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Reference Framework and Model for Integration of Risk Management in Agile Systems Engineering Lifecycle of the Defense Acquisition Management Framework

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Abstract. Risk management is a requirement for success of any enterprise. Despite this fact, there have been limited solutions for integrating risk management in agile life cycles. On average, 70% of all IT-related projects fail to meet their objectives which have caused 80% of companies to reassess their process. One of these processes includes risk management where studies have shown that risks should be assessed in all dimensions of a program. We found that risk management was being conducted on the overall program with concentration in the software development phase which leaves other life cycle phases with no risk assessments and mitigation strategies. Agile systems engineering is more complex than traditional systems engineering due to events happening concurrently and non-sequentially during the life cycle of a program. This paper will propose a framework and model for risk 'managility', management in an agile environment, specifically in systems engineering life cycle. We use the Department of Defense's Evolutionary Acquisition and Management Framework as a bridge to define and illustrate an agile systems engineering life cycle (ASEL) framework and an agile risk integrated engineering lifecycle (ARIEL) model.