The Problem:

> Lessening the soldier’s burden is one of the top five priorities of Armed Forces around the world. Numerous studies state that modern soldiers have reached or even crossed the limit in terms of load carriage before their agility, mobility, lethality, survivability and sustainability are seriously affected.

Mawashi’s Solution:

> To solve this critical issue without creating other problems to soldiers, Mawashi developed a fully ergonomic unpowered Human Augmentation System: The Ultralight Passive Ruggedized Integrated Soldier Exoskeleton (UPISE®).

Key Features:

> Game-changing passive load-bearing exoskeleton
> Provides load transfer capacity in static & dynamic conditions
> Reduces musculoskeletal stress when soldiers carry heavy body-borne loads
> Reduces discomfort related to carriage of heavy body-borne loads
> Streamlined & low profile structure which provides a high degree of kinematic compatibility with the user
> Does not alter significantly physiological parameters during gait
> Does not alter significantly the soldier’s strategies during execution of primary and secondary operational tasks
> Allows for dynamic & unpredictable movements involved during tactical maneuvers
> Tested & evaluated in laboratory conditions and simulated operational training environment

Differentiating Factors:

> Advanced ergonomics: Unparalleled level of Freedom of Movement with a minimal degree of resistance on ease and range of motion that promotes agility, flexibility, mobility and lethality.
> Effective 50% to 80% load transfer to the ground: Smart load redirection according to Nature’s principles (Biomimetic blueprint) from the shoulders down to the ground, on the inside of the footwear.
> Unpowered & ultralight system: Constant assistance with no limitation on mission duration, allowing sustainability from mission start to finish (no need for heavy actuation, sensing or control systems).

Potential Benefits for the Warfighter:

> Increased Performance
> Increased Endurance
> Increased Situational Awareness
> Increased Combat Effectiveness
> Decreased Musculoskeletal Injuries
> Decreased Metabolic Expenditure
> Decreased Fatigue
> Decreased Discomfort

Potential Benefits for the Armed Forces (Direct & Indirect):

> Ensured Superiority & Dominance on the modern battlefield
> Technological Advantage over near-peer competitors and threats against national interests
> Enhanced Operational Readiness
> Decreased Medical Costs
> Decreased Rehabilitation Costs
> Decreased Deployment Costs