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**Enhancing Naval Enterprise Readiness through Augmented Reality Knowledge Extraction**

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**Subcommittee Category:** Emerging Concepts and Innovative Technologies

**Abstract:** The newest wave of Naval aircraft carriers are implementing novel systems that require fewer Sailors to man, with the goal of improving readiness and reducing operating costs. These new, unique systems has led to an increase in required training hours for Sailors. To address this gap, recent developments in Naval training have included the use of emerging technologies, like augmented reality (AR), to support high velocity learning in traditional school-house and pier-side learning environments. However, what is still lacking is the ability to transition this technology to on-the-job training in the form of job performance aids (JPAs). Due to the reduced-crew environments of the new Ford-class carriers, expert Sailors have less time available to mentor and coach junior Sailors. Thus, a gap exists in utilizing emerging technologies to assist both expert and junior Sailors as they are underway. The present paper discusses the application of AR for the extraction of expert maintainer knowledge, allowing the Navy to capture expert maintainers' hard-earned expertise and then store and distribute their knowledge and skills for life-long Naval enterprise use. This allows junior maintainers to "take experts with them", as they need support in their work, long after those experts have retired. This paper discusses the development of such an application, evaluation onboard the CVN 78 with Machine Control Monitoring System (MCMS) maintenance technicians, and concludes with a summary of initial lessons learned and future directions and applications onboard the CVN 78.

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