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Prime Item Development Specification Re-verification Framework (PIDS RVF)

Owen Bailey, Zachary Sostak, DeAndre' Bell, Andrew Soncini, and Jasmine Motupalli

United States Military Academy

Corresponding author's Email: jasmine.walker@usma.edu

Author Note: Cadets Bailey, Sostak, Bell, and Soncini are seniors at the United States Military Academy. They will be commissioned as Second Lieutenants in the United States Army in May of 2016. CPT(P) Motupalli is an instructor in the Department of Systems Engineering, and the advisor for this capstone. The client for this project was Kerry Wagner, the chief engineer of the Software Engineering Directorate. This project was for the STARS division at the Aviation Missile Research Development Center (AMRDEC).

Abstract: As deployed Department of Defense (DoD) systems receive software upgrades, the Prime Item Development Specifications (PIDS) must be re-verified to facilitate system-reintegration into the field. This report describes an efficient framework for re-verifying requirements using a process that reduces the cost and man-hours previously required by defense contracting organizations. The proposed methodology consists of three phases: (1) requirements analysis, (2) PIDS re-verification, and (3) process formalization. Each verification method; analysis, testing, demonstration, and inspection, re-verifies a different group of PIDS. This procedure reduces the cost and man-hours required by providing an internal capability for DOD organizations to re-verify a system's requirements. The AN/TPY-2 radar system is examined as a case study for evidence that the framework created by this project has been proven to work. This study produced a framework, which can be implemented as an over-arching methodology for any military system that undergoes software upgrades.

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