Context Aware ML/AI

Health

Performance

Introducing CRG's

Wearable Performance Monitoring

The Wearable Performance Monitoring platform monitors warfighter health and performance using non-invasive commercial wearable sensors. Context-aware Artificial Intelligence (AI) and Machine Learning (ML) algorithms detect warfighter activity, terrain, environment, and exoskeleton augmentation. State-of-the-art AI processes complex multimodal data to estimate **overall health and performance state** and provide **diagnostics, prognostics, and alerts**. The Wearable Performance Monitoring platform equips warfighters and unit leaders with actionable insights to optimize training effectiveness and operational performance.

Advanced AI meets Continuous, Real-Time Health and Human Performance Monitoring

Individualized Insights
AI performs activity and terrain detection, normalization, and anomaly detection to track user health and performance

Continuous Monitoring
24/7 monitoring provides continuous trend tracking and anomaly detection for the user

Diagnostics & Prognostics
AI provides alerts for exhaustion, heat stress, sinus tachycardia, and more from users in the field

Comfortable Wearables
Non-invasive lightweight wearable sensors provide a comfortable usage experience

User-Friendly Insights
Complex physiological and environmental information is summarized as easy-to-interpret metrics

Modular Architecture
Supports easy addition of new exoskeletons, sensors, ML upgrades, and integration with commercial software

Maximize Unit Readiness, Preserve Health, and Optimize Performance

via multimodal physiological, movement, environmental, and exoskeleton monitoring
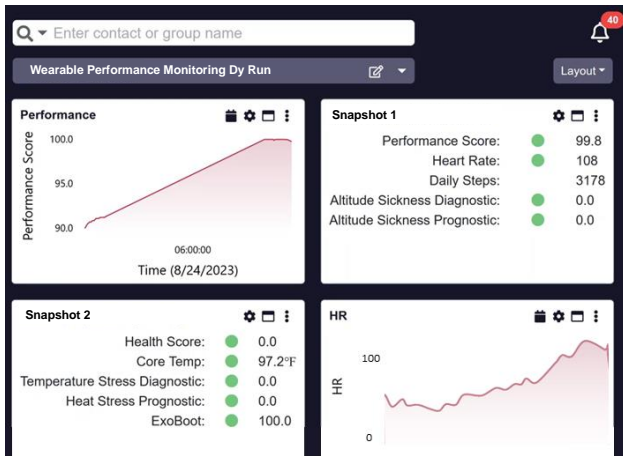
Sensor-Agnostic Sensing
- Exoskeleton
- Mobility & gait
- Physiological
- Environmental

Context-Aware AI/ML
- Activity, environment, terrain detection
- Soldier normalization
- Health & performance estimation / prediction
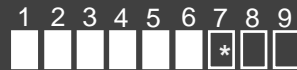- Anomaly detection
- Exertion estimation

Actionable Insights in ATAK
Soldier-specific...
- Diagnostics
- Prognostics
- Trends & alerts

Wearable Performance Monitoring platform status:

Technology Readiness Level: 1 2 3 4 5 6 7 8* 9

Manufacturing Readiness Level: 1 2 3 4 5 6 7 8 9* 10

Army Field Testing: Human Research Volunteer (HRV) Program subjects

* = anticipated TRL/MRL for 2024

Alternative Applications:
Sports medicine, injury rehabilitation, law enforcement, first responders, and industrial hygiene

For more information:

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CRG

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Distribution A: Approved for public release