SBIR 26.BZ R2 Q&A Telecon Transcript
27 May 2026

- **SOC26BZ02-NV003 (Phase I): Passive Simultaneous Localization and Mapping (SLAM) for Terminal Guidance**

SBIR Process Timeline
06 May 2026: Topic issued for pre-release
27 May 2026: USSOCOM begins accepting proposals via DSIP
24 June 2026: Deadline for receipt of proposals no later than 12:00 PM ET

1. Can you summarize the purpose of this topic?
The government seeks a passive SLAM-based terminal guidance capability for loitering munitions and one-way attack UAS platforms operating in cluttered rural and urban environments. The goal is to move beyond simple pixel-lock guidance and enable intelligent navigation around obstacles to both static and dynamic targets.

2. Is the Phase I proposal limited to five pages?
Yes. Phase I technical proposals are limited to five pages. Offerors should use the technical volume template on DSIP and follow SOCOM-specific instructions. Resumes should be included separately in Volume 5 rather than within the technical volume.

3. Are solutions expected to support indoor navigation?
Ideally yes. While indoor environments may reduce achievable speed and maneuverability, the government would like solutions capable of limited indoor navigation in addition to outdoor operation.

4. Is there a preference for rotorcraft or fixed-wing platforms?
Rotorcraft Group 1 platforms are preferred because their maneuverability reduces the likelihood that platform dynamics become the limiting factor. The focus should remain on perception and navigation performance.

5. Are there required drone sensor configurations?
No specific sensor suite was prescribed. Vendors are expected to determine the necessary passive sensors and hardware configurations during Phase I feasibility analysis.

6. Must solutions explicitly implement SLAM?
Not necessarily. Alternative approaches will be considered if they satisfy the required performance objectives.

7. Is GPS-denied operation required?
Yes. Systems should assume GPS denial during terminal guidance and should not rely on active command-and-control during terminal engagement.

8. What altitudes, speeds, and engagement distances are desired?

The government intentionally did not specify these parameters. Vendors are expected to explore feasible operating ranges based on platform type, sensors, and environment.

9. What should Phase I prioritize when tradeoffs are required?
Simulator performance and SWaP analysis should receive the highest priority during Phase I.

10. What target types are envisioned?
The solution should support both static and dynamic ground targets. Specific operational target details were not disclosed.

11. How should mission success be defined?
Mission success includes: maintaining target track, obstacle avoidance, navigating through clutter, and successfully reaching the target intercept envelope. All are considered equally important.

12. What forms of degradation are unacceptable?
Added sensors or compute must not excessively degrade: endurance, payload capacity, flight dynamics, or mission effectiveness. Solutions that overly burden the platform will not be viable.

13. What baseline should solutions compare against?
The baseline comparison should be traditional direct-to-target visual guidance (pixel-lock guidance).

14. Is onboard telemetry and logging desired?
Yes. Logging navigation confidence, obstacle avoidance decisions, drift estimates, and constraint compliance is of interest for post-test evaluation.

15. Is the government looking to improve sensors themselves?
No. Sensor development is not the focus of this effort. The emphasis is on navigation, route planning, and obstacle avoidance.

16. Are there compute or GPU limitations?
No explicit compute or hardware requirements were provided, provided the system does not negatively impact host platform performance.

17. Can vendors assume line-of-sight to the target?
Yes. At least initially, the target may be assumed to be visible when terminal guidance begins.

18. Is smaller drone size preferred?
Yes. Smaller platforms are preferred as long as they can satisfy mission objectives. Group 1 or smaller platforms are acceptable.

19. Why is loop closure important?

Loop closure enables recovery from navigation mistakes or target occlusion by returning to a previously known valid location and replanning.

20. What level of adversarial robustness is expected?
The effort is not focused on advanced computer vision against camouflage or deception. However, systems should tolerate realistic target movement and standard evasive maneuvers.

21. Will the vehicle have localization before terminal guidance?
Yes. The system may begin with GPS, INS, or visual odometry localization, but GPS cannot be relied upon during terminal execution.

22. Is fuse integration relevant to this effort?
No. Fuse integration is outside the scope of Phase I. Navigation is the primary focus.

23. Are custom optics or proprietary sensor systems allowed?
Yes. Vendors may use proprietary optics or custom sensor configurations, but sensor invention itself is not the main objective.

24. Is the government seeking low-SWaP near-term solutions or future-looking architectures?
The government is primarily interested in practical low-SWaP solutions that meet requirements today.

25. Can the government discuss CONOPS driving the requirements?
No. Specific operational concepts cannot be discussed in this forum.

26. Is there a desired operating range for the passive system?
Longer range is preferred, but the emphasis is more on navigation and route planning than long-range sensing capability.

27. Are proposal scoring criteria published?
SOCOM evaluates proposals based on: technical merit, key personnel,
and commercialization. Evaluations identify strengths and weaknesses rather than assigning numerical scores.

28. Is persistent mapping for future reuse expected?
Not necessarily. Since this is intended for one-way attack platforms, long-term mapping persistence is not a priority beyond local navigation and loop closure support.

29. Is absolute visual localization using satellite imagery desirable?
Yes, if vendors believe it benefits their approach.

30. What is the Phase I funding amount?
Phase I awards are capped at $175,000.

31. What obstacle clearance and altitude behavior are desired?

Platforms should remain high enough to avoid obstacles when possible, then descend when required near the target. Exact spacing depends on the selected platform and maneuverability.

32. Will multiple performers be funded?
Typically SOCOM awards 2–3 Phase I contracts, though more awards are possible for compelling solutions.

33. Can vendors assume target identification is already solved?
Yes. Vendors may assume ATR and target identification are solved by external systems and focus solely on navigation and terminal guidance.

34. Is collaborative mapping between multiple vehicles desirable?
Yes, collaborative mapping is of interest, provided it functions in denied environments.

35. Is there a preferred simulation platform?
No preferred simulator was specified.

36. Can more than one award receive the full $175K amount?
Yes. Multiple awards may each receive up to the full Phase I amount if justified.

37. Will the Q&A recording and transcript be released?
Yes. The transcript will be made available after review and approval.

38. Is precomputed environmental mapping acceptable?
Yes. Satellite imagery or mapping support from larger platforms is acceptable. However, detailed preexisting 3D models or lidar scans should not be assumed.

39. Must vendors use existing onboard sensors and compute only?
No. Vendors may add sensors and compute resources as needed.

40. Is attacking airborne targets part of this effort?
Not currently. The focus remains on static and dynamic ground targets.

41. What operational failure mode motivates this effort?
Pixel-lock guidance performs poorly in cluttered environments where obstacles or moving targets require intelligent route planning.

42. Are simpler vision-only approaches acceptable?
Yes. Any approach meeting the required performance criteria will be considered.

43. Must vendors determine guidance engagement distances during Phase I?
Yes. Vendors should explore feasible engagement distances and include findings in the Phase I report.

44. Should feedback loops from past mission data be explored?
Yes, feedback mechanisms may help improve development and testing. However, operational recovery of failed platforms is unlikely.

45. Must the system search large areas for targets?
No. Vendors may assume the target has already been identified and authorized for engagement.

46. What are the expected Phase I deliverables?
The primary deliverable is the Phase I report.

47. How will operators designate targets?
An ATR system is assumed to identify a target and request engagement authorization from the operator.

48. Which operational environments matter most?
Urban and rural terrain are the highest priorities for this effort.

49. What is the Phase I period of performance?
SOCOM Phase I contracts are seven months long.

50. Should vendors expect to provide their own hardware during Phase II?
Yes. Vendors should expect to provide their own hardware solutions.

51. How important are night operations?
Night operation capability is important, though the government understands it increases sensor complexity and cost.

52. Should adverse weather be considered?
Yes. At minimum, systems should operate in rain. Dense fog or smoke may exceed some sensor capabilities.

53. Were there any missing or unexpected questions?
No. The government felt the submitted questions were comprehensive.

54. Why not use existing commercial systems?
Market research did not identify commercial systems meeting all desired requirements.

55. What constitutes a cluttered urban environment?
Examples include: buildings, power lines, telephone poles, vehicles, rubble, debris, and general warzone clutter.

56. Should the simulation-to-real gap be addressed during Phase I?
No. Simulation-only demonstrations are sufficient for Phase I.

57. What autonomy level is desired?

The desired outcome is fully autonomous terminal execution after operator authorization is provided.

58. Will targets always be ground-based?
Yes. The effort focuses on ground-based targets.

59. Can mothership-launched UAVs still be used?
Yes. Launch method is less important than navigation and perception performance.

60. What fails most often with current pixel-lock guidance?
Pixel-lock systems cannot intelligently navigate around clutter or reacquire targets obscured by structures.

61. Can the operational kill chain process be discussed?
No. Additional operational details cannot be shared at this time.

62. Is there an alternate venue for existing mature capabilities?
Yes. SOCOM technical experimentation events may be appropriate venues for demonstrating existing capabilities.

63. What proposer strengths are valued most?
The government considers: prior government work, existing products, novel research, technical merit, key personnel, and commercialization strategy. Formal evaluation follows the published criteria.

64. How quickly are contracts typically awarded?
Proposal evaluation typically takes 30–45 days, followed by approximately 60 days to contract award.

65. What should Phase I simulator demonstrations show?
The government would like to see a Gazebo-style demonstration of autonomous navigation through wooded or urban terrain.

66. Can PX4 be used instead of ArduPilot?
Yes. PX4 is acceptable.

67. Where can submission templates be found?
Templates and instructions are available on DSIP under supporting documents.

68. What does commercialization potential mean?
Commercialization strategy is up to the proposing firm. This may include transition to primes, direct software sales, or non-DoD applications.

69. Is path planning more important than perception?
Yes. For this topic, path planning is prioritized over perception capability.

70. What will Phase II award amounts be?

Phase II funding amounts and award quantities will be determined after completion of Phase I.

71. Will the government provide operational data?
No. The government does not plan to provide data for this effort.

72. Can existing feasibility studies be attached to Volume 5?
The government is not requesting a feasibility study during proposal submission. The Phase I effort itself is intended to produce that feasibility study. Vendors may include relevant past work.

73. When does submission for Release 2 open?
Submission for 26.BZ Release 2 opens immediately following the event.

74. Where should additional questions be submitted?
Additional questions should be submitted through the DSIP tool or via the SOCOM SBIR email address referenced during the event.