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Reducing the Visual Signature of the M4A1 Rifle

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Abstract: The Maneuver Center of Excellence (MCoE) presented a directive to reduce the visual signature for small arms weapons by altering the color of the M4A1 rifle from its traditional black color. This research utilizes the Systems Decision Process (SDP) to develop and analyze alternatives to create a feasible and permanent solution to reduce the weapon's visual signature. The research consisted of an extensive stakeholder and functional analysis to develop a value model and framework that provides a values-based recommendation. The model establishes an optimal color change process that accounts for the design and performance characteristics of the weapon system and the stakeholder's values. The research also analyzes the potential integration of short wave infrared (SWIR) mitigation into the new color of the weapon. This analysis will establish a baseline methodology for weapon color change for all Army small arms weapons.

Key Words: Operational Camouflage Pattern (OCP), Short wave Infrared (SWIR), M4A1 Rifle, Value Modeling