



OmniSoc

omnisoc.iu.edu

Cybersecurity Risk Assessment

...

Mikeal Jones

Overview:

- Introduction
- ARF Mission
- Cyber Risk Components
- Risk Assessment Process
- Conclusion

What is Cybersecurity Risk?

Cybersecurity Risk is the probability that a cyber-incident can impact an organization's mission and goals.

Cybersecurity Risk Management

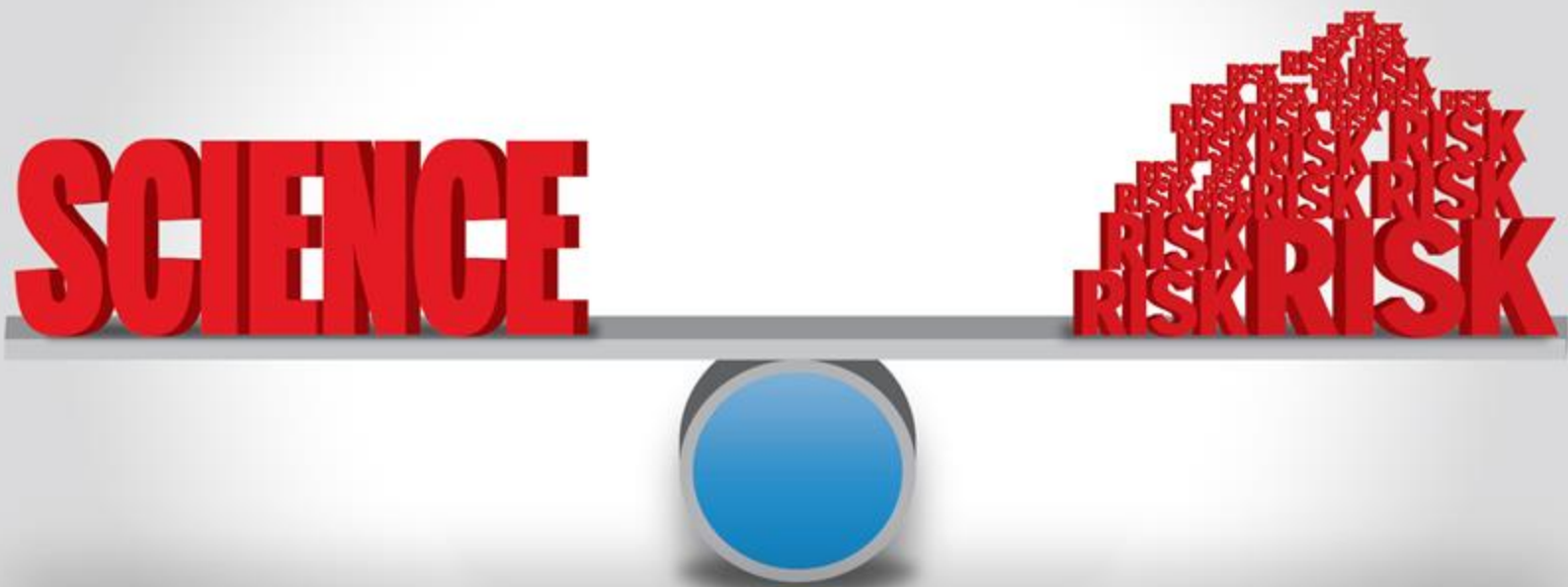
A Continual Process of Identifying, Analyzing, and Mitigating Risk to an organization's IT/OT infrastructure.

- Identify Gaps and Weaknesses
- Prioritize Resources
- Improve Incident Response Capabilities

Organizational Mission

U.S. Academic Research Fleet

- Enabling Scientific Research
- Advancing Knowledge and Education
- Protect the Lives of all Personnel
- Prevent Loss or Damage to the Ship, the Environment, and Science Data.



Cybersecurity Risk Components - Assets

- Vessel
- Data
- Systems
 - Supporting the Safe Operations of the Vessel
 - Supporting the Science Mission

Cybersecurity Risk Components - Threats

- Bad Actors
- Malware
- Ransomware
- Human Error

Cybersecurity Risk Components - Vulnerabilities

- Operating System or Software
- Weak Passwords
- Lack of Training

Risk Assessment Process:

- Identify Assets
- Classify Assets
- Identify Threats
- Evaluate Vulnerabilities
- Analyze Risk
- Prioritize Risk
- Implement Mitigation Strategies
- REPEAT

Risk Assessment - Identify Assets

- Data
- Hardware
- Software
- Networks
- Humans

Risk Assessment - Classify Assets

PRIORITY:

- Critical
- Important
- Low

Risk Assessment - Identify Threats

- Malware
- Ransomware
- Phishing
- Misconfigurations
- Human Error

Risk Assessment - Evaluate Vulnerabilities

- Gaps in Defenses
- Outdated Software
- Systems and Data Recovery Capabilities
- Lack of Training

Risk Assessment - Analyze Risk

$$\text{Risk} = \text{Impact} \times \text{Likelihood}$$

$$\text{Risk} = \text{Impact} \times (\text{Vulnerability} \times \text{Threat})$$

Risk Assessment - Prioritize Risks

Review Assets, Criticality, Threats, Vulnerabilities and determine highest risks.

Risk Assessment - Mitigation Strategies

Reduce Risks and Impact of Threats

- Eliminate Vulnerability
- Minimize Exposure
- Create a Plan for Specific Circumstances
- Create Clear Security Policies
- Conduct Regular Training

Risk Assessment - Rinse and Repeat