X1.02  System Lifecycle Integration of Cost and Risk Models

Lead Center: MSFC

Participating Center(s): ARC, GRC, LaRC

Traditional, and at times typical, analysis of new systems involves an assessment of the system's performance independent of the cost and risk associated with the design. Specifically, the cost and risk are assessed after the design, requiring integration "after the fact". The SE&I process, however, requires a balancing of cost, risk and performance throughout a system's lifecycle. An additional challenge associated with this subtopic area is the use of cost and risk techniques early in the design process where there exists little data (i.e., performance, cost, and risk) from which to draw upon for developing the cost/risk algorithms, associated relationships, and verification/validation artifacts. An approach for integrating cost and risk models early in the assessment, ensuring that they drive the design and not vice-versa, is required to address the challenges in the agency. Proposals are sought to address: (1) the integration of cost and risk models into a seamless integrated solution; (2) the early application of cost and risk modeling into the analysis cycle of a system; and (3) the approach to verification and validation of the integrated cost/risk models.