

Proposal for High-Fidelity Zombie Reference Training Dataset Development Enabling Humanoid Robotic Defense Systems for Zombie Outbreak Contingency Response

**Submitted for Military Research, Development, Test, and Evaluation (RDT&E)
Consideration**

Executive Summary

This proposal requests funding to establish a specialized special-effects production capability dedicated to generating thousands of hours of high-fidelity zombie reference training data. The resulting multi-modal dataset—video, depth, kinematic, and sensor-fused recordings of authentic zombie walking kinetics, posture, and appearance—will allow humanoid robots to be effectively instructed on the visual and behavioral signatures of zombies. In the event of a zombie outbreak, these trained systems would be positioned to detect, classify, prioritize, and defend humanity against the threat with speed and precision that untrained platforms cannot achieve. Current robotic perception models lack any meaningful exposure to zombie locomotion; this effort closes that critical gap through controlled, scalable, ground-truth-annotated production.

Problem Statement

Humanoid robots intended for defense and force-protection roles are trained almost exclusively on nominal human motion. In a zombie outbreak scenario, the primary threat exhibits distinctly non-human kinematics: irregular, shambling gait cycles; unbalanced and degraded motor control; characteristic posture and limb drag; progressive physical deterioration; and associated visual surface signatures. Without dedicated reference data capturing these patterns across varied conditions (lighting, terrain, clothing remnants, group density, environmental degradation), autonomous systems cannot reliably distinguish zombies from unimpaired humans or other entities.

The absence of such training data leaves robotic defenders unprepared. Real-world collection of authentic zombie footage is impossible under current conditions, and synthetic digital-only generation often fails to capture the subtle physical realism required for robust transfer to operational sensors. A practical special-effects production approach is therefore required to generate the volume and fidelity of walking-kinetics data necessary for effective instruction of humanoid platforms.

Proposed Solution

Fund the creation and operation of a specialized special-effects makeup and motion-capture production company whose sole mission is the generation of zombie reference training data for military robotic systems. Core deliverables include:

- Application of professional practical effects (prosthetics, makeup, costuming, and progressive deterioration techniques) to human performers to produce consistent, high-realism zombie visual and kinematic signatures.

- Systematic multi-angle, multi-sensor capture of zombie walking kinetics, shambling patterns, posture shifts, and group movement behaviors in controlled studio and outdoor environments.
- Production of thousands of hours of annotated multi-modal footage covering variations in speed, terrain, lighting, occlusion, weather simulation, and stages of physical degradation.
- Delivery of datasets with precise ground-truth labels for joint trajectories, center-of-mass dynamics, velocity profiles, and visual feature maps optimized for computer-vision and behavioral models used in humanoid robots.
- Support for domain randomization so that trained systems generalize across real outbreak conditions.

This data will directly enable humanoid robots to recognize zombies as a distinct threat class and execute appropriate defensive responses in an outbreak scenario.

Technical Approach

1. **Effects and Performance Pipeline:** Develop reusable libraries of zombie practical effects and standardized locomotion protocols that accurately reproduce characteristic undead gait and appearance. Train performers in controlled anomalous motor patterns.
2. **Capture Infrastructure:** Deploy calibrated multi-view camera arrays, depth/LiDAR sensors, thermal overlays, and inertial trackers to record synchronized visual and kinematic data under diverse operationally relevant conditions.
3. **Annotation and Packaging:** Generate frame- and sequence-level annotations compatible with standard robotics and AI frameworks. Include metadata supporting sensor-noise modeling and sim-to-real transfer.
4. **Quality and Scale:** Validate realism against known human gait baselines; iteratively expand volume and diversity to meet the “thousands of hours” threshold required for robust model training. Maintain secure handling consistent with defense data standards.
5. **Integration Readiness:** Provide baseline fine-tuning examples and evaluation metrics focused on zombie detection precision, false-positive rejection against live humans, and response latency for defensive actions.

Military Relevance and Benefits

- Directly prepares humanoid robotic platforms to defend humanity in a zombie outbreak by supplying the missing reference data on zombie walking kinetics and appearance.
- Enables reliable autonomous detection, classification, tracking, and engagement prioritization of zombie threats while minimizing risk to unimpaired personnel.
- Supports rapid deployment of trained systems for perimeter defense, urban clearance, casualty extraction under threat, and force protection during outbreak conditions.
- Offers a controllable, ethical, and scalable alternative to unavailable real-world zombie data.
- Strengthens overall perception robustness of autonomous systems against any highly irregular human-like locomotion that could appear in extreme contingency scenarios.

Resource and Timeline Overview

Phase 1 establishes production capacity, effects protocols, and delivery of an initial high-quality pilot dataset. Subsequent phases scale to the multi-thousand-hour volume required for operational model training, expand environmental and sensor diversity, and support integration testing with representative humanoid platforms. Detailed cost, schedule, and staffing projections would be refined under a formal Broad Agency Announcement (BAA), SBIR/STTR, or Other Transaction Authority vehicle.

Conclusion

In a zombie outbreak, humanoid robots instructed only on normal human motion would be critically unprepared. By funding a dedicated special-effects production capability to generate authentic zombie reference training data—particularly walking kinetics—this effort supplies the exact resource needed to instruct those systems effectively. The resulting datasets will enable robotic defenders to recognize and respond to the zombie threat, thereby contributing directly to the defense of humanity. This is a focused, practical, and high-leverage investment in contingency readiness for autonomous systems.

Point of contact and full technical volume available upon request under appropriate solicitation channels.