

**System of Systems Engineering
Collaborators Information Exchange (SoSECIE)**

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Mission Engineering and Prototype Warfare

Presenter: Mr. Matthew Horning, US ARMY FUTURES COMMAND

Abstract

Prototype Warfare represents a paradigm shift in how the US Department of Defense (DoD) executes acquisition of defense systems in a manner that is significantly faster than traditional acquisition. At its core, Prototype Warfare shifts focus from large fleets of common one-size-fits-all exquisite systems to small quantities of rapidly fielded, highly tailored systems that are focused on specific capabilities within a specific theater to address a specific (and typically urgent) requirement. This paper does not address the programmatic or policy implications of implementing Prototype Warfare, but instead provides an approach to achieving Prototype Warfare from a technical perspective. The key to executing a Prototype Warfare program is to establish and execute a robust Mission Engineering practice that uses the operational context of a system to drive performance requirements, allowing the modeled end use of the system to be root of all requirements traceability.

Biography

Matthew A. Horning is the Assistant Chief of Staff, G5, Plans officer for the Army Futures Command, Next Generation Combat Vehicle Cross Functional Team (NGCV-CFT). Previously, Mr. Horning established the Mission Engineering competency at the US Army Tank Automotive Research, Engineering and Development Center (TARDEC) from 2014-2018 with the purpose to provide an operational research and analysis capability to identify and address operational impacts of emerging TARDEC and Army technologies. Prior to his work at TARDEC, Mr. Horning was a Systems Engineering practitioner across many combat platforms including Abrams, Bradley and Stryker. His prior roles include Lead Systems Engineer, Specialty Engineering IPT Lead, Deputy Chief Engineer, and Requirements Engineer. Mr. Horning is currently the Commander of Cyber Protection Team 188 in the United States Army Reserve. Prior to transferring to Cyber branch, he was an Aviator qualified on the UH-60 Blackhawk with functional qualifications in Force Management and Acquisitions. Mr. Horning has a Master of Business Administration degree from the University of Phoenix and a Bachelor of Science in Engineering in Aerospace Engineering from the University of Michigan.