, this would need to be executed after selection of the technology. SWAP is a trade and would need to be 'voted on' by the users ICW the vendors.

**- Is this entirely IRAD or is there RnD funding?**

The intent is to be a mix; however, I am not a contracting officer so I can't say.

We have funding, but as far as the amount that we have, it's flexible. If we choose to make multiple awards out of this, then obviously that would change the amount of funds we can attribute to each effort or each performer. I don't think it would be wise to give the amount we have available right now, but yes, we do have RnD funding that we are planning to make actual OT awards out of.

Additional note- it is expected that the selected vendor would need to use IRAD to complete this effort.

**11. What is the desired program timeline (not for the submittal, but for product delivery/demo)? Is SOCOM using Mid-Tier Acquisition authorities for this prototyping project?**

We are not currently using the MTA. This is structured in a little bit simpler format with our strategy. We are using another transaction authority to execute this, but it is still very much an RnD effort, with the option of the follow-on production portion. But right now it is not supported by using the MTA type strategy. This requirement was a number 1 SOCOM requirement in 2001, so the desired timeline is as soon as possible so we can get it out to the guys, because they've needed it for 20 years.

**12. There seems to be an inconsistency between program objectives and the statement that the technology needs to demoed at TRL4 at Phase 1. Per <http://acqnotes.com/acqnote/tasks/technology-readiness-level>, TRL4 is "Component and/or breadboard validation in laboratory environment", but the announcement is looking for demonstrations / application in a field environment, which would TRL 6 or 7. How is TRL4 reconciled with that level of demonstration?**

I believe that is just a mix up or word confusion. We are expecting that breadboard validation at Phase I to act as a qualifier for Phase II, which will culminate in a TRL 6 or 7 field demonstration. So maybe use the word "demonstration" for TRL 4 a little bit loosely, but the team here wants to know that the breadboard that's being put together shows promise to be able to meet the accuracy requirements that are in the draft, in the characteristic's attachment.

**13. What's wrong with current systems in use by SOF? Is SOCOM leveraging U.S. Army Next Generation Fire Control System Program which is aiming at a similar goal. If not what is different between SOF's requirement and the Army's?**

Current systems (SOF or otherwise) are not capable of the accuracy required or will not meet size/weight requirements for operational use during dismounted movement.

Yes, we are following the Army and Marines efforts for a similar requirement. However, they are still in the initial phases and the Marines requirement seems to go well beyond a dismounted capability when looking at size/weight constraints.

See above for differences.

**14. Is there a requirement for initialization time for the system?**

Yes, in the document the initialization time when in standby mode. There is not one from power on to acquisition, because depending on where we are, if you're relying on the GPS to do it then you might have to wait 7 minutes to get enough satellites to acquire a good position.

**15. Can we have the operator wait 2 minutes to initialize?**

It depends on whether he is in a firefight or not. If it's in standby mode, then no. Two minutes is too long. If it's from a cold start to actually targeting, perhaps we would look at that technology.

**16. How well does the operator know his position when he uses this device?**

Specifically, he will probably have several commercial GPS systems, and a GPS SASM system. So as accurate as that system is, which is not accurate enough. The device is supposed to start out taking out the error in self location before you go to target locations. The system actually needs to reduce the error that is inherent in the GPS.

**17. Can we provide a device that gives an offset, or must the device give an absolute position?**

If you're talking about an offset that the device calculates out and the user doesn't have to do it, that's okay. But if they're expecting the users to understand and calculate their own offsets, then no. Do not understand the question and/or rationale behind it. If needed, rephrase and add explanatory information.

**18. It sounds like the device must also recognize targets if so which types of targets? Or does the device just need to provide video images of target with enough resolution for an operator to make identification?**

If there are advanced algorithms that allow the device to actually suggest what the target is- person, vehicle, tank - then that's great. If not, then the user is going to have to identify the target, so the optical image is sent through the device to the operator to make sure he knows what it is. Actually, you would have to double check to make sure the system doesn't say a school bus is a T72 anyway. I want to add that those features - being able to automatically identify things and notify the operator- sound good, but not at the cost of SWAP-C.

**19. Will you consider proposed solutions that have no hardware component? i.e. we are a software company that would pair with a hardware company chosen by SOCOM**

If there is teaming to be done, it can be done through the SOFWERX website. So yes, we would consider it. That link will be available after this call today.

**20. Will the user/ATAK be expected to have digital topographic map data of the area of operations that the TLD can query?**

Yes, that is the expectation.

**21. Must the system automate identifying and selection of potential targets, or will the user be expected to manually identify and tag targets either with the device itself or through ATAK linked to the device?**

It would be fantastic if the system could help with identifying. I wouldn't say selection, because that is the job of the user, not of the automated system. But help identifying targets is great, but like the last question, SWAP-C is more important. And typically, what we're seeing is that the user is happy to do it themselves.

**22. Please explain the intended use case, ground systems, and munitions that will be engaging targets. If users are expected to have clear LOS to the target, there must be something more to the problem such that it cannot be solved with current tech. Must distinguishing between a target holding a rifle vs. some other two-handed object be automated? What level of system development is required for the assessment on 28 May? Can the device be placed between the user and the target to give a targeting solution at the desired threshold range?**

Intended use case is an operator, running around on the battlefield, sees a target, pulls out this device, which gives him accurate coordinates to the target. He is then able to employ GPS guided munition. We're not going to cover every single munition that is possibly GPS guided.

It needs to be handheld, because they are moving around. They might have just jumped out of an airplane or come out of a boat, but they are moving around on the ground to get to the target. If you don't have a line of sight to the target, you probably don't know it's there anyway, so yes, assume we have a line of sight. "There must be something more to the problem". Yes, this has been a problem for decades and still is a tough physics problem.

Not sure why we keep getting the "automated ID" question... If we can do it, that's great. That's actually a future plan, with an additional piece to the whole kit. However, that is not a requirement for this effort, unless it is super cheap, doesn't require a whole lot of power, and doesn't interfere with SWAP.

**23. If a vendor makes it to Phase 5, what FY and Quarter would a projected Award be made?**

It all depends on the delivery schedule of when the OT happens. It also depends on getting a product, and if we're satisfied with the deliverables on that then we would have to go through an RFP stage to get to that follow-on production. As fast as we can get this done, then we will find ways to make it happen. If we have a system that's ready to go, then we will figure out how to get it going now. If it takes a while to develop it, then that's okay. So we don't really know what the schedule looks like right now.

**24. Can more explicit definitions for "No Pre-Planned Reference Points" and "Inability to Generate Reference Points" from Table 1 of Attachment 1 TLD Characteristics be provided?**

That is under the terrestrial category. There are multiple categories up top. There is also a definition at the bottom. However, "no pre-planned reference points" means that before the mission, before you went out, you don't have any "pre-planned reference points" stored in your ATAK or in the device, depending on how they do it. The "inability to generate reference points" means while you're out on the objective doing stuff you are not able to generate reference points. This could be because you are in the middle of the desert with no terrestrial features that you can use to self-generate a reference point. One is before and one during... two separate issues likely with two separate solutions.

**25. What target reflectivity should be used for modeling the ELRF performance against a man-sized target?**

I know that we called it a man target, for what needs to be able to be identified by the imager. But we never specifically called out man as the target for a target location measurement. The target that you're trying to get a location for can be many different things. I don't know that answering this question is going to provide what you think it's going to provide, because the system needs to be able to get a coordinate to whatever the target may be. However, in the past, for a man, we have used 10% as the target reflectivity. But again, it could be a building, a vehicle, it could be all kinds of different things. Not just a man. But the man target is a harder one, because it's smaller. So that is why identifying that person is the requirement, in addition to what was just said.

**26. In Attachment 1 TLD Characteristics, the paragraph titled "Target Location Accuracy" specifies minimum ranges of 1000 meters daytime and 500 meters night. The next paragraph titled "Observation Day/ Night Performance" specifies threshold ranges of 1500 meters daytime and 500 meters night. Is this an intentional differentiation between the TLE accuracy requirement and daytime observation range requirement, or is there a typographical error?**

The numbers in the Attachment 1 TLD Characteristics are correct, and reflect the minimum acceptable based on the current requirement. Ideally the device will extend to 1500 meters or beyond for all capabilities, however it must remain affordable and man-portable in its size/weight.

**27. Does the device need to incorporate a master zeroize if recovered by non-friendly?**

Yes, because if it has a SASM system in it, it has to have one anyway by regulation. You also want it to zeroize pictures and video, and anything else it might have captured, along with any information about where the user was. Because, depending on metadata, you could say "This particular device came from Fort Bragg" or wherever they were using it in training if you don't zeroize that stuff appropriately.

**28. Could you please cover production quantities?**

In our government meeting in Tampa, we put out up to 2,000 systems. That does not mean we are going to buy 2,000 systems. A lot of that would have to do with cost, but that would be generally what the SOCOM BOI - Basis of Issue - would be.

**29. Can you provide down select criteria for the white paper submissions?**

In reality, we are looking for something that is realistic in meeting the SOO, the draft we have posted. There is not really any criteria that we are evaluating against. We are looking at technical merit, schedule, the ROM. Obviously, we are more intrigued and interested in the actual technology. We do have a certain amount of money, so cost is important, but we don't have ranges and criteria that we are down selecting from white papers. We want it to be a reasonable solution for the SOO we have posted. And that does cover if there is any type of collaboration between vendors who could collaborate together. We are open to seeing solutions be combined. If two different companies submit their individual white papers, but then they end up wanting to team together, that could be something we would be open to hearing if their solution came together.

**30. The event timeline lists several phases (1-5), while the SOO also lists phases (1-2). We assume the phases in the "event timeline" and the two phases in the SOO are not directly related, correct? The two phases in the SOO are "development phases" where execution of phase 2 is contingent on a successful phase 1, correct?**

They are not directly related.

**31. Please provide guidance/examples "two-handed object."**

A shovel. The difference between recognize and identify, in terms of the night vision labs, etc. Differentiate is a better word so we can tell the difference between a rifle and a shovel. We can "identify" that a person is holding something, but we can't differentiate what it is. That is why we're using that term. In the modeling characteristics that were put in the attachment to the SOO, TLD1 characteristics, that modeling profile was specifically made with differentiating a two-handed object from a rifle. That whole model is based around that differentiation statement.

**32. Is the technology required to be "passive?" Does this mean it cannot receive anything external like satellite signals? What I meant was "non-transmitting." Such as a Laser Range Finder. A transmitter has the potential of giving away their location.**

The assumption is that you're going to have to use a laser range finder, you're going to have to have GPS signal at some point. Hopefully someone figures out a way to not use that, but as far as we can tell, you're going to have to use a range finder.

There are probably going to be some use cases, because cost is so important on this one, where the optical system is not going to be optimized for the darkest of dark evenings. With that we could potentially see the possibility of having to use active illumination, in some spectrum. We want to stay away from that if we can, but we also want to get something we can afford.

As an example, SWIR is very expensive. SWIR, at a certain light level at X distance, probably requires some kind of active illumination. It would be a double negative if we had a very expensive piece of equipment that still needed illumination. Again, not out of the question but cost must be thought of in the approach.

- 33. If the sky is not obstructed is it assumed that there is some other location capability (i.e. imagery from air vehicle/satellite) or is it envisioned to use celestial navigation as a potential?**

It is assumed to use celestial navigation.

- 34. Is there a perceived shortfall with current technologies in use (i.e. LRF)?**

Laser Range Finders are great. They are a piece of target location, but they also have their own inherent error. Especially when the user is standing up and leaning against the building, trying to catch his breath.

Vendor will have to account for the operational scenarios. So if you have a target that is 1000 meters, and you're trying to very specifically hit one point in that target to laser range find it, it could be a problem. Yes, there are shortfalls but we also know there are several ways to address the issue- some with commercial tech that is extremely inexpensive.

- 35. What is the anticipated contract type (cost-plus, FFP)?**

That is debatable. As we get closer to learning about what solutions are out there, as we receive white papers and go through the assessment event, then we'll be able to solidify a little more what kind of contract types we need to make available for the solution out there.

- 36. Table 1 lists TLE-SE90 Objective for scenarios 1-5 as T=0. We assume this is an indication that the Threshold (T) is equivalent to the Objective (O) for these scenarios, correct?**

That is common acquisition term, yes.

- 37. SE90 is a 90% probability of meeting the Spherical Error threshold/objective, correct?**

Yes, again, very common term.

- 38. Are targets mobile? How fast are they moving?**

Yes, people can be mobile. It can be used to get initial grids for moving vehicles. However, we don't expect it to do the automatic calculation for speed and distance. The user should be able to do that after they have the initial target location. Further, GPS guided weapons (Most) are not suitable for engaging moving targets.

- 39. The performance characteristics state that "the system shall be able to see..." does this imply an EO/IR solution or would RF or another sensor solution be acceptable?**

Another sensor solution that assists an EO/IR type solution would probably be okay, but just saying you have an RF, for example, you can't tell what the object is so the requirements of the ROE, the person pulling the trigger, basically dropping the bomb, has to confirm it's a valid military target so he has to be able to see it.

- 40. Is the system assumed to be "self-contained" (see size requirement)? May the solution involve a system of systems?**

Yes, this is in the RFI. It is well documented on size, weight, etc. It has to be shared with ATAK. If it has the ability to incorporate other systems that SOCOM is using, or the Army or Air Force, great. If it has data from Link 16 or Blue Force Tracking stuff in the system, great. But that is not a threshold requirement by any means.

We were very specific that a tripod mounted solution is not acceptable.

- 41. In section III of SOO, last bullet, there is reference to the use of an accurate map; and the reader is directed to Paragraph V for additional information. Paragraph V has GFE information; but not map related info. Could this be clarified/provided?**

The GFE item was referring to ATAK. So the Interface Control Document (ICD) and any data required for the vendor to interact and display things on ATAK will be provided by the government to them upon award.

- 42. Observation Day/Night Performance: The overall modeling parameters for DRI calculations were similar to those used on previous SOCOM requirements. However, the V50s on this RFI are different, they now require a much larger optical system and a much narrower FOV. Was this intentional? A V50 of 4.0 in NVTherm 2009 (HHI MINI LR) and 4.0 in NVIPM (TLD) are significantly different requirements. Are there minimum FOV requirements for the observation ranges?**

There is specific research and data collected for a man holding a rifle and a man holding a two-handed tool or object. The V50's were chosen based on that research. Yes, it is different and yes, it is intentional. We did not define any minimum FOV requirements for the observation ranges, but it still has to be useable. If you put a half degree field of view in the system to meet those detection and recognition requirements, that will not result in a system that anyone can use effectively.

- 43. Scenarios: Can the user enter a known reference point once reaching a target objective? For example, helicopter landing zone, drop zone, or friendly rally point grid location post infil.**

Yes, the intent is, especially when you are using ATAK, that the data can be ingested into the TLD as needed. The form that takes, if it's floating icons, etc., that is something we'll work out later, but that data should be able to be ingested into the system for reference points or targeting later.

The user should be capable of doing those things on the system, however there are some scenarios in the accuracy table, in the TLD characteristics document, where the system still has to be able to get a target location if the user is unable to enter those things for one reason or another. That was talked about earlier.

- 44. LRF: Has hand-held jitter been considered for accurate ranging to the targets described at the ranges required? Will characteristics be provided, or ranging be considered perfectly stable?**

Ranging will not be considered perfectly stable. The jitter, depending on what they're talking about for jitter, the actual laser jitter itself, is a hardware, software issue for the device. User jitter, their heartbeats and movements, have been considered and we're highly recommending that companies figure out a way to ensure the user that he got the right

piece of the target that he was trying to range, as there are multiple ways to do this. If your reference point is a building, the building could be 20 meters long, you may need the second story left corner within one meter to make sure this thing is accurate enough. In order to do that, you need to somehow confirm that the LRF is hitting the right spot. Good news... several ways to do this, as mentioned.

- 45. Size: What is driving the linear inches requirement, and does it include peripherals (hand straps, eyecups, lens covers, afocal lenses, etc)? If the weight is specified are the linear inches redundant? Present linear inch requirement would seem to lead to a device significantly lighter than 6lbs.**

Everything encompassed on the system is included in that 21 inches.

To specifically address these, hand straps collapse pretty close to the body of the system. Eyecups and lens covers do mostly the same thing. They are part of the system. A good one from this list would be an afocal lens. If you have an afocal lens that gives you extra range and is not required for the minimum, that's fine and should not count against size or weight because the snipers are going to want way more range out of this. For meeting the threshold requirements that are in that characteristics document, you should not plan to be attaching an external afocal lens.

- 46. Maps: In order for some of these scenarios to be met, accurate (sub-meter) 3-D maps may be required. Will 3-D maps and DTED be provided as GFE? Will they be served externally (ATAK) or do they need to be served within the device?**

Assume they are going to be in the ATAK, on the device. Unless they can store it on the device, which is great but not required. As long as they can interact with ATAK.

- 47. Target Accuracy: Specified as 1000m during the day in the Target location accuracy section and 1500m during the day in the Observation Day section.**

The numbers in the Attachment 1 TLD Characteristics are correct, and reflect the minimum acceptable based on the current requirement. Ideally the device will extend to 1500 meters or beyond for all capabilities, however it must remain affordable and man-portable in its size/weight.

- 48. There are no indications on the event or submission pages to indicate whether submissions are confidential or not. Can you please confirm that submissions will be used for the sole use of USSOCOM's assessment and will not be used for other purposes without the expressed written consent of the submitter?**

We did go through the form. You are submitting unclassified, nonproprietary information. It will be treated as proprietary information. It will not be shared outside of SOCOM or DoD channels.

- 49. Is "location" assumed to mean coordinates? Are there any other acceptable interpretations?**

Yes, location is the coordinates.

**50. For the "inability to generate reference points" constraint, does the operator "recognize/map structures in view from the device's position" or is it assumed that the recognition is done by the device?**

This was addressed previously. We said that the user would look at the intended reference points and pick the spot on it. If it has a reference point in it or is scarping it off the map data, great. That would be helpful. He needs to know where he's at anyway. He needs to know where his mark is and figure it out himself if it's not already part of the system. i.e., he has to know that the RP he is shooting at is the correct one...a building for example.

**51. There's no labor line item associated w/ the pricing sheet. Should labor be amortized into the per unit cost, outlined separately (in the "other accessories/components" section), or in the available pricing appendix?**

As far as labor goes, when you're talking about the NRE cost, that should include the labor that is put into the development. We're not necessarily looking at specific cost elements for this ROM yet, we just want to get a picture. I would suggest including that labor cost in your NRE projection, and then if the contract type for the OT ends up being something like a cost type contract and that we are looking at those different cost elements, and we will address the labor category separately at that time.

**52. Will the government be satisfied with a video of a prototype demonstration during the Assessment Event's virtual session, or will the virtual session need to be able to actively demonstrate the prototypes capabilities?**

You don't have to necessarily be able to actively demonstrate the prototype capabilities. It is a presentation, so if they want to include a video within their virtual presentation, that is okay. This is going to be conducted very similar to this, so if they have a PowerPoint or a video they want us to watch, that is perfectly acceptable, but it does not have to be completely demonstrating the prototype capability.

**53. The Statement of Objectives refer to a Phase 1 and a Phase 2, with an ATAK ICD being made available to the Performer after successfully meeting the requirements of Phase 1. Given that, does the Government expect Phase 1 prototype to demonstrate required capability without interfacing with the ATAK?**

The SOO says, "The ATAK ICD will be made available as GFI to the Performer." This will happen after contract award, at the onset of Phase 1.

Unfortunately it depends. If they require ATAK to operate, and we need to know that they can do it, the criteria would likely be no, you don't have to demonstrate that. If you have the ability to get accurate coordinates without it, that would be an added bonus. But eventually it has to operate with ATAK. We will have to look into that more.

**54. We're a small company with a specialized and established capability in most, but not all, of the proficiencies needed to meet the objectives stated. Will the Government be able assist with partnership agreements and/or IP licensing between complementary companies or government entities?**

SOFWERX will send out a link for potential teaming. The government will not be part of that process.

**55. Accurate Map: Does the highly accurate map have topographical features with known coordinates? Or known north reference and to what accuracy**

I don't understand the question. Maps have directional references on them. They will have reference points of some kind, such as terrain features and/or reference points. The accuracy is assumed to be Cat 1 from PRI, the precision image system that ATAK has approved from NGA. I hope that answers the question?

**56. Time: Do the users have access to accurate time?**

**GPS Time: what is the assumption of duration loss of GPS time input prior to mission start?**

It depends where we are in the world and who we are fighting. Initially we assume we have location and time. If we lose it, how do we know we lost it, and how do we know when we lost it? I don't think we do. That is part of getting jammed. This is part of the problem and would need to be addressed when discussing GPS use as well as celestial.

**57. Can we assume ZUPTs are allowed in the case of an inertial sensor?**

ZUPT is Zero Velocity Update. We need more context on this question. If I can answer generally, we are looking for a device that allows us to get accurate target coordinates in accordance with what we put out in the characteristics document. However you want to achieve that within the \_\_ latent power, if it can meet everything in that table and doesn't cost 100's of 1000's of dollars, then I don't think we would say no to any specific piece of technology if it something that works. We don't want to tell people how to do it, we are asking how we can get it done.

**58. Scenario 12? In reference to the characteristics.**

We're looking for solutions, those are the ones we thought of - terrestrial, celestial, GPS, map data. If we can find something that allows us to do this outside of those as well, then it makes scenarios 9-16 much easier. We still have to be able to engage targets at that point. We want to be as accurate as possible in ALL scenarios. In fact, we cannot provide all possible scenarios as they are infinite depending on environment and technology available.

**59. The SOO says: "...expected to be mobile immediately before and after determining a coordinate, and thus any potential solution requiring use of a stationary tripod is expected to be operationally unacceptable."**

**Q1: If we can offer a solution that will be within the weight threshold (and Objective) that will also include a built in/pop up tripod to enable quick deployment and movement when needed would it be automatically declined?**

Tripods are not acceptable if they are required to be use to gather accuracy information. If they are used as a "cheap" stabilizer to assist user during a mission that is a possible use.

**Q2: Phase 1 submission - For the system Optronics payload ( LRF, Thermal Camera etc.) we intend to collaborate with Vectronix to use their MOSKITO TI as an add on to our miniature high precision Goniometer, with its unique solution for finding precise Attitude (Azimuth, Pitch, Roll) and own location with the aid of Celestial Bodies, day and night. Having said that, we are open to collaboration with any other company**

**that can offer a similar/better solution that is desired by the SOF operators. Would add on system be considered for this submission?**

As long as it meets the SWAP and it's not on a tripod, they would entertain it. There is a lot of very specific vendor related stuff on there. If you are interested in teaming, you need to get on the teaming agreements at the end of this and put the pieces together. Again, if it meets the size, weight and power, and meets the other thresholds and objectives then I am quite confident the government would assess it.

**60. Is a technology that discriminates human vs. machine without using shape recognition of interest?**

I'm not sure it would be specifically be of interest for this, but in other ways it would be of interest. More information would be needed to properly answer this question.

**61. 8 of the 16 scenarios say that GPS is unavailable, can this be clarified?**

As per the environment sheet, sometimes in the very varying degrees of combat, GPS will not be available at that second that the user needs it. There are ways we are looking at, or hoping that someone will come up with, to use certain data from the GPS, namely time for some of it, to help with self-location.

**62. The second one was around mission pre-planning data, which I would consider to be a reference point. So again there are scenarios listed in attachment one where that information is considered to be unavailable. So same question as with GPS, is that in reference to those lesser constrained scenarios and you're hoping that we will provide a solution if that's unavailable or did I misunderstand that?**

We assume that we know where we're going, and then all the sudden we figure out we landed in the wrong place or got lost along the route. Therefore, we may have pre-planned RPs but they are not visible.

Yes, we hope we find solutions for the most challenging scenarios. If a company can do the hard ones, they should be able to easily do the less constrained ones.

**63. And then the final one was the map data. Are you saying that map data is available for every single scenario?**

No, that is not what we're saying. This might sound contradictory, but map data by itself can be used for targeting, like a building or something, if it is on the map data, if you have updated maps. However, it's the people in the buildings or the vehicles, etc., off that 'map', that you won't see from a satellite shot that we're actually trying to get. So when we say that map data is unreliable, except in the environment scenarios like where maybe you're EUD took a bullet, or a building blew up and ripped it off, and it's hanging on the second story where you used to be, that's when it's unreliable. And just to clarify that, it's on the website, that map data while useful, is not always updated, and it can't be used for personnel or moving targets because they're not on a map. I think that's what the events page was saying.

**64. Is it safe to assume that an ideal solution for SOCOM would be a solution that addresses the most complex scenario, which would be scenario 16 where you have no GPS, no reference points, no map data, so on?**

If you have a solution that can do that, please bring it to us. If you can do 16, then you can do the other 15 too and that would be fantastic.

**65. Will the document with the questions on it be made available? Will a recording be available?**

Yes, transcription will be available as soon as we get to transcribe it. Next week (20-24 Apr)

**66. My question has to do with the linear inch requirement. It seems by restricting the linear inch so small, you're restricting the weight requirement even more. Have you considered that linear inches and weight are redundant, and just pick one over the other?**

No, we don't believe that that is true. A liter of osmium and a liter of water have the same volume but have significantly different weights. We need something we can carry therefore, weight and size both matter.

**67. My other question had to do with the task difficulty, the V50 4.0. I just wanted to reiterate and make sure that you guys understand that that is a significant ask at the requirement that you made of a .25 by .25-meter target. So .25 by .25 is a lot smaller than a rifle, so you're asking for a very small target at a very significant distance that is going to require some very large optics, so I just wanted to bring that to your attention.**

We talked to the guys that do the research and build the models, and this is what our users require. We went to the right people to get the information to be able to allow industry to model their solution.

**68. Can that model be provided (to industry)?**

[https://c5isr.ccdc.army.mil/inside\\_c5isr\\_center/nvesd/integrated\\_performance\\_model/](https://c5isr.ccdc.army.mil/inside_c5isr_center/nvesd/integrated_performance_model/)

I believe it is available. I don't have that information off hand, but I think almost anyone can get that model from Night Vision Labs. We can see if there is a link we can provide.

**69. Does the government have a desired form factor? Are you thinking like binocular style or rifle style?**

We are thinking binocular style, but we are not limiting anybody to anything at this point and time. It has to be operationally suitable, and part of that is carrying it. We have to make sure we have a place to carry it.

**70. Would the government consider is operationally acceptable to have essentially no restrictions prior to mission start? For example, before I leave the FOB (?), I get my position very accurately and then as I'm in the field, my performance is degraded but I had an accurate position to start off with.**

Do we find that acceptable? Yes, if you can get a very accurate position. But the problem is the mission might have started in the US, loading an aircraft at Joint Base Lewis in Washington and then you flew 5,000 miles to go squash somebody in whatever country, so how is that going to keep that position, I don't know. My thought is to be able to input an accurate position of where you're supposed to go, as opposed to where you where?

I don't know, I'm not the engineer for it. If you have a different way to do it, great. We're not going to say don't do it, but that is my thought. When you get on a helicopter and you fly 7 hours one way, I'm not sure it's going to be useful to have your previous position. But again, if there is a solution, please bring it forward for elevation.

**71. Could you just confirm that you will provide ATAK applications to the bidders prior to Phase 1?**

The intent is to, once we go to award, at Phase 1, give you the ICD – Interface Control Document – beforehand. Believe you can download the commercial version of ATAK right now to get started.

**72. The military version will not be available until after award?**

Correct. It is controlled, so the restrictions on who can use it and work with it will be the same as any other ITAR controlled item. This is important for all to understand. There is a requirement for all military efforts, as far as I know, to ensure ITAR compliance. If you are not familiar with it, please look at the DDTC website before asking SOCOM from specific restrictions as we will just point you back to the regulation.

