

# **JPC-1 Health IT/Informatics (HITI) Steering Committee Monthly Meeting**

## **29 January 2019**

Dr. Loretta Schlachta-Fairchild, Interim Chair, JPC-1



# Today's Agenda



Joint Program Committee-1 (JPC-1/MSIS) - Health IT and Informatics (HITI) AGENDA - Tuesday, 29 January 2019 Steering Committee POM Review Meeting 0800 to 1000 TCON ONLY   Dial-In Number: (210) 249-4234; Conference ID: 2540#; Pin Code: 820073#					
Start	Stop		Topic	Presenter	Organization
8:00	10:00		<a href="https://conference.apps.mil/webconf/JPC1HIT">DCS: https://conference.apps.mil/webconf/JPC1HIT</a>		
Opening Remarks					
8:00	8:45	0:45	HITI Draft Smart Shutdown Plan	Dr. Loretta Schlachta-Fairchild	JPC1
8:45	10:00	1:15	JPC-1 POM FY21-25 Budget Presentation	Mr. David Thompson	JPC1
JPC1 HITI Upcoming meetings: - 26 February 2019 – 0800-1130 @ Axiom Bldg, Falls Church, VA - 26 March 2019 – Virtual Meeting (audio call): 0800-1130 23 April 2019 - Interim Progress Review: 0800-1700 @ Ft. Detrick, Bldg. 1076 - 27 August 2019 - Virtual Meeting (audio call): 0800-1130 @ Axiom Bldg - 24 September 2019 - Interim Progress Review: 0800-1700 @ Ft. Detrick, Bldg. 1076					
10:00		Adjourn			

# Joint Program Committee-1 (JPC-1)

## *Health IT / Informatics*

### ***DRAFT Smart Shutdown Plan***

*29 January 2019*

Loretta Schlachta-Fairchild RN, FACHE, PhD

Health Information Sciences Research Program Area Manager

Cindy Crump, MA, PMP, CISSP

Health Information Technology Portfolio Manager



# Smart Shutdown Draft Plan Agenda



- Brief Overview of JPC-1/HITI Portfolio
- Approach/Goals
- Approach/Transition Plans
- Approach/Issues
- Timeline

# **Health Information Technology/Informatics (HITI) Research Portfolio DHP-Funded Overview**

# Medical Simulation and Information Sciences/JPC-1

## Vision:

*Preeminent research leader in the pursuit of leading-edge, military medical capabilities, through technology, simulation, and data sciences.*

## MISSION:

Produces and sustains a robust research program for the identification and prioritization of capability gaps

- Establishes and conducts mature processes to solicit, evaluate, and recommend research to address those gaps
- Provides the Military Health System with visibility into emerging capabilities in the areas of informatics and health information technologies
- Aids the advanced development community in reducing risk in the adoption of such capabilities



# JPC-1 HITI Research Portfolio Vision / Mission / Priorities

## Vision:

Research and develop timely, clinically relevant and secure health information technology (HIT) solutions that close significant asymmetric information and medical situational awareness gaps and challenges at the point of care in-theater and far forward environments. Enhance efficiency of healthcare operations in combat and operational settings through multi-faceted, novel technology-based research that advances the state of the art in military medicine for 24/7 globally integrated operations.

## Mission / Approach / Priorities

- JPC1 HITI manages the selection, oversight and transition of research products within the MHSITRP
- The HITI portfolio includes research in health IT, informatics, data and prototype systems
- HITI addresses military medical capability gaps and requirements based on stakeholder priorities
- HITI projects research, test and prove the maturity, usability and performance to reduce MAIS risk to the MHS enterprise\*\*



Medical Data  
Capture &  
Exchange In-  
Theater/Casualty  
Response



Secure Computing

Synchronous/  
Asynchronous  
Data and EHR  
Access in  
Operational  
Medicine



Medical Device  
Interoperability



Next Gen  
Medical Logistics



Decision Aids for  
Forward Resuscitative  
Care



Precision Medicine/  
Genomics

Patient Movement



Virtual Health



Total Exposure  
Health

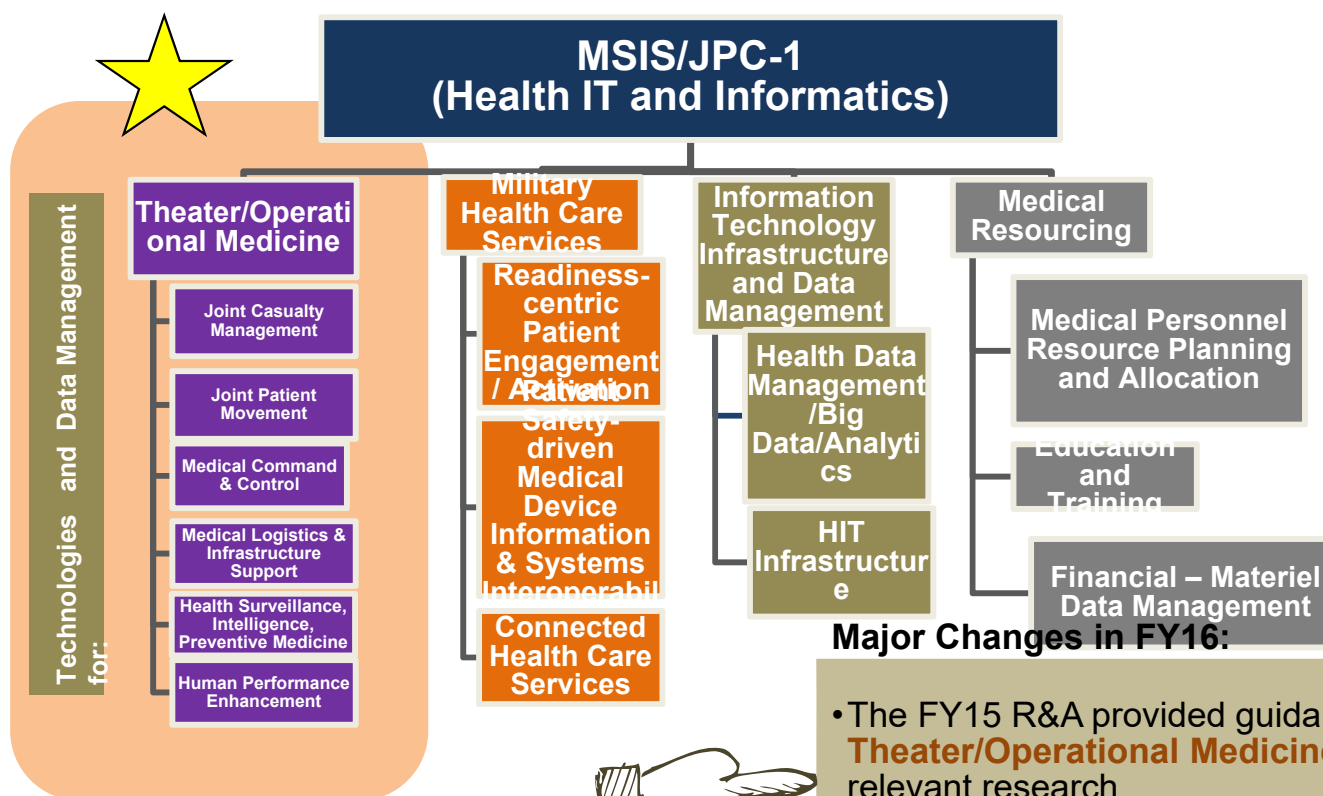


Global Health  
Engagement w/  
COCOMs

\*\* NDAA 2016 Section 217. Mandates S&T Activities for Risk Reduction of MAIS.



# HITI Research Domains and Initiatives



## Major Changes in FY16:

- The FY15 R&A provided guidance to focus on **Theater/Operational Medicine**/militarily relevant research
- Addition of Informatics to focus
- Research initiatives were reprioritized and updated to synch with documented theater capability gaps/priorities



# HITI FY18 Active Studies by Research Domain

Theater/Operational Medicine\*\*\*

N=30 (DHP=20 / Other=10)  
(N=27 in 2017)

Military Health Care  
Services

N=4 (DHP=4 / Other=0)  
(N=4 in 2017)

IT Infrastructure and Data  
Management

N=9 (DHP=5/Other=4)  
(N=12 in 2017)

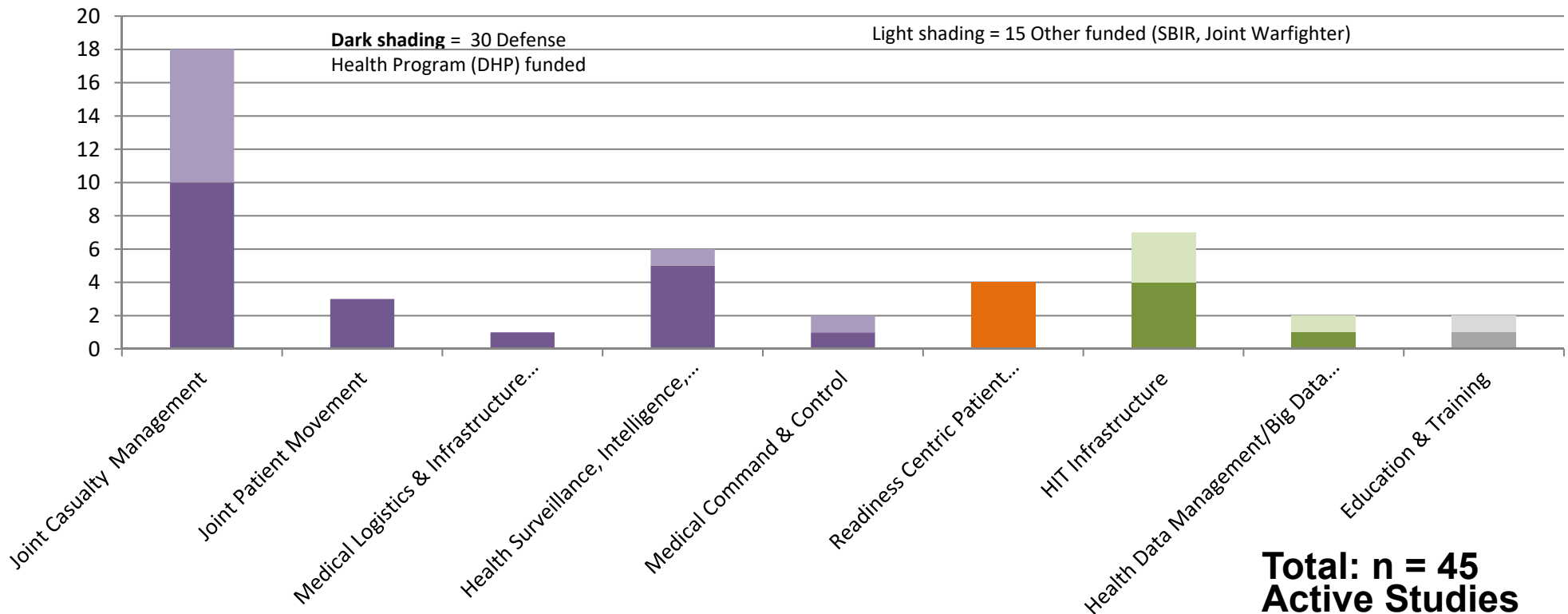
Medical Resourcing

N=2 (DHP=1/Other=1)  
(N=2 in 2017)

Legend

■ JPC-1 Funded

■ Other Funded (SBIR, JWM, etc.)



**Total: n = 45  
Active Studies**

# **HITI Steering Committee Membership, Operations and Prioritization**

# JPC-1 HITI Steering Committee Membership



**Interim Chair: Dr Schlachta-Fairchild**  
(Prior Chair: DHA HIT Sep 2014-Sept 2016)

## Voting Members

- Office of the Army Surgeon General
- Office of the Navy Surgeon General
- Office of the Air Force Surgeon General
- Office of the Joint Staff Surgeon (open position)
- Office of the Director, DHA HIT CTO
- Office of the Director, DHA Healthcare Operations (Clinical)
- Office of the Director, DHA Operational Medicine
- Office of the Director, DHA Business Support
- PEO Defense Healthcare Management Systems
- Office of the Director, JPC-1
- Office of the Director, DHA HIT Solution Delivery
- SOCOM
- Joint Operational Medicine Information System (JOMIS)
- Marine Corps (invitation working)

- DHA HIT Directorate for Infrastructure & Operations
- DHA HIT Directorate for Cyber Security
- DHA HIT Directorate for Portfolio Management
- Army Capability Development & Integration Directorate, AMEDD Center and School
- Army Telemedicine and Advanced Technology Research Center (TATRC)
- Office of the Director, JPC-1, Transition Management
- DHA Advanced Applications and Concept Engineering (AACE)
- Office of Naval Research (ONR)
- Air Force Medical Support Agency
- Department of Veteran Affairs
- DHA Connected Health
- USUHS (invitation working)
- DHA Privacy Office
- Institute of Surgical Research (ISR)
- Naval Health Research Center (NHRC)
- Air Force Research Laboratory

## Legend

New in FY17/18

## Advisory Members

- DHA Component Acquisition Executive (CAE)
- PEO Defense Health Management Systems Modernization-CMIO
- Joint Telehealth Working Group
- PEO Defense Health Clinical Systems
- PEO Defense Health Services Systems
- DHA HIT Directorate for Information Delivery

# HITI Requirements and Strategic Documents

- DHA Research Development and Acquisition Directorate Concept of Operations (CONOPS) 14 May 14
- 2016 National Defense Authorization Act (NDAA) Section 217. Mandates Science and for Major Automated Information Systems (MAIS)\*
- Theater Medical Information Requirements (TMIR) Information System (IS) Capabilities Development Document (CDD) Mar 2017\*
- Research Development Document (RDD) for Aeromedical Evacuation Program of Record, Air Mobility Command Surgeon General Nov 2016\*
- CONOPS for the DoD Trauma Enterprise (DTE), Oct 2016
- US Army-Marine Corps Multi-Domain Battlefield White Paper - 18 Jan 17
- Prolonged Care in Support of Conventional Military Forces – AMEDD C&S Mar 17
- 2019 National Defense Authorization Act (NDAA)
- Joint Health Protection Gaps for Guidance for Force Development (GDF) 2018 (DHA)
- Joint Military Operational Medicine ICD July 2017

## Legend

\*New in FY18



# HITI Research Development Strategy/Approach

- Conduct Annual Review/Content Analysis of Requirements Documents & Strategic Drivers
- Validate HITI Research gaps/needs with HITI Steering Committee (SC)
- Conduct Individual working meetings with PEO/Program Offices/Services
- HITI research is re-prioritized annually by the HITI SC to address priority documented theater/operational medicine capability gaps

## HIT Requirements and Strategic Documents

- DHA Research Development and Acquisition Directorate Concept of Operations (CONOPS) 14 May 14
- Research Development Document (RDD) for Aeromedical Evacuation Program of Record, Air Mobility Command Surgeon General Nov 2016
- Air Force Optimization of Human Capital RDD Nov 2016
- 2017 NDAA Dec 2016
- CONOPS for the DoD Trauma Enterprise (DTE), Oct 20
- US Army-Marine Corps MDB White Paper - 18 Jan 17
- Joint Concept for Health Services (JCHS) Transition
- Prolonged Care in Support of Conventional Military
- US Army Robotic and Autonomous Systems Strat
- Tactical Combat Casualty Care – Group Level II
- SPAR Product Review FY17/18 CNA AMEDD
- Joint DCR for Provision of FRC in Support of
- Joint FRC DCS Supporting Documentation
- FY 2019 Administration R&D PB Priorities
- J-MEDIC3 CDD – USSOCOM (Draft) 2f
- Air Force Total Exposure Health Sept
- Navy/MC Expeditionary Requiremer
- US Army – Prioritized Shortfalls and
- HIT Technology R & D Interagen
- Latest compiled requirements doc

### Legend

in FY17

UNCLASSIFIED

Table 2. Validated Capability Gaps. A table outlining the high-level capability gaps validated by the JROC within the TMIR IS-ICD is provided below (Table 2). (A complete listing of all validated shortfalls/gaps identified in the TMIR CHA is provided under separate cover in the Annex 3.)

Attribute	Current Capabilities	Validated Capability Gaps
Accessibility	All authorized users are able to access relevant datasets and applications from their assigned device	Authorized users cannot access as many applications from their assigned devices as required for mission success
Agility	Methodologies, processes, tools and reporting formats used to capture and organize information during all activities conducted in support of operational healthcare functions can be rapidly modified based on changing or emerging requirements	Insufficient ability to rapidly develop and implement software updates in response to policy changes or clinical requirements
Reach	Information necessary to facilitate health care delivery is able to be captured, queried and/or delivered when and where required	Lack of ability to provide in-directional exchange of information in support of asynchronous (near real time) and synchronous (within 24 hours) communication domains to deployed medical information systems
Interoperability	The system allows for bidirectional exchange of information across and across exchange of information within authorized systems or storage and/or processing capabilities as appropriate, using current Department standards	Lack of ability to integrate medical specific information sharing across domains (JPHNET, JICA, JICA-2, JICA-3, JICA-4, JICA-5, JICA-6, JICA-7, JICA-8, JICA-9, JICA-10, JICA-11, JICA-12, JICA-13, JICA-14, JICA-15, JICA-16, JICA-17, JICA-18, JICA-19, JICA-20, JICA-21, JICA-22, JICA-23, JICA-24, JICA-25, JICA-26, JICA-27, JICA-28, JICA-29, JICA-30, JICA-31, JICA-32, JICA-33, JICA-34, JICA-35, JICA-36, JICA-37, JICA-38, JICA-39, JICA-40, JICA-41, JICA-42, JICA-43, JICA-44, JICA-45, JICA-46, JICA-47, JICA-48, JICA-49, JICA-50, JICA-51, JICA-52, JICA-53, JICA-54, JICA-55, JICA-56, JICA-57, JICA-58, JICA-59, JICA-60, JICA-61, JICA-62, JICA-63, JICA-64, JICA-65, JICA-66, JICA-67, JICA-68, JICA-69, JICA-70, JICA-71, JICA-72, JICA-73, JICA-74, JICA-75, JICA-76, 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# JPC1 HITI Theater/ Operational Medicine (TOM) - REACH

## TOM Reach

### Research Focus :

- Casualty Response
- Patient Movement
- Virtual Health/Telehealth
- Data Capture/Connectivity
- Global Health Engagement
- Physiologic Monitoring

### **Enabling Research:**

- Hands-Free Data Entry
- Medical Device Interoperability/Architecture
- Next Gen Medical Logistics
- Precision Medicine/Genomics Biobank for Readiness and Human Performance Research



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352 d. Validated Capability Gaps. A table outlining the high-level capability  
353 gaps validated by the JROC within the TMIR IS-ICD is provided below (Table 2).  
354 (A complete listing of all validated shortfalls/gaps identified in the TMIR CBA is  
355 provided under separate cover in Enclosure 3.)

356 Table 2. JROC-Validated TMIR Capability/Gaps

Capability Requirements		Current Capabilities
Knowledge Management conducted in support of Operational Healthcare Functions		
JCA: 6 Nat. Centric / 6.2 Enterprise Services		
Attribute	Initial Objective	Current Performance
Access- ibility	All authorized users are able to access relevant databases and applications from their assigned device	Authorized users cannot access all required medical information applications from their assigned devices Authorized users cannot access multiple applications from assigned devices with single sign-on (SSO)
Agility	Methodology/algorithms, tools and reporting formats used to capture and organize information during KM activities conducted in support of operational healthcare functions can be rapidly modified based on changing or emerging requirements	Insufficient ability to rapidly develop and implement software updates in response to policy changes or clinical requirements
Reach	Information necessary to facilitate health care delivery is able to be captured, queried and/or discovered when and where required	Lack of ability to provide bi-directional exchange of information in support of the provision of health care across synchronous (near real time) and asynchronous (within 24 hours) communication domains to deployed providers when and where needed
Inter- operability	The system allows for bi-directional exchange of information across and lateral exchange of information within authorized systems, or store-and-forward capability as appropriate, using current Department standards	Medical information systems lack the ability to store-and-forward and/or support bi-directional data exchange Lack of ability to integrate medical planning and information sharing activities across domains (SIPRNET, NIPRNET) Medical information systems within specific functions generally do not share information across functions
Knowledge Management in support of Medical Command and Control (MedC2)		
Support Medical Planning		
JCA: 5 Command and Control / 5.3 Planning		
Attribute	Initial Objective	Current Performance
Timeli- ness	All MedC2 information is managed (identified, captured, organized, disseminated and/or synchronized) within timelines established in support of the command's planning process	Lack of ability to automatically aggregate MedC2 information to develop a common operating picture (COP) in support of (SIC) medical planning
Agility	Methodology/algorithms used to organize and synthesize planning information is responsive to anticipated (deliberate), emerging, or contingency (crisis) situations	Medical information systems do not support role-based data queries/ automated report generation in response to CCMD requests

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## Sunset Overall Goals

- Close HITI research portfolio by Sept 30, 2020
- Preserve currently funded research investments/research products
  - *DAU Guidance on Smart Shutdowns:*
  - *Requirements do not go away when a portfolio shutdown so transition of investments to other programs is important to include in plan*
- Identify/transition foundational research that supports future innovation incl. autonomy
- Submit notional HITI POM FY21-25



## Research Transitions

### FY19-20 Studies/Transition Plans Continue efforts with Advanced Developer

- JOMIS (8 studies signed Transition Agreement )
- SOF SSES JMEDIC-3 (Signed Transition Agreement with SOF SSES)
- **MC4 6 Hands-free Studies and Medical Data Cloud Study**
  - **NOTE: Funding decrements to MC4 anticipated to impact transitions**
- Medical Device Interoperability research Transition Agreement Draft with USAMMDA for Autonomous Closed Loop Systems
- Cerner Master Research Agreement – next meeting scheduled Feb 2019

## Currently Identified Issues to Resolve

### Issue Tracking Log

- JMEDIC-3, Medical Data Cloud, Medical Device Interoperability and Burn Patient Transfer System Research Tails – need to meet with PI's/CDMRP and coordinate guidance
- Will NCE's be allowed for HITI Studies after FY20 ? Need to coordinate guidance
- Hands-free project down select process – working approach with CDMRP re: requesting invited proposals for continuation based on IPR results; current intent is to keep as UFR's in case EOY funding becomes available
- 3 studies invited to full proposal – recommend continue to prepare 2 of the 3 (see next slide) in order to have available Autonomy/AI proposals to fund with FY18/19 EOY \$\$\$

# Pre-proposals in hand



JPC1 #	Sub-mission Route	Project	Org	PI	Requested Amt	PoP	STATUS	Pending Recommendation
H17013	unsolicited	PRE-JOMIS CLINICAL DECISION SUPPORT Prototype	DHA/J6/ACCE	Dr. Russ Davis	\$2,815,000	2 years	Invited for full proposal	Pending full proposal  Recommend to Proceed w full proposal prep
H17012	FY18 BAA	A Pre-Hospital Data Commons for Development of an automated TRaUma Medical Assistant (TRUMAN)	Geneva Foundataion / WRNMC	Dr. Steven Hong	\$1,802,088	3 years	Invited for full proposal	Pending full proposal  Recommend to Proceed w full proposal prep
H17011	unsolicited	IRISE: INTERACTIVE RADIOLOGY INTELLIGENCE AND SUPPORT ENVIRONMENT	USAF 60MDG/SGSE	Maj Ian Stewart	\$1,900,000	2 years	Pending full proposal submission (Nov)	Fund, Not to fund, Unfunded Request (URF)  Recommend NOT to Proceed w full proposal prep

# **HITI Research Tails in FY20**

# JMEDIC-3, Phase III

## TA Signed 7 June 2018

### w/ SOF SSES



**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, US ARMY MEDICAL RESEARCH AND MATERIEL COMMAND  
810 SCHREIDER STREET  
FORT DETRICK, MD 21702-5000

MCMR-TT

SUBJECT: Joint Medical Exchange & Documentation of Information for Combat Casualty Care (JMEDI3) Virtual Medical Portal (VMP) Transition Agreement

1. Purpose: This Transition Agreement (TA) establishes a collaborative relationship between the Telemedicine and Advanced Technology Research Center (TATRC), the Joint Program Committee-1 (JPC-1) Program Area Directorate (PAD) and the United States Special Operations Command's (USSOCOM) Special Operations Forces (SOF) Survival Support Equipment Systems (SSES) Program Management Office for the transition of Joint Medical Exchange & Documentation of Information for Combat Casualty Care (JMEDI3) Virtual Medical Portal (VMP).

2. High-level Summary of the capability being developed.

a. Brief synopsis of the capability development effort.

The JMEDI3 Virtual Medical Portal (VMP) proposed research initiative will use an operational prototype of a VMP to assess the impact of skilled medical providers (local)

Award Number: H1603000

**PoP:** 36 months

# Medical Data Cloud TA Signed 4 Dec 2017



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
HEADQUARTERS, US ARMY MEDICAL RESEARCH AND MATERIEL COMMAND  
810 SCHREIDER STREET  
FORT DETRICK, MD 21702-5000

MCMR-RTJ

SUBJECT: Technology Transition Agreement - Medical Data Cloud (MDC) on Secure Tactical Networks

ENCL: (1) Related TMIR Capability/GAPS  
(2) Quad Chart

1. Purpose: This Technology Transition Agreement (TTA) establishes a collaborative relationship between USAMRMC Joint Program Committee-1 (JPC-1)/Medical Simulation and Information Sciences (MSIS) Program Area Directorate (PAD), the Telemedicine and Advanced Technology Research Center (TATRC), and the Program Executive Officer for Enterprise Information Systems (PEO EIS)/ Product Director Medical Communications for Combat Casualty Care (PD MC4) for the transition of technology in the technology area "Medical Data Cloud (MDC) on Secure Tactical Networks."



# Medical Data Cloud (MDC) on Secure Tactical Networks

Award Number: H1602600

23

PI: Mr. Carl H. Manemeit

Org: USAMRMC TATRC

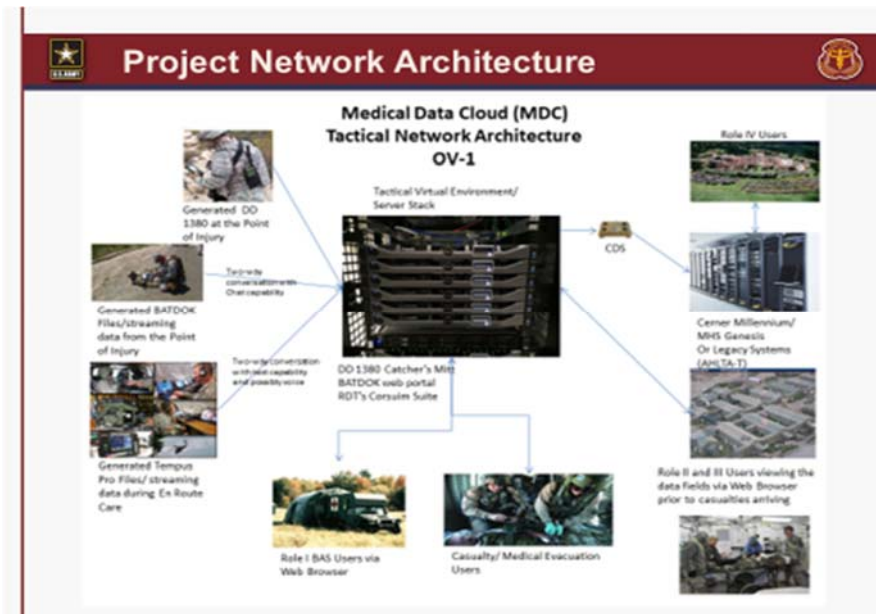
Award Amount: \$3,233,180.00

## Study/Product Aim(s)

- Enable the BATDOK system to be viewable on the web based browser
- Integrate BATDOK on the tactical network to transmit streaming near real time data over the radios
- Design and demonstrate a conceptual web based cloud server array to implement the MDC capability on common user tactical networks
- Implement the TEMPUS-Pro operational telemedicine system as a cloud web based application to enable in-theater remote patient monitoring

## Approach

Medical Data Cloud (MDC) on Secure Tactical Networks supports robust and secure micro cloud sharing of waveforms and vital signs data points, plus DD 1380 medical encounters that collected on a NW EUD from wireless medical sensors using 1) in-house TATRC researchers, 2) collaborating researchers from other DoD labs (e.g. USAFRL, CERDEC, MCWL, NSWCCD, PM MC4) and 3) possible commercial firms with prototyped enabling technologies available through current contracts.



## Timeline and Cost

Activities	CY	17	18	19	20
BATDOK integration and development (field test)					
Operational telemedicine system implementation					
MDC concept development of a web portal micro cloud server					
Concept Demonstration					
Estimated Budget (\$K)		\$000	\$1,118	\$1,093	\$1,023

## Accomplishments:

- Completed requirements to send BATDOK library data to AMRDEC S3I and the BATDOK team integrated the Chat4ISR application
- 14 Sep 18 – Completed and accepted all ISSA through Live Link to MIPR funds to GSA/AMRDEC S3I and NSWCCD
- BATDOK and Tempus Pro evaluated at Island Marauder on AMRDEC AeroMedTelNet while supporting PEO Aviation

## Goals/Milestones

### FY19 Goal – Capability Design and Prototyping

- Integrate BATDOK application with the ADvanced Virtual Support for OpeRational (ADVISOR) Teleconsultation Program.
- Review MedCOP/Micro-Cloud Architecture description with TATRC and MCWL Expeditionary Medicine Branch

## Comments/Challenges/Issues/Concerns

- CERDEC SMASH-MD software may not be mature enough to be integrated with the BATDOK application

## Budget Expenditure to Date

FY17 RDT&E funds Expenditure: \$1,117,860.00

Received FY18 RDT&E funds in Sep 2018 for year 2 (FY19) funding:

Updated: 15 November 2018

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# Medical Device Interoperability TA pending w/ USAMMDA

**TECHNOLOGY PRODUCT NAME** Medical Device Interoperability (MDI) for Autonomous Care and Evacuation (ACE)

## U.S. Army Medical Research and Materiel Command Transition Agreement Template

This Transition Agreement (TA) signifies the intent to transition a materiel or knowledge product using Research, Development, Test, and Evaluation (RDT&E) funding. The below stated Technology Developer and Technology Recipients mutually agree to enter into this TA for the purpose of defining deliverables for the above noted S&T project. This TA documents a clear understanding between all parties of the conditions required to ensure a successful transition.

### 1. PARTICIPATING ORGANIZATIONS

	Technology Developer	Technology Recipient
<b>Organization:</b>	MSIS	USAMMDA
<b>Name:</b>	Dr. Loretta Fairchild	Mr. Steven Hawbecker
<b>Phone number:</b>	301-619-3205	301-619-3709
<b>Email address:</b>	loretta.m.schlachta-fairchild.civ@mail.mil	steven.e.hawbecker.civ@mail.mil
<b>Title:</b>	Program Area Manager	Program Manager
<b>Alternate POC:</b>	Mr. David Thompson	Ms. Maureen Milano

**2. ANTICIPATED TRANSITION DATE:** FY2020, The Technology Readiness Level (TRL) at transition will be TRL 5-6.



## Medical Device Interoperability

Organization: JHU/APL

Period of Performance: 09/13/18 – 09/12/20

### Study/Objectives/Aim(s)

- Develop a platform supporting prolonged field care situations and onboard evacuation through modular robotic, autonomous and unmanned capabilities that enable semi-autonomous and autonomous critical care. Development includes:
  - Design Technical Architecture and Device Interoperability Standards/Model
  - Develop and demonstrate Reference Implementation
  - Autonomous, Closed Loop Control 'Black Box Recorder'
- Capabilities: Closed Loop Critical Care Systems, AI assisted patient assessment, monitoring, and treatment intervention, and remote and autonomous patient monitoring

### Approach

Use a Systems Engineering approach to developing the Medical Device Interoperability reference architecture. Focus on enabling reference system architecture, not on the autonomy itself. Subcontract with experts. Draw on existing autonomy architectures.

Autonomous/Semi-Autonomous/Remotely Operated Medical Devices and Medical Data



Accomplishment: Initial team, multiple contacts with possible vendors, setup initial face-to-face discussions.

### Timeline and Cost

Activities	CY	18	19	20
Research, Interviews, and Site Visits				
Define Operational Context				
Preform Early PoC Demo				
Develop and Demo MDI Architecture				
Determine Standards & Profiles Needs				
Estimated Budget (\$K)		\$4.4M	\$000	\$000

Updated: 11/16/2018

### Goals/Schedule/Milestones

#### CY18 Goal – Project Kickoff

- ☒ Contract Award, Kickoff Meeting, Project Plan
- ☒ Begin Research, Interviews, and Site Visits

#### CY19 Goals – Proof of Concept (PoC)

- ☐ Establish Core Team
- ☐ Define Operational Context
- ☐ Perform Early PoC Demo

#### CY20 Goal – Standards Defined

- ☐ Develop and Demo MDI Architecture
- ☐ Determine Standards & Profiles Needs

### Comments/Challenges/Issues/Concerns

- N/A - Budget and timeline are on track

### Budget Expenditure to Date

Projected Expenditure: \$4,476,123

Actual Expenditure: \$123,866

**Congressional (CSI)  
Burn Patient Transfer System  
36 month POP – Jul 2019-June 2022  
MTEC OTA**

# Burn Patient Transfer System (Congressional/CSI)

## Program/Effort Description

- U.S. Army Medical Research and Materiel Command (USAMRMC) initiated research to enhance patient regulating for mass casualties of burn/trauma patients in coordination with United States Transportation Command (USTRANSCOM), and the US Army Institute for Surgical Research (ISR).
- FY19 efforts expand coordination of previous development efforts with Department Homeland Security (DHS) as well as NATO partners in a Phase II development/test/research.

## Description of Planned Execution

- Research, develop, and test a web based, and mobile app-accessible, open architecture cloud-based system to track capacity and improve the logistics of burn patient/trauma patient triage and transfer in and between military and civilian treatment facilities in an event with large numbers of burn patients.
- Phase I: Market Research, Comparative Study, and Requirements Definition
- Phase II: Working prototype of web/mobile burn patient capacity across participating burn centers/hospitals.
- Phase III: Integration with DHS Nat'l Disaster Mgmt System at Federal Level and NATO Partner Nations.

## Funding Information

Organization	OUSD(R&E)
Appropriation	RDT&E, ARMY, 2040
Budget Activity (BA), Program Element (PE)/ Line Item (LI)	BA2, PE 0602787A, 29 – MEDICAL TECHNOLOGY, Burn Patient Transfer System

	FY 2019 (\$000)
PB 2019 Request	-
Congressional Add	2,000
<b>Total</b>	<b>2,000</b>

## Contract Information

- Medical Technology Enterprise Consortium (MTEC) Other Transaction Authority (OTA) estimated award in FY19Q4
- 36 Month Period of Performance (Estimated): July 2019 to July 2022

# Timeline

# Timeline for Sunset

- **29 Jan – Draft Sunset Plan Review w HITI SC**
- **Monthly HITI SC Meetings in 2019: 26 Feb Axiom, 26 Mar Virtual**
- **23 April 2019 IPR at Ft. Detrick Bldg. 1076 – ALL DAY MEETING**
- **24 Sep 2019 IPR at Ft. Detrick Bldg. 1076 – ALL DAY MEETING**
- **HITI State of the Science Report – External Program Review commissioned by Director JPC1 - from Portfolio Inception (2010) to 30 Sept 2020 – commencing Feb 2019; approx 6 months effort**



# HITI Portfolio Draft Sunset Plan

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- **Questions/issues/discussion from Steering Committee members**



# JPC-1

## DHP RDT&E S&T FY20-25 Program Plan



PRESENTED BY Mr. Dave Thompson  
29 January 2019

# JPC-1 POM Agenda



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Joint Program Committee-1 (JPC-1) - Medical Simulation & Information Sciences  
 AGENDA - Wednesday, January 23, 2019  
 Program Objective Memorandum (POM)  
 LOCATION: Teleconference

Start	Stop		Topic	Presenter	Organization
8:30			Call into Teleconference: (210) 249-4234 Conference ID: 2299# PIN Code: 852869#  log into DCS: <a href="https://conference.apps.mil/webconf/MSISRP">https://conference.apps.mil/webconf/MSISRP</a>		
0830 - 1430			PROPOSED NEAR TERM PLAN & POM PLAN (DHP FY20-25) <ul style="list-style-type: none"> <li>• Understand changes MEDCOM/MRMC to AFC</li> <li>• Understand the current budget environment                             <ul style="list-style-type: none"> <li>• Discuss JPC1 Near-Term and POM</li> <li>• Prioritize JPC1 UFRs</li> </ul> </li> </ul>		
8:30	8:45	0:15	Welcome / Introductions	Mr. Dave Thompson	JPC-1
8:45	9:00	0:15	MEDCOM/MRMC/JPC1 update	Mr. Dave Thompson	JPC-1
9:00	11:30	2:30	JPC1 S&T Program Plan	Mr. Dave Thompson	JPC-1
11:30	11:50	0:20	Near-Term, POM, UFR discussion	Mr. Dave Thompson	JPC-1
11:50	12:05	0:15	Meeting Adjourn	Mr. Dave Thompson and JPC-1 Committee members	All
12:00			ADJOURN for DAY		

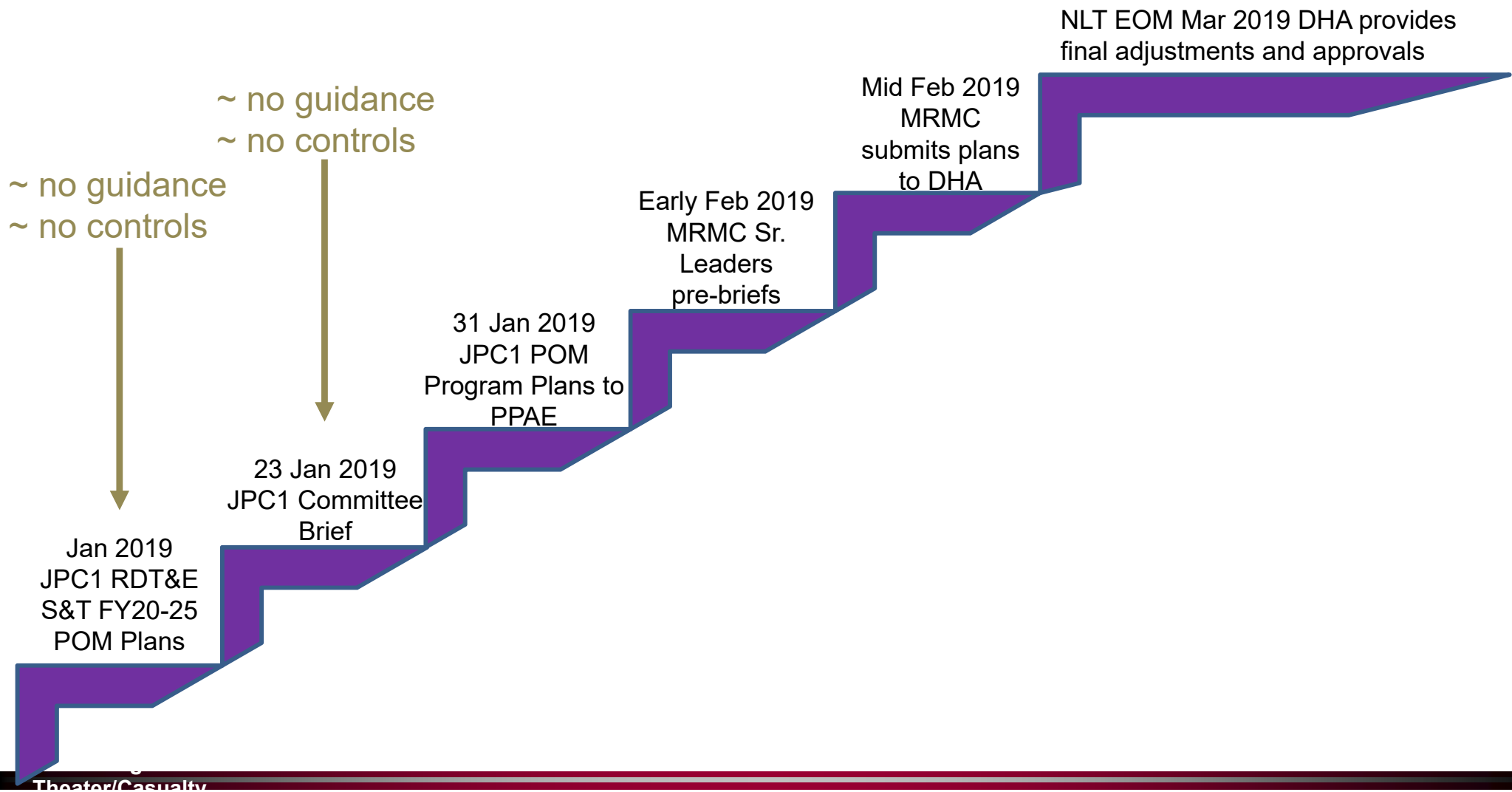
# JPC-1 FY20-25 DHP Program Plan

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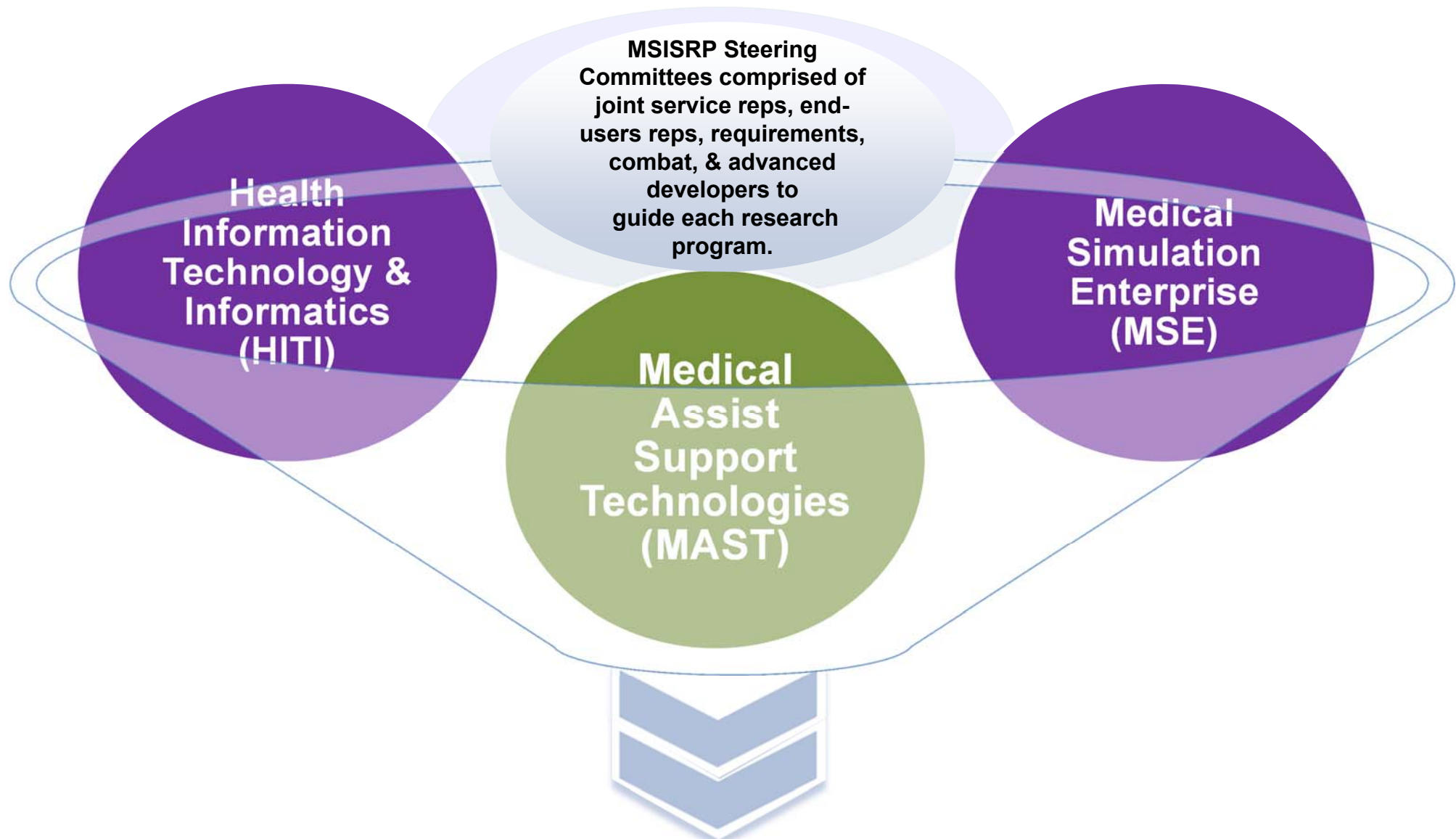
## JPC Membership

	Representative	Service	Affiliation	Expertise	Concur
1	Mr. Dave Thompson	JPC-1	DHA	Chair	
2	Dr. Pat Reilly	Army	USAMRMC	MRMC PAA	
3	Mr. Joe Goodin	Navy	SPAWAR	Materiel Developer	
4	CAPT Daryl Daniels	Navy	USFFC	HQ, N01H	
5	Mr. Mitch Lawrence	Air Force	AFMSA/SG5M	Materiel Developer	
6	Mr. Robert Wolfe	DHA	PEO SDD	Materiel Developer (PEO SDD)	
7	COL Scott McIntosh	DHA	JPM MMS	Materiel Developer (PEO STRI)	
8	Mr. Mark Goodge	DHA	CIO	Office of Director, DHA Health Information Technology	
9	COL Susan Walton	Army	CDID	Combat Developer	
10	CAPT Jeffrey Paulson	Navy	USFF Surgeon	Navy Combat Developer/Requirements	
11	Ms. Angela Grubbs	Air Force	AF-SG	Combat Developer	
12	Dr. Alan Smith	DHA	CECOM SEC to DHA	Combat Developer	
13	LTC Todd Collins	SOCOM	SOCOM	Combat Developer	
14	COL Gina Adam ?	Army	TATRC	Research Execution	
15	Dr. Wayman Cheatham	Navy	ONR	Research Execution	
16	Col Martin Lafrance	Air Force	AF R&D	Research Execution	
17	Dr. Deb Niemeyer	Air Force	59th MDW/ST	Chief Scientist	
18	CAPT Francisco Leal	Marine Corps	HQMC	Director of Medical R&D	

# JPC-1 POM Milestone/Schedule

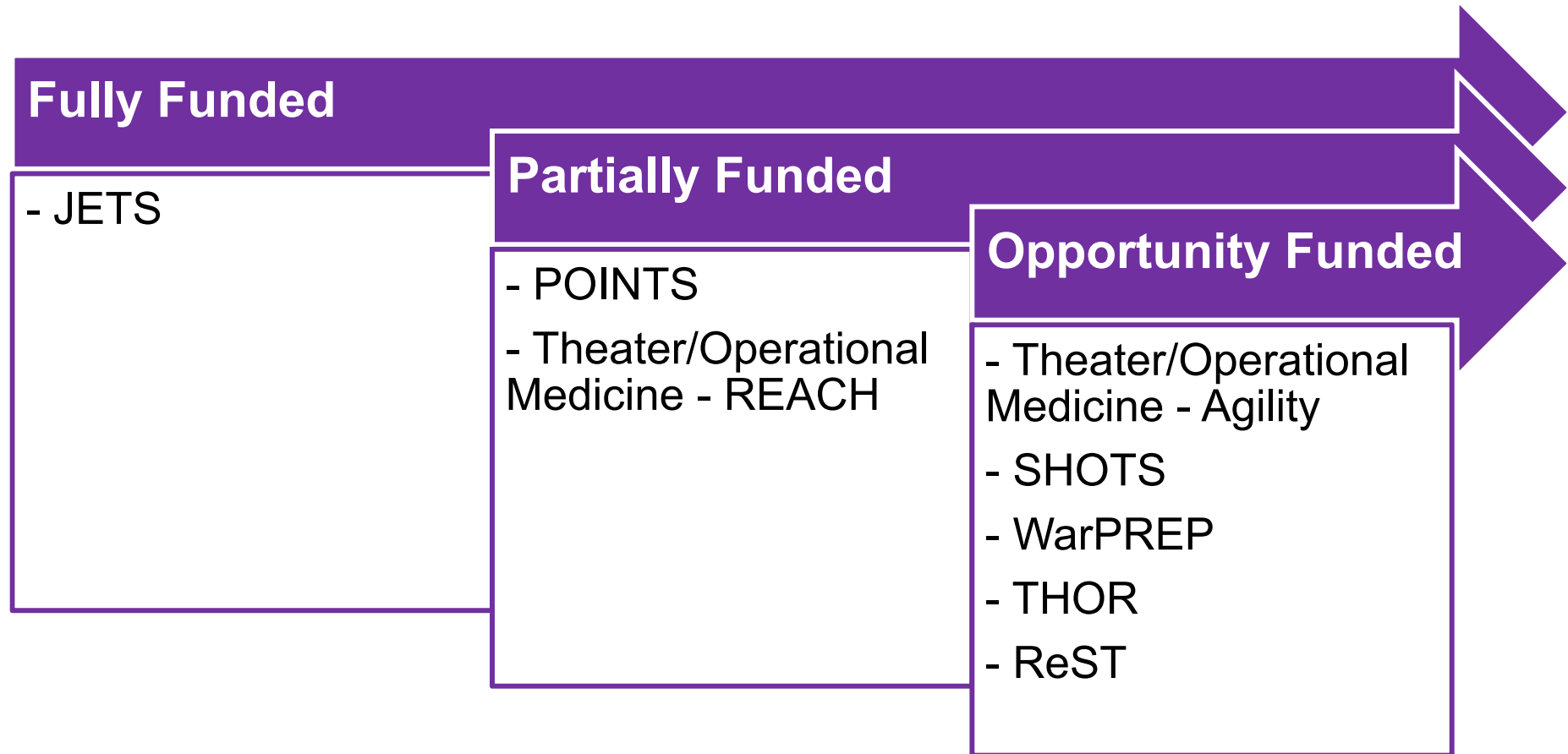


# Research Area Overview



JOINT PROGRAM COMMITTEE – 1 (JPC-1)

# Bottom Line Up Front – JPC-1 Priorities





# MRMC Realignment to AFC

NDAA 2019 MRMC to move to DHA no later than 30 SEP 22

Secretary of the Army and Chief of Staff of the Army – concerned Army would lose ability to influence medical readiness through research and development, logistics and training/teaching

Army Medical Command



Army Material Command



*transition effective 1 October 2019*

Army Futures Command



*transition effective 1 March 2019*

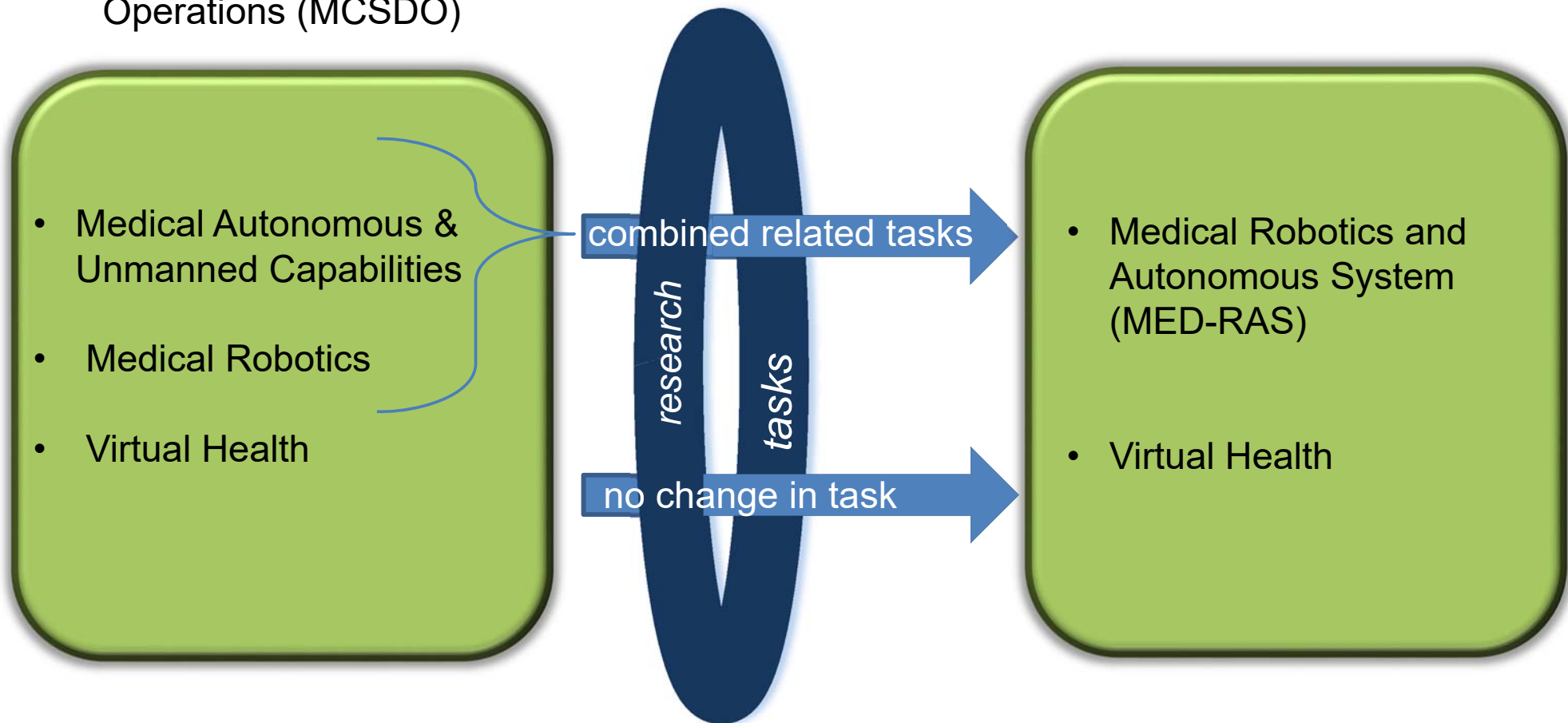
# Medical Research Tasks Aligned to Army Modernization Priorities

38



## Medical Capabilities to Support Dispersed Operations (MCSDO)

## Medical Assist Technology Tools (MAST)



### DoD Financial structure:

- Program Element
- Project
- Task
- Sub-Task

# Current Army S&T PE Profile

## Profile in President's Budget (PB)

PE	PE Title	PE Project	Project Title	FY19	FY20	FY21	FY22	FY23	FY24	FY25
602787		XV5	Medical Capabilities to Support Dispersed Ops <sup>1</sup>	5,720						
622787	Medical Technology	MM6	Medical Technologies to Support Dispersed Ops Tech <sup>2</sup>		12,212	15,838	14,883	16,672	16,970	14,081
633002	Medical Advanced Technology	MM7	Enabling Med Cap to Support Dispersed OPS Adv Tech <sup>3</sup>		1,819	1,721	2,145	2,067	2,111	5,000

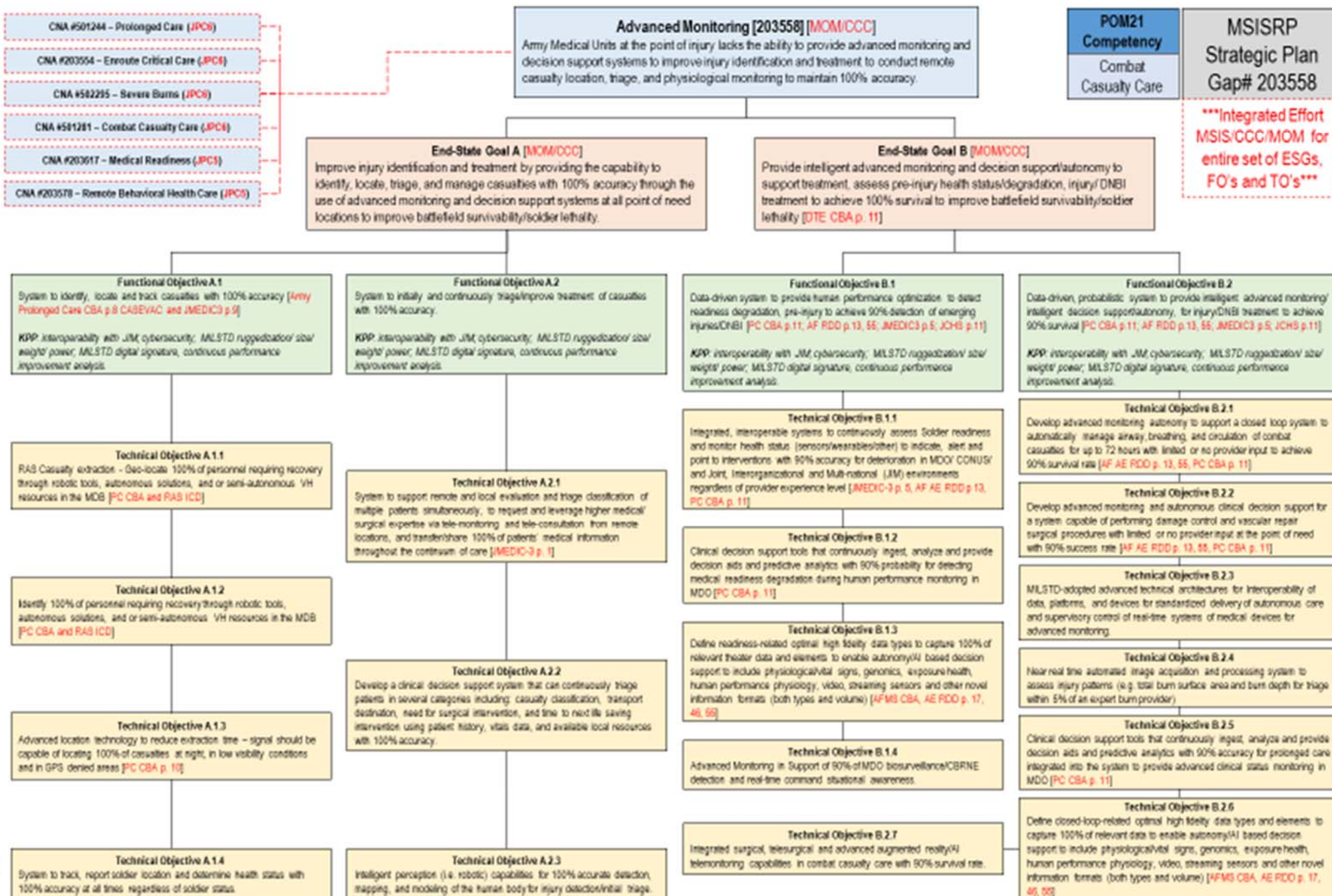
<sup>1</sup> **Med-RAS** --research, design, and prototype future, next generation medical robotic, autonomous and unmanned medical capabilities to deliver high quality combat casualty care while optimizing the medical logistic footprint in far-forward and dispersed operations with limited or absent medical personnel in support of the Army Multi-Domain Battle concept and the Army Force 2025 and Beyond vision. **VH** -- develop future Virtual Health enterprise process architectures, approaches for delivery of care, and integrated physical solutions capable to supporting prolonged field care and dispersed operations in conditions with limited or lacking traditional field communications and extended enroute care scenarios when providers are in different locations

<sup>2</sup> **Medical Technologies to Support Dispersed Ops Tech** -- Improve Soldier Lethality in MDO by exporting Medical Care and Medical supplies whenever and wherever needed using advanced technologies. Key deliverables - early prototypes/knowledge products for unmanned casualty evacuation shell for air/ground and multi-mission logistics pod; technology tools to protect and ensure critical patient medical data exchange in MDO and no/lo-comm environments.

<sup>3</sup> **Enabling Medical Capabilities to Support Dispersed Ops Advanced Tech** -- Improve Soldier Lethality in MDO by exporting Medical Care and Medical supplies whenever and wherever needed using advanced technologies. Key deliverables - Unmanned casualty evacuation shell for air/ground; multi-mission logistics pod.

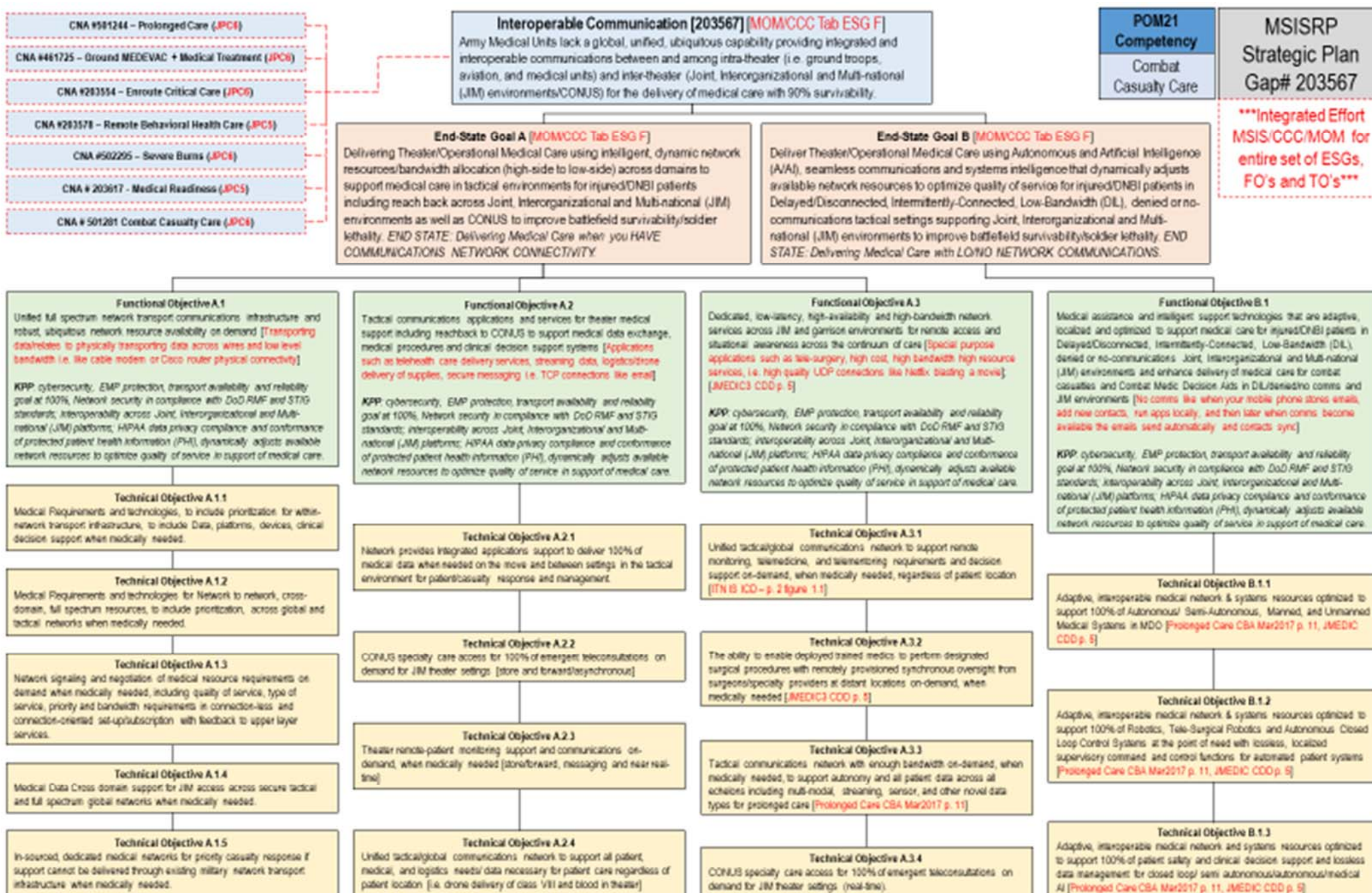


# CNA Gap – Advanced Monitoring



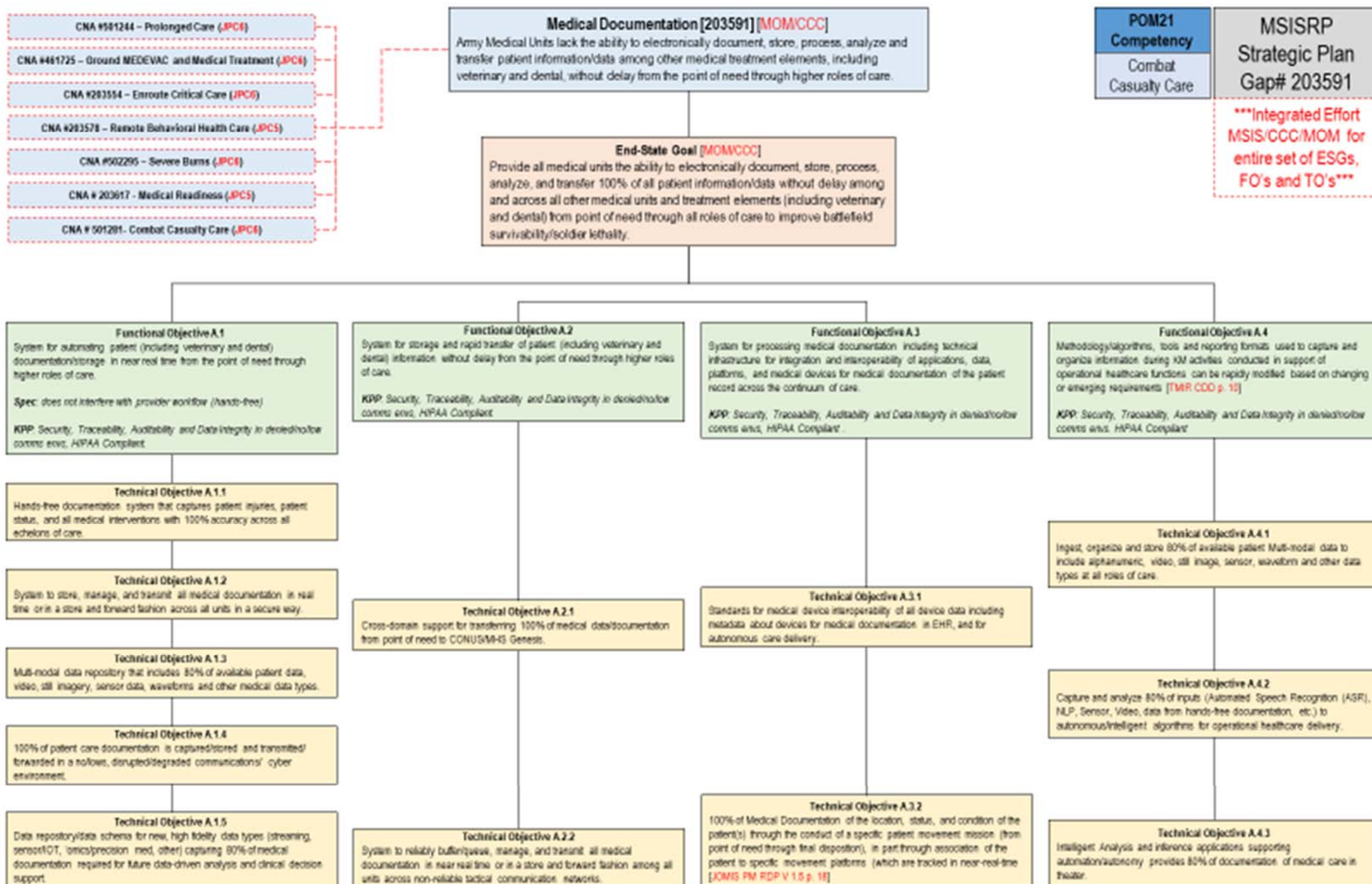


# CNA Gap - Interoperable Communication



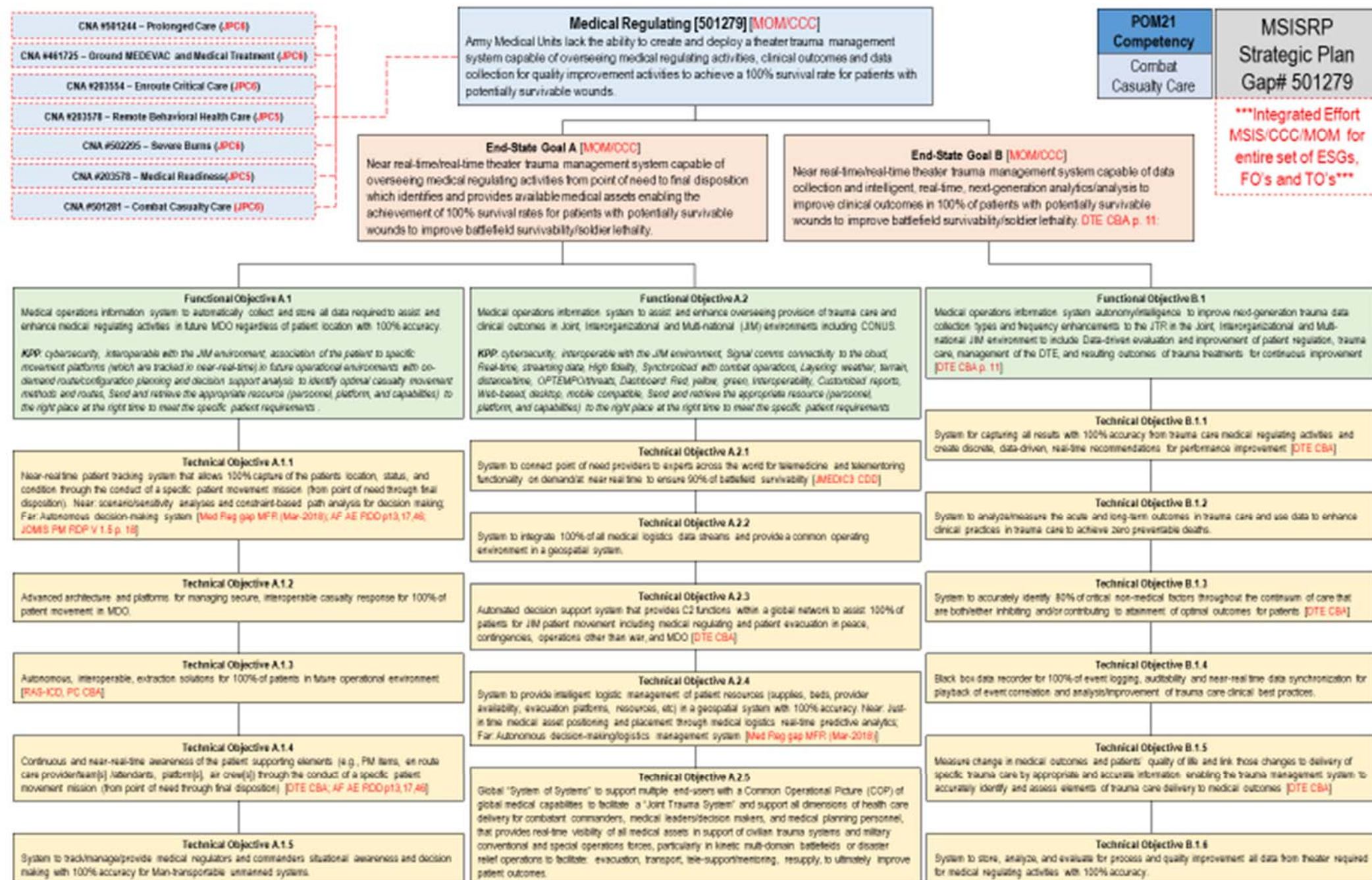


# CNA Gap – Medical Documentation



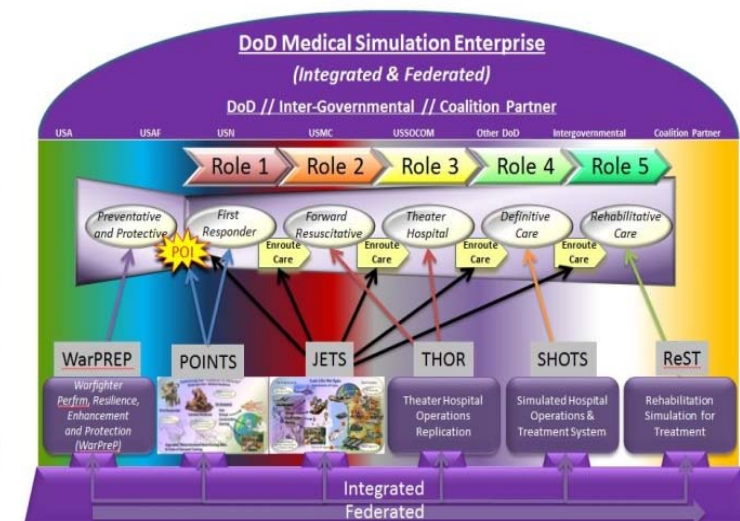
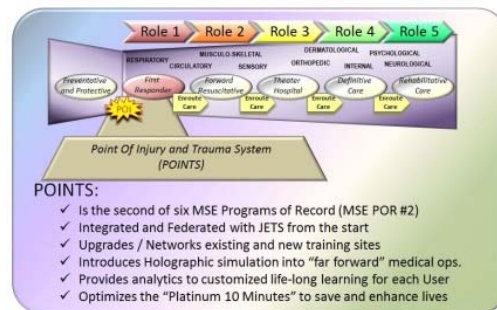
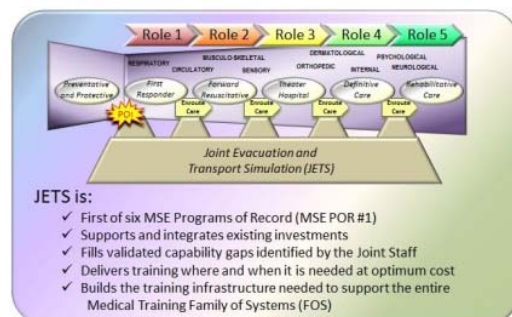


# CNA Gap – Medical Regulating





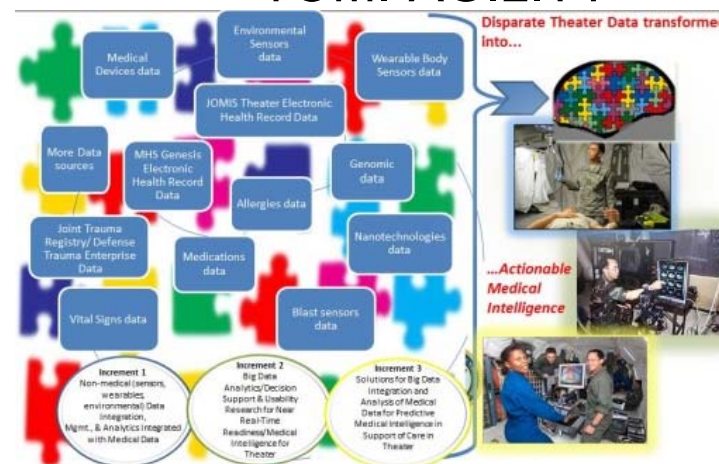
# JPC-1 DHP Portfolios



## TOMI-REACH

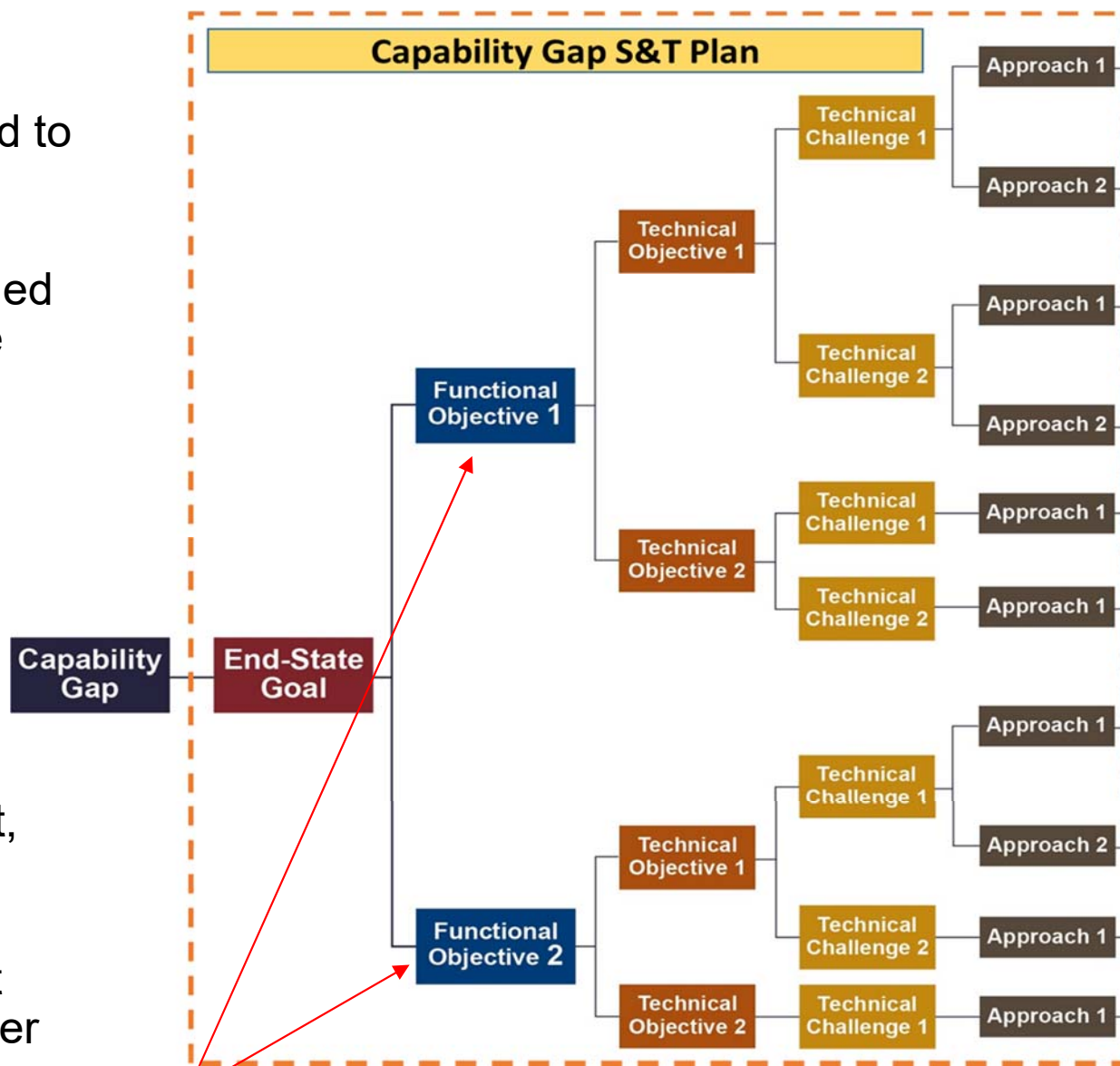


## TOMI-AGILITY



## ■ Approach

- ❑ R&D portfolio must be tied to supporting key strategic priorities.
- ❑ Ensure S&T work is needed by a customer and will be transitioned.
- ❑ Provide near-term deliverables of capability while still looking to the future.
- ❑ Establish Stage-Gates in S&T.
- ❑ Use metrics to monitor performance in S&T (cost, schedule, deliverables).
- ❑ Redirect funding for low-priority efforts or work not progressing back into other high-priority efforts.



\*Functional Objectives are the solution sets delivered to the end users.

- Later-stage S&T (6.3 level research) is requirements driven, and funded efforts align to capability gaps, end-user needs, and requirements.
- Funds: DHP Core, Congressional Special Interest (CSI), and Small Business Innovation Research (SBIR) distributed via assistance agreements, contracts, and intramural awards.
- Mechanisms: Broad Agency Announcement (targeted BAAs); Other Transaction Authority (OTAs) – MTEC; Partnership Intermediary (PIA) – MilTech; and University Affiliated Research Center (UARC) – JHU/APL
- Full lifecycle management capabilities (identification of problem, basic and applied research, advanced development, acquisition, logistics, fielding, and modernization for subsequent increments).
- Awards may be either intra- or extramural

- DHA JPC Charter for Medical Simulation and Information Sciences, OSD(HA), 4 Dec 2014
- DHA Research Development and Acquisition Directorate SOP, 14 May 2014
- Joint Chiefs of Staff (JCS) Joint Concept for Health Services, Aug 15
- Health Readiness CONOPS, Jan 10
- Health Service Delivery CONOPS, Feb 11
- Health System Support CONOPS, Feb 11
- Force Health Protection CONOPS, 17 Nov 11
- CONOPS for the DoD Trauma Enterprise (DTE), Oct 2016
- Medical Readiness Skill Sustainment Training During Deployed Operations (MRSST-DDO), Terms of Reference (TOR), 15 Dec 17
- DoD Combat Casualty Care Training Technologies ICD – Aug 2016
- Joint Theater Patient Evacuation DOTmLPF-P Change Recommendation (DCR) 15-May-2015
- Joint Force Health Protection (JFHP) Initial Capabilities Document (ICD), 24 Feb 2010
- FY 2019 Administration R&D PB Priorities – Exec Offc of President, 17 Aug 17
- Joint FRC DCS Supporting Documentation (FRC CBA and DoDAF Arch), Aug 17
- **Draft Information Science Capability Decision Document (IS-CDD) Army Synthetic Training Environment (STE) (2018)**
- **2019 National Defense Authorization Act (NDAA)**
- **Joint Health Protection Gaps for Guidance for Force Development (GDF) 2018 (DHA)**
- **Joint Military Operational Medicine ICD July 2017**



- Joint Evacuation Training Systems (JETS)
  - Approved draft CDD with Requirements Sponsor (DHA J7)
  - Provides requirements supporting first DHA medical simulation SoS covering training center and point of demand (POD) training capabilities
  - Solutions will be allied with POINTS program, and help establish an integrated and federated FoS that will make up the DoD Medical Simulation Enterprise
  - Joint Force Health Protection ICD, 2010; Combat Casualty Care Training Technologies Initial Capabilities Document (ICD), 30 November 2015
- Point of Injury Training System (POINTS)
  - Working draft CDD at DHA J7
  - Provides requirements supporting the second DHA medical simulation SoS covering training center and point of demand training capabilities
  - Solutions will be allied with, and help to establish an integrated and federated FoS that will make up the DoD Medical Simulation Enterprise
  - Theater Combat Casualty Care ICD, 2007; Joint Force Health Protection ICD, 2010; Combat Casualty Care Training Technologies Initial Capabilities Document (ICD), 30 November 2015

- Theater Medical Information Requirements (TMIR)
  - Information Systems (IS) ICD – Complete and approved by JROC 13 JUN 16
  - Provides requirements to develop capabilities to identify, capture, organize, disseminate, and synthesize required operational health and medical force information, in support of PM Joint Operational Medical Information System (JOMIS)
  - CDD draft released 3 OCT 16, currently in JCIDS process
- Defense Trauma Enterprise CONOPS
  - Capabilities Based Assessment (CBA) process currently underway
  - Per FY17 NDAA sections 708, 712, 713 cites requirements for a comprehensive Theater-related Joint Trauma Registry from POI through rehabilitation as a timely learning system to improve trauma care best practices and standards



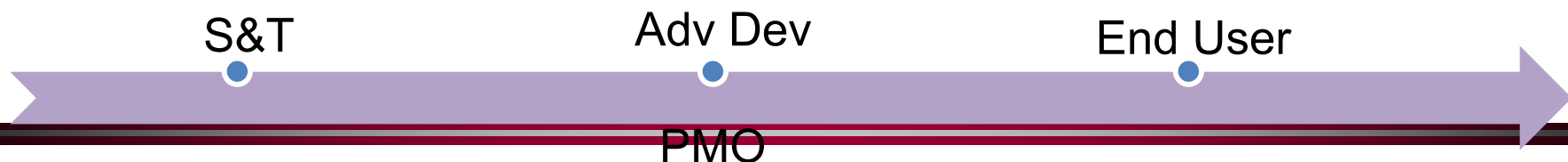
# JPC-1 HIT Transition Partners

- Med Sim
  - Joint Project Manager Medical Modeling and Simulation (JPM MMS) at Program Executive Office for Simulation, Training, and Instrumentation (PEO-STRI)
- HITI
  - Defense Healthcare Management Systems (DHMS): Defense Information Medical Exchange (DMIX), MHS Genesis, JOMIS
  - Program Executive Office Solution Delivery Division (SDD)
  - Program Executive Office for Enterprise Information Systems (EIS)
  - Medical Communications for Combat Casualty Care (MC4)
  - Industry (ie. GE for iFAST) via MRMCM Medical Technology Transition Office
  - Air Force Medical Service (AFMS)
  - Navy Medical Modeling and Simulation Training (NMMSAT)
  - Special Operations Command (SOCOM)
  - CERNER

- Transition Agreement (TA) – established a collaborative agreement between JPC-1 and Materiel Developer for each S&T Functional Objective designated for transition
- TA includes high level summary of the functional objective, captures the Technology Readiness Level (TRL), identifies the timeline of anticipated transition, defines the requirement, and establishes the exit criteria for moving from the Technology Maturity and Risk Reduction (TMRR) to the Engineering and Manufacturing Development (EMD) phase
- Three phase transition approach initial interest (6.2), mid-point agreement (start 6.3) with draft exit criteria to continue research; and final transition agreement (12 months from start of 6.3) locked criteria.

DHP Program Plan – current TA status

- MedSim – JPM MMS Technology Transition SOP pending and 11 pending TAs
- HITI – 11 signed TAs and 8 pending



**Vision:** Solving Complex Military Healthcare Problems Using Knowledge and Technology

## Goals:

- Advance military medical capabilities using medical simulation throughout the entire continuum of care
- Deliver combat casualty care training tools, in order to support a high state of medical readiness and capability for both medical and non-medical personnel
- Create predictive models to assess healthcare providers high-quality military health care management
- Improve healthcare data capture, integration and transmission in and from theater operational environment
- Advance Medical Informatics capabilities within Military Health System (MHS)

### FY20-25 POM

#### Virtual Health



Open source  
pharmacological  
agent tool  
kit/engine



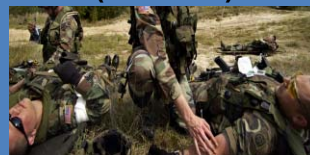
Machine Learning

Deployable Simulation  
Center

#### Medical Device Interoperability



#### Point of Injury & Trauma Simulation (POINTS)



Hands-free PoI/PoC  
Theater EHR  
documentation prototype

Virtual  
Patient  
Surrogate/  
AR/VR tech  
for LVCG

Synchronous/  
Asynchronous  
Data and EHR  
Access in  
Operational  
Med



Net ready  
capabilities

Deployable  
capabilities

Medical Intelligence  
and Decision Support

Learning Assessment  
System/MeTER



### Beyond POM

Deployable/Rugged  
Holodeck

Library to Assemble Virtual  
Complete Patients

Nanotechnology  
data acquisition

Predictive  
analytics for  
Real time  
theater medical  
intelligence

Open Source  
Integrated  
Virtual Body  
[complete  
models]

Adv.  
Physiology  
Engine

Embedded Nanotechnologies  
to Reduce Footprint of Medical  
Devices In-Theater

### FY19

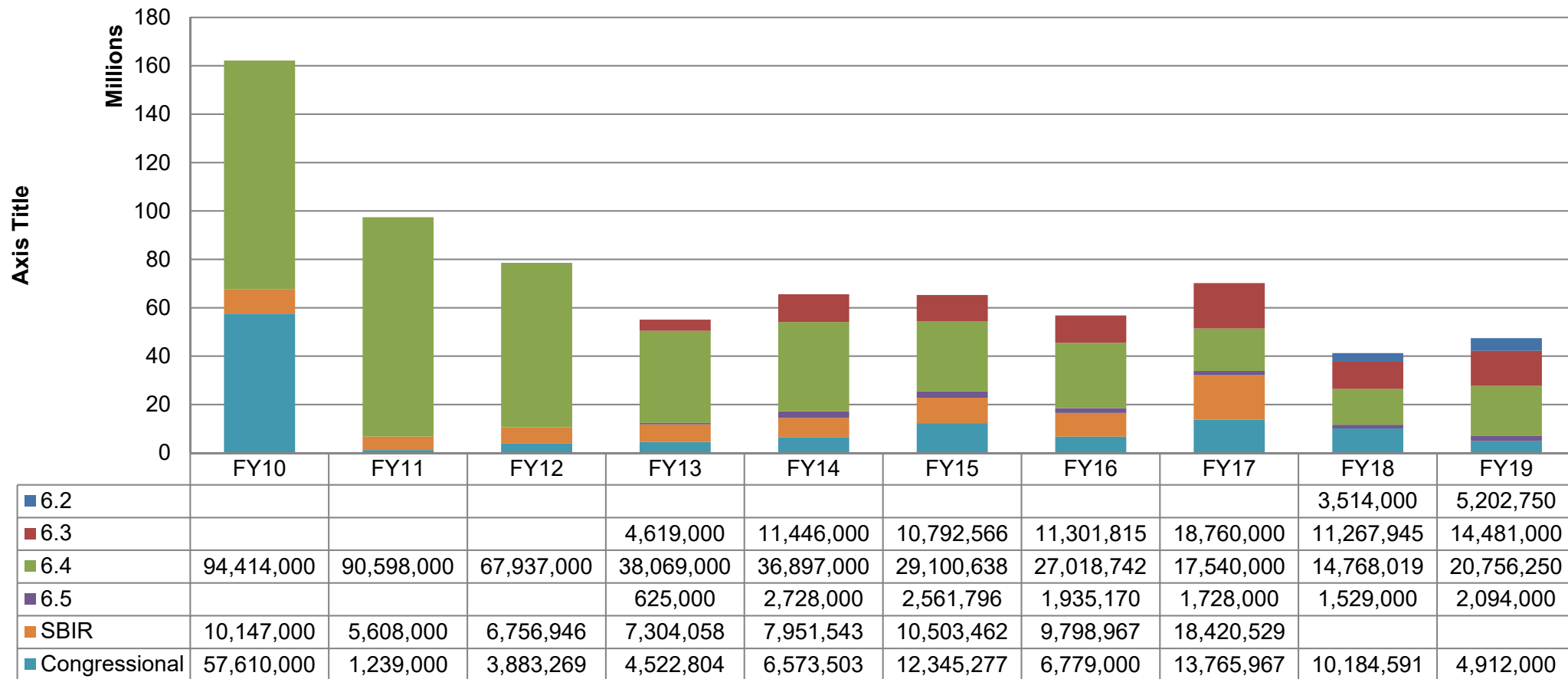
Joint Evacuation &  
Transport [Training]  
System (JETS):  
Architecture



Medical Data Capture &  
Exchange In-  
Theater/Casualty  
Response

# JPC-1 FY10-19 Investment by Source and FY

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\* FY17-19: Receiving PH/TBI and Restoral Congressional Funding

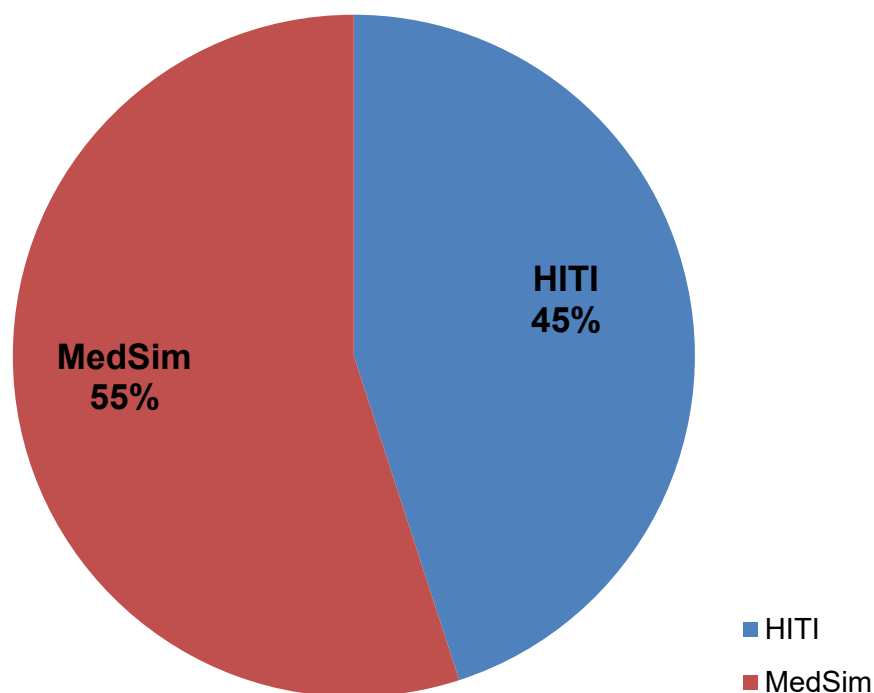
\* All dollars presented in Available for Science

# JPC-1 DHP Program Funding by Portfolio

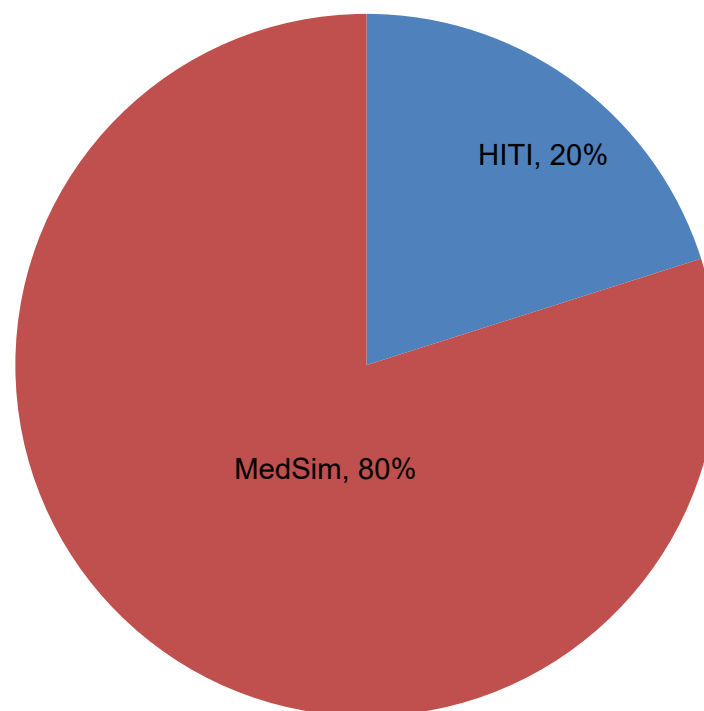
## FY10-19

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**FY10-18 Funding by Portfolio  
HITI and MedSim**



**FY19 Funding by Portfolio  
HITI and MedSim**



\*Includes FY15, FY16, and FY17 GDF Restoral funding

\*Includes only HITI and MedSim DHP funding

\*FY19 Funding in accordance with J9 approved acceleration spend plan

## **DHP RDT&E S&T FY20-25 Program Plan Presentation**

# JPC-1 FY20-25 DHP Program Plan

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## Overview

### FY20-25 Overarching Goals

- Research standardized Joint Patient Movement simulation capabilities, replicating the chain of evacuation in a Joint Evacuation and Transport Simulation (JETS) program.
- Point of Injury and Trauma Simulation (POINTS) capabilities to sustain and improve first responder and combat medical (e.g.: medic & corpsman) skills.
- Improve real-time information access, security and mobility; interoperable hands-free data capture and documentation technologies; advance telehealth technologies
- Deliver next generation casualty management, medical logistics and medical command and control in dispersed operations and other theater/operational environments.

### Warfighter Health and Readiness Impact

- Improve military medicine training and education using medical simulation throughout the entire continuum of care.
- Deliver combat casualty care training to support a high state of readiness and capability for military healthcare providers.
- Minimize data collection errors, improve healthcare data capture, integrate and transmit at the point of care in-theater and far forward environments.
- Advance military health care management
- Enhance Joint casualty management and patient movement



# JPC-1 FY20-25 DHP and Other Funding

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## By Task Area

**Mission:** To responsively and responsibly coordinate emerging research in military medical simulation, health information technologies/informatics and medical care delivery in dispersed and complex environments across all stakeholder communities and transfer research solutions and knowledge to meet MHS goals.

### DHP GDF FUNDING

\$222,614K

\$34,906K

- ❖ Joint Evacuation and Transport Simulation (JETS)
- ❖ Point of Injury & Trauma Simulation (POINTS)

Medical Simulation & Training

- ❖ CSI

- ❖ Theater/Operational Medicine – REACH
- ❖ Theater/Operational Medicine – AGILITY

Health Information Technology & Informatics

- ❖ CSI

- ❖ Medical Robotics and Autonomous Systems– MedRas
- ❖ Virtual Health– VH

Medical Assist Support Technologies

\$89,691K

ARMY Funding

PH/TBI, JWMP, SBIR

JWMP, SBIR

# **Medical Simulation**

## Dr Darrin Frye

# JPC-1 Medical Simulation Portfolio

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**Task Description:** This Task plans, coordinates, and oversees a responsive, comprehensive, tri-service research, development, test, and evaluation (RDTE) program focused on improving military medical capabilities through medical simulation, and patient-focused objective metrics.

## **Task Goals:**

### **JETS**

- Deliver the tools for effective chain of evacuation and patient hand-over training for improved patient outcomes throughout the continuum of care.
- Deliver a joint patient movement training platform, with global 24/7/365 capability, with integrated LVCG training that seamlessly connects training centers and the learner's point of demand (PoD)

### **POINTS**

- Provide the tools and technologies to train and maintain capable first responder and combat medical skills for a dispersed and multi-domain battlefield.

FY20-25 Task Area Objectives		
<i>Joint Evacuation and Transport Simulation (JETS):</i>		
Funded Capabilities	Unfunded Capabilities	Other Contributing Investments
Replication	Interactive (partial)	
Net Ready	Replication (partial)	
Interactive	Assessment (partial)	
Integration		
Assessment of learning		
<i>Point of Injury Trauma Simulation (POINTS):</i>		
Funded Capabilities	Unfunded Capabilities	Other Contributing Investments
Joint Training Global Environment	Joint Training Global Environment (partial)	
Assessment	Training (partial)	
End User Support (Access)		
Training		

# JPC-1 Task Priority #1

## Medical Simulation - JETS

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### *Joint Evacuation and Transport Simulation (JETS)*

#### Goal Overview

##### **Overall**

- Replicate the chain of evacuation for improved mission success and patient outcomes through integrated LVCG simulation
- Deliver a usable patient movement training platform, with immersive global 24/7/365 capability at the learner's point of demand
- Integrate JETS across DoD training centers and the User's PoD

##### **Capability Gap Addressed:**

- Joint Force Health Protection ICD (2010); Draft JETS CDD (2017)
- Determination for the use of Animals in Medical Ed & Training Memo

##### **Impact to Warfighter Health and Readiness**

- Improved health outcomes through more efficient and coordinated patient movement throughout the chain of evacuation
- Increase efficiency of training while decreasing DoD training costs
- Link operational needs of Services and Combatant Commanders with a highly trained medical forces to improve operational readiness

#### Program Objectives

##### **• Intermediate (within 10 years) (IOC)**

- Provides modernization and sustainment to existing training sites delivering Global/Joint patient movement (GPM/JPM) simulation capability with automated LVCG simulation.
- Fully represents current and future DoD, inter-governmental, and coalition operational environments, mission profiles, and training requirements.

##### **• Long Term (10+ years) (FOC)**

- Provides sustainment and modernization to training sites and GPM training through fully autonomous sub-systems, 4D environments, fully immersive holographics, 360° force feedback and Neuro based (Neurohaptics) haptics.
- Utilizes realistic patient surrogates with on-board predictive metrics, fully mature artificial intelligence, with auto-morphing nanotechnologies, reducing reliance on LTT.

### **Program Plan Development Strategy**

##### **• How did you develop and prioritize this goal and the objectives within?**

- This Joint goal aligns to DHA J-7 and Component capability gaps
- Joint Theater Patient Evacuation DOTmLPF-P Change Recommendation (DCR) 15-May-2015
- DoD Combat Casualty Care Training Technologies ICD – 8-Aug-2016
- Followed framework of JETS CDD (2017) – Pending JROC
- The goals and objectives were developed and prioritized by JPC-1 Medical Simulation Committee, stakeholders, and end-users

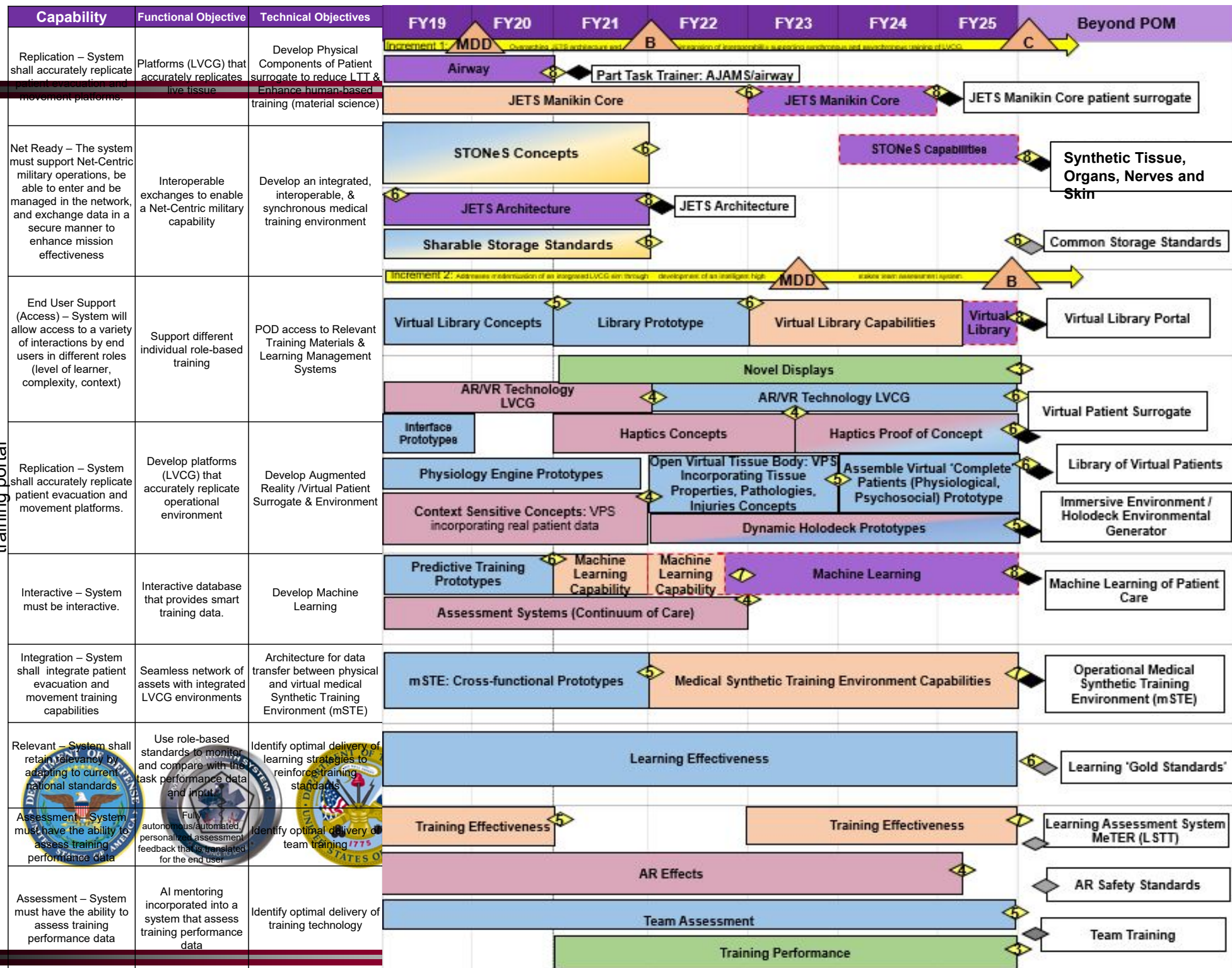
##### **• How are you going to achieve objectives given current resources?**

- Invest in development of a JETS training platform that coordinates the development of subsystems and their components
- Invest in simulation tools that are interoperable across services and roles of care
- Invest in the development of physical components of patient surrogate material products to reduce LTT & enhance human-based training
- Invest in technologies that support augmented/virtual LVCG environments, machine learning, and learning assessment capabilities

~~Invest in augmented reality/virtual patient surrogate & LVCG environments using dynamic holodeck and simulation to train with fully autonomous sub-systems.~~

# Joint Evacuation & Transport Simulation (JETS)

Delivers a global Point of Demand training capability, linking training centers and Warfighters around the globe to integrated Live, Virtual, Constructive, Gaming (LVCG) training through DoD enterprise training portal





# JPC-1 Task Priority #2

## Medical Simulation - POINTS

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### Point of Injury & Trauma Simulation (POINTS)

#### Goal Overview

##### Overall

- Train and maintain a capable and ready force from the point of injury (POI) through Role-1 combat casualty care.
- **Capability Gap Addressed:**
  - Joint Force Health Protection ICD (2010)
  - Determination for the use of Animals in Medical Education & Training Memorandum
  - Improved health outcomes at the POI, through more effective combat casualty care training delivered at the Point of Demand (POD)
- **Impact to Warfighter Health and Readiness**
  - Increase efficiency of training for healthcare provider/decrease overall training cost
  - Link operational needs of Services and Combatant Commanders with a highly trained medical forces to improve operational readiness

#### Program Objectives

- **Intermediate (within 10 years) (IOC)**
  - Provides standardization, modernization and sustainment to existing training sites and the initial POD training capability.
  - It delivers fully automated and integrated LVCG simulation capabilities, and fully represents current and future DoD, Inter-governmental and coalition operational environments, mission profiles, and training requirements.
- **Long Term (10+ years) (FOC)**
  - Fields new training sites (i.e. Joint bases, CENTCOM, PACOM, etc.), and a full global POD capability (24/7/365) through a mSTE and DoD portal, to the user device of choice, supporting seamlessly integrated LVCG synchronous and asynchronous training at the individual, team and unit levels between training sites and POD Users
  - Utilizes realistic patient surrogates with on-board predictive metrics, fully mature artificial intelligence, with auto-morphing nanotechnologies, reducing reliance on LTT.

### Program Plan Development Strategy

#### How did you develop and prioritize this goal and the objectives within?

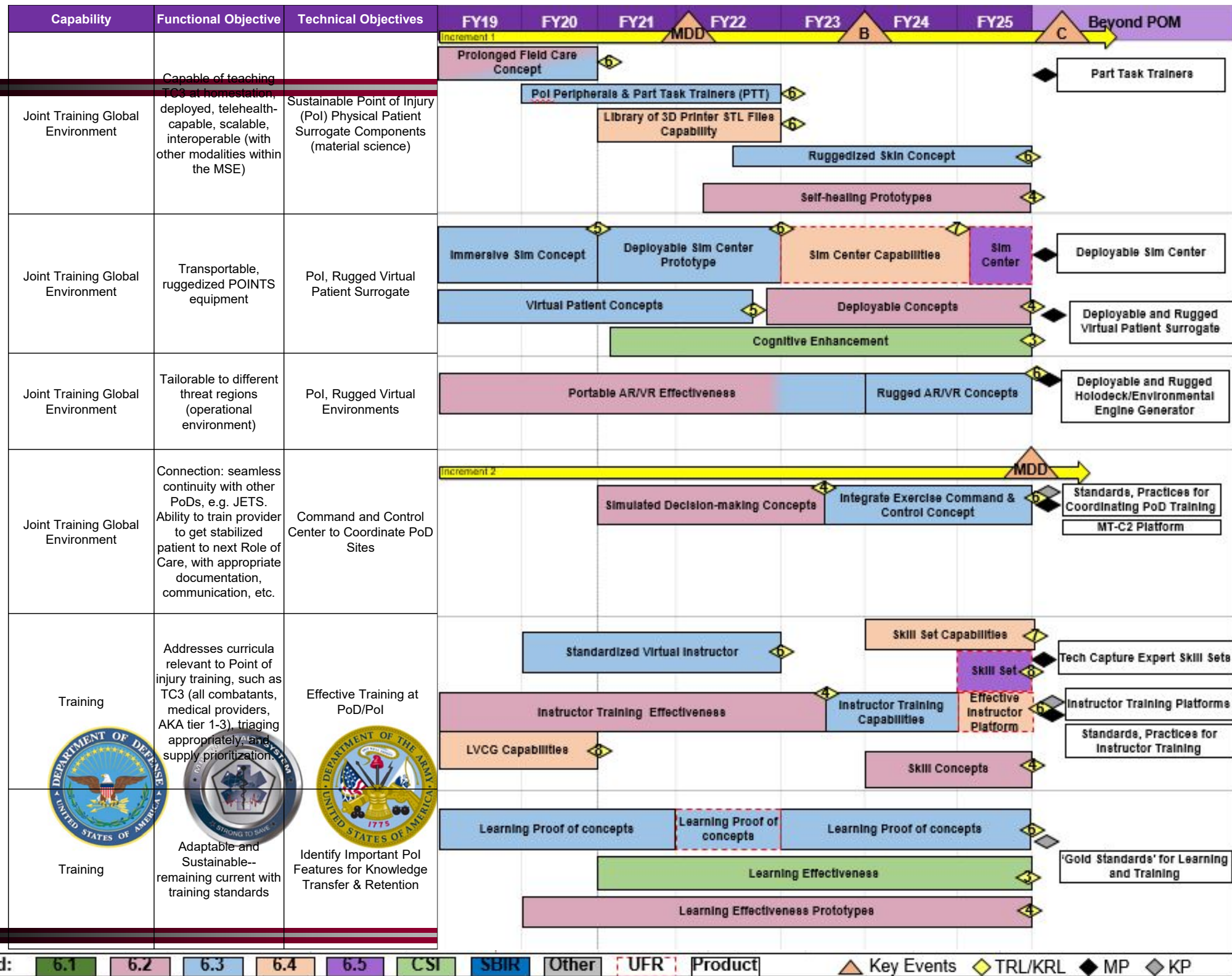
- This Joint goal aligns to DHA J-7 and Component capability gaps
- DoD Combat Casualty Care Training Technologies ICD – 2016; Joint Force Health Protection ICD-2010; TC3 ICD 2007
- POINTS working draft CDD – DHA J7, E&T Directorate
- The goals and objectives were developed and prioritized by JPC-1 Medical Simulation Committee, stakeholders, and end-users

#### How are you going to achieve objectives given current resources?

- Invest in the development of technologies that increase the portability and ruggedness of simulation tools at the Point of Demand (PoD)
- Invest in development of materials for increased capability for patient surrogate, and part task trainers
- Invest in technologies that increase the effectiveness of instructors and autonomous instruction technologies
- Invest in Neuro-based haptics (Neurohaptics) in distributed and mixed/augmented/virtual reality & LVCG environments

Train and maintain a capable and ready force at the point of injury/ combat casualty care

Train and maintain a capable and ready force at the point of injury/ combat casualty care





# JPC-1 Medical Simulation Portfolio

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## Deliverables

### Material Transitions from MedSim S&T

- **Replication:** STONeS is expected to transition to JPM MMS and Industry (dual use) in FY21
- **Net Ready:** JETS Architecture is expected to transition to JPM MMS in FY21
- **Replication:** Virtual Patient Surrogate/AR/VR LVCG is expected to transition to Industry in FY23
- **Interactive:** Machine Learning is expected to transition to JPM MMS and Industry (dual use) in FY21; Physiological Engine FY 24+; Integration: Medical Synthetic Training Environment is expected to transition to JPM MMS in FY21
- **Assessment:** Learning Assessment system is expected to transition to Industry in FY24+
- **Joint Training Global Environment:** Deployable Sim Center to JPM MMS in FY 22; Points Peripherals and part task trainers to JPM MMS in FY 22; MT-C2 platform to JPM MMS in FY 24+; Deployable and Rugged environmental engine generator/holodeck to JPM MMS in FY24+; Deployable and rugged virtual patient surrogate to JPM MMS and Industry in FY 24+
- **End User Support (Access):** Virtual Library Portal to JPM MMS in FY22
- **Training:** Tech to capture expert skill sets to industry in FY 22; Instructor training platforms to JPM MMS and industry FY 24+

### Knowledge Transitions

- **Joint Training Global Environment:** Standard practices for coordinating PoD training in FY24+
- **Relevant:** Learning 'Gold Standards' FY24+
- **Net Ready:** Common Sharable Storage Standards will transition to DHA J-7 in FY22
- **Training:** Gold standards for learning and training in FY22 and FY24+

## Task Area UFRs

Rank	Capability	UFR Title	What the UFR Buys	Impact to Warfighter Health and Readiness if not Funded	PE	FY20-25 (\$K)
1	POINTS: Training	Learning Effectiveness	Identifies important features for knowledge transfer and retention	Limiting capacity to train individual, collective, and unit skills that will decrease performance and readiness.	6.3	1,000

# MedSim FY20-25 DHP Program Plan



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## Milestones and Transitions

Task	Functional Objective	MS FY	MS	TA (Y/N)	Transition FY	Transition Organization
<b>JETS</b>						
<b>Increment I</b>		FY 21	MS B			
JETS	<b>Replication:</b> JETS Manikin Core			Pending	FY20	JPM MMS
JETS	<b>Net Ready:</b> Architecture			Pending	FY21	JPM MMS
JETS	<b>Replication:</b> STONeS			Pending	FY21	JPM MMS / Industry
JETS	<b>Replication:</b> Multi Layer Tissue Structure			Pending	FY22	JPM MMS
<b>Increment II</b>		FY 24	MS B			
JETS	<b>Interactive:</b> Machine Learning			Pending	FY21	JPM MMS / Industry
JETS	<b>Integration:</b> mSTE			Pending	FY21	JPM MMS
JETS	<b>Replication:</b> Virtual Patient/AR/VR/LVCG			Pending	FY23	JPM MMS / Industry

<b>POINTS</b>						
<b>Increment I</b>		FY 22	MS B			
POINTS	<b>JTGE:</b> Deployable Sim Center			Pending	FY22	JPM MMS
POINTS	<b>End User Support:</b> Virtual Library Portal			Pending	FY22	JPM MMS
POINTS	<b>JTGE:</b> Part Task Trainers			Pending	FY23	JPM MMS
<b>Increment II</b>		FY 24	MDD			
POINTS	<b>Training:</b> Expert Skill Sets			Pending	FY22	JPM MMS / Industry

JTGE = Joint Training Global Environment

## Knowledge Transitions

Task	Functional Objective	KTA (Y/N)	Transition FY	Transition Organization
JETS	<b>Net Ready:</b> Common Storage Standards	Pending	FY 22	DHA J7
POINTS	<b>Training:</b> 'Gold Standards' for learning and training	Pending	FY 22	DHA J7

# Health Information Technology and Informatics

**Task Description:** Research and develop timely, clinically relevant and secure health information technology (HIT) solutions that close significant asymmetric information and medical situational awareness gaps and challenges at the point of care in-theater and far forward environments. Enhance efficiency of healthcare operations in combat and operational environments through multi-faceted, novel technology-based research that advances the state of the art in military medicine for 24/7 globally integrated operations.

**Task Goals:**

- Goal #1 Theater/Operational Medicine – REACH
- Goal #2 Theater/Operational Medicine – AGILITY (UFR)

FY20-25 Task Area Objectives		
Task Goal #1: Theater/Operational Medicine - REACH		
Funded Objectives	Unfunded Objectives & Realignment Requests	Other Contributing Investments
Medical Device Interoperability (MDI) (\$22.3M PE 6.4)	Medical Data Interoperability (\$36.7M PE 6.2 UFR and \$22.3M Realignment Request) MEDLOG (\$2.9M PE 6.2 Realignment Request)	Joint Warfighter Awards x2 MDI
Medical Logistics (MEDLOG) (\$3.5M PE 6.4)		Army Funding for Medical Assist Support Technologies (MAST)
Virtual Health/Teleconsultations (\$13.7M PE 6.4)	Virtual Health/Teleconsultations (\$7.5M PE 6.2 Realign. Request)	SBIR Awards x2 Hands Free EHR Data Entry
Hands-free Clinical Documentation (\$3.09M PE 6.4)	Hands-free Clinical Doc (\$2.7M PE 6.2 Realign. Request)	
Task Goal #2: Theater/Operational Medicine - AGILITY		
	Unfunded Objectives	Other Contributing Investments
	Theater Data and Analytics Integration with Joint Trauma Registry (\$13.8M PE 6.2)	
	AI Decision Support /Bioinformatics (\$37.9M PE 6.2)	
	Wearable Sensor and Exposure Data Integration for Biosurveillance (\$34.5M PE 6.2)	

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# JPC-1 Task Priority #3

## Health Information Technology & Informatics - REACH

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### Goal #1: Theater/Operational Medicine - REACH

#### Goal Overview

**Summary:** Provide materiel solutions in globally integrated operations to and from all roles of care where and when needed. Close documented capability gaps in data capture, data transfer and data exchange including secure, seamless computing and network access for medical data (SIPR to NIPR), no- and low-communications environments, hands-free data entry at the point of care, medical logistics and medical command and control. Solutions include software tool(s), hardware, data repository for theater teleconsultation/virtual health, closed loop medical device interoperability during prolonged care in place and medical evacuation, hands-free medical data capture/data entry, and medical device interoperability data/black box recorder for the Joint Theater Trauma Registry / electronic health record.

**Impact to Warfighter Health and Readiness:** Reduce preventable harm and medical errors on the battlefield and build open-architecture, interoperable supervisory platform towards autonomous closed loop control systems for forward casualty response and patient movement.

#### Program Objectives

##### Intermediate (within 10 years)

- Deliver next generation medical logistics and best practices for just-in-time medical asset positioning and placement
- Virtual Health/Teleconsultations for Joint sync/async virtual health for deployed healthcare professionals at all roles of care.
- Advance medical device interoperability through research and development of technical architectures, reference models and platforms for interoperable semi-autonomous and closed loop control systems and applications in trauma care.
- Improve documentation of care in Theater/Operational Medicine Environments by advancing hands-free/passive data capture/transfer in theater in disruptive environments

##### Long Term (10+ years)

- Deliver architecture and platforms for secure, interoperable forward casualty response and patient movement in the multi-domain battlefield
- Deliver next generation, interoperable architecture and platforms for surgical, tele-surgical and advanced augmented reality/AI tele-mentoring capabilities for combat casualty care

### Program Plan Development Strategy

#### How did you develop and prioritize this goal and the objectives within?

- The goals and objectives were developed and prioritized by the JPC-1 HIT/I Steering Committee with voting member representation from DHA and the Services (Air Force, Navy/MC) with input from stakeholders and end users.
- This Joint goal aligns to a Capability Gap in each Service as represented by the requirements strategic drivers documented on Slide 8

#### How are you going to achieve objectives given current resources?

- Use core dollars to partially fund Goal #1 (REACH) and realign some PE 6.4 funding to PE 6.3 research.
- Request a UER to develop Medical Device Interoperability architecture and platform supporting interoperable semi-autonomous and autonomous closed loop control systems for forward medical care.



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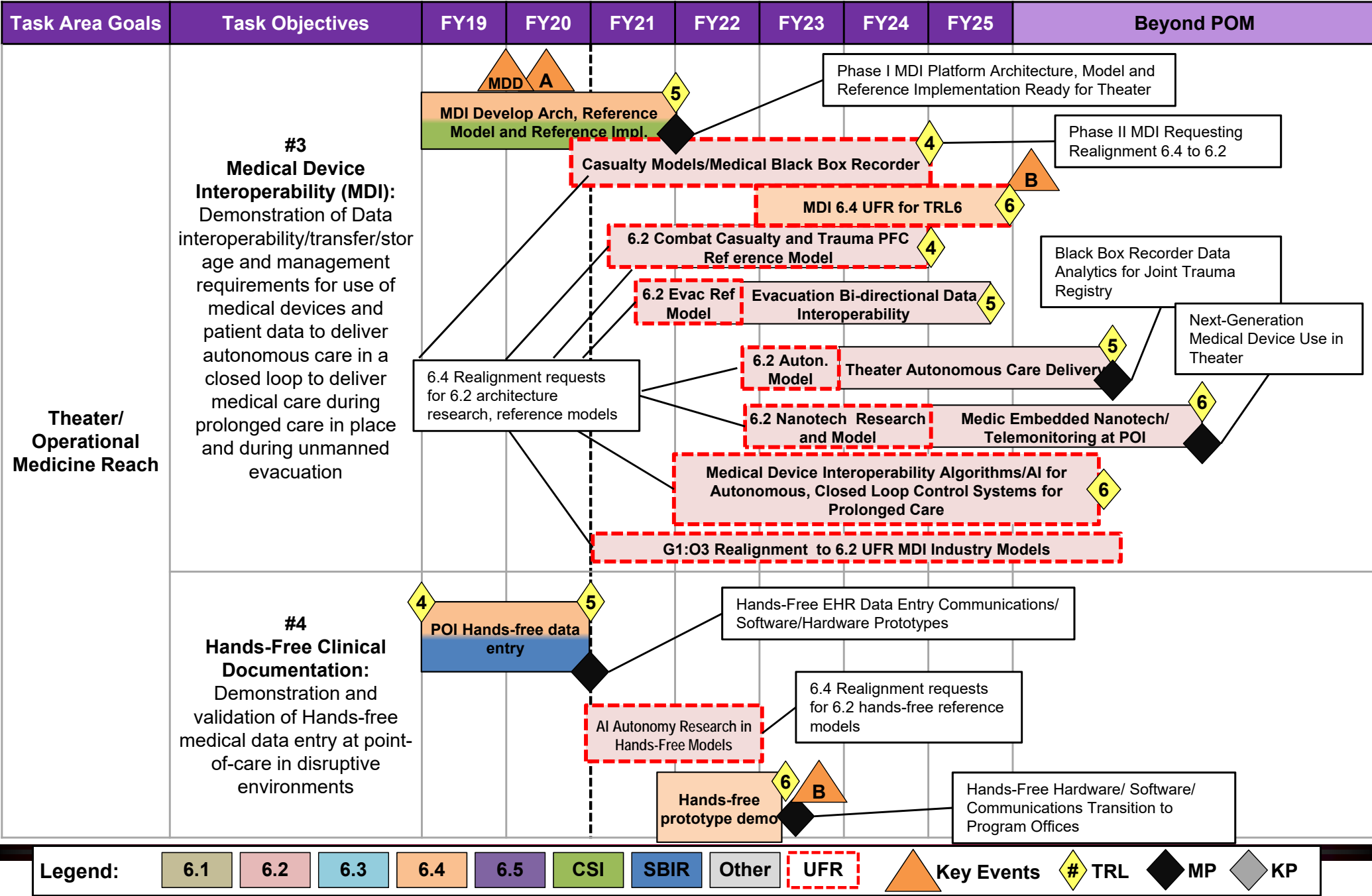
Task Area Goals	Task Objectives	FY19	FY20	FY21	FY22	FY23	FY24	FY25	Beyond POM
Theater/ Operational Medicine REACH	<p><b>#1</b> <b>MEDLOG:</b> Model Use of Innovative Technologies and Industry Best Practices to Support Defense Medical Logistics Data Capabilities</p>			<p>Realignment request to PE 6.2</p>					
	<p><b>#2</b> <b>Virtual Health/ Teleconsultations:</b> Demonstration of Joint synchronous/ asynchronous Teleconsultation/Virtual Health for deployed healthcare professionals at all levels of care (JMEDIC3 and Medical Data Cloud)</p>								

**Legend:**

6.1	6.2	6.3	6.4	6.5	CSI	SBIR	Other	UFR	Key Events	# TRL	MP	KP
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# JPC-1 Task Priority #3 REACH (cont.)

## HITI



# JPC-1 Task Priority #4

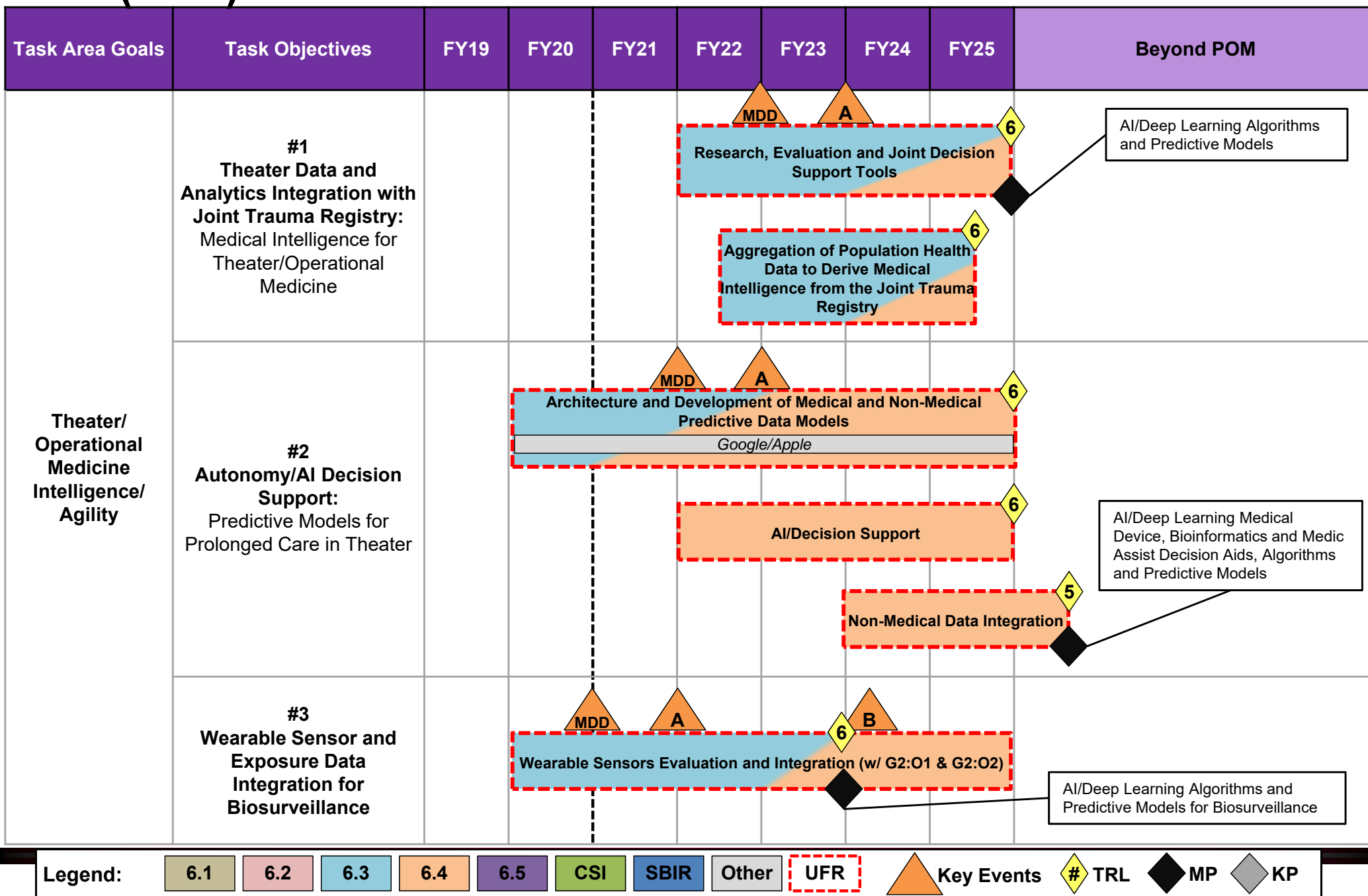
## Health Information Technology & Informatics- AGILITY (UFR)

Goal #2: Theater/Operational Medicine- AGILITY / Artificial Medical Intelligence	
Goal Overview	Program Objectives
<p><b>Summary:</b> TOM Agility is focused on delivering data-driven materiel solutions for medical intelligence, genomics data, AI and decision aids improving Theater-medical informatics and predictive modelling capabilities through use of AI, bioinformatics, analytics, joint decision support tools/interfaces and applications for clinicians.</p> <p><b>Impact to Warfighter Health and Readiness:</b> Delivery of sustained casualty response in forward resuscitative care and stabilization through interoperable, interchangeable clinical decision aids and medical command situational awareness for prolonged care in austere environments and globally integrated operations.</p>	<p><b>Intermediate (within 10 years) - If Funded:</b></p> <ul style="list-style-type: none"><li>• Theater Data and Analytics Integration (device data logger, EHR) with Joint Trauma Registry – Medical Intelligence for Theater/Operational Medicine</li><li>• AI Decision Support and Medic Clinical Decision Aids: Predictive Models for Prolonged Care in Theater</li><li>• Wearable Sensor and Exposure Data Integration &amp; Bioinformatics Platforms for Biosurveillance and Global Health Engagement</li></ul> <p><b>Long Term (10+ years) - If Funded:</b></p> <ul style="list-style-type: none"><li>• Deliver augmented reality and AI-based decision aids to combat medics and other providers far forward in the multi-domain battlefield.</li></ul>
Program Plan Development Strategy	
<p><b>How did you develop and prioritize this goal and the objectives within?</b></p> <ul style="list-style-type: none"><li>• The goals and objectives were developed and prioritized by the JPC-1 HIT/I Steering Committee with voting member representation from DHA and the Services (Air Force, Navy/MC) with input from stakeholders and end users.</li><li>• This Joint goal aligns to Data Agility Gaps identified in the Joint TMIR-CDD 2016, JCHS Transition Plan and JDCR – 2017)</li></ul> <p><b>How are you going to achieve objectives given current resources?</b></p> <ul style="list-style-type: none"><li>• Gaps are estimated to be 0% filled.</li><li>• Request a UFR for this goal to develop data analytics and decision support capabilities for theater/operational medicine.</li></ul>	

# JPC-1 Task Priority #4 Agility

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## HITI (UFR)



# JPC-1 Health Information Technology & Informatics Portfolio

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## Deliverables

### Material Transitions from S&T

- MEDLOG (FY24, DHA Med Log)
- JMEDIC3 Role 1 Medical Monitoring Data Transfer (FY22, SOF SSES)
- Medical Data Cloud Comms/Data Transfer (FY21, MC4/PEO EIS/JOMIS)
- JOMIS Notional Increment II (FY24, JOMIS/PEO EIS)
- Hands-Free EHR Data Entry (FY22, MC4/PEO EIS/JOMIS)
- Ph. I MDI Platform Architecture, Model & Reference Implementation (FY24, USAMMA)
- Ph. II MDI Medical Black Box Recorder (FY24, USAMMA)

### Knowledge Products

- N/A

## Task Area UFRs

Rank	Task Goal / Objective	UFR Title	What the UFR Buys	Impact to Warfighter Health and Readiness if not Funded	PE	FY20-25 (\$K)
1	G1:O3	MDI	Reduce preventable harm and medical errors in trauma care/on the battlefield and build open-architecture, interoperable supervisory platform for autonomous closed loop control systems.	Delay delivery of architecture and platforms for autonomous closed-loop control systems for forward care.	6.2	36,695
					6.3	0
2	G2:O1	Theater Data and Analytics Integration with Joint Trauma Registry	Theater data and analytics integration (device data logger, EHR) with Joint Trauma Registry – Medical Intelligence for Theater/Operational Medicine.	Reduce medical intelligence capabilities for command and control in theater/operational medicine as well as patient safety and quality by not synchronizing data sources and clinical decision support across medical applications.	6.2	13,768
					6.3	0
3	G2:O2	AI Decision Support	Develop data analytics, predictive models, bioinformatics and real-time clinical decision aids and tools to deliver genome data, casualty response, patient movement and globally integrated operations for prolonged field care scenarios.	Reduced capabilities in sustained casualty response in forward resuscitative care and stabilization through interoperable, interchangeable clinical decision aids and medical command situational awareness for global health engagement and globally integrated operations.	6.2	37,993
					6.3	0
4	G2:O3	Wearable Sensor and Exposure Data Integration for Biosurveillance	Convergence of non-EHR data (wearable device, remote monitoring, personal health data, environmental sensors, blast sensors, epidemiology etc.) data acquisition, analysis, usage, clinical decision support and EHR integration.	Reduced capabilities for biosurveillance and exposure health in partner and coalition forces operations in theater. Failure to close existing capability gaps identified in data agility per the Joint Staff Surgeon in TMIR-CDD and the JCHS Transition Plan.	6.2	34,550
					6.3	0



# HITI FY20-25 DHP Program Plan



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## Milestones and Transitions

Task	Functional Objective	MS FY	MS	TA (Y/N)	Transition FY	Transition Organization
MEDLOG	Next Generation IT Architecture for Medical Logistics IT Systems	FY24	MSB	Y	FY24	DHA Medical Logistics
Virtual Health/ Teleconsultations	Role 1 Medical Monitoring Data Transfer and Teleconsultation for Special Forces	FY19	MSA	Y	FY22	SOF SSES
Virtual Health/ Teleconsultations	Medical Data Cloud Communications/Data Transfer for Virtual Health in Theater	FY21	MSB	Y	FY21	MC4/PEO EIS/JOMIS
Virtual Health/ Teleconsultations	Medical Data Cloud Communications/Data Transfer for Virtual Health in Theater	FY19	MSA	Y	FY21	MC4/PEO EIS/JOMIS
Virtual Health/ Teleconsultations	Next Generation Virtual Health and Teleconsultation for theater	FY21	MSB	Y	FY21	MC4/PEO EIS/JOMIS
Virtual Health/ Teleconsultations	Next Generation Virtual Health and Teleconsultation for theater	FY23	MSB	In Progress	FY24	JOMIS/PEO EIS
Hands-Free Clinical Documentation	Hands-free EHR Data Entry Communications/Software/Hardware Prototypes	FY21	MSB	Y	FY22	MC4/PEO EIS/JOMIS
Medical Device Interoperability (MDI)	Technical Architecture, Model and Reference Implementation for Autonomous Systems in Theater	FY19	MSA	In Progress	FY24	USAMMA
Medical Device Interoperability (MDI)	Medical Black Box Recorder for Theater Data for Joint Trauma Registry	FY19	MSA	In Progress	FY24	USAMMA
Medical Device Interoperability (MDI)	Medical Black Box Recorder for Theater Data for Joint Trauma Registry	FY24	MSB	In Progress	FY24	USAMMA

## Issues/Requests

### Remaining Issues

- Insufficient S&T funding due to inability to reprogram during the last three POM cycles
- Need realignment of medical research funding for PE 6.1, PE 6.2 & PE 6.3 and 6.4
- Must align S&T efforts with the correct type of funding (currently executing 6.1 level research with 6.2; along with 6.2 and 6.3 level research with 6.4 funds)
- Significantly underfunded compared to the research gaps and needs, due to earlier cuts
- No funding for predictive modeling and data analytics supporting advanced decision support aids for combat medics, medical intelligence and capture AI innovations in medical care, next generation battlefield casualty response, patient movement and real-time command situational awareness in globally integrated health operations
- Unique JPC, due to multiple Program Management Offices (PMOs) that are all external
- Evolving transition processes with applicable PMOs
- Increasing process, administrative, reporting and oversight tasks
- Army Future Command Cross Functional Teams (CFT) personnel resource demands (STE, N-CFT), taking up to 50% of a Portfolio Manager's time and effort

### Accomplishment

- Defense Business System (DBS) Certification relief. MHSITRP is not an IT system, but will remain an IT investment.

- **Combat Medic Training pilot program using OB/Pediatrics manikin incorporating 3D hologram technology to augment training, Aug 2017**
- Multiple Amputee Trauma Trainer (MATT) Lower Extremity (KGS, Inc. Commercially available traumafx.net, 2013)
- Advanced Blood Simulant for Simulation-based Medical Trauma Training – SimuBleed 1000 (Spectra Group, LTD, 2013)
- Combat Medic Training System (COMETS) (CAE Healthcare 2011)
- TraumaFX® AirPlus Lifecase Upper Torso Trainer (KGS, Inc. available on GSA 2013)
- Army training capture system (known as TRACER) (IVIR 2012)
- Ultrasound Training for Military Health Systems (Pelagique LLC; GE Healthcare, 2014)
- Cognitive Rehabilitation Environment using Surface Technology
- **Development and Implementation of a Health Informatics Outcome System in Orthopaedic Surgery (MOTION) (DHA/SDD Nov 2018)**
- BioGears® Physiology Engine, an open-source whole-body, validated physiology platform for consistent, accurate, real-time, and scenario-based simulation launched in Commercially available 2014
- Intelligent Focused Assessment of Ultrasonography for Trauma (iFAST) –handheld ultrasound with interpretation. Patent and licensed to GE (Jun 2017)
- Geographic Util of AI in Real-time Disease Identification and Notification (GUARDIAN) - deployed in Illinois hospitals; patent, 28 peer-rev. pubs., and commercial spinoff (Aug 2017)
- Integrating Clinical Technology for Military Health (DocBox) commercialized (Sept 2016)
- Medical Device Plug N Play (MDPnP) – Interop medical devices, ASTM and AAMI OpenICE stds dev, 2 peer-rev. publications (Sept 2017)
- **Digital Biobank won Federal HITI innovation Award, April 2018**
- Joint Legacy Viewer (JLV) – used by MHS Genesis to view CHCS/AHLTA data (Jun 2015)
- Patient Assessment Screening Tool Outcome Registry (PASTOR)- Patient entered pain data in SDD IT systems portfolio (Jun 2016)
- Remediation-Oriented Cohort Builder – used by Army OTSG Pt Safety/Quality Dir (Jun 2017)
- Evaluation of Military and Civilian Outcomes After Burn Injury - American Burn Association TBI/Burn Triage Tool used nationally in burn centers, 21 peer-rev. publications (Jun 2017).
- Tactical Combat Casualty Care (TC3X), fielded in medical sim centers and forward deployed in 2017

## High Impact Partnerships:

JPC1 is working through MRMC, to establish a partnership with Cerner to develop a collaboration framework for conducting research and transition of research products to MHS Genesis

## Redistribution Between JPCs

JPC	PE	Task	FY20	FY21	FY22	FY23	FY24	FY25	FY20-25 (\$K)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Agreement:**  
None

**Justification and Impact:**  
No Redistribution between JPCs will be requested by JPC-1

## Program Prioritization List

### DHP FY20-25 Program List (Prioritized)

Rank	Portfolio	Task
1	MedSim	Joint Evacuation and Transport Simulation (JETS)
2	MedSim	Point and Injury and Trauma Simulation (POINTS)
3	HIT/I	Theater Operational Medicine Informatics – REACH (TOMI-REACH)
4	HIT/I	Theater Operational Medicine Informatics – AGILITY (TOMI-AGILITY)



# JPC-1 FY20-25 DHP Program Plan

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## UFR List

**DHP FY20-25 UFR List (Prioritized)**

Rank	PE	Task Area	UFR Title	Description of What the UFR Buys	Impact to Warfighter Health and Readiness if not Funded	FY20-25 (\$K)
1	6.3	POINTS: <b>Training</b>	Learning Effectiveness	Identifies important features for knowledge transfer and retention	Limiting capacity to train individual, collective, and unit skills that will decrease performance and readiness.	1,000
2						
3						
4						

# JPC-1 FY20-25 DHP Program Plan

## JPC Comments

Representative	Comments
CoE/Service/ Stakeholder	

# Backup Slides

# JOMIS-Aligned (TTA signed 2 Mar 18)



## Active HITI Studies (8) 1 of 5

#	Project Title	Performer	Contract Status	Performance End Year	Object/ Task Area	Requirements Document	Transition POC	TTA Status / Date Signed	Expected Transition Year	Exit TRL / Type of Product
1	Medical Cloud Connectivity for Combat Casualty Care (MC5)	TATRC	Active	30-Sep-18	Theater/ Operational Medicine	TMIR-CDD (10/2016) / NDAA 2016	JOMIS	3/2/2018 JOMIS	FY18	6 / Material
2	Medical Data Cloud (MDC) on Secure Tactical Networks	TATRC	Pending	31-Jan-20	Theater/ Operational Medicine	TMIR-CDD (10/2016) / NDAA 2016	PEO EIS/JOMIS	3/2/2018 JOMIS	FY21	6 / Material
3	Automatic Sensing for Clinical Documentation (ASCD)	Vanderbilt University Medical	Active	29-Dec-19	Theater/ Operational Medicine	TMIR-CDD (10/2016) / NDAA 2016	PEO EIS/JOMIS	3/2/2018 JOMIS	FY22	6 / Material
4	Hands-Free Electronic Health Record Data Entry Initiative (HFEHR)	Pennsylvania State University	Active	24-Sep-19	Theater/ Operational Medicine	TMIR-CDD (10/2016) / NDAA 2016	PEO EIS/JOMIS	3/2/2018 JOMIS	FY22	6 / Material
5	Complete and Resilient Documentation (CARD) for Operational Medical Environments	Clemson University	Active	24-Dec-19	Theater/ Operational Medicine	TMIR-CDD (10/2016) / NDAA 2016	PEO EIS/JOMIS	3/2/2018 JOMIS	FY22	6 / Material
6	Single Multi-modal Android Service for Human Computer Interaction – Medical Data entry (SMASH-MD)	CERDEC	Active	31-Jan-19	Theater/ Operational Medicine	TMIR-CDD (10/2016) / NDAA 2016	PEO EIS/JOMIS	3/2/2018 JOMIS	FY22	6 / Material
7	Telehealth 2.0; Providing Continuity of Behavioral Health Clinical Care to Patients Using Mobile Devices	TATRC	Active	2-Feb-20	Theater/ Operational Medicine	TMIR-CDD (10/2016) / NDAA 2016	JOMIS	3/2/2018 JOMIS	FY19	6 / Material
8	The Burn Medical Assistant: Developing Machine Learning Algorithms to Aid in the Estimation of Burn Wound Size (BURNMAN)	USAISR	Active	30-Sep-19	Theater/ Operational Medicine	TMIR-CDD (10/2016) / NDAA 2016	JOMIS	3/2/2018 JOMIS	FY19	6 / Material

# Non-JOMIS Active HITI Studies



## (#1 to #10 - incl. JWMRP/CSI) 2 of 5

#	Project Title	Performing Organization	Performance Year End	Requirement	Objective/ Task Area	Transition POC & Target	TTA Status / Date Signed	Exit TRL
1	Mission Analysis and Assessment Reporting System (MAARS) Research	SPAWAR	18-Jan-20	JCHS-TP / JDCR FRC	Theater/ Operational Medicine	Sean Scanlon, /Navy Medicine Online (NMO)	12-Feb-18	7 / Material
2	Medical Device Plug-and-Play (MD PnP) Interoperability Standardization Program Development	Mass General Hospital	14-Jan-18	TMIR-CDD / JDCR FRC	Theater/ Operational Medicine	AAMI ASTM- F2761-09 (13) Standard	Commercialized Knowledge Product	8 / Knowledge
3	Prototype Generic Behavior Change Coach Application for Weight Loss, Smoking Cessation, and Medication Management, Using Transtheoretical Change Model	National Center for Telehealth & Technology	30-Sep-18	HITI Steering Committee	Military Health Care Services	Dr. Russ Davis/DHA HIT AACE / Cerner for External	In process / Cerner	5 / Knowledge
4	Interactive Visualization Framework to Support Exploration and Analysis of TBI/PTSD Clinical Data	National Intrepid Center of Excellence	14-Apr-19	HITI Steering Committee	Information Technology Infrastructure &	COL David Carnahan / SDD Population Health	In process / EIDS Cerner	6 / Material
5	Linked Problem List (LPL) for Web-Based Health Information Exchange Applications [Joint Legacy Viewer (JLV) Enhancement]	TATRC	15-Sep-18	HITI Steering Committee	Information Technology Infrastructure &	Lance Scott/DMIX	In process	6 / Material
6	Team Fitness Tracker	TATRC	10-May-19	HITI Steering Committee	Military Health Care Services	Patty Deuster / USUHS CHAMP and Cerner	In process / Cerner	5 / Material
7	Secure Integration of Point of Care Physiologic Data via Ultra Wideband Communications for Special Operations Forces - Ultra Wideband (UWB)	TATRC	10-May-18	TMIR-CDD/ USSOCOM CDD	Theater/ Operational Medicine	SOCOM SOF SSES	SOF SSES Letter Transitioned in 2016	7 / Material
8	Digital Biobank Prototype	AFMSA	23-Jun-18	HITI Steering Committee	Theater/ Operational Medicine	Col Bonnema/ DHA SDD / AFRL	In process / Cerner / AFRL	5 / Material
9	Establishment of Peripheral Nerve Injury Data Repository to Monitor and Support Population Health Decisions	USUHS	30-Jun-18	TMIR-CDD Data Agility	Theater/ Operational Medicine	Chris Nichols/ DHA SDD EIDS	In process / Cerner	6 / Material
10	Legacy Data Storage and Retrieval (LDSR)	MAMC	21-Sep-18	DHMS	Information Technology Infrastructure &	Ken Blount IPO DHMS/ MAJ Taylor SDD EIDS	In process	7 / Material



# Non-JOMIS Active HITI Studies



## (#11 to #20 - incl. JWMRP/CSI) 3 of 5

#	Project Title	Performing Organization	Performance Year End	Requirement	Objective/ Task Area	Transition POC & Target	TTA Status / Date Signed	Exit TRL
11	Development and Implementation of a Health Informatics Outcome System in Orthopaedic Surgery (MOTION)	WRNMMC	30-Sep-18	DHA Health IT Strategic Plan	Information Technology Infrastructure &	MAJ Jeffrey Taylor SDD EIDS	CPMB Present as part of PROCR IPT Aug 2018	6 / Material
12	Enhancing mHealth Technology in the PCMH Environment to Activate Chronic Care Patients: A Feasibility Study	Clemson University	31-Dec-18	HITI Steering Committee	Military Health Care Services	DHA Mobile Health	In process / Cerner	6 / Material
13	Effectiveness of a Driving Intervention on Safe Community Mobility for Returning Combat Veterans - (JWMRP)	University of Florida	14-Apr-19	JWMRP	Medical Resourcing	PEO STRI	TBD	6 / Knowledge
14	Integrated Communication System (ICS)	Colorado Springs Military Health System	31-Aug-19	HITI Steering Committee	Information Technology Infrastructure & Data Management	CO eMSM	KTA Signed July 2018 w/ CO eMSM Mgr	7 / Knowledge
15	Implementation of the AWARE System to Support Virtual Critical Care in a MEDCEN and CSH	Madigan Army Medical Center	24-Sep-19	TMIR-CDD / JDCR FRC	Theater/ Operational Medicine	DHA Telehealth/Virtual Health Program Office	Draft TA sent to COL Dominick August 2018	5 / Material
16	Real-Time Telemetry Health and Safety Monitoring System Design and Implementation in a High Risk Training Environment	Air Force Research Laboratory	30-Sep-19	AF RDD Medical Resourcing	Medical Resourcing	Col Daniel Shoor/ AETC SGR	26-Jan-18	6 / Material
17	Individual Exposure Health Risk Profile (IEHRP)	AFMSA	31-Jan-20	AF Total Exposure Health	Theater/ Operational Medicine	Col Goff/Total Exposure Health Program	14-Nov-17	6 / Material
18	Joint Medical Exchange & Documentation of Information for Combat Casualty Care (JMEDI3)	TATRC	30-Nov-20	USSOCOM CDD	Theater/ Operational Medicine	SOCOM SOF SSES	TA signed by SOF SSES May 2018	6 / Material
19	An Interoperable Platform for Real-Time In-Theater Caregiver Decision Support (JWMRP)	Mass General Hospital	29-Sep-19	JWMRP / TMIR-CDD	Theater/ Operational Medicine	USAMMA / Cerner	In process / Cerner	5 / Material
20	Integrating Clinical Technology for Military Health PHASE II / DocBox (JWMRP)	DocBox	18-Jun-21	JWMRP / TMIR-CDD	Theater/ Operational Medicine	USAMMA / Cerner	In process / Cerner	7 / Material

# Non-JOMIS Active HITI Studies



## (#21 to #28 - incl. JWMRP/CSI) 4 of 5

#	Project Title	Performing Organization	Performance Year End	Requirement	Objective/ Task Area	Transition POC & Target	TTA Status / Date Signed	Exit TRL
21	Model Use of Innovative MEDLOG Technologies and Best Practices	MTEC/ASU	31-Jul-20	TMIR-CDD	Theater/ Operational Medicine	Anne Hart/DHA Medical Logistics	TA Signed DHA MEDLOG 10/25/2017	6 / Material
22	Medical Device Interoperability	UARC via JHU/APL w/ NITRD Federal Partners	Pending Award	TMIR-CDD / JDCR FRC / AF RDD AERO / NAVY EXPED.	Theater/ Operational Medicine	Christine Parker/USAMMA and Cerner	Draft TA sent to Steve Hawbaker July 2018	6 / Material
23	Consolidated Personal Health Record (C-PHR), Personal Decision Aids (PDAs) and Patient Directed Information Prototype Phase I	TATRC	Pending Award	TMIR-CDD	Theater/ Operational Medicine	Regina Julian, J-3 Chief Bus Ops DHA	R. Julian J3 Signed Nov 2017	6 / Knowledge
24	AI Research Data Architecture	TBD	Pending	TMIR-CDD	Theater/ Operational Medicine	TBD	TBD	
25	Burn Patient Transfer System (CSI)	MTEC	Pending	TMIR-CDD	Theater/ Operational Medicine	TBD	TBD	

# SBIR Active HITI Studies (#1 to #11) 5 of 5

#	Project Title	Performing Organization	Performance End Year	Objective / Task Area	Exit TRL	Transition Status / Org	Transition Org
1	Battlefield Medical Situational Awareness Goggles (Think - A - Move), PH I, II and III)	Think-A-Move, LTD	30-Sep-17	Theater/ Operational Medicine	6 / Material	MTT/ Barry Datlof	Cerner
2	Natural Language Processing	Progeny Systems Corporation	25-Feb-18	Information Technology Infrastructure & Data Management	6 / Material	MTT/ Barry Datlof	Cerner
3	Remediation-Oriented Cohort Builder for Healthcare Quality Assurance - Commonwealth Informatics	Common Wealth Informatics, Inc	13-Jan-18	Information Technology Infrastructure & Data Management	6 / Material	Transitioned / OTSG	OTSG Quality and Safety Directorate
4	Security & Safety Co-Analysis Tool Environment (SSCATE); SBIR Phase II	Adventium Enterprises, LLC	25-Sep-18	Information Technology Infrastructure & Data Management	5 / Knowledge	MTT/ Barry Datlof	Cerner
5	Methodologies and Tools for Securing Medical Device Systems in Integrated Clinical Environments (ICE) SBIR Phase II	Real-Time Innovations, Inc.	28-Sep-18	Military Health Care Services	5 / Knowledge	MTT/ Barry Datlof	Cerner
6	Hands-Free Human Machine Interfaces for Clinical Healthcare Providers Using Intelligent Agents	Ejenta, Inc.	17-Apr-18	Theater/ Operational Medicine	3 / Material	TTA 11/30/17 MC4	MC4/PEO EIS
7	Context Aware Procedure Support Tools and User interfaces for Rapid and Effective workflows (CAPTURE)	Charles River Analytics, Inc.	29-Mar-18	Theater/ Operational Medicine	3 / Material	TTA 11/30/17 MC4	MC4/PEO EIS
8	Improved Human Machine Interface Usability for Clinical Healthcare Providers to Enter Data into Electronic Health Record	Bio1 Systems LLC	14-Mar-18	Theater/ Operational Medicine	3 / Material	TTA 11/30/17 MC4	MC4/PEO EIS
9	Improved Human Machine Interface Usability for Clinical Healthcare Providers to Enter Data into Electronic Health Record	SA Photonics	28-Feb-17	Theater/ Operational Medicine	3 / Material	TTA 11/30/17 MC4	MC4/PEO EIS
10	MARS: Maintenance Application for Remote Systems	Architecture Technology Corp.	12-Jun-18	Theater/ Operational Medicine	3 / Material	JOMIS Request	JOMIS
11	Medical Information System Software Maintenance Capability	Quality Support	12-Jun-18	Theater/ Operational Medicine	3 / Material	JOMIS Request	JOMIS