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Developing a Command System to Control both Human and Robotic Elements

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Abstract: Unmanned systems in battlefield formations will only become more prevalent as autonomous sensors, unmanned ground vehicles, and other autonomous systems are developed for the Warfighter. In an environment populated by both man and machine, Army command and control interfaces at the lowest levels require the ability to transmit information that is understandable by both groups of entities. Previous research efforts have shown Primitives of Meaning's effectiveness in conveying orders to autonomous entities but have failed to demonstrate human ability to understand the same orders. This study builds upon this research to augment Primitives of Meaning by creating a command and control architecture that can generate orders understandable by both human and robotic elements within one platoon.

Keywords: Operations Order, Distributed Command, Multi-robot systems, Primitives of Meaning