



**SBIR 24.4 R3 Q&A Telecon Transcript**  
**SOCOM244-004: Handheld Kinetic Defeat of UAS**  
**18 January 2024**

**SBIR Process Timeline**

January 17, 2024: Topic issued for pre-release

January 31, 2024: USSOCOM begins accepting proposals via DSIP

February 20, 2024: DSIP Topic Q&A closes to new questions at 12:00 p.m. ET

March 5, 2024: Deadline for receipt of proposals no later than 12:00 p.m. ET

**1. Is there a suggested altitude upper limit for this kinetic defeat device?**

Particularly for this effort, which we're trying a little bit of a different approach. Previously efforts have been mostly focused on range, effective range, and things like that. That really hasn't worked out too well for us in the past. Here we're really focusing on functionality, high probability kill and is it just a functional solution. Is this something the operator can viably use in the field, that's where we're trying to maintain focus. Range is absolutely important, but really we're trying to put a little less emphasis on range, really want to focus on the probability kill. We need a solution that just works and an operator can easily use it and it's going to last in the field. If we can get that, we can work on improving the range down the road. We don't want to really put any numbers on a range at this point. Maybe we can work that throughout Phase I, if we get to a Phase II, we can specify some requirements knowing we just want to open the aperture here, get all types of solutions available and see what ranges we can get, but really stressing the importance on the other factors.

**2. Could you further expand on the meaning of 'handheld'? Is this kinetic defeat device being operated by SOCOM soldier from the ground?**

Yes, absolutely. That is the intent. That's really what we're focused on, something that's been a little bit of a struggle in the past, fixed site solutions, we have a good handle on. The individual soldier on the ground still deserves better protection. That is the focus. Handheld, we don't have a strict weight requirement at this point or size or anything like that at the moment, but it has to be small and light, just going to leave that qualitative for now. If it's too bulky, too big, the soldiers just aren't going to take it. We need something that's appealing to them.

**3. Does the kinetic handheld requirement rule out another remotely operated drone that would perform the defeat mission?**

That one's a little bit tricky. As long as the other drone can be carried by a soldier, that's absolutely fine. There's just caveats to that. Ideally, this would be remotely operated by a single soldier operator when it's needed, without any prior coordination with anyone else. If that's feasible using a remote drone, if they can just pull it out of their pack, that's definitely acceptable.

**4. Would a small iPhone-size handheld solution that can kill UAS of various sizes and types using different EW effects qualify under this requirement?**

That one really depends. If it's a kill, like an actual defeat, and not just a deter, that would definitely be of interest. We're open to EW effects, but we have a wide variety of threats to





go after, some that don't rely on active C2 links. We want to definitely go after those threats as well. EW effects would probably require some more advanced, sophisticated techniques to actually get a kill at that point. But just a deter capability, we're not too interested right now. There are solutions available for that.

**5. Can you provide the desired distance/altitude (max effective ranges) for detection and defeat? What if something already exists at a higher TRL LVL, e.g. 7-9?**

If there's something that exists at a higher TRL, we'd love to hear about it because we're not really tracking much out in this space. The range question, we don't have a good answer for that at this point and we don't strictly have a detection requirement for this device or for this topic. That would be nice to have if the capability had to detect capability with it, but we're solely really just focused on the defeat portion. We're reviewing this as a last-ditch effort by the operator to, if he sees a drone it's obviously displeasing them or putting them in danger and they have no other options to take it out this is the solution we hope they lean on.

**6. Can you define kinetic in this context?**

Really where we need is to actually bring down that drone, I'll just leave it at that. We don't want to just go after the deterrent and keep them out of the zone. We definitely want to physically down that drone. Any means to do that whether it's munition or if you can do it with an EW effect or anything else, we're open, totally open to any methodology.

**7. What is the intended deployment level? Soldier, team, squad, platoon?**

That's still TBD is going to require, depending on the cost of the system and other factors there could be some ancillary equipment if it can be operated by squad we think we can accept that as long as it's able to be distributed across each soldier to make it feasible. Right now we don't really have a specified deployment level. We want to get to the soldier level eventually, but other options that we can consider.

**8. What distance do you need to be able to detect the drone?**

Detect is not really the focus on this one, it's a nice to have. We don't have a range for detect specified. We have some dismounted detect capability that can be used to support the kinetic defeat system. Right now, as much situational awareness or early warning we can get is where we're after for detect. But realistically, as long as it surpasses the ability of the defeat capability of the system.

**9. Can the solution be weapon-mounted?**

That one's a little bit tricky. We've had some solutions, or we've tried some things like that before, typically that we don't want to affect the weapon too much. If it's low enough, SWAP definitely that can be a consideration.

**10. Is there a preference for reusability or is 1-1 effect acceptable?**

Yeah, one-to-one is definitely acceptable for this. There are pros and cons for reusability, so either or is fine with us.

**11. Is it a one-size-fits-all for groups 1-3 or will a family of solutions be acceptable?**

We're definitely going after groups 1-3, but we'll accept subsets of that. If it's solely Group 1, that's still interesting to us, we can look at that and look at family solutions to expand the capability.





**12. Are there any collateral kinetic requirements?**

Not at this point. We just want to find solutions that work, and we can you know develop TTPS and things like that later down the road to avoid any collateral effects. Right now, we do not have any requirements for that.

**13. Is there any means of defeat that has some effectiveness currently?**

We don't want to get too deep into that. Yes, there are some we don't want to specify, but we'd like to do better. We can just leave it at that.

**14. It appears that Phase I looks at the feasibility of the defeat mechanism. With multiple payloads, should Phase I evaluate both delivery and defeat mechanisms?**

Yeah, it depends on this one really. Phase I we think should focus on the defeat and depending on what the capability is, we may need to address delivery, digital payload or mechanism throughout Phase I to get a better understanding of what the capability is you're proposing.

**15. What has been tried that you are not interested in?**

We don't want to go too deep into that one right now, but deter capability is something we're not interested in really for this one. EW deter, just jamming C2, there's a good handle on that. So really just focusing on the kinetic defeat.

**16. Is there a Price Target for each threat category? Group 1, 2, 3...**

We guess you're referring to; if you have different defeat mechanisms for different groups. No, we don't have a price target. Of course, it's going to play a factor in how many we can field down the road if we get there. But we're open on price, just finding out looking for what works.

**17. Do you need any kind of IFF?**

That would definitely be nice to have, but when you're looking at the size of current IFF (Identification, Friend or Foe) interrogators and power and cost that doesn't seem like it's ever going to be a dismantled capability. If there's some other IFF means that you're tracking, yes that could definitely be useful. It'd be a nice to have, but it's not a requirement.

**18. Do you have a Maximum weight for the system? Is this a one-person, two-person, one-man, two-man more lift in size, or is that not something that you look into?**

We don't want to put any numbers out there. We guess tentatively under 20lbs would be interesting. Anything more than that, it'll be scrutinized a little bit more, but there's really no hard number. It's the probability of kill, there's trade space here, there's a lot of trade space. If you're looking at a very high probability of kill, then we can take some compromises on weight and other factors.

That really depends. We're ideally looking for one soldier carrying this system with his other gear without sacrificing anything else. If it's two man or multiple person lift, if that capability can be distributed amongst a couple different soldiers and still be manageable, we're open to that.





**19. What results are you looking for in the initial feasibility study? No working prototypes are specifically mentioned.**

The feasibility study is a final report. There will be no prototype developed or required to be developed and delivered within the feasibility study, that's the Phase I. The Phase II, for example, we will have multiple awardees in Phase I and then there'll be a down select to the Phase II from the Phase I towards the end of that Phase I period of performance. When that is to be completed, the selectees for Phase II will be developing the prototype and there's a different price tag for that, that will be discussed during that time.

**20. What distance is desired, I. E. Does it need to affect Group 3 targets at maximum AGL flight height?**

It doesn't need to. That's nice to have if you can come up with something that works to affect Group 3s high altitude, that would be great to hear, but that is not a requirement. We'd like to get to that road. If the solution you propose has a pathway to extend ranges that would be ideal. For Phase I we are looking for solutions regardless of range that just work and has a high probability kill. We can extend those ranges down the road if feasible. Right now that's a pretty tough bridge to cross and that's understandable. Just to clarify on that just a little bit we would say 100 meters is probably a threshold at this point that is not a hard requirement at all, but significantly less than that if we're talking 10 meters, 20 meters, that's probably not even going to raise our eyebrows too much. We are willing to take a hit on range, but it has to be at least something meaningful that can be useful in an operational environment.

**21. Would a shotgun provide the solution that you are looking for, and if not, why not?**

That depends. The shotgun is something we can look at, but it would probably require some specialized munition to do the job. Current shotguns I think have a pretty low probability of kill unless you're talking just 10s of feet.

**22. Should we assume the soldier is the primary source of threat detection?**

Yes. Eyes on is probably going to be the detect mechanism where you're trying to address the soldier seeing a drone and being not having a solution to do anything about it besides the small arms that they're carrying. So yes, soldier is definitely going to be the primary source of detect, potentially an RF detect if it's an active link on the drone.

**23. Does having an advanced prototype TRL 6 + disqualify from Phase I?**

No, it does not disqualify from a Phase I. It might get you ahead if it meets the requirements. Please submit, make sure it fits the requirements and the topic description. If you have that high of a TRL well done. We would love to see the proposal.

**24. Are solutions that are currently over 20lbs but have a pathway to weight reduction of interest. Would this weight reduction be desired in Phase II or Phase III?**

Yes, definitely of interest. If you can shave some weight off of a current solution then that'd be great news.

We would try to for Phase I, we would look into your approaches for shaving that weight and seeing what's feasible and we can determine what phase that would come in during Phase I.

**25. Are there EMI or RF constraints on the solution?**

If it's EWRF solution, there's really not going to be any constraints as long as we can pass HERP (Hazards of Radiation to Personnel) testing, there's no constraints. As long as you're not





affecting the soldier, we are good with that. If you're talking about constraints other than the environment the solution is going to be in, there is a strong chance for that, but we'll have to deal with it as we go. It's hard to find at this point.

**26. Can the Phase I request government provided data or payloads in Phase I to enable the feasibility analysis (e.g., Pk)?**

As of now we don't foresee any GFI (Government Furnished Information) to be provided. But if there is any to be provided, you can request it and we can provide (pending proposal selection). Then we'll work on what we call a DD254 to make sure that we can have those documents exchanged in a secure manner. If it's completely unclassified, then there are easier ways to do that. But again, this falls back on, you can request it and if we can provide it, we will. If nothing was proposed or offered upfront now, you need to work on proposing something that's not dependent on us providing something that we may or may not be able to provide.

**27. The trade-off for increased range is increased size and weight. Which is weighted more? Increased range or minimum weight?**

That's some trade space we're going to have to consider. It really depends, we hate to keep saying that, but we're trying to keep this one open for you guys and we're talking about what kind of range we are going to get for what kind of weight. That's going to have to be a case-by-case basis, but we think right now we're going to have to probably just lean more towards weight and just stay consistent. The range is not going to be as important as the other factors we're stressing.

**28. Phase I specifically asks for a feasibility study? Do all respondents have to do this as a task, or can they further develop a solution that meets requirements?**

The funding for this as you have seen in the solicitation is not to exceed \$175,000 and that's for a seven-month period of performance. The outcome is that you'll be working closely with the technical POC, the authors who are the program managers as well as the program office that's looking for the solution. You work with them closely and you continue to research. This is not basic research, we're not looking at that kind of level, but you do whatever you need to do within that period within the funding allotted to provide the deliverables that we're asking for. If you go further, we're not looking for a prototype back in our hands, but if you go further that's great. That just puts you ahead one way or another. You really want to meet the requirements and leverage that relationship that you're going to have with the program office and seeing what they're looking for in providing. The Direct to Phase II would provide the feasibility study as part of your proposal and then we'll be working on a prototype if selected, but in this case, if your feasibility study meets everything, 100% of what we're looking for, we highly doubt that so we think you might need to continue to refine and improve and provide something closer to what we're looking for. There's always room for improvement and there's always more to do to get close to what we're looking for.

**29. Is the solution required to be operable in GPS denied at this stage?**

That's not a requirement, especially at this stage, we can work on hardening a solution down the road, that's definitely nice to have.

**30. Is the Phase II demo planned to be live fire?**

That would be nice to see. We think that's going to be a pretty critical requirement get to a





Phase III. So definitely plan for a live fire. We're definitely thinking far ahead here, we gotta get to the feasibility study and somewhere in the middle of the feasibility study, we'll do a Phase II requirements meeting where we'll be talking about a lot of that information. Your goal is to get to the Phase I award first. Live fire as in you got something you're going to shoot whatever solution that you have at it and make it work, ideally, that'll be a functioning prototype. Otherwise, it may not be the preferred solution. It may require a lot more development and that would not be the final result of Phase II. But, we haven't finalized that decision for that Phase II yet.

**31. Does the solution need to have a night capability?**

It's not a requirement at this point. We can assume ideal conditions for whatever you propose and address those.

**32. Since the Phase I requires a feasibility study, what criteria will be used to select the proposal winner?**

That's going to come down to that trade space. We're looking for high probability kill and some of those other factors, we try to prioritize that in the topic. Those will mostly be the criteria that we'll go after. It's hard to find at this point, so it's hard to answer that one right now. It does have to meet topic description information, so don't veer too far from that. If you can, please read our SOCOM instructions for this topic. A lot of people assume that all of the Department of Defense has the same instructions, and they follow AFWERX processes, which none of us have the same exact process, so follow ours. We have check boxes and things that you can go through. It's in <https://www.defensesbirsttr.mil/> under funding opportunities. A drop down from SBIR/STTR funding opportunities and then you can look up the SOCOM 24.4 topic description. The technical team will go through it to see if it meets the requirements of what they're looking for. The technical evaluation covers 3 specific criteria. The first one is technical merit. Can you do the work, how are you going to do the work? The second part is personnel. Do you have the right expertise in your team, resume submitted and everything to do the work? The third part is your commercialization plan. Are you going to be able to do the work and stay in business to continue to develop more and provide the solution and what kind of commercialization plan? Obviously due diligence is important. From our perspective, whatever proposal you provide, we're going to do our security due diligence to make sure that there's no foreign country of concern interest into your program and you don't have that kind of concern. Do your own research on your own company, where your money's coming from, personnel etc. There's a lot of programs that would help you find out more. The defense of small business programs is doing some SBIR, Small Business Boot Camp that SOFWERX is having and all of that has some mechanisms and ways to learn more about the due diligence process.

**33. Can you submit more than one solution, that are unrelated to each other?**

Since this is not an open topic, you can. Department of Defense have not restricted that. That said, it does have to be different solutions, and if you have some subcontractors, different subcontractors' etc, all of that kind of counts within different solutions that you're providing.

**34. Is a small handheld device (iPhone size) that uses EW to kill various size and types of UAS compliant with this requirement?**

That one depends, there are caveats to that. Kill is the important word there. We're not looking for EW deter capability we're looking to physically down the UAS. If you can do that





through EW means, that's definitely compliant with this requirement. To add to that as well, we expect this to be applicable to a variety of UAS. We're not looking just for UAS with active links or a subset of commercially or cost available solutions. We're not really looking for the one trick pony.

**35. Is it safe to assume handheld means backpackable, but not necessarily requiring hand launch?**

That's safe to assume backpackable is definitely acceptable.

**36. Is there a minimum setup and initialization time?**

No, at this point there's not a requirement for that. Ideally usability is something that's important. Some of our SMEs are going to be from our components that have a real stake in this the solution. Set up initialization time is going to be an important role. We'd like to have something readily available, but we'll accept some trade-off there if we can hit some of the other factors we're looking for.

**37. Is foreign participation allowed?**

No, the SBIR/STTR funding is America's seed funds. It is to be done by U.S. companies, U.S. small businesses particularly, that certify that they are one through SBA, and it has to be done in the United States. That goes to the subcontractors as well and any subcomponents that's not something that needs to be like subsystems. All of those have to be within the United States and if it is an ITAR (International Traffic in Arms Regulations) that restriction adds another layer to make sure that the company cannot sell this outside the U.S. unless it gets Department of State approval. We have to keep that in mind as well. It has to be in the U.S.

**38. What about dual citizens? (US-Turkey)**

In talking about dual citizens, we're talking about individuals, not a company. U.S. nationals as in U.S. citizens and U.S. permanent residents can work on this personnel wise, but they do have to reside in the US. No work of any kind, not even code writing, can be done outside of the U.S. No communication, none of that. All of that we have to keep in mind that no one's sitting outside and remote working out of any country outside of the U.S. is working on the technology.

**39. Is ATV mounted, like MRZR, within the scope or only dismounted?**

For this effort, dismounted is what we're looking for, so mounted solutions would be not within the scope.

**40. What is the expected Phase II budget and POP for this project?**

We can't give an exact answer here. The Phase II budget at this point, is arranging and this is for this year about \$1.3 million for development. That can change, that is different from one year to another and really depends on what kind of work we're going through. We can do our own independent government cost estimate and find a different budget that may be higher than that. Average about 1.3 million, the period of performance for this project depends also on the level of work. We go through the selectees, and we'll see how far they are in the feasibility study and based on that, we can go anywhere from 8 months to 24 months, so 18 months we think on average. There's an unclarity here at the moment for this.





**41. Can the solution be its own backpack? In other words, is it ok if the solution prohibits the user from carrying another backpack?**

Yes, we think that's acceptable. We can deal with compromises. As long as it's meeting some high probability kill or some other factors, we think that's a compromise that operators are willing to make.

**42. Is a two-person solution in scope? For example, one soldier using a laser designator and a second soldier launching a device with a laser seeker?**

Yes, we think that's acceptable within scope. If your solution can be loaded out across multiple soldiers, we think that's feasible as long as the weight to each soldier is manageable.

**43. Are things like skydivable kit within scope at this Phase or will this come later?**

That particularly is not a requirement. Ruggedization, being able to survive in the field, that is going to be an important factor, but not specifically skydiveable.

**44. Is this seen as mission-specific equipment or always available equipment?**

That one's going to depend a little bit. Ideally, it's always available because they're never really going to know when they're going to need it. Mission specific, there's probably going to be use cases where this is going to be specific gear for a mission but always available is ideal.

**45. Is ruggedization threshold Mil-std810g or can compromises be made on things like temp, IP rating, etc.**

Ruggedization is going to be an informant factor, but not for Phase I at this point. As long as there's a pathway to get this ruggedized to last in the field and it's not going to drastically add to the weight. We're looking at that as we're fine. If it's going to get heavier to get some ruggedization threshold or Phase I, not too important right now as long as we can get there down the road.

**46. How much should we assume the threats have been hardened or are carrying self-defense/evade capabilities?**

For now you can just consider them all unhardened at this point.

**47. Could you address desirable effective range?**

We're trying a different approach here where range is not the priority as it has been in previous attempts at looking for solutions. Looking at some of the other factors listed in the topic, those are going to have higher priority. Probably 100 meters would be something we're going to look at. We can take less as long as we're getting things like a high probability of kill. That's definitely negotiable, that's not a hard requirement but if we're talking feet that's really not going to raise our eyebrows.

**48. Does the operator need an active c2 link to remain I loop after launch?**

That's not a requirement. If you're planning on using a UAS to kinetically defeat another UAS, we can consider that. Ideally an active C2 link is been a little bit of a problem but we're not going to rule that out at this point. We'd like to avoid that, but it's definitely up for consideration at this point.

**49. Do you anticipate multiple awards?**

The US SOCOM SBIR/STTR program office averages about three to four Phase I awards per







topic. We've seen by exception of seeing different variations of less or more that really depends. The technical POC you're talking to and the program office managing this effort may request based on what they're seeing. If they see anything that they are interested in, they will voice their opinion and say hey we want more. This is open for further discussion with them.

**50. Are there any specific off-the-shelf self-drones we should use as the standard for testing?**

No, there's nothing specific and just your standard COTS are sufficient for preliminarily to conduct your feasibility study.

**51. Any comments on gas or electric powered UAS targets?**

Our mission is Group 1 – 3, that is what we're going after. Not necessary for this topic. We'll take what we can get and that covers a variety of different propulsion methods, electric and gas are included in those Group 1- 3 targets. So no, nothing specific. We're looking for all UAS at this point. If your solution is looking to use like a seeker or something like that, you need to track a gas engine or something like that with a little bit higher heat source that's definitely up for consideration. We can accept taking any subset. With the Group 1-3 space there's a lot of different threats out there. Just because you can only go after a subset of that, we don't want that to be discouraged. We definitely encourage you to still submit a proposal.

**52. Do you have a current solution for this use case?**

The Stakeholder is unable to answer this question.

**53. Will kill confirm be visual by operator on ground, or should the solution provide kill status to operator?**

Kill status would be nice to have, but just the operator visually seeing it go down is acceptable.

**54. Is there a desire to recover downed drone for exploitation?**

That is not a requirement at this point. The desire, yes, potentially. But as long as the drone is down that's the priority. If we can recover it and exploit it, yeah, that's a nice to have. Definitely not a requirement at this point.

**55. Are loitering-type solutions being considered?**

Yes, those are definitely up for consideration. As long as they can be carried by an operator or loaded out across a couple of operators that's totally fine.

**56. Is there a time requirement to defeat?**

No, we don't have a time requirement set. Ideally, it's immediate. That's just going to be trade space. We're going to have to explore. If it takes a couple of minutes or seconds, we'll just have to weigh those and make compromises there. But if there is some initialization time that's understandable.

**57. Would a solution that can be deployed against both air and ground targets be favorable?**

For this topic, we are really focused on UAS but our mission is unmanned or uncrewed systems. We cover your ground maritime targets as well. That would be interesting if you can target ground targets as well, but not a requirement.





**58. What is the target date for Phase I award?**

The average from proposal to award is about 90 to 100 days. If this is awarded by the contracting officer and it doesn't say anything about SOFWERX awarding it, it'll be about 90 to 100 days on average. This is what we're looking at from the moment that DSIP closes. Now these are averages, they're not set in stone and it may differ based on the situation that we have on hand to get the documents evaluated and awarded etc. We have multiple stakeholders that work on it.

