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Designing and Provisioning for a Consistent C2 Approach for Marine-Machine Teaming

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Background

- Development of a C2 framework to drive decision making analysis in a Marine-machine teaming construct.
- Framework and analysis are based on MCWL experimentation, previous UTACC theses, and small unit C2 experience.
- Foundational cost-benefit analysis supporting future acquisitions decision making.



Expeditionary Modular Autonomous Vehicle (EMAV) operating at the Urban Training Center in Muscatatuck, IN.



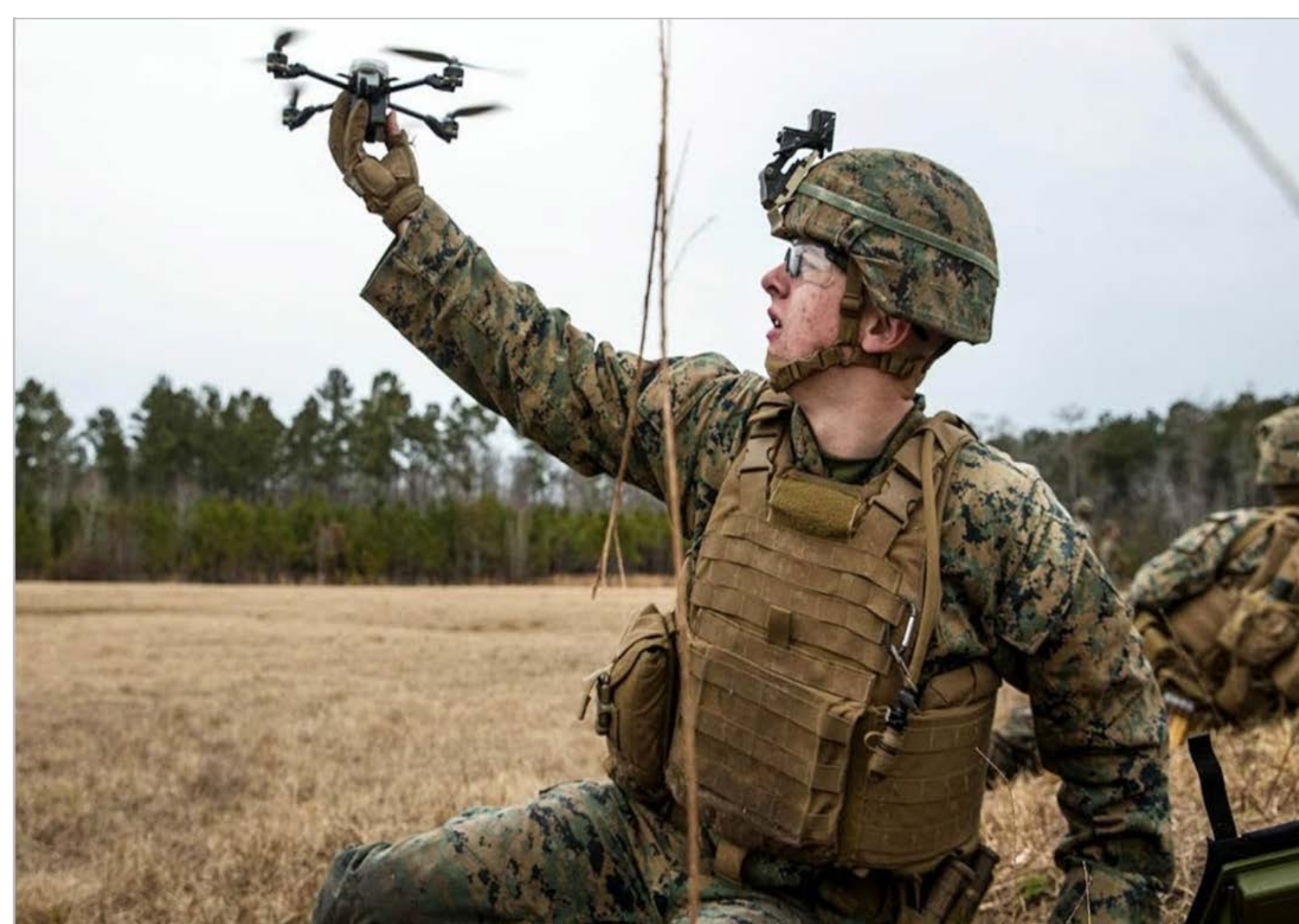
Air Assault at MCAGCC during ITX

Scenario: Combined Arms Air Assault

- Utilizing a combined arms air assault modeled after the same scenario executed at Integrated Training Exercise (ITX) in Twentynine Palms, California.
- Air assault is ideal medium to demonstrate the capabilities of UGS and UAS platforms within a Marine infantry unit.
- Will demonstrate the need for a consistent C2 framework with the addition of these systems.

Consistent C2 Framework for UAS and UGS Systems

- Using Parasuraman's (2000) and Beer's (2014) models as the backbone for the framework.
- The end state is a framework that maximizes man-unmanned teaming (MUM-T) from the squad to the battalion level.
- The framework is designed in a way to ensure that the appropriate level of decision-making resides at the right level, i.e. the Battalion Operations Officer is not using UAS and UGS systems to make decisions at the platoon level.



Follow-On Research

- Our thesis is theoretical—Infantry Battalions have not yet been fielded with the UAS and UGS platforms seen at the MCWL experiment. Once systems are fielded, a follow-on thesis should focus on the practical C2 issues that will arise.
- A follow-on thesis that models our framework in a program such as Stella that demonstrates the application of the system would be beneficial.

