Mr Peter Bovet Emanuel, Swedish Defence University, Augmenting Operational Planning through AI: Exploring Decision Advantages in the Comprehensive Shield 2025 Experiment

This paper explores how artificial intelligence (AI) can augment human decision-making and planning performance within operational headquarters. Building on the conceptual framework developed in Exploring Decision Advantages (2025), the study analyzes experimental data from the joint Swedish-Norwegian exercise Comprehensive Shield 2025 (CS25). The CS25 experiment compares three Joint Operational Planning Groups (JOPGs) conducting identical long-term planning tasks: one using NATO's COPD methodology, one using COPD with AI-based decision support, and one combining AI with Systems Oriented Design. A mixed-methods protocol captures performance across six dimensions: planning quality, time efficiency, decision confidence, innovation, cognitive load, and team cohesion. Instruments include expert evaluation, NASA-TLX, and structured participant reflection. Preliminary analysis suggests that AI support extends the cognitive capacity of planning teams, restructures the decision space, and introduces new patterns of operational reasoning. The findings align with recent scholarship emphasizing AI's role in enhancing tempo, sensemaking, and trust dynamics in military decision-making (Bovet Emanuel, 2025; (Chen et al., 2025; Wright et al., 2025). The paper reflects on emerging human-AI teaming practices and how synthetic cognition may challenge traditional methodologies as well as command and control concepts. By situating the CS25 experiment within contemporary debates on professional military education (PME), the study contributes empirical insight into how AI reshapes not only decision processes, but also institutional learning and military epistemology. It concludes with implications for doctrine, staff culture, and AI governance in multinational operational contexts. Keywords: AI, decision support systems, human-machine teaming, military planning, synthetic cognition.

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