

Introducing CRG's

Intelligent Human Performance Monitoring System (IHPMS)

Context-Aware AI/ML

Health



Above Average
▲ +3%

Performance



Above Average
▼ -10%

Alerts



IHPMS 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**. IHPMS 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



Comfortable Wearables

Non-invasive lightweight wearable sensors provide a comfortable usage experience



Continuous Monitoring

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



User-Friendly Insights

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



Diagnostics & Prognostics

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



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

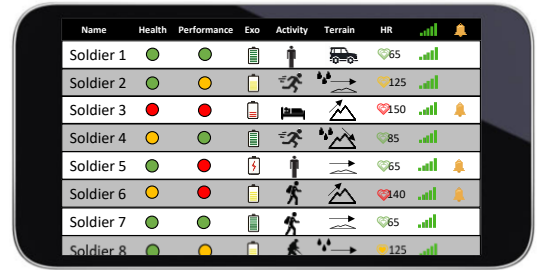
- Activity, environment, terrain detection
- Soldier normalization
- Health & performance estimation / prediction
- Anomaly detection
- Exertion estimation



Soldier-Specific Context Awareness

Actionable Insights in ATAK

- Soldier-specific...
- Diagnostics
 - Prognostics
 - Trends & alerts



Intelligent Human Performance Monitoring System (IHPMS) status

Technology Readiness Level:



Manufacturing Readiness Level:



Human Subjects Testing:

Fall 2022

Alternative Applications:

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

* = anticipated TRL/MRL for early 2023



For more information:

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