



SBIR 25.4 Release 12 Q&A Telecon Transcript

SOCOM254-008: Silencing with Acoustic Rainbow Emitters (SWARE)

1. **There are many researches regarding UAS noise reduction. Is USSOCOM interested in an analysis of these methods and their comparison with the announced ARE?** Yes. For Phase I, we would be interested in such a comparison as part of feasibility analysis.
2. **For Attribute 1, is a 6 dBA reduction of UAS SPL required, or is a 6 dB reduction of the main tonal components sufficient?** We are looking for a 10 dB reduction in audible signature to human ears, not just 6 dB SPL reduction.
3. **Acoustic Rainbow Splitter, is it the sole technology under consideration for noise scattering or lower noise emission?** The focus is on Acoustic Rainbow Emitters, but comparison to other technologies is acceptable.
4. **Is there interest in alternative technologies or methods that might result in low noise emission and masking?** Yes, if compared against Acoustic Rainbow Emitters.
5. **Is there any interest in modifying the vehicle controls specifically for noise reduction to take advantage of over-actuated flight schemes?** Not within the scope of this effort.
6. **What are the restrictions on placement of ARE's on the drone surfaces?** No restrictions beyond not interfering with payloads or sensors.
7. **Is there scope for investigating design modifications of the drones that could help reduce tonal components or scatter existing tonal noise?** If the modifications are related to adding an ARE, yes. Otherwise, no.
8. **Is acoustic reduction required across 20 Hz–20 kHz?** Yes. That is the human audible range. Reduction across the full band is desired.
9. **What are the mass and integration constraints for ARE modules including payload?** None specified. Smaller is better, but not limited.
10. **Does SOCOM require spectral redirection validation?** Not for Phase I. Could be relevant for Phase II.
11. **Would a solution that focuses on a single type of UAS be acceptable? (either multirotor or fixed wing)** Yes, acceptable. A one-size-fits-all solution is not expected.
12. **Is consideration of fixed wing drone with ARE installed on wings enough for submission?** Yes, as long as it meets the key system attributes.
13. **What is your opinion if drones in swarm are used as scatters in ARE?** Not within scope. The intent is application to a single drone, expandable to a swarm.
14. **Do you see limitation in sizes of ARE plates?** Only that the aircraft must still be able to fly. Trade-offs will exist.
15. **Should we include information regarding the potential performance degradation of drones when applying AREs for encapsulation?** Not required, but would be beneficial for understanding trade-offs.
16. **You said the broader the frequency range the better, but are there particular frequency ranges that are most important/problematic?** The focus is on the human audible range (20 Hz– 20 kHz), followed by acoustic sensor ranges.
17. **Do you want to estimate Radar cross section increase due to ARE?** Not required for Phase I, but useful additional information.

