

Introduction

- Future Large-Scale Combat Operations (LSCO) will require autonomous medical care and casualty movement in contested, resource-limited environments.
- Current autonomous medical technologies lack interoperability and Command & Control (C2) integration necessary for operational deployment.

Objective

- Accelerate the transition of autonomous and semi-autonomous medical technologies from prototype to operational capability.
- Synchronize military requirements with civilian innovation to improve interoperability, regulatory alignment, and technology adoption.
- Foster collaboration between academia, industry, and government.

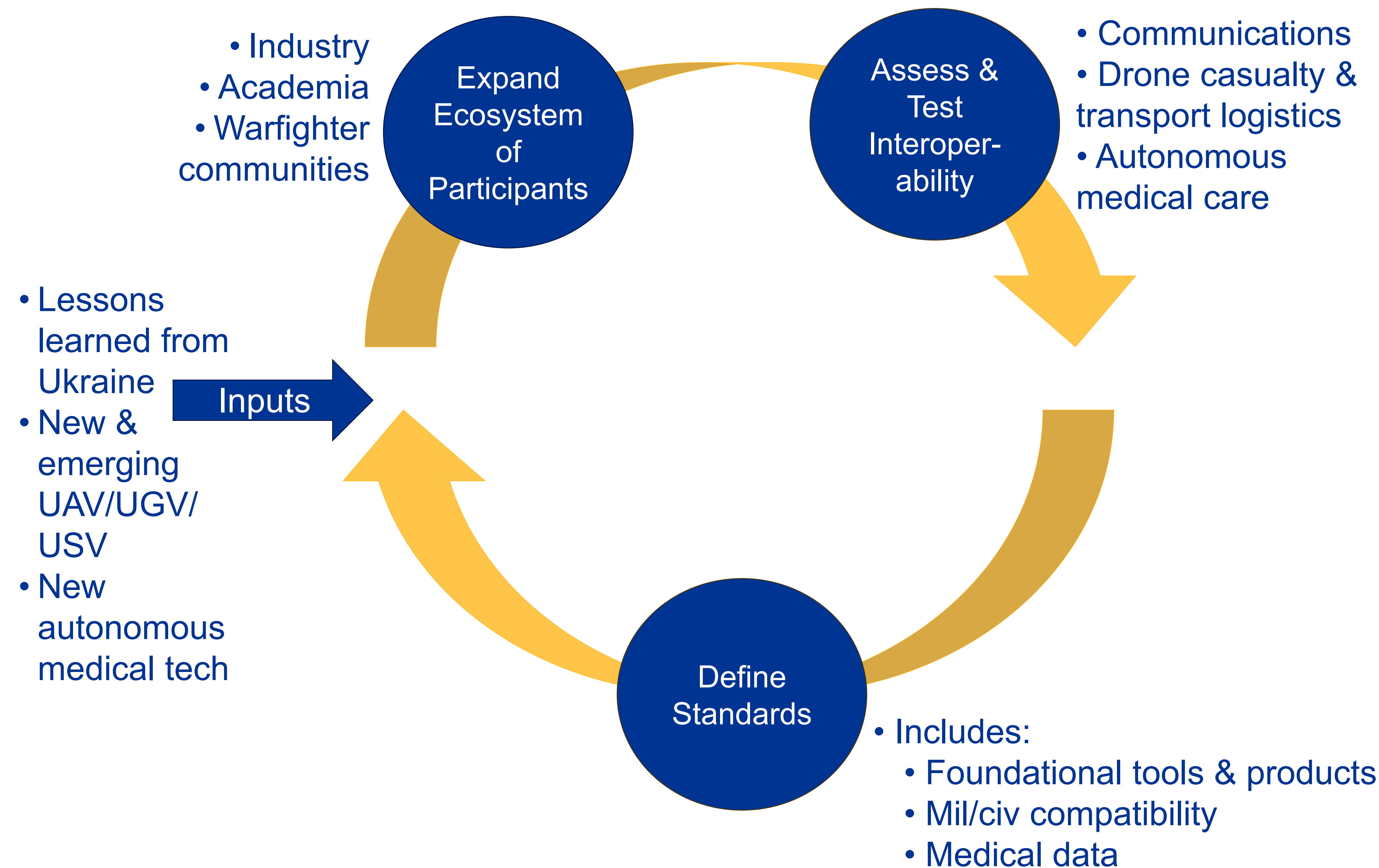
Approach

- Stakeholder-driven partnership including: DoW laboratories, National Guard units, Academia, & Industry.
- Technical workshops and virtual modeling refine mission-essential task lists, operational requirements, human-on-the-loop concepts, & software-centric integration strategies.

Formation Meetings

- Facilitated virtual meetings in 2025-2026 to bring together DoW stakeholders
- Conducted thematic analysis and stakeholder mapping to identify key operational gaps, align mil/civ capabilities, and define technology insertion points within DoW experimentation cycles.
- Querried the consortium via questionnaire to help identify future collaborative interests.

MACAM Collaborative Lifecycle



Warfighter Impact

- Creates a pipeline for transitioning autonomous medical technologies into operational use.
- Improves interoperability and C2 integration across military medical systems.
- Reduces cognitive burden on forward medics.
- Extends life-saving capability when traditional medevac is delayed or unavailable.

Outcome

- Developed a synchronized roadmap for autonomous technology insertion into Role 2 and Role 3 care.
- Prioritized capabilities including autonomous triage, autonomous resuscitation, & life-saving interventions
- Identified DoW experimentation venues (e.g., Northern Strike 2026) for operational validation.

Next Steps

- Ecosystem expansion
- Formal establishment of consortium under the Pitt/DHA Master CRADA to include agreement on mission/vision, roles, and collaborative operations
- Seek DoW funding to accelerate consortium research collaborations
- Staff MACAM with senior DoW leaders (e.g., Joint Chiefs Surgeon, DEVCOM)

Focus Areas



Scalable Triage & Resuscitation



Integrated Operational C2



Autonomous Casualty Care & Movement