

Introduction to the Risk Informed Approach Cycle

Threat and Risk Curriculum Module F

Threat and Risk Concepts and Terminology

Threat Assessment and Risk Informed Approach

Basis for Threat Assessment and Risk-Informed Approach

Intro to the Risk Informed Approach Cycle

Nuclear Security Risk Scenarios

Risk Assessment Methodologies

Targets and Consequences

Expert Elicitation

Threat Assessment Methodologies

Uncertainty & Sensitivity

Communicating Threat and Risk

The Risk Informed Approach

Applying the Risk Informed Approach to a Fictional State

Module Objectives

Participants will understand the five steps in the risk informed approach cycle, as well as how and when to apply a risk informed approach when making decisions about nuclear security systems and measures. Topics include:

- Overview of the risk informed approach cycle
- Integrating the risk informed approach into the decision making process
- Utilizing the risk informed approach to prioritize resources and investments



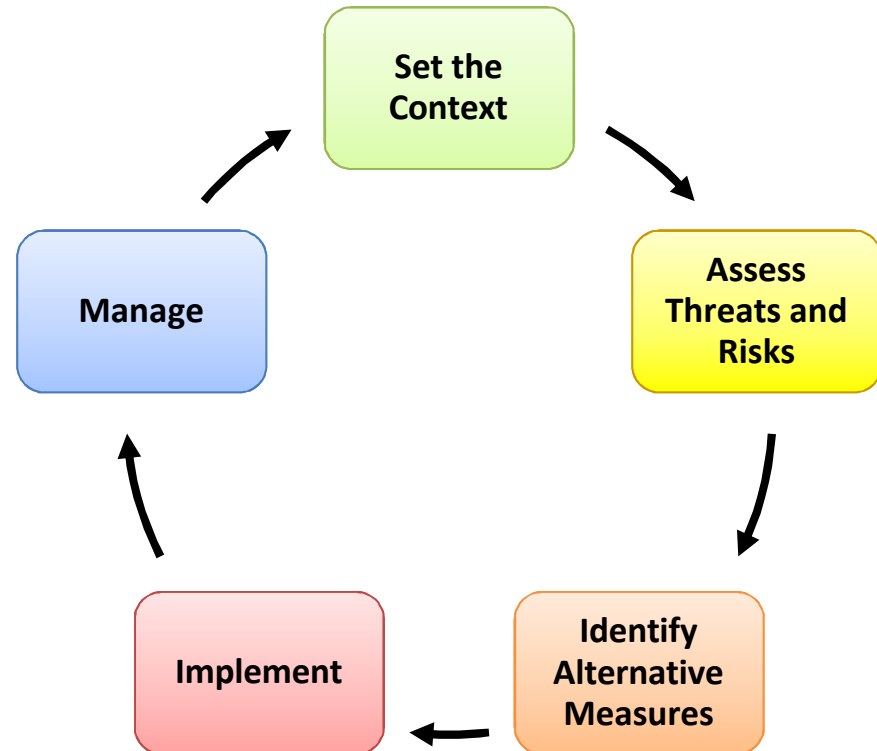
Module E motivated why threat and risk assessments are needed and described the basis for threat and risk assessments. A framework should be in place to ensure:

1. The threat and risk assessments are as accurate as possible and
2. Results are utilized to inform architecture decisions

The proposed Risk Informed Approach Cycle is such a framework.

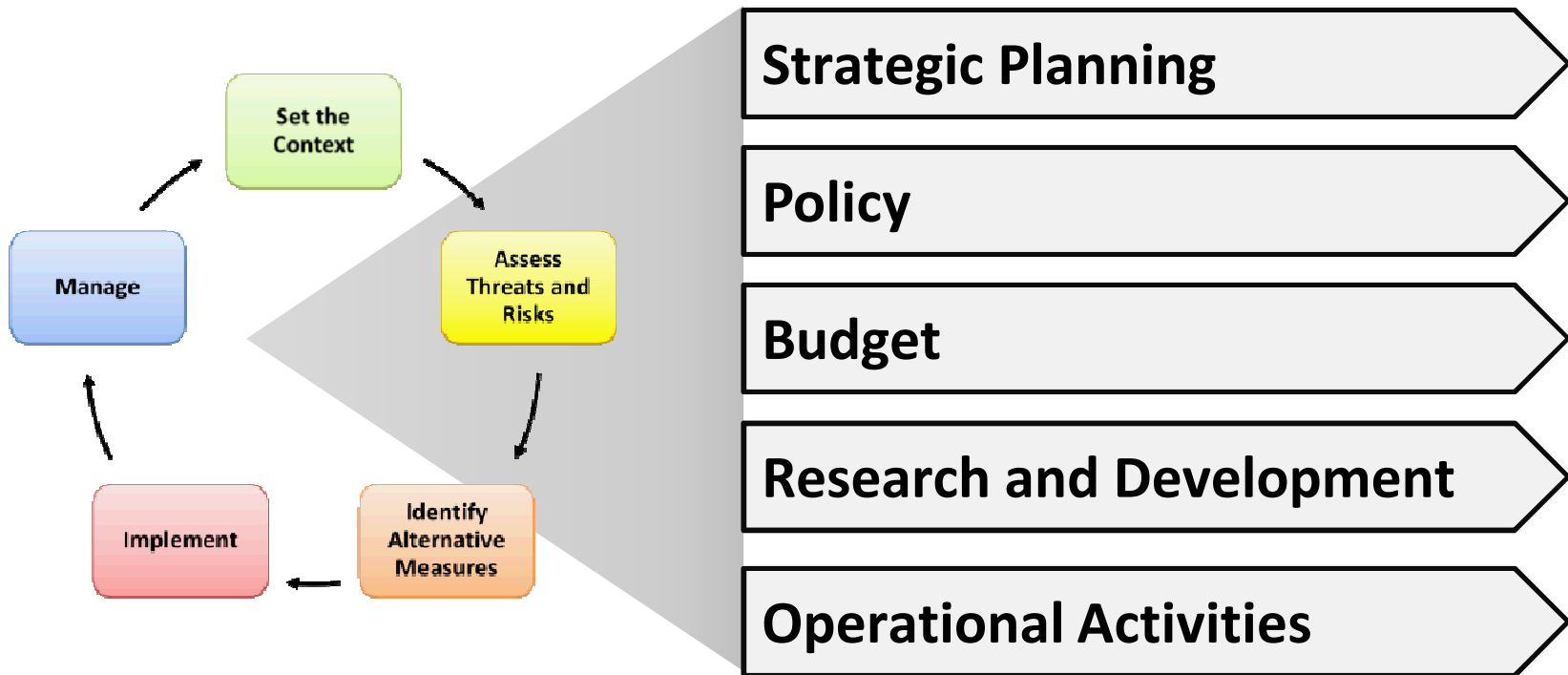
The Risk Informed Approach Cycle

- A framework for effectively executing a threat and risk assessment
- Identifies which actions are most effective in reducing risk
- Iterative process that:
 - Identifies and assesses risks
 - Develops, evaluates, and implements options
 - Monitors and manages the results



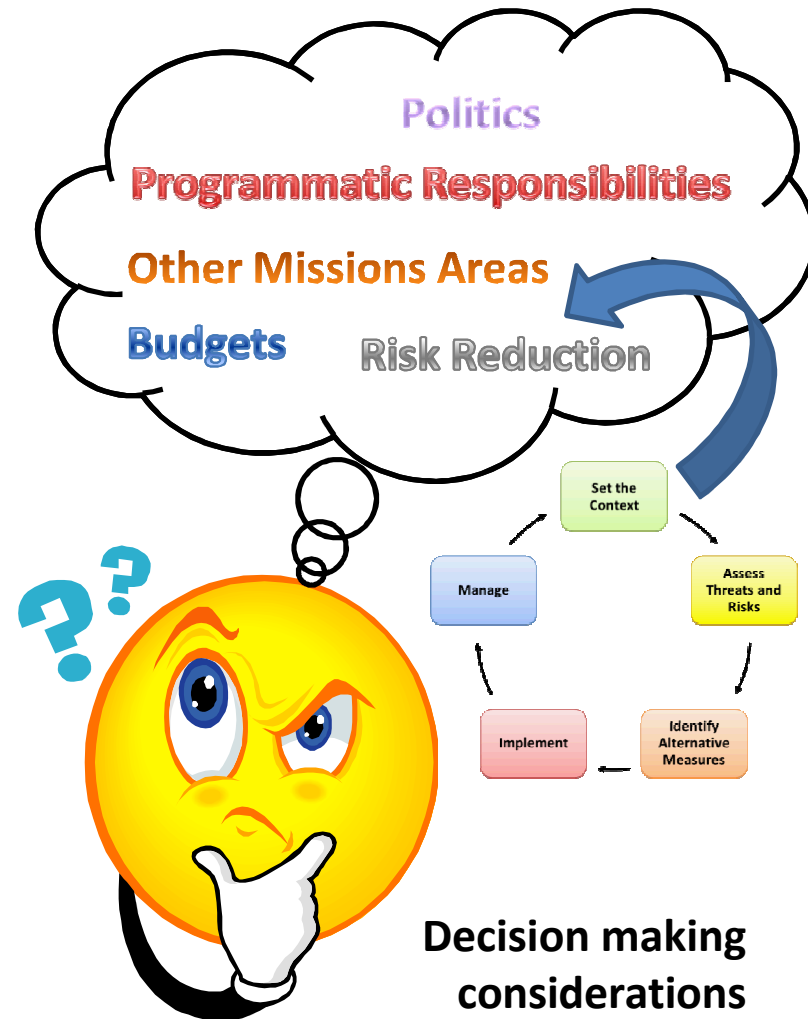
Applying the Risk Informed Approach

Supports various nuclear-security decisions, including:



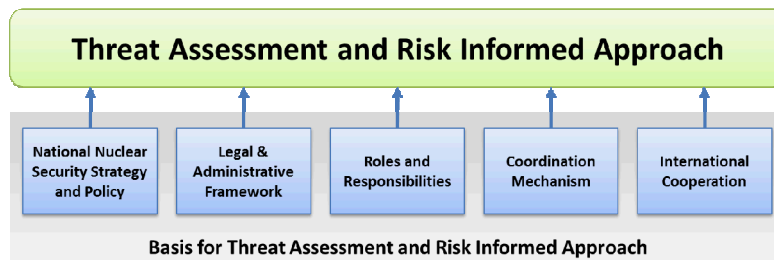
Integrating into Decision Making

- Most States will already have a process in place for decision making
- The risk informed approach is meant to *inform* the decision process
- Should be aligned with all appropriate decision making cycles

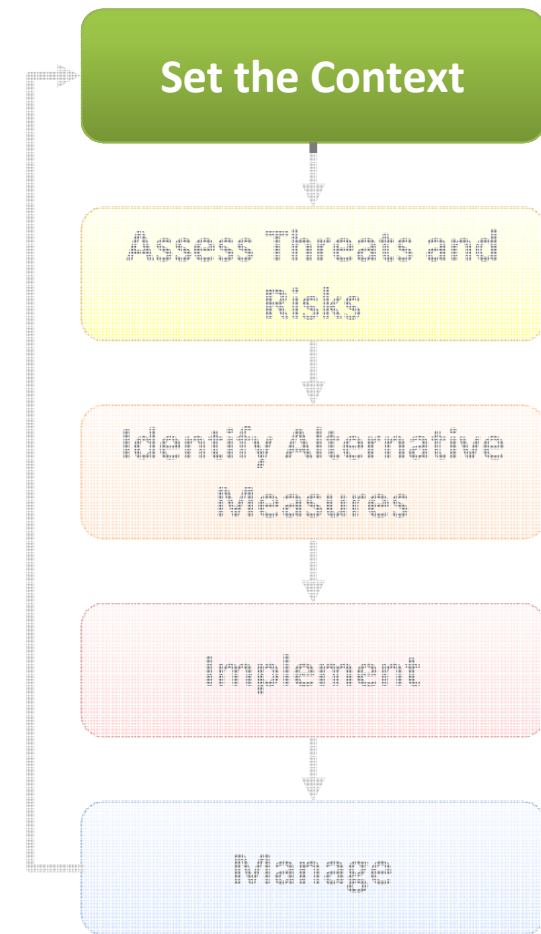


Setting the Context

The context should be informed by those elements (outlined in Module E) that constitute the basis for the threat assessment and risk informed approach.

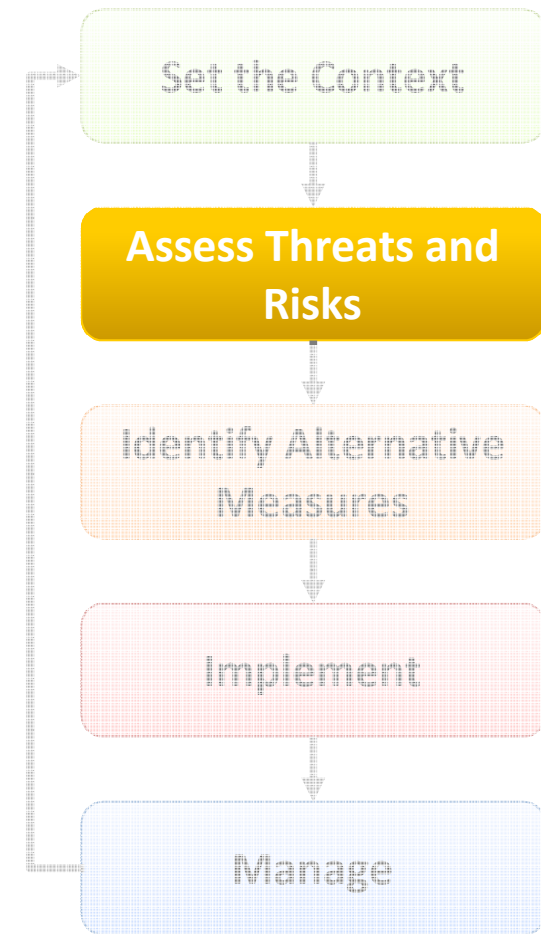


- Setting the context includes:
 - Establishing risk management policy
 - Identifying competent authorities and stakeholders
 - Integrating risk reduction into decision making
 - Establishing coordination and communication



Assessing Threats and Risks

- Appropriate qualitative and quantitative methods are used to assess threat and risks
 - Subsequent modules cover assessing threats and risk in greater detail
- Results must be validated and verified



Identifying Alternative Measures

- Alternative measures should be identified that reduce risk
- Common approaches for identifying and evaluating alternatives include:
 - Gap analysis
 - Cost-benefit analysis
 - National capability analysis



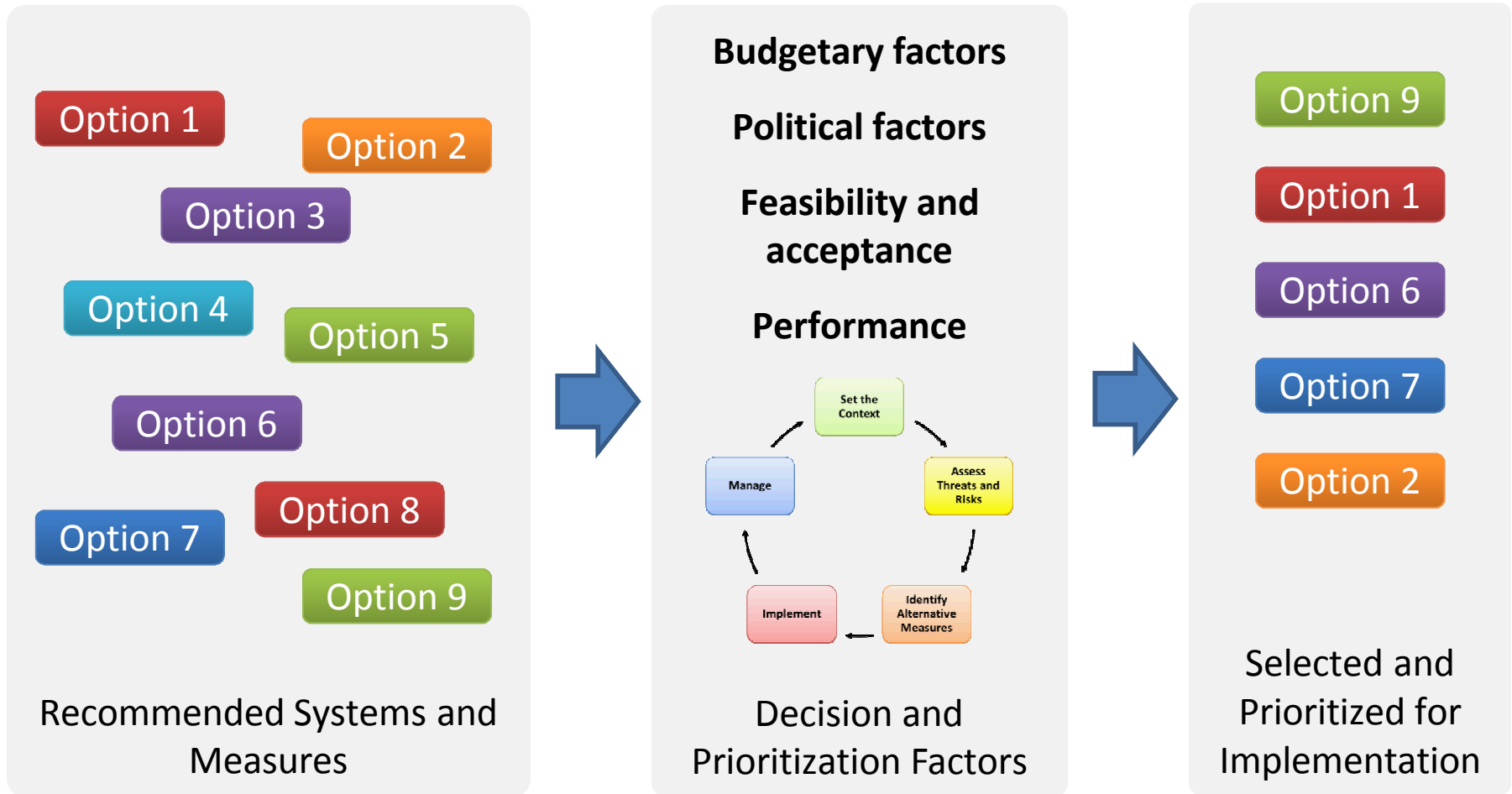
Examples of Alternative Measures

The gap analysis may conclude that detection capabilities are strong at the borders but limited in the domestic interior. Alternatives for addressing that problem include:

- Do nothing detection-wise but continue to strengthen border controls
- Equip law enforcement personnel with the tools needed for detection
- Conduct regular screening of vehicle traffic at interior chokepoints
- Focus more on potential targets by strengthening detection measures at strategic locations and special events

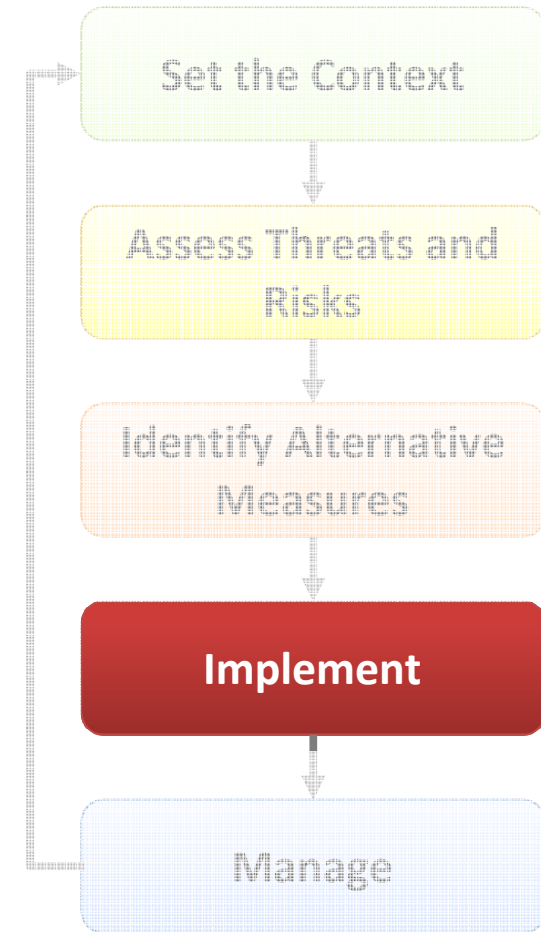


Selecting and Prioritizing Options



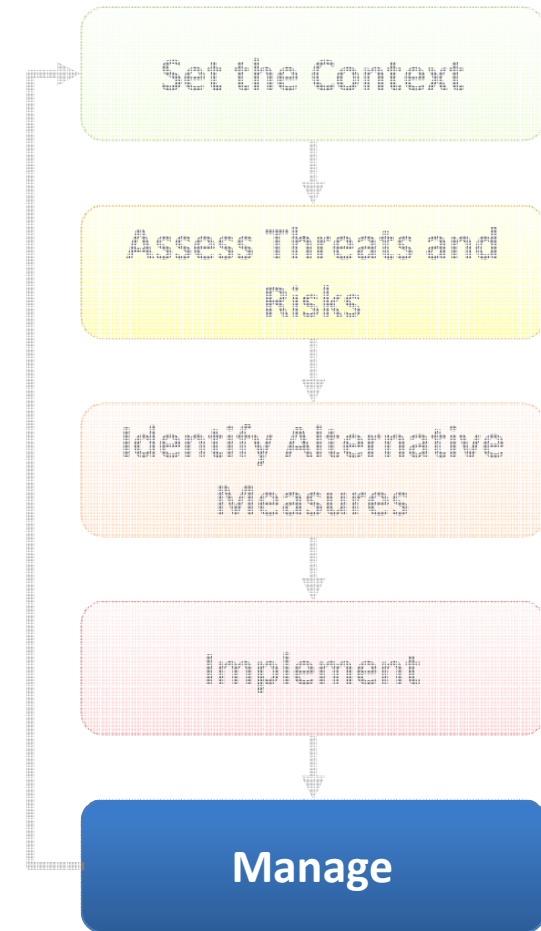
Implementing Nuclear Security Systems and Measures

- Includes developing, deploying, and maintaining nuclear security systems and measures
- Plan of action should include:
 - Development
 - Acquisition
 - Deployment
 - Operation
 - Maintenance
 - Sustainability



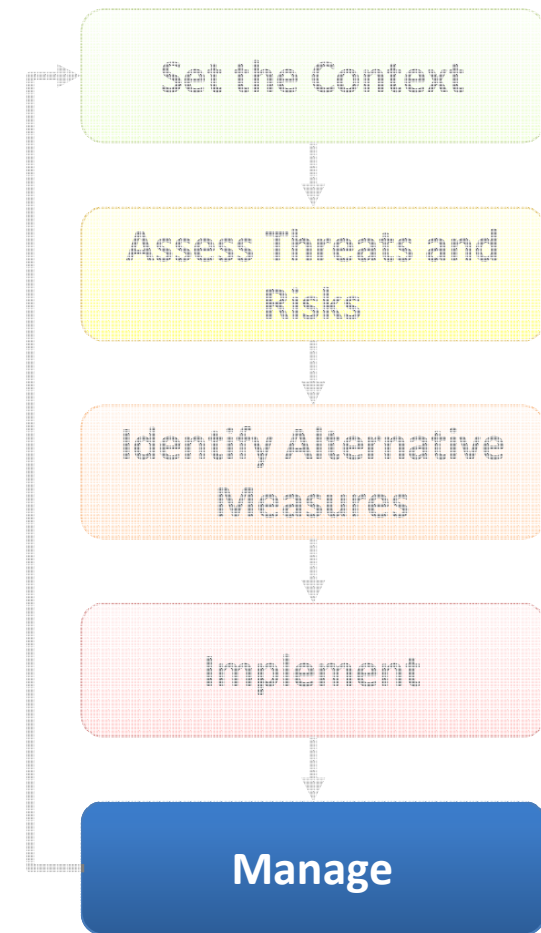
Managing Risks

- Risks should be managed over time
 - Deploying systems and measures is not a one-time action
 - Threat and risk assessments may change
 - Equipment may lose effectiveness or become obsolete
- Systems and measures may need to be upgraded, and adapted as the risk environment changes

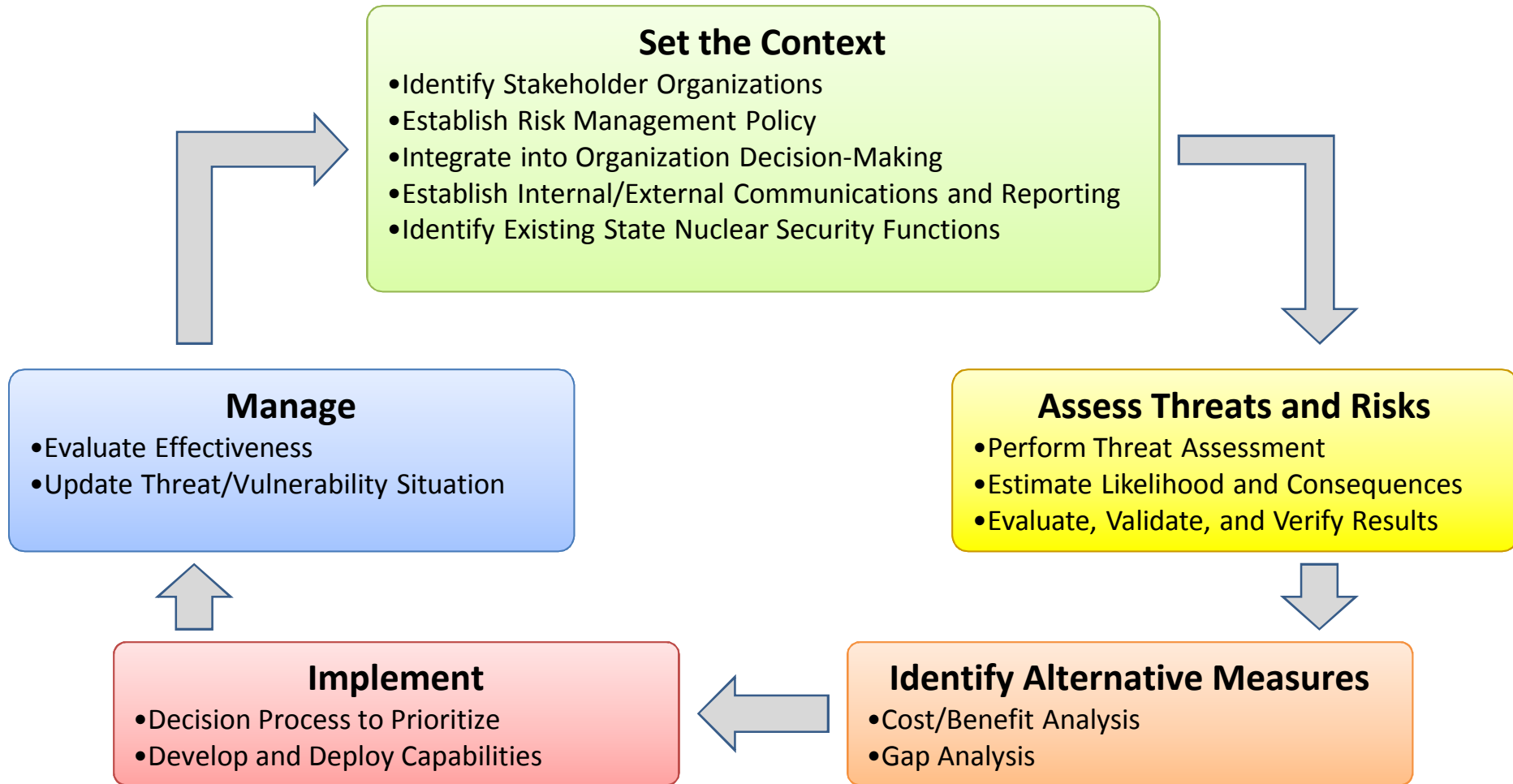


Monitoring Processes

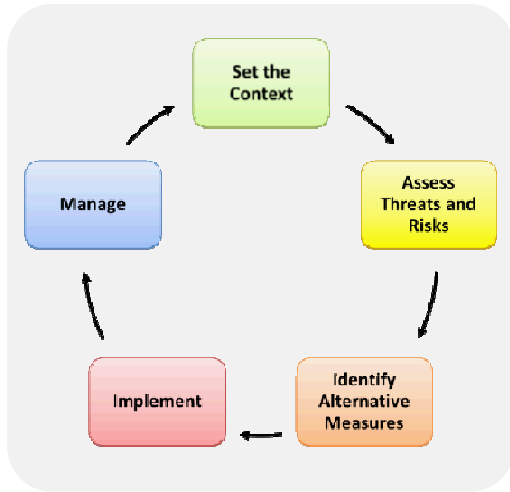
- Effectiveness evaluation
 - Metrics for performance assessment
 - Training exercises can be used to gauge effectiveness
- Trend analysis
 - Changes in adversary behavior
 - New adversaries and targets
- Results of the monitoring process should be used in the next iteration of the risk informed approach



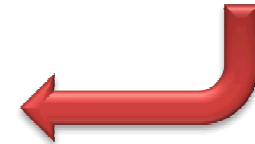
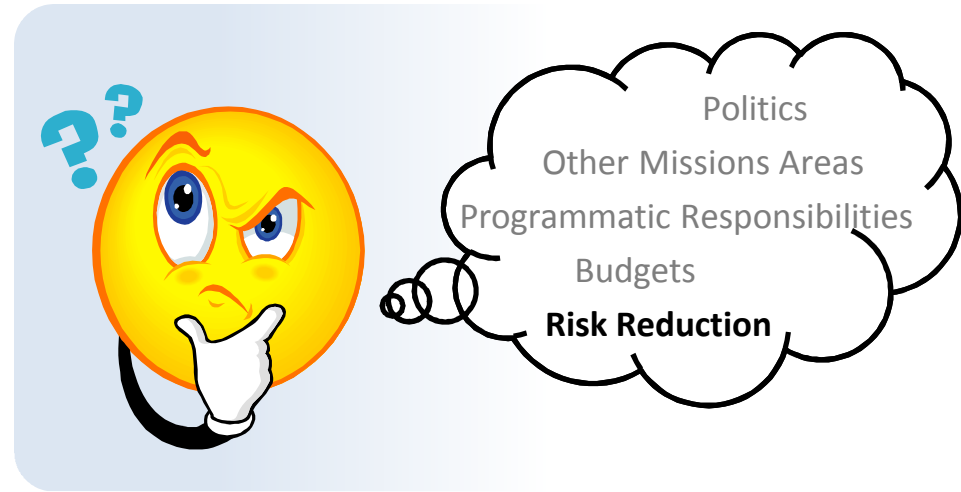
Summary: The Risk Informed Approach



Summary: Using the cycle



**Informs
Decision
Making**



**And
Prioritization**