

Aligning DARPA's GOLDEVAC Extracorporeal Technology Development with Warfighter Needs through a Technical Interchange Meeting

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Introduction

In austere and contested environments, casualties may face extended evacuation timelines, and the "golden hour" may stretch to many hours or even days.

Current resuscitation and critical care technologies require expert clinical teams and multiple complex devices, making them impractical for far-forward use by field medics in austere and contested environments.

Defense Advanced Research Projects Agency (DARPA)'s GOLDen hour extended EVACuation (GOLDEVAC) program is developing compact, deployable extracorporeal support technologies capable of providing:

Fluid resuscitation and oxygenation support via a single intravascular cannula

Placement by a field medic without a specialized care team

Technical Interchange Meeting (TIM)

Early, direct engagement between technology developers and end users is uncommon but critical. Without it, programs risk late-stage "retrofitting" of military relevance - leading to delays, cost overruns, and technologies that fail to meet real operational needs.

Event Design: A one-day, hybrid TIM was conducted on January 22, 2026, hosted by the US Army Institute of Surgical Research (USAISR) at Fort Detrick, Maryland, with the purpose of aligning GOLDEVAC technology development with real-world operational needs.

Plenary presentations and live demonstrations established operational context:

- Military Trauma System Overview and Roles of Care
- Casualty care demonstrations (Role 1, and Role 2, and Evacuation), illustrating real space, staffing, and medical capability constraints
- Future military concepts and challenges of large-scale combat operations (LSCO) and multi-domain operations (MDO)
- Advanced development and military regulatory considerations

Structured breakout sessions rotated subject matter experts (SMEs) and end users through three GOLDEVAC performer groups. Each performer presented their technology approach, followed by facilitated feedback and discussion with the multidisciplinary stakeholder groups.

Collaborative Engagement

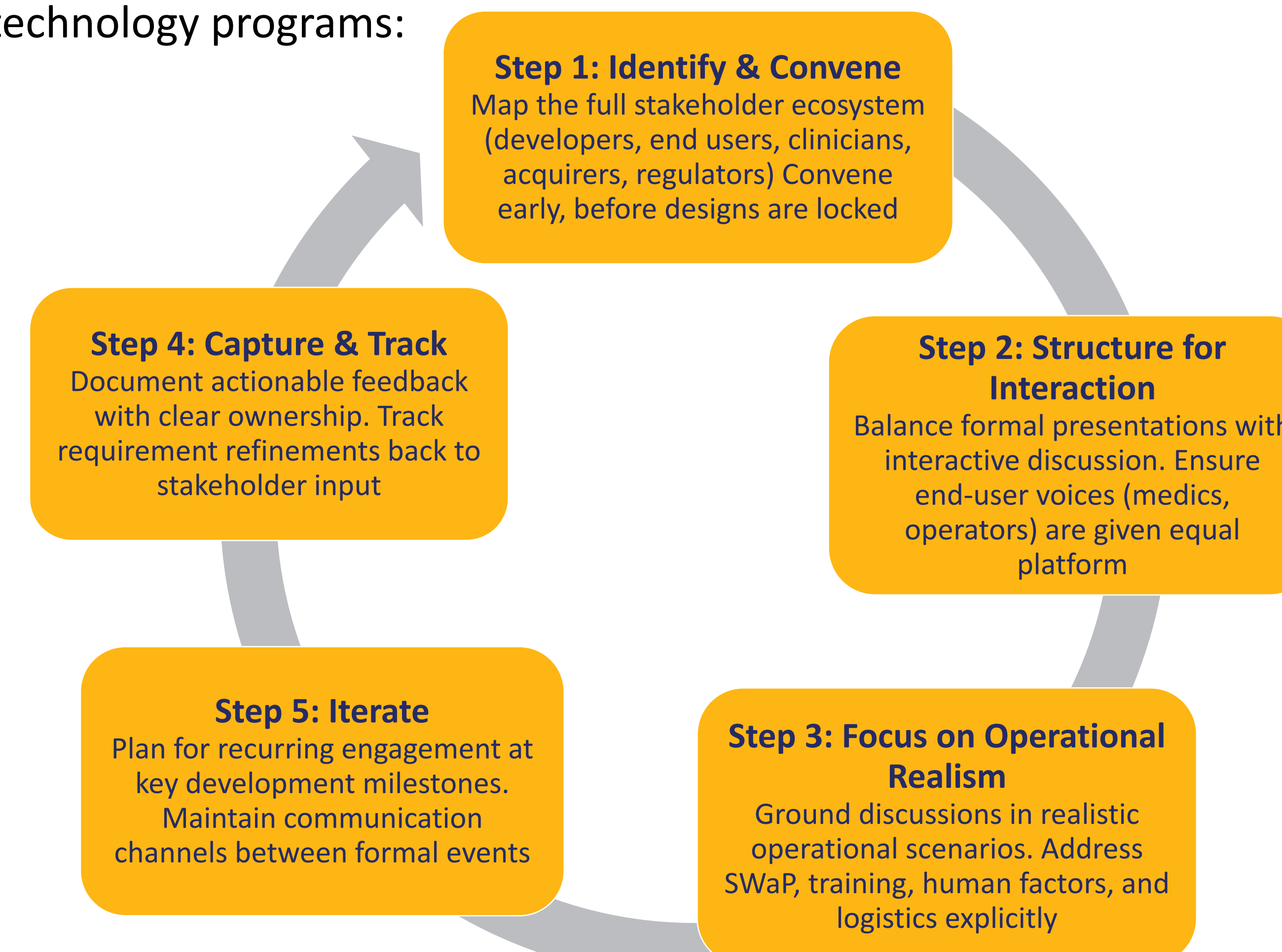
The meeting convened 75 participants from the Defense Health Agency (DHA), military departments, healthcare systems, Food and Drug Administration (FDA), DARPA, USAISR, and MITRE, representing a diverse, multidisciplinary group of experts and end users to provide feedback to the three GOLDEVAC program performers developing the technology. Convening this group simultaneously enabled cross-community problem solving and real-time identification of conflicting requirements that could not be achieved in isolation.

Attendees from Varied Organizations Offered Feedback

59 th Medical Wing	Joint Trauma System (JTS)
711 th Human Performance Wing	Massachusetts General Hospital (Clinician)
C-STARS Cincinnati	MITRE
Air Force Research Laboratory (AFRL)	Operational Medical Systems (OPMED)
Army Care Providers (Medic, Flight Medic, Nurse, PA)	OPMED Test Branch
Advanced Research Projects Agency for Health (ARPA-H)	PEO Soldier
Combat Casualty Care Research Portfolio (CCCRP)	US Air Force District of Washington (AFDW)
Brooke Army Medical Center (Clinician)	US Army Institute of Surgical Research (USAISR)
CCCRP Research and Engineering (R&E)	Naval Medical Research Command (NMRC)
FDA	US Navy (Hospital Corpsman)
Air Force Integrated Capabilities Command (ICC P)	US Marine Corp

A Repeatable Framework

This TIM model represents an **easily repeatable, low-cost, low-barrier method** for integrating operational stakeholders early in technology development, before costly late-stage redesign is required. The following framework can be applied broadly to future military medical technology programs:



Outcomes

A key value of the TIM was creating an early bridge between technology developers and military end users, allowing performers to understand operational needs and context of use before system designs become fixed.

Requirements Refinement

Performers received actionable feedback enabling early-stage design refinement aligned with real-world operational constraints.

Early Acquisition Visibility

Early visibility into emerging capabilities for acquisition and advanced development groups.

Collaborative Forum

Bidirectional exchange feedback between teams and facilitated connections across typically siloed communities.

Conclusions

The GOLDEVAC TIM demonstrated that early, structured engagement between technology developers and operational stakeholders is both feasible and high-impact.

Key Takeaways:

- Low-cost, low-barrier approach easily repeatable across programs
- Prevents costly late-stage redesign by embedding operational relevance from the outset
- Accelerates delivery of operationally relevant medical capabilities
- Enhances warfighter survivability by ensuring technologies address real-world needs
- Framework **broadly applicable** to future military medical technology development efforts and could be adopted widely across the DHA.

Ultimately, this collaborative approach accelerates the delivery of operationally relevant medical capabilities that enhance survivability and expand life-saving care for the warfighter in contested and resource-constrained environments.

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