

SPEAR™ Speech Processing System



SPEAR™ – Think-A-Move’s Speech Processing System, enables control of unmanned systems with speech commands in noisy environments. SPEAR uses proprietary speech algorithms and an ear-piece with an in-ear microphone. The in-ear microphone captures sounds that emanate from the speaker’s mouth and travel back into the ear canal. SPEAR’s speech algorithms then process the signal and send recognized commands to the unmanned system through the operator control unit. Think-A-Move’s patented system makes it possible to use speech commands simultaneously with a hand controller or operator control unit, allowing multiple actions to happen concurrently, leading to reduced time for mission completion. The system also enables heads-up, hands-free device control, increasing overall situational awareness, through the use of speech commands as the sole means of controlling an unmanned system.

SPEAR’s design and software algorithms minimize the effect of ambient noise. This allows a warfighter to effectively use speech commands to control a UGV in extreme noise conditions, such as gunfire and explosions.



TAM’s system also provides payload control and audio feedback from the UGV. Additionally, TAM’s technology can be adapted for use with Unmanned Aerial Vehicles and Unmanned Surface Vehicles.

Features and Benefits:

- Simultaneous control of UGV using SPEAR and hand-controller reduces mission completion time
- Heads-up, hands-free UGV speech control
- Operator maintains situational/tactical awareness
- Improved man-machine interface
- >95% accuracy in noisy environments
- Speaker profile training in under five minutes
- Payload control
- Provides audio feedback from UGV
- Adaptable to other Unmanned Systems



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Product Specifications:

Proprietary Software Algorithms:

- Ambient Noise Adaptation
- Echo Cancellation
- Speech High-Band Reclamation
- Speech Recognition Engine

Speech Recognition: >95% accuracy in noisy environments

Microphone sensitivity (dB): -44 ± 3

Passive Noise Cancellation: 30 dBA

Operating System: Currently Linux;
Windows XP Capable

Patents: Multiple U.S. patents and international patents issued with additional patents pending



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