

Risk Assessment for Next Generation Supply Chain Readiness (RANGER)

PROBLEM / OBJECTIVE

Unexpected fabrication and processing issues negatively affect supply chain deliveries. This creates work stoppages, ineffective use of resources, and delivery delays in weapon systems.

The vision is to achieve supplier connectivity, visibility and interoperability in defense-based and commercial supply chain operations. With the objective of developing integrated and interactive predictive performance models for improved process efficiency throughout the supply chain, RANGER focuses on the manufacturing stage within the total life-cycle.

The RANGER project baselines and categorizes the elements of risk associated with defined supply chains. Metrics are established based on the risks to provide the appropriate information for action.

The ultimate goal is to enable effective management of supply chains. This is accomplished by addressing vulnerabilities and unforeseen failures which can negatively impact delivery, system performance, and life cycle evaluations.

ACCOMPLISHMENTS / PAYOFF

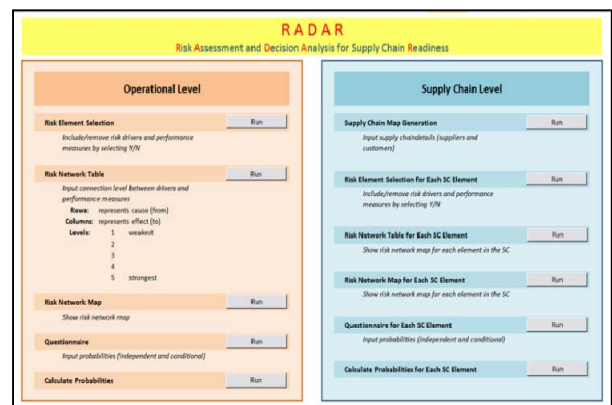
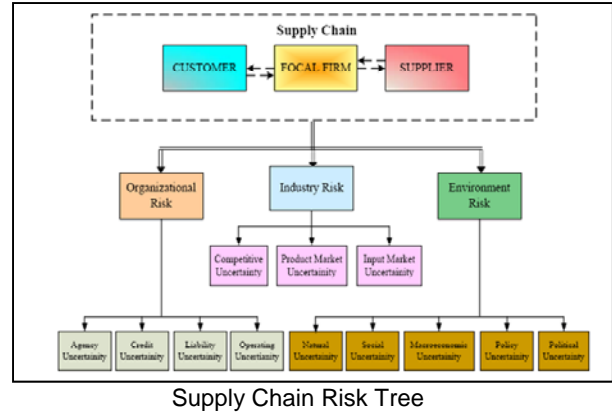
Process Improvement:

The RANGER project has assessed the various origins of supply chain risk across four major product life-cycle stages including:

- Pre-manufacturing
- Manufacturing
- Use
- Post-use

Background:

The University of Kentucky used commercial and defense application related manufacturing data from General Electric and Boeing to model and conduct simulations of several risk scenarios. With various studies and supplier



RADAR Screen View

surveys offering development guidance, a software simulation package called Risk Assessment and Decision Analysis for Supply Chain Readiness (RADAR) was developed using real supply chain data.

Demonstration of the RADAR software tool at recent symposiums has generated interest from commercial software developers and vendors, along with interested end users noted below. Future efforts will refine the risk management framework and result in an actual use case demonstration. Future demonstrations are expected to support the direction, validation and commercialization of the RADAR tool.

Technology Transition:

Capabilities developed and demonstrated in Phase I are being fully commercialized during Phase II. Additionally, pilot demonstrations of an enhanced RANGER tool are committed for team members

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GE and Boeing; additional interest from numerous sources is being explored.

Organizations expressing interest in project results:

- Missile Defense Agency
- Raytheon
- Air Force Global Logistics Support Center
- Aviation and Missile Life Cycle Management Command
- Army Material Command
- Fluor Government Group
- Bent Systems
- Army Space and Missile Command
- Intelligent Systems
- ICF International

Technology Transfer:

The commercial software vendor, Agena, has joined the project in supporting the commercialization of a software product.

Expected Benefits and Warfighter Impact:

Acquisition System Benefits include the:

- Ability to develop new predictive performance models for supply chain operations with consideration of the total life cycle stages.
- Capability of the test-bed for displaying supplier connectivity and visibility.
- Improved ease of use of next generation supply chain modeling and simulation tools.
- Capacity to utilize supply chain modeling and simulation tools to demonstrate real time data integration and decision assistance across a supplier network.
- Facilitate the shop floor supply chain technology that will link upward into future Advance Supply Chain Modeling Systems

Warfighter Benefits:

- Greater availability of weapon systems
- Longer, more reliable product life

PARTICIPANTS

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