



***S&T Division and MCRCO  
Marine Corps Warfighting Laboratory  
Col Kevin “Astro” Murray***

# S&T Mission

- To identify, develop, and deliver innovative capabilities for warfighter assessment, experimentation, & transition
  - The successful execution of this mission depends upon our ability to transfer these capabilities/recommendations to capability development



**Mid**



**Near**



**Far**

# S&T DIVISION



# S&T Areas of Interest

(Near & Long Term)



**Logistics Next:** Robust, agile, responsive and secure

**Hybrid Electric:** Organic resource generation

**JADC2:** Resilient, all-domain

**LR-OPF:** Out-reach adversaries & swarm

**GBAD:** Integrated air, missile, and defend vs. swarms

**MUM-T:** Fully embracing RAS

**OIE:** Kill-web architecture enabled by AI

**Space:** Sense and engage to counter

**I-Next:** Energy management, force protection and resilience

**Near Term:** CMC Force Design

- MAGTF C2 – Naval and Joint
- Long Range Fires – kinetic+Info
- Counter C4ISR-T
- Airborne early warning (IAMD)
- Manned-Unmanned Teaming
- OIE Capabilities
- Logistics Transformation
- Installation Resiliency

**Far Term:** Continue to Evolve and Keep Pace with Technology:

- Advanced autonomy and AI to better enable MUM-T / PED / C2
- Advanced C2 – Quantum
- Alternative Power Generation
- Space Exploitation
- Biotechnology
- Hypersonics
- Cyber Tools (always evolving)

**Value Proposition:**  
Accelerate S&T in the near-term for next generation, highly mobile, sensors, platforms, network architectures and weapons providing a landward complement to Navy for maritime dominance, while looking out to 2030 for game-changing capabilities that will disrupt the peer threat and achieve a true revolution in military affairs.



**Marine Corps Warfighting  
Laboratory/  
Futures Directorate**

**Modern Day Marine –  
Virtual 2020**

**Marine Corps Rapids  
Capability Office**

# Marine Corps Rapid Capabilities Office (MCRCO) 1/3



**Mission:** The MCRCO seeks emergent and disruptive technology to rapidly develop and deliver operational prototypes that increase Fleet Marine Forces' survivability and lethality; and provides operational assessments that inform requirement development and investment planning.

**Approach:** MCRCO identifies, assesses, and transitions COTS and GOTS technologies that possess high technology and manufacturing readiness levels (7+) in order to inform requirements and acquisition efforts.

- Develop Portfolios one fiscal year out and select specific Projects within three to six months of the execution fiscal year
- Conduct assessment of technology prototypes, develop Capability Assessment Report (CAR), and attain senior leader approval for transition to requirements and acquisitions organizations within one fiscal year of execution
- Out-of-cycle “special projects” executed on a case-by-case basis

# Marine Corps Rapid Capabilities Office (MCRCO) 2/3

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FY 22 Focus Areas (approved March 2019)

## **(U) Non-Satellite Terrestrial Communications**

Ground based, long range, and high bandwidth communications pathway to provide forward deployed forces an intra-theater reach back capability. This included vehicle and man-packed datalink hardware, waveforms and network management capabilities.

## **(U) Localized Micro-Aerial Superiority**

Localized tactical aerial superiority as a force protection measure and to enable employment of organic systems. This includes airspace sensing, airspace management, counter unmanned aerial systems, air and missile defense capabilities.

# Marine Corps Rapid Capabilities Office (MCRCO) 3/3



FY 23 Focus Areas (approved January 2020)

## **(U) Execution of Expeditionary Advanced Base Operations**

Emergent and disruptive technologies that enable FMF formations to effectively conduct Expeditionary Advanced Base Operations within the Indo-Pacific Theater.

## **(U) Unmanned, Multi-Dimensional Battlefield Effects**

Improve the capabilities, capacities, and autonomy of multi-dimensional unmanned systems that deliver ISR and lethal/non-lethal effects to the battlefield to better protect human resources and to overwhelm adversary defense systems.

## **(U) All Source / All Shooter Fires Integration**

The ability to provide targeting solutions to any target on the battlefield by any friendly fires coordinator from any fires capability within striking distance (to include organic through strategic fires).