CAPT U.S. Navy (ret), William Combes, Baltic Defence College, Navigating Complexity Through Human-AI Collaboration: Lessons from PME Workshop Design for Command and Control in an Era of Accelerating Change.

Military leaders have always operated in environments characterized by volatility, uncertainty, complexity, and ambiguity (VUCA). However, today's security landscape features unprecedented technological acceleration that compounds these challenges for decision making. Drawing on Snowden's Cynefin® framework, this paper examines how human-AI collaborative approaches can help navigate complex environments where cause-effect relationships are only discernible in retrospect and chaotic situations where immediate stabilizing action is required before patterns can emerge. The research presents an embedded case study of an AI-assisted workshop on AI integration in Professional Military Education (PME) conducted at the Baltic Defence College. This recursive approach of using AI to explore AI implementation created a unique laboratory for examining human-AI collaboration in practice. Building on previous research on digital transformation in PME, the study analyzes how this collaborative methodology generated insights for command and control applications in complex operational environments. The findings reveal three critical patterns of effective human-AI teaming that emerged from the workshop process: (1) AI excels at identifying emergent patterns across disparate information sources, while humans provide contextual judgment about their significance; (2) in time-constrained scenarios, AI can rapidly generate multiple response options while humans maintain responsibility for ethical and strategic evaluation; and (3) the most effective collaborative frameworks maintain clear human primacy in defining objectives while leveraging AI for continuous environmental sensing and adaptation. The best practices identified through this process offer practical guidance for military organizations seeking to implement human-AI collaborative approaches to command and control in complex and chaotic domains, with potential applications to other sectors facing similar decision-making challenges under conditions of uncertainty and rapid change. These collaborative models complement traditional decision-making approaches by maintaining human judgment while potentially enhancing responsiveness to rapidly evolving situations. The paper concludes with recommendations for implementing similar experimental approaches to develop context-specific human-AI collaborative frameworks across military functions.