

2019 NC Defense Asset Inventory and Target Industry Cluster Analysis

Market Areas Selected

- 1. Human Performance** – augmenting, assisting, and protecting humans to optimize performance, such as pharmacogenetics, microbiome, AI-powered diagnostics, regenerative medicine, wearable health monitors, and prosthetics integrated with the nervous system. Also includes human psychology and social behavior, human factors and systems. Includes virtual training –using virtual, augmented, synthetic, simulated, and mixed reality to create realistic virtual environments for better training.
- 2. Data & Knowledge Management** – processing, storing, fusing, analyzing, and protecting data, and creating knowledge from data; access to data analytics and knowledge for situational awareness to enable real-time decisions, including data and sensor fusion, storage, transmission, and processing. Includes data protection, or cybersecurity – protection from cyber-attack, system resilience, assurance, and cyber forensics. Includes quantum computing as the next generation of data processing.
- 3. Power** – energy and power technologies that reduce size and weight and enhance electronic equipment performance, including energy production, harvest, storage, and distribution; batteries, microgrids, power electronics.
- 4. Autonomous Systems** – smart, self-directed systems that reduces manpower load and extends capability, including unmanned air, ground, and water vehicles. Includes robotics, self-healing networks, human-machine interaction. Includes artificial intelligence – applied to systems for increased speed and agility, better decision making, less maintenance failures, improved accuracy using pattern recognition, prediction, machine learning.
- 5. Advanced Manufacturing**- this includes newer methods to manufacture that can support the warfighter in the field, such as additive manufacturing (3D printing), methods for lightweighting equipment, and quality/reliability testing methods to ensure part performance.
- 6. Materials**- new materials to enable warfighter advantage, such as nanomaterials, ceramics, lightweight metal alloys, composites, flexible electronics, functional fabrics.