Gliding Offensive Lightweight Unmanned Munition (GOLUM) Assessment Event (AE) Q&A Telecon Transcript

26 February 2025

1. **What is the required captive and release envelopes**
   The answers will be provided to those invited to the April Assessment Event. You will get at SECRET // REL to USA, FVEY briefing and there will be no doubt in your mind as to what your product will need to do and how, in a general sense, that needs to be done. But we can't talk about that here.
2. **What is the release altitude?**
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3. **Is a development effort acceptable?**
   Yes, if you have an idea, and you have a timeline to it, if you only got a green light, what would it look like? It doesn't have to be something that you have an existing model for. It can be an idea, but it has to be based on a reasonable developmental timeline that you can achieve for us.
   There is a short timeline for the development of this. So going from idea to operational prototype demonstration, in an operationally relevant environment, we're going to be looking to do that pretty quickly, probably 12 months or less from start of effort, so you're going to have the able to move fast. And when I say operational prototype, I mean with the integrated payload as well.
4. **What computer architecture does this platform require. SOSA ? 3UVPX or VNX+ ? How are they achieving MOSA.**
   Sensor Open System Architecture (SOSA)
   Module Open System Approach (MOSA)
   I believe that architectures are going to be open for trade space that comes to the solution. All recommended technology should be able to integrate with one another. So, again, it's something that I believe when you get the Classified portion of it, it should be very clear how you should be able to achieve modularity with this.
   We also need to keep in point that this is a munition. It may not be networked. This might be a moot point. We'll address that in the classified forum.
5. **What is the launch mechanism? CLT / CLT – like device or other?**
   I can discuss the launch mechanism at the Classified level. It does not have to be Common Launch Tube (CLT).
6. **Munition glide ratio? We know >100 km from separation without an audible signature. Is there a restriction on AGL or MSL at separation? Host FW, MC or both?**
   Glide ratio of 10:1. That is the objective, but if you fall short of that, we still want to see what you have. We're still at an exploratory stage, so if our answers don't seem firm, it's because this is still market research. The 100 km is not hard and fast. Don't hang your hat on that. If you're at 89 or 110, you're close enough to talk to us.
7. **What are the requirements for the GPS Capabilities/Performance**

It must have GPS. But you have to assume that GPS signal available to the ammunition upon release from the aircraft will be terminated, so you will have no GPS signal as soon as it's in free flight.

8. **What is the required schedule and milestones for the effort**
   1st prototype due: 6 months; 1st operational demonstration: 9 months; full-rate production must start NLT 12 additional months
   Those are guesstimates that are informed by the state of industry that we think is out there now. Some people representing companies may have protypes on paper, and some may have prototypes that have actually flown. But we think that this is the fastest we can go, assuming monies are available.
9. **At what altitude and speed will the glide munition be released**
   That is classified. Those invited to attend the AE in April will be given more information.
10. **Is USSOCOM considering software solutions for UAVs or aircraft, like GPS-denied navigation and automated targeting for munition support?**
    GPS-denied navigation is critical to this mission. We would absolutely consider it and any targeting solution, alternative and navigation solution alternative GPS would behoove any of the industry partners who are presenting.
11. **If a system is in the design phase, will it fit the GOLUM TRL interest given the various prototype and other contracting/award paths listed?**
    Short answer is yes, but you'd have to be on a fast track. But yes, if you have an interesting design, we are interested in it. We gave you the development timeline, which is quick.
12. **What is the SWaP of the desired payload / is there already a predetermined supplier for the payload?**
    1) Weight – 30lbs glide munition, including the warhead (max weight for the warhead is 10lbs) That 10lbs may be energetics, and it may have some steel in there. So we count them all together. If it's part of a warhead, it's steel and not steel together. The payload is interactive with the accuracy of the round. So the more accurate your round, the less payload you may have to carry, so just keep that in mind upon your submission.
    2) No, we are still looking for the right vendor to supply the kit for the capability
13. **Does "without an audible signature" mean something like "unable to be audibly detected by XXX" or "must have an acoustic signature less than XXX dB at XXX Hz"?**
    We don't want it to be audible, period. There's no motor or engine of any kind, so it should be as silent as possible. With that being said, we are still in an exploratory phase, but I don't think that we would eliminate a powered system. We call it a glide munition, but if somebody submitted a powered system that met all the requirements, and it was silent or inaudible to the target area, I don't think we would eliminate it before we took a look at it. If you had a low-noise, long-duration device that you could show us and make the point that it's not perfectly silent, but almost there, I think it's worth us listening to the vendor.
14. **What is the minimum clearance required to take part? Is a facilities clearance a requirement?**
    SECRET // REL TO USA, FVEY (Australia, Great Britain, New Zealand, Canada, and the USA). Your submission cannot be classified, but the discussions at the Tampa event will

be. And in fact, your submission cannot be classified because civilian companies do not have the ability to classify information. And that goes back to the OPSEC discussion. We need to be very careful what we put out there on the Internet because we're informing the world, potentially, of our capabilities, and that includes attaching a file of a great idea and sending it to, to me or to tosh or to DEVCOM. You've got to assume that our systems are at risk unless they're a higher classification level. So, we all collectively need to be careful with the next steps from here over.

15. **Does the munition have to be launched from a CLT or other existing launch system?**
    No
16. **Is there an objective unit cost at low-rate initial production?**
    Yes, the government will request estimates for prototypes in production at scale. We see this as a mass production opportunity, even though it's precision. We need to keep the costs as low as you can bear it and still produce it and make a profit. We understand that's a part of our relationship. But we can't have an exquisite one-off weapon that requires a large amount of funding from the government.
17. **Are guidance systems for GPS denied environments required?**
    Yes. Assumption #1 – no GPS signal will be available upon release from the aircraft. So, you will have GPS until such point as you release and then it has to use something else and I'll stop there.
18. **Will you consider submissions from a software only APNT solution?**
    That's tangential to this, but I would say absolutely. You may be a software designer who give us a good idea, and we can go forward from there and integrate that into another part of what we're doing, I can't promise you that we'll use it. I can't tell you where it'll go from there, but it you have something understanding what we're building and you have a software component to that I would like to see it and we'll go from there.
19. **If a company currently does not have a FCL, will you sponsor the company for a FCL / interim clearance if you like their proposal?**
    If you've got a good idea, but you don't have a security clearance, send it in and let us wrestle with the issue. First of all, if it doesn't meet our requirements, once you send the idea, that's the easy answer. You'll know that we're not interested in it in its current form. But if we are, then it's on us to take the next step.
20. **Are there are details or requirements you can share about the communications protocols or electronics needed to interface with the launch platform?**
    No, I don't think there's anything more we can tell you about that. Except there will be no communications between the device and the launch platform once it's released.
21. **Are APNT component solutions considered? Or are only complete munitions solutions considered?**
    I think we've addressed that already. APNT might be something we can use in other efforts that we're doing at the unclassified level. USASOC is exploring high altitude solutions for reconnaissance and communications extension. So an APNT solution might fit those acknowledged programs. So yes, send it in. It may not be perfect for what we need here, but we may be able to divert you to another effort that's ongoing.

22. **Has there been any previous efforts leading up to this project done through SBIR/STTR? If so, could you share the topic?**
    Yes, there has been. But we can't reveal the topic without revealing the capability. So yes, there has been work done on this. If you had prior knowledge of the capability or have worked with SOCOM who knows about the capability, we're asking that you not mention it because we have changed our stance on the classification of the capability.
23. **Is this opportunity open to all of industry (not just small business)? Thank you!**
    Absolutely open to anyone who's got an idea and the means to further it. It is also open to Academia, Laboratories, or non-traditionals who might have a solution.
24. **Is a partial solution acceptable (e.g. only a seeker) or is only an integrated solution within scope?**
    Yes, if you have an idea, if you have a component, we don't need you to provide the entire package. If you have a good idea for a component that we're looking for, by all means, submit.
25. **What follow ups should we expect if you like our component (APNT for example) but doesn't fit this specific topic?**
    We will address this if/when it happens, but we would likely pull it away from this effort and follow the guidance from SOCOM/SOFWERX Program Managers to move forward with that company. We wouldn't let it drop if we thought it had merit.
26. **Will SOCOM consider an ability for the airframe to be quietly electrically powered to achieve range and the ability to change targets and or loiter if needed.**
    Yes, that is more capability than what we're asking for, and you might even get more range. So, it could be powered, and it might have the connectivity to change targets or loiter if needed. That's not the requirement. But if you have something that you're working on that you think meets the weight requirements, but it happens to have a small electric motor, then please send it in. Please keep in mind that cost and weight are factors in this. We didn't really go into cost and we didn't feel comfortable in putting a figure down there just yet. But we gave you the weight limits and it's right there in the middle of the desirements – 30lbs gross including warhead. Warhead weight of 10 lbs now if it's 10.5 lbs, I think we'll probably look at it, but that's what we're trying to keep to.
27. **Would it be useful to submit individual WPs related to different components of the design e.g. an APNT WP and a warhead WP. Thank you**
    If you have the white papers separated already, don't do any more work, just use the glide munition white paper format and populate it. If they've got it in one big thing and it brings it to four pages, I'll still read it. I don't object to that. As long as they can package it in the white paper in the format we need it in. It might be too much information to do in one white paper, but I'll defer to the people who are submitting. It just has to be legible and understandable and compact.
28. **Is SOCOM open to interchangeable, self-powered, expendable ISR or EW companion payloads to identify, disrupt, or deceive adversary assets to increase lethality**
    Yes, absolutely. It doesn't have to be explosive to create an explosive impact or explosive effect. When I say explosive, I mean energetic. We're not talking about ISR here, but we have active ISR programs with our partners. So if you have an ISR idea that

fits this mode, but it's just not an energetic that might be something we take offline. Electronic warfare, however, is different. So, again, we're not looking for disruption or deception here, but we have other efforts that may see that. I would say, if you have something that fits this, if you wrote this or have something that fits this question, send it in and we'll go through the process with SOFWERX to divert it to other efforts if it doesn't match this one. But it's hard to say more without seeing the product.

29. **The overall glide munition weight is not to exceed 30 lbs. Do you have a warhead weight in mind?**
    Yes, 10lbs. Not hard and fast. Don't hold it back if it's over or under. We just can't make it too big and too expensive.
30. **Is there a maximum size limitation (length by width) for this glide munition?**
    No. There is no limitation beyond weight. So, physics will create the size limitation for us. If you're limited to 30 lbs., it's only going to be so big. These systems will be used by tactical teams. So you can't make it so unwieldy that we can't get it anywhere like in the back of a truck or loaded onto a vehicle.
31. **We produce products made out of Magnesium alloys, serving UAV's and reducing weight by 35% when compared to Aluminum Alloy. With whom I need to contact?**
    We cannot help you with that. But you're welcome to collaborate with others on a submission.
32. **What is the estimated number of units that eventually will be required during production**
    If you go into the white paper template, paragraph 10, we're asking you to make 5 estimates. Estimate the group cost between 50 to 150 units, all the way up to 1500 to 4000 units. Now we put 4000 units there as the right limit. That's our best estimate at this point, but it could, if it's successful and works well, it could be significantly more than that. We're looking at mass and accuracy and not necessarily size for the impact. Keep in mind that you're just talking about the SOF peculiar item, with a follow-on potential with the Army. So, it could be larger than that, and we can't give an estimate for that right now. Upon success, we think that there is a reasonable opportunity to expect that other entities within the US DoD or allies will want to have the capability.
33. **What is the desired mature production rate?**
    I can only refer you to paragraph 10 in the white paper template. I can't give you a mature production right now, but we're looking at thousands, not hundreds of units, and perhaps much more than that.
34. **What is the intended role of the GOLUM in modern warfare, and how does it enhance operational capabilities**
    We cannot answer this right now. We have a specific purpose for this system, and it will fill a critical role within the US Army and US DoD.
35. **Where can we access the Desirements sheet? It does not appear to be linked in the chat or meeting maker.**
    https://events.sofwerx.org/gliding-offensive-lightweight-unmanned-munition-golum
36. **What are the environmental conditions the munition must withstand**
    Must be able to operate in a hostile temperature range from -40° Fahrenheit to +145°.
37. **What are the requirements for the munition's built-in data link?**

We do not envision a data link after release.

38. **What is the Required CEP from the system**
    Under assumptions, the smaller CEP for your accuracy, the better. Second bullet on desirements: Accuracy: 10m CEP 90. This means a 10m circle, 90% of the rounds land within the 10m circle.
39. **If not CLT, is this expected to be deployed via tube, wing store, door, or other? Is there a fire control system that needs to be integrated with pre-launch?**
    I'm not going to talk about mode of employment at this level. You know the temp range that it has to operate in and you know that it's not tube launched. That's all we can say.
40. **Can we contact (or do we need to contact) DEVCOM prior to submission to confirm their interest in collaborating on aspects of the Warhead (e.g. fuzing)?**
    Let's wait until after downselects to start that collaboration. So if you're asking this question, and your intention is to collaborate on the warhead, I would just state that in your proposal that you're proposing a glide vehicle, you can go so far, just say we're doing the glide vehicle and we want to collaborate on the design with DEVCOM. So that's acceptable.
41. **How does the GOLUM compare to the GBU-69 small glide munition in terms of size, capabilities, and cos**
    If you Google the GPU-69 I think you'll find it's about 4x the size of what we're looking to fill. Otherwise it operates in a similar manner. It's an unpowered glide munition, and that's all I can say on that.
42. **Is there any page count or other limits on the white paper given the new template?**
    No, there is not. Fill it in. Don't waste time making it fat. We made this format and we staffed it amongst the partners to keep it sharp. So it's not going to be two pages once you fill it in and you can even take away the admin remarks if you want (e.g. explanations on what we're looking for in your answer). That's totally up to you. So, no page count, but you're not getting paid by the word for a study. I need you guys to keep it short and sweet. Keep the BLUF (Bottom Line Up Front). Help us understand quickly what it is you have and that's why we put a picture box on the front. That picture box can have multiple pictures in it, but don't make them too small. You can also add attachments at the bottom of the white paper because some of the industry partners may already have premade products that explain your product very well (or videos). Keep in mind your audience who are going to be reading and going through all of these. You know, if you submit something that's 40 pages long, we're going to have to slog through a lot of these. I think there's 125 people on this call. We're going to have to get through a lot of them. Keep in mind that the people reviewing your submissions, we're not engineers. We are program managers and capability managers, so if you start getting into a very detailed finite engineering that's just going to pass right over our heads. We'll get into the nuts and bolts of things later on.
43. **Is cost a higher priority than mission performance?**
    I can't answer that except to divert you back to the desirements chart. Cost is a consideration. We'll consider request for prototypes and production at scale. We think cost is going to be important because we can buy more smaller things than we can lesser bigger things.

44. **Does "navigation" mean navigate to a map coordinate or does that also include detecting a particular type of target, either for navigation or terminal guidance**
    Yes, it needs to strike a specific target with an accuracy of 10m, CEP 90. So, yes, and it's not going to sense the target at random as it's looking. It's not a mobile missile thing/counter missile thing. It's something else. And that's all I can say here.
45. **For pre-launch, will there be a gov't provided fire control system or should we propose that as part of the system?**
    The munition needs to know where it's going, and hit it within 10m CEP 90.
46. **What is the performance requirement from the warhead**
    That is variable. If the CEP is large, then you're going to need a bigger warhead, and it's going to affect the final performance of the warhead. We can't get into what the actual performance of the warhead will be in this forum. It'll be something that comes up later.
47. **Are you accepting solutions from partnering teams? (Similar question: Can we submit this proposal as a team? One company focusing on the precision glide requirements (unpowered UAV) and the other on the warhead requirements.)**
    Absolutely! Just identify the partners on the top of the white paper format.
48. **Is 100km the minimum navigation distance?**
    Don't use 100km. That was only a guide and if I had to write it over again, I would use something else. Glide ratio is 10:1.
49. **Can we assume the target is metal?**
    I'm not going to address that in this forum. We're using explosives, though. It's going to have to be substantial.
50. **Should we envision glide ranges considerably higher than 100 km?**
    We've answered that. The objective glide ratio is 10:1.
51. **Should we consider a "mother ship" (UAS) as high as FL350?**
    I'm not going to address this either. You're not tube launched, we've told you that. And I'm not going to talk about the altitude of employment at this classification level.
52. **What open standards are required for inside the vehicle?**
    Not sure what that means.
53. **Any rail requirements including ESAF/external connections?**
    No, no rail requirements.
54. **Can a classified submission be made?**
    No. SOFWERX cannot accept classified submissions. All submissions must be unclassified and non-proprietary.
55. **Are conventional droppers applicable for dropping from the mothership?**
    Not sure what a "conventional dropper" is.
56. **Is there any minimum size or weight we might provide in terms of the total system and specifically for the warhead in terms of desired functionality/lethality?**
    The total warhead weight including energetics and steel sleeve, if any, cannot exceed 10 lbs in weight. We will provide more information at the classified setting.
57. **What is the size weight and power for the UAS's computer, any related requirements?**
    Not applicable. The glide munition has its own power source.
58. **Does the GOLUM need a fail-safe mechanism if the self-destruct command via data link is jammed or not received for some other reason?**

No. We're treating it like an artillery or mortar round. Once fired, it cannot be recalled.

59. **What are the storage and handling requirements?**
    Just like other similar items in the U.S. inventory.
60. **What is the target price point?**
    We don't have a specific price-point. Cheaper is better to allow us to afford mass.
61. **Are there non-kinetic payloads of interest?**
    Possibly. We're focused on the kinetic payload here, but are open to non-kinetic payloads. If you have an idea for a non-kinetic payload, please submit it to SOFWERX.
62. **What kind of power is required?**
    Internally powered.
63. **Is there a targeted speed to cruise/glide?**
    No. Faster is better, but it has to be accurate.
64. **Is there any restriction on materials or manufacturing processes?**
    No, but they need to be as light-weight and durable as possible.
65. **Is there a release velocity, altitude, and heading associated with the 100 km, i.e., 100km range in line with launch heading released from X ft AGL at X ft/s?**
    No. Don't focus on the "100 km" as that is a ball-park figure. Focus on the 10:1 glide ratio.
66. **Does the >= 100 km target distance apply for all three detonation types? i.e. height above ground detonation, point detonation, and penetration?**
    Use the 10:1 glide ration instead of 100km. Yes, the same figure (10:1) will apply to all three warhead types.
67. **Can you clarify the expected launch mechanism from host air vehicle, and what is intended by "without an audible signature".**
    We cannot say more about the launch mechanism at this classification level. Without an audible signature means that the enemy cannot hear an engine such as with legacy ISR systems.
68. **Is SOCOM adopting WOSA standards for GOLUM?**
    Sorry, I do not recognize this acronym.
69. **What are the seeker options or guidance option requirements?**
    There is no laser seeker. The GOLUM must navigate to the target without GPS on its own.
70. **Do submitters have to meet all desirements in a whitepaper submission or will partial solutions be reviewed? Ie. can we submit a novel alt-pnt whitepaper?**
    Yes, partial solutions will be accepted for review.
71. **Can launch platform providers apply as well to develop launch capabilities?**
    It depends on what launch platform you have. Sorry, cannot be more specific. If you contact Claire Harmon on the side and provide more info, we'll let you know.
72. **Neuromorphic computational systems are being used more nowadays. Any restrictions on using such a system for this requirement?**
    We don't anticipate any self-limiting requirements at this time. We'll review any ideas you have.
73. **Is powered flight for longer ranges post-separation desirable or is intent solely a glide vehicle?**

Powered flight to extend the range could be desirable, but only if the power-pack and battery/fuel source didn't add to the overall weight and bring us over the 30-lbs total limit.

74. **How much funding should be expected to provided for munition development?**
    That is not known at this time.
75. **What are the development acquisition contract vehicles under consideration?**
    Contract vehicles are pending.
76. **Do you have a cost per round threshold? The desirements document says "cost is a consideration." Round costs at this stage is challenging given lack of info.**
    Unfortunately, we don't have a cost-per round threshold. Understand the cost analysis is imperfect that this stage.
77. **Is it safe to gather that a RECON type of glider smart system is not entertained, as we are seeing more of the munitions discussion so far?**
    We're interested in an ISR variant that could take digital still photos and burst them back to our C2 node. This could be as large as a Group 2 sUAS and could be powered as well.
78. **Is there a needed or desired release pathway that's being eyed? (specific BRU's, pneumatic release, electric hook, etc?)**
    Negative. No specific release pathway.
79. **Does "smaller than the SGM" mean smaller in weight, or does it need to be smaller dimensionally?**
    Our primary LIMFAC is weight. Has to be smaller than 30-lbs. We're not worried about the dimensions.
80. **Is there a preferred warhead or warhead size?**
    No. We like them all. Warhead options could also include multiple explosively formed projectiles (mEFPs).
81. **What is the target set?**
    Can't tell you at this classification level.
82. **What is assumed altitude for 100km range?**
    Can't tell you at this classification level.
83. **Is there just a 30 lb class munition or would a smaller one around 10 lbs be attractive?**
    Can't give you an answer without seeing the performance characteristics of the smaller round.
84. **What are intended platforms?**
    Can't tell you at this classification level.
85. **Is there a launcher or do we need to provide the launcher?**
    You don't need a launcher.
86. **Is there an ICD for launcher or platform interface?**
    No.
87. **Is the MOD Payload ICD applicable?**
    No.
88. **Will you provide a list of collaborators in case we need to collaborate?**
    Yes, if appropriate, we put multiple companies together and offer a collaborative environment.

89. **Are the launch platforms moving, or are balloons also being considered as potential launch platforms?**
    Can't tell you at this classification level.
90. **Can any mass be left behind on the launch platform as part of the system, and if so how much launcher mass is allowable?**
    The gross weight limit is 30-lbs.
91. **Can DEVCOM Armaments center provide the effects package for a flight body design, and if so how do you account for that costs?**
    Cost for DEVCOM AC design & integration support should be included in your quote based on the contractors assessment of the difficulty required for design and integration. DEVCOM AC man year costs are 274,580.00/year in FY25 with 1710 hours per year giving an average hourly rate of $161/hour.