
# *Air Force Capability & Requirements Update*

## *Human Systems Division*

**Mr. Emilio Varcarcel**
**Human Systems (AFLCMC/WNU)**
**Agile Combat Support (AFPEO/ACS)**
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# Human Systems Division
## AFLCMC/WNU

*AFLCMC… Providing the Warfighter's Edge*

## Vision:

**Save or improve Airmen's lives**

## Mission:

**Acquire and support human systems to enhance warfighter performance, protection, and survivability**

***Every Airman...Every Mission...Every Day!***

# Agile Combat Support (ACS) Directorate

*AFLCMC… Providing the Warfighter's Edge*

CMSgt Theodore Angel
Senior Enlisted Advisor

Colonel Lea Kirkwood
PEO/Director

Kevin Keck
Deputy Director


VACANT
Sr IMA to Directorate

Mr. William Williams
Chief, Auto Test Sys

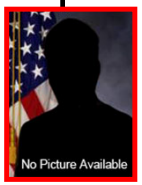
Mr. Carl Unholz
Chief, AFMETCAL

Colonel John Kurian
Chief, Simulators

Mr. Emilio Varcarcel
Chief, Human Systems

Colonel Gregg Jerome
Chief, EW & AV

Colonel James Brenning
Chief, Spt Equip/Veh




Vacant
Chief , Contracting
WPAFB

Mr. Marty Ledden
Chief , Contracting
Robins AFB

Ms Lynne Leftwich
Chief, Financial Management

Mr. Alvin "Clay" Mims
Director of Engineering

Mr. Neil Erno
Chief, Logistics

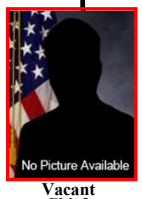
Ms. JoAnn Freburg
Chief, Management Operations

Mr. Dennis Deitner
Chief, Portfolio Analysis

Mr. Ron Hannan
Chief, Security

Mr. Michael Duron
Chief, FMS

Mr. Jeffrey Thetford
Chief, Intelligence




Vacant
Chief, Test

*Revised: 30 August 2021*

# Agile Combat Support (ACS) Directorate

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**Color Legend**

WPAFB | Robins AFB | Heath OH | Aberdeen MD

**Air Force Materiel Command (AFMC)** ☆☆☆☆

**Air Force Life Cycle Management Center (AFLCMC)** ☆☆☆

**Agile Combat Support Directorate (WN)**

**PEO/Director**: Colonel Lea Kirkwood

Deputy Director: Mr Kevin Keck, NH-IV

Exec: Captain David Beale 937-904-2271


- **Automatic Test Systems**
- **AFMETCAL**
- **Simulators**
- **Human Systems**
  - Mr. Emilio Varcarcel 937-938-3157
  - Dep Lt Col Will Southard 937-938-4320
  - **Egress & Survival** — Maj Robert Hoggard (Acting) 937-938-4072
  - **Aircrew Performance** — Mr. Jason Scott 937-938-4073
  - **Aeromedical** — Mr. Cole Hutchison 937-938-2737
  - **Combat Ready Airman** — Ms Deb McLean (Acting) 508-206-3072
  - **AF Chem-Bio Defense** — Lt Col Paul Hendrickson 867-3209
  - **Sustainment Branch** — Ms Mary Kicklighter 478-222-7414
- **Electronic Warfare & Avionics**
- **Support Equipment & Vehicles**


# Combat Ready Airman

- Standardize Enterprise Requirements Management & Acquisition
- Move Planning, Programming, & Advocacy to the Enterprise Level
- Management Capability with Central Oversight
- Tie Enterprise Processes Together with Enabling IT

- Specialized Warfare: 1% of Airmen
- Aircrew Flight Equip: 8% Airmen
- CRA: 91% Airmen*

# Female Fitment Major Milestones

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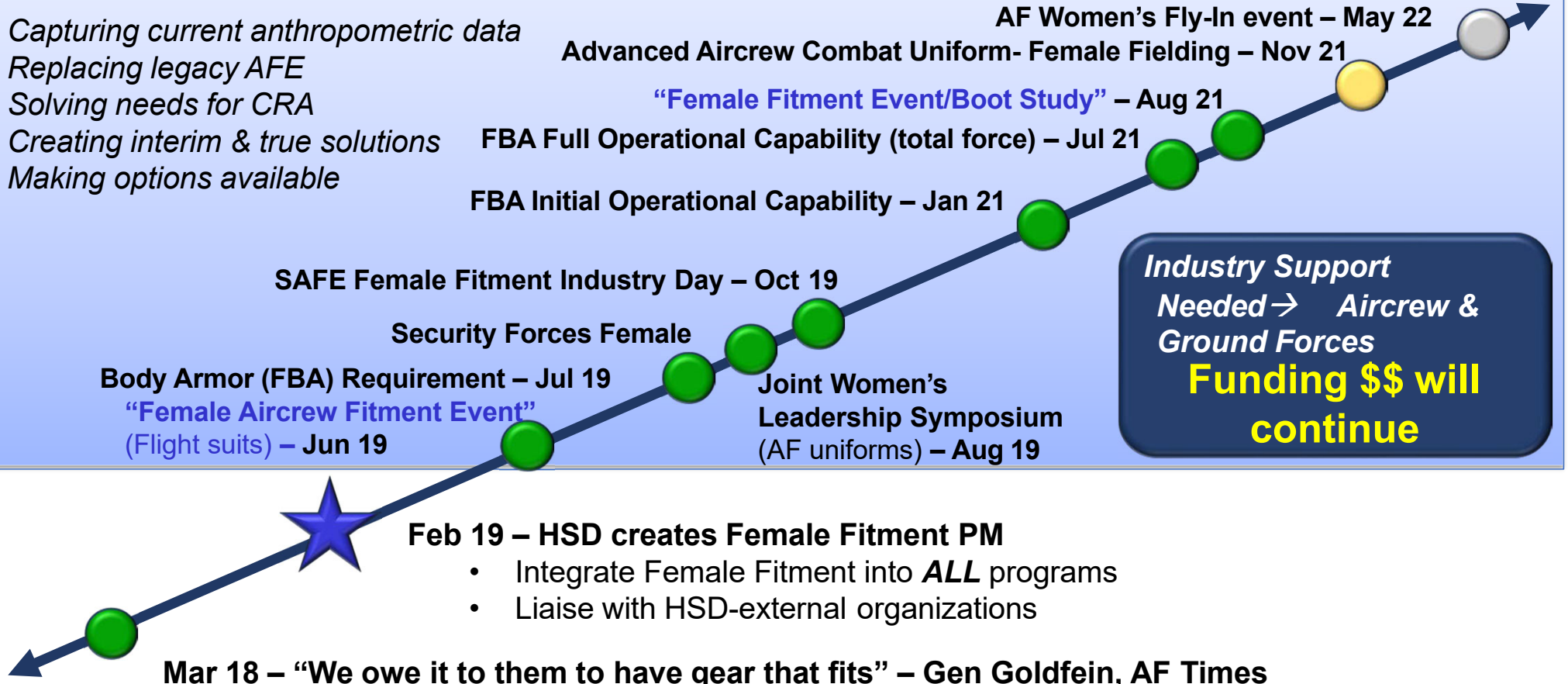
- ✓ *Capturing current anthropometric data*
- ✓ *Replacing legacy AFE*
- ✓ *Solving needs for CRA*
- ✓ *Creating interim & true solutions*
- ✓ *Making options available*



# Female Flame Manikin- "Franny"

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- **No female burn manikin existed in the world for testing of female sizes**
  - **All Services utilized unisex burn manikins as baseline for female sizes**
- **AF funded Natick Army lab to complete build of female manikin and addition of maternity bump**
- **Female Manikin complete in December 2020; first burn test was completed on A2CU-F**
- **Available for all Services for testing**

# Flame Manikin – aka "Franny"

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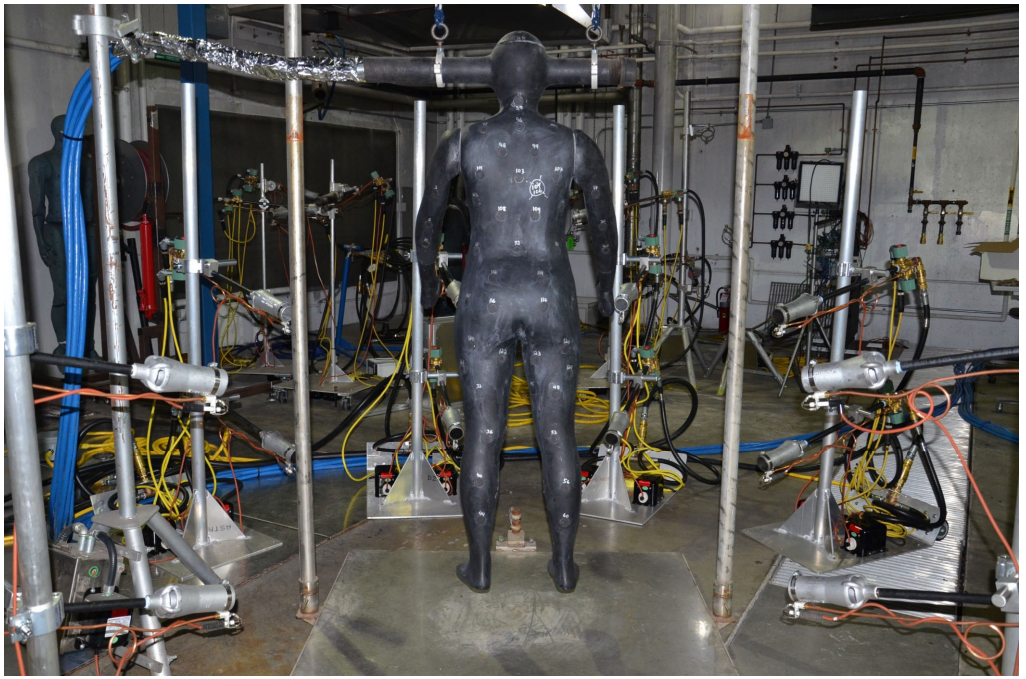

***Franny installed within 6 burner stands, 2 burners per stand***
***Ready for service!***

# Franny's First Clothed Burn with FR-ACU

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**22 December 2020**

# Franny's Baby Bump 29 December 2020

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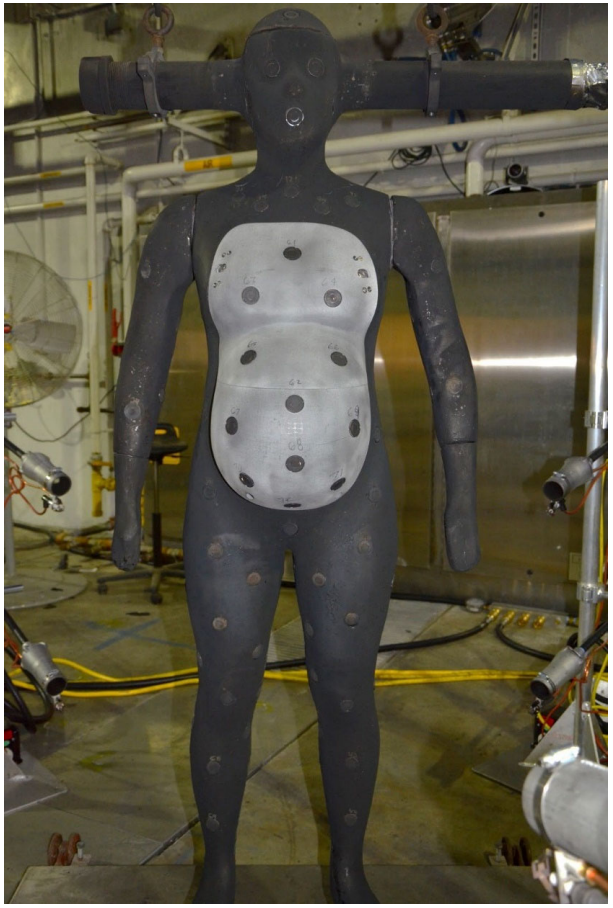

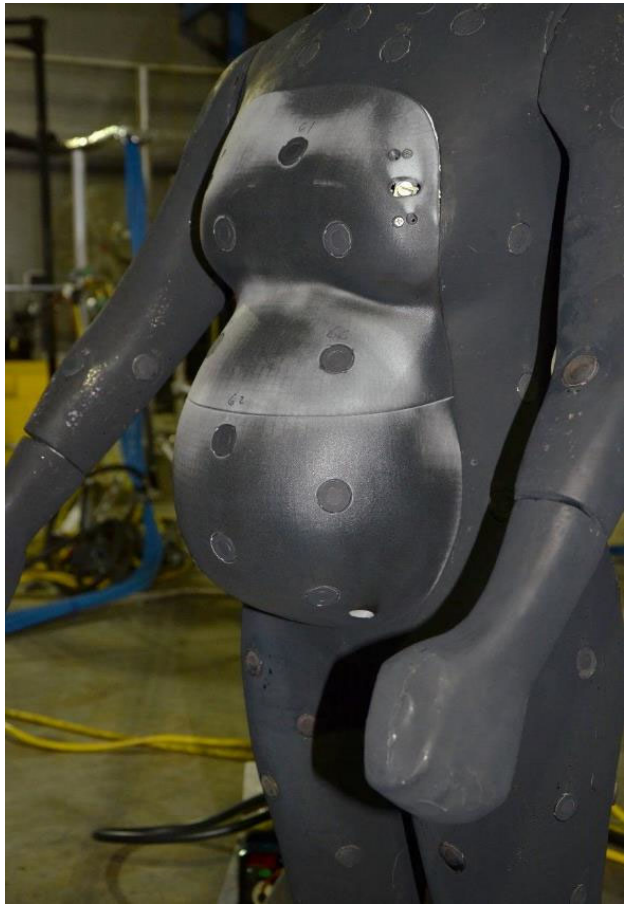

# CRA Way Ahead

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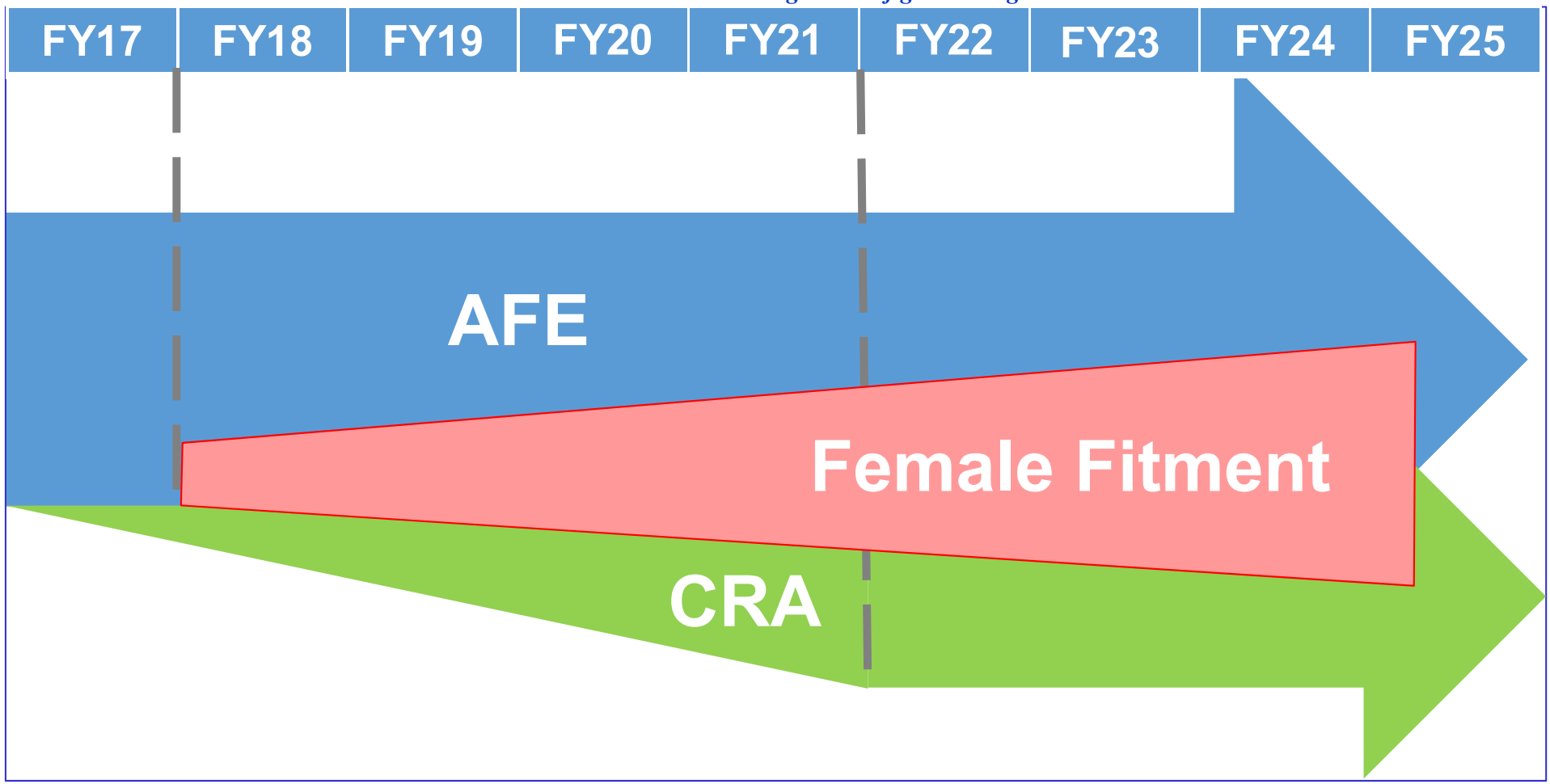

# Try Decide Buy IDIQ Contract

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## Description

TDB is a contract vehicle with a 10 year ordering period which provides the Govt. the ability to rapidly procure, assess, and evaluate commercial items in order to support follow-on larger procurements.

**Try** – Make small purchase of items to test
**Decide** – Introduce to using community for evaluation of items
**Buy** – Submit follow-on delivery order for larger purchase to fulfill users needs

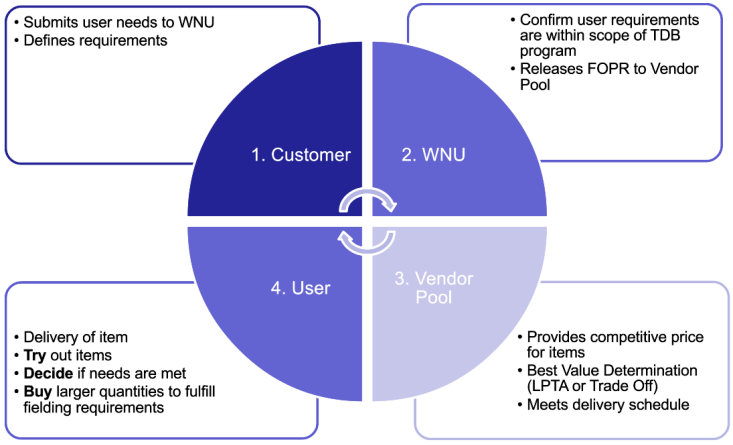
## Current TDB Programs

**Security Forces Female Body Armor**
- ☑ Contract Status – Awarded Mar 20
- ☑ TDB Phase – "**Buy**"

**T-6 Physiological Monitoring Systems**
- ☑ Contract Status – Awarded Sept 20
- ☑ TDB Phase – "**Try**"

**ACC Survival Kits**
- ❑ Contract Status – FOPR Released Aug 21
- ❑ TDB Phase – "**Try**"

## TDB Process




## TDB NAICS Codes

| NAICS Code | Description |
|---|---|
| 314999 | All Other miscellaneous Textile Product Mills |
| 315280 | Cut and Sew Apparel Contractors |
| 315990 | Apparel Accessories and other Apparel Manufacturing |
| 316998 | All other leather Good and Allied Product Manufacturing |
| 326199 | All Other Plastics Product Manufacturing |
| 326299 | All Other Rubber Product Manufacturing |
| 333314 | Optical Instrument and Lens Manufacturing |
| 334220 | Radio and TV broadcasting & Wireless Communications Equipment Manufacturing |
| 334290 | Other Communications Equipment Manufacturing |
| 336413 | Other Aircraft Parts & Auxiliary Equipment Manufacturing |
| 339113 | Surgical Appliance and Supplies Manufacturing |

# Joint Multi-Channel Infusion Pump (JMCIP)

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## System Description

**Description:** MCIP system that is FDA approved, reliable, maintainable, and capable of simultaneous delivery of multiple fluids, medications, nutrition, and blood with pre-set factors to eliminate drug incompatibility and sequencing issues for patients across the operational continuum of care

**Portfolio:** Defense Health Agency (DHA), ACAT III

**Customer:** Joint Service components

## Schedule

- **Acquisition Strategy:** Full & open two-step proposal process utilizing Airman Readiness Medical Research (ARMR) Hybrid Broad Agency Announcement (BAA) posted on sam.gov
- **Contract Award:** FY22 Q2 (TMRR Phase; multiple award)
- **Schedule**

FY22: Call for white papers
FY23: TMRR phase ends
FY23: EMD Contract Award
FY24: IOC--10% fielded

## Requirements

**Requirements:**

- CDD (Draft), Dec 2020
- 3 or more channels
- Weigh < 6 pounds
- Size < 0.057 cu ft
- Safe to Fly / Sea worthy
- Infusion of IV drugs, pain control, blood products, nutrition

## Program Status

- MDD approved in Q3 FY21
- Anticipate call for white papers in Q1 FY22
- Documents in Development:
  - SRD
  - LCCE
  - ASP
  - RFP

# Autonomous Closed Loop Control for Mechanical Ventilation

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## System Description

Advanced development of a closed loop control (CLC)/ autonomous solution (AS) for mechanically ventilated (MV) patients. The CLC platform supports unmanned MV and fluid resuscitation based on patients physiological requirements. The controlled responses are based on clinical practice guidelines associated with proper setting manipulations for $FIO_2$, PEEP, and ventilation parameters. Additionally, the CLC platform utilizes an oxygen concentrator to generate an autonomous flow of oxygen to sustain proper oxygenation levels.

## Schedule

| Milestones | Est . Dates | Progress |
|---|---|---|
| Market Research Analysis | Nov 2021 | In-progress |
| Analysis of Alternatives (AoA) | Nov 2021 | Working Plan |
| MDD Briefing | Feb 2022 | Working Plan |
| CDD Approval | Mar 2022 | Working Plan |
| Acq Strategy Panel (ASP) | Apr 2022 | Working Plan |
| RFP | May 2022 | Working Plan |

## Requirements

- Device shall include an autonomous option of closed loop mechanical ventilation.
- Device shall provide continuous vitals feedback as ventilator increases PEEP.
- Device shall have ability to control an alternate oxygen concentrator.
- Device shall automated adjustment of FiO2 to maintain SPO2 in a clinical set range.
- Device shall be compatible with other closed loop technologies and ability to remote display ventilator data.
- Device shall meet Safe-to-Fly/Air Worthiness criteria for all aircraft medical missions.

## Program Status

- Joint High Performance Team assembled by AFMRA/SG3A to outline requirements in Apr 2021 to support Autonomous Closed Loop Control Capability.
- CDD to be completed by AFMRA SG3A for DHA approval Mar 22
  - Adjudication process on-going. Joint service feedback in process of being incorporated into CDD.
  - Chief of Requirements will need to approve and then send to AFMRA/SG4T for MR.
- Market Research Analysis currently being conducted.

# Autonomous Closed Loop Control for Mechanical Ventilation

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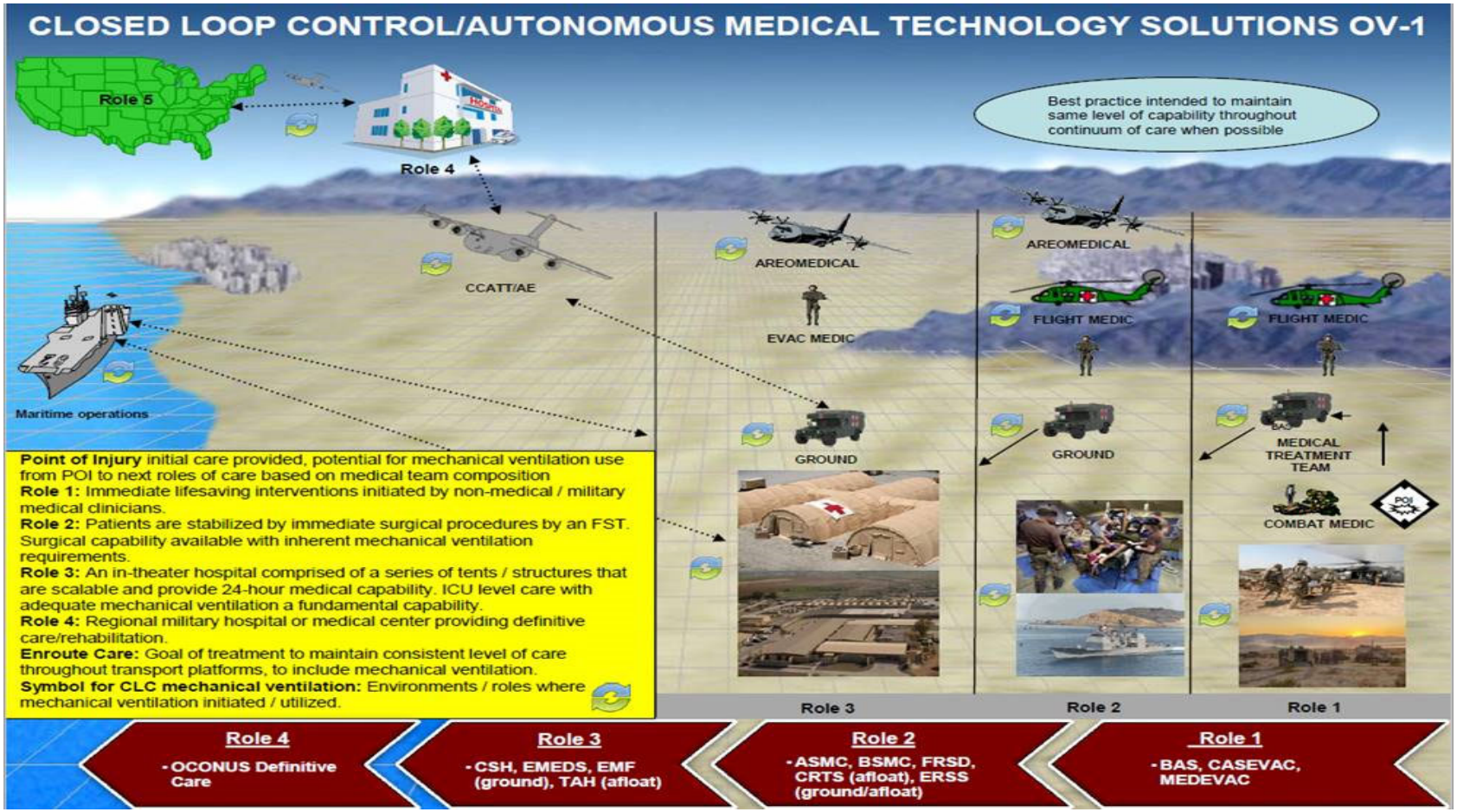
Operational View (OV) - 1



# Materials & Textiles Lab (MTL)

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## Description

The MTL conducts physical and mechanical tests to determine functionality and conformance of critical life support equipment and components. The MTL performs quality assurance inspection and testing of physical and chemical properties of textiles, first articles, and production lot samples.

## Active Projects

- Drogue Parachute Assemblies (PLTs)
- Personnel Parachute Pack (TMT)
- Parachute Deployment Bag (TMT)
- Drogue Parachute Assembly (TMT)
- Personnel Parachute Harness (TMT)

## Near-Term New Work

- Linear Actuating Cylinder Piston (FAT)
- Parachute Ejector Snap (FAT)
- Seat Cushion (TMT)
- Oxygen Masks, MBU-12/P (PLTs)
- Parachute Harness V Rings (3 PLTs)

## Requests for Assistance

**Equipment Upgrades / Repair Needs:**

- Tensile testing extensometer
- Optical comparator
- X-Ray Fluorescence Spectrometer

# Life Support Systems/Scientific, Test, Analysis, and Qualification (LSS/STAQ) Lab

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## Description

The LSS/STAQ Lab performs aircrew oxygen system performance test and evaluation. This includes, but is not limited to equipment such as, helmet systems, protective equipment and survival gear, and mask and breathing support systems (including current, modified, and new OBOGS and related oxygen systems for military ground, air, and space operations).

## Active Projects

- **T-7A OBOGS**
  - ☑ Core testing completed 19 Aug
  - ☑ Phase II TRR approved 20 Aug
- **MBU 20/P Mask ECP**
  - ❑ Test plan in work

## Near-Term New Work

- MBU 20/P ECP testing
- eT-7A follow-on testing
- F-22 OBOGS
- QDM follow-on testing
- F-35 OBOGS Comparison

## Requests for Assistance

- CAD models/drawings of OBOGS equipment
- Communication methods between lab software and OBOGS platforms (ICD's of equipment)
- Calibrations of existing equipment
- ID representatives from OBOGS manufacturers

# Aeromedical Test Lab (ATL)

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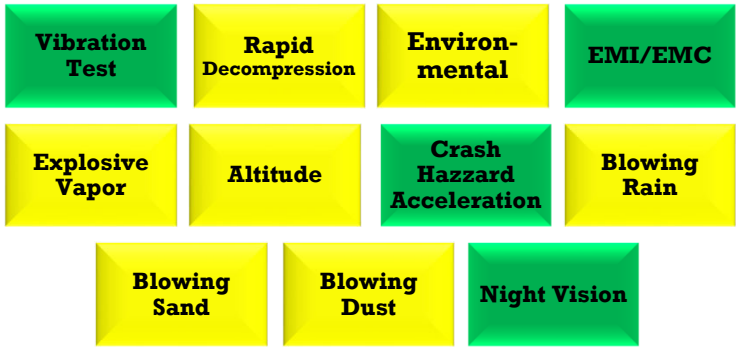
## Description

The ATL provides safe-to-fly testing, evaluation services, and expertise for the DoD in support of expeditionary medicine to advance Health Services for Joint Warfighters by validating that aeromedical equipment can safely and effectively operate in the environment for which it is intended.

## Tests Conducted




## Active Projects

- QinFlow (Portable IV Fluid Warmer)
- Save II+ (Ventilator Kit)
- Neonatal Transport System
- Advanced Portable Refrigeration Unit
- Spinal Immobilization Transport Device
- Spectrum Life Support Modules/Liters

## Request for Assistance

- Conduct battery of tests listed below for devices that cannot be tested in-house for certain devices
  - ❑ **Rapid Decompression**
  - ❑ **Environmental**
  - ❑ **Explosive Vapor**
  - ❑ **Altitude**
  - ❑ **Blowing Rain**
  - ❑ **Blowing Sand**
  - ❑ **Blowing Dust**

# Questions

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