Fact Sheet

RAM:
Security Risk Assessment Methodology

RAM can help security analysts provide additional security to critical infrastructures.

Background

Assessing risk can be a difficult, painstaking process, often relying on the qualitative "gut feelings" of subject matter experts. Every facility is unique, which eliminates the "one size fits all" option for providing physical security. The need to add security features has placed a heavy burden on the already-strained budgets of government and commercial enterprises. Security risk managers need a mechanism to help them analyze facility information and make the most logical decisions to protect their facilities against the potential for malevolent acts.

Description

Sandia National Laboratories has developed RAM, a security Risk Assessment Methodology tool. Security risk is a function of threat, vulnerability, and consequence. RAM is a systematic and robust security risk management approach focused on "how to" perform a complete risk assessment to assist facility and infrastructure owners, managers, and decision makers to make a choice of how to reduce risk by:

- applying security upgrades based on performance
  or
- mitigating the potential consequences

RAM is useful for the following:

- Conducting a screening process to prioritize facilities or assets
- Identifying a regional and site-specific threat spectrum (both likely and credible, including natural threats)
- Evaluating consequences such as loss of life and property, loss of mission, economic impact, or loss of public confidence or symbolic value
- Assessing the effectiveness of the protection system against the threat and identifying any site-specific vulnerabilities in the security system

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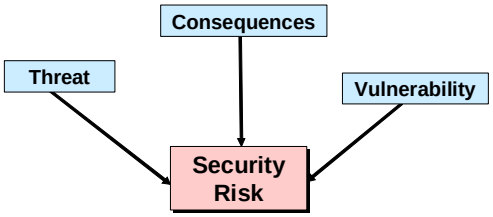
Applications of RAM

Sandia's risk assessment methodology has been applied to a variety of critical infrastructures, including:

- Dams
- High-voltage electric power transmission facilities
- Municipal water systems
- Chemical facilities
- Communities
- Buildings and occupants



Current Activities

Continuing development of a basic automated RAM tool that can be adapted for specific industries that:

- Is easy to understand and use. Can be applied in the field on a user's portable computer
- Speeds up the assessment process
- Provides documentation of results and assessment process
- Provides a basis for easily conducting future assessments to accommodate changes in threat, construction, security features, or operating conditions
- Includes basic Presentation Package of results

Advantages

The RAM has the following advantages:

- Provides logical and analytical metrics for security decision making (relative risk estimate and level of risk reduction allow comparison of security options).
- Provides a systems approach instead of a "checklist" approach. Buying and installing new security system features does not guarantee the features will function together.
- Provides a high level of analysis "completeness". A logic tree format helps the user understand all of the ways that the site mission can be disrupted and which assets must be protected
- Identifies site-specific vulnerabilities. This information lets you know what needs improvement to reduce risk for daily activity and where to place reinforcements during high-alert conditions
- Provides repeatable results that are traceable to original assumptions
- Provides a process to complete the DHS RAMCAP analysis
- Applies proven protection system effectiveness models that have been used for over 30 years to protect high-value assets

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