



***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)



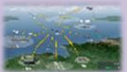
Logistics Next: Robust, agile, responsive and secure



Hybrid Electric: Organic resource generation



JADC2: Resilient, all-domain



LR-OPF: Out-reach adversaries & swarm



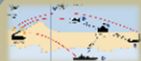
GBAD: Integrated air, missile, and defend vs. swarms



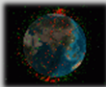
MUM-T: Fully embracing RAS



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



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).