

Multi-Domain Operations Wearable

A NextFlex Project / Department of Defense Manufacturing Innovation Institutes

NEXTFLEX® **Technology:** Multi-Domain Operations (MDO) Wearable Phase I

Institutes' Role: NextFlex created the MDO wearable – a flexible electronics device that is light enough and small enough to be laminated into a regular shirt, or the current Army Combat Uniform. The institute used technology and learnings from across the ecosystem to develop the device.

Technology Description: The MDO wearable uses radio frequency communications to interface with wearable and embedded sensors that can collect information such as vital signs, soldier stress, heat/cold injuries, local environmental data, and signs of fatigue. The device has the potential to collect and disseminate vital information about the battlefield itself. Additionally, it may function as a “smart” dog tag, automatically keeping track and reporting a soldier's health status, medical history, and combat readiness.

Impact: In this project, the NextFlex team demonstrated a leap forward in manufacturing capability which included a successful integration of flexible electronics onto textiles. This opens numerous opportunities in wearables and medical devices. Using this technology, smart clothing will be able to sense vital signs and communicate alerts to a desired location. Wearable technology promises to make significant changes to how soldiers report information, decreasing the amount of time it takes to send vital information and increasing the reliability of the data.

