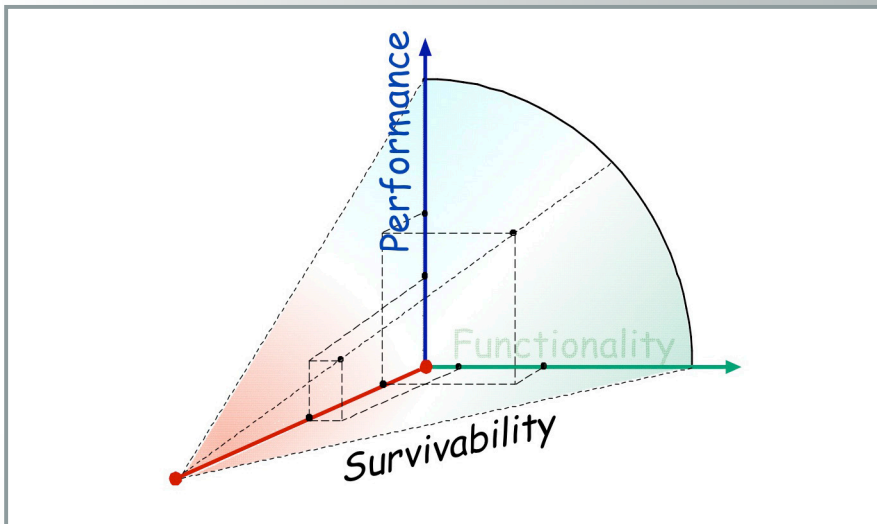


Cyberspace Security Econometrics System

UT-B ID 200701980



Technology Summary

To make effective cybersecurity decisions, stakeholders need to assess security countermeasures, architecture, and operations. ORNL researchers invented an improved security metric to support analysis of how well a system meets its security objectives. The technology provides courses of action that have the highest risk reduction return on investment, reducing the most risk for the lowest cost.

Currently, there are few practical metrics for cybersecurity. Conventional systems focus on mean time to failure measures, which do not distinguish between stakeholders, specific components, or degrees of assurance.

The primary measure of this invention is mean failure cost, a calculation that is consistent with value-based engineering and decision making. The ORNL invention recognizes differences among stakeholders and acknowledges that not all stakeholders have an equivalent stake in all security failures. The invention also reflects the specific weight stakeholders assign to different requirements and the various levels of certification performed on different components.

Advantages

- Provides costs and benefits of alternative approaches to securing systems
- Provides a failure cost per unit of time (mean failure cost)
- Quantifies the impact of failures
- Offers decision support for security countermeasure design
- Distinguishes between stakeholders
- Distinguishes between specification components
- Distinguishes between degrees of assurance

Potential Applications

- Computer network security

Patent

Robert K. Abercrombie, Frederick T. Sheldon, and Ali Mili, *System and Method for Implementing and Monitoring Cyberspace Security Econometrics System and Other Complex Systems*, U.S. Patent Application 12/421,933, filed May 12, 2008.

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