

RISK ASSESSMENT

Risk = Likelihood × Consequence

A-P-T Research, Inc. conducts risk assessments for launch systems, explosives, and other inherently hazardous operations. These assessments begin with the standard risk equation:

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

From this basic equation a specific risk equation is derived in mathematical terms to reflect the scientific and probabilistic situation under assessment.



Overview

APT has developed risk equations for the following organizations:

- Range Commanders Council
- National Ranges
- Department of Defense Explosives Safety Board
- Air Force Safety Center
- US Army Technical Center for Explosives Safety
- Naval Ordnance Center
- Marines Corps Systems Command
- NATO AC/258
- Explosives Manufacturers

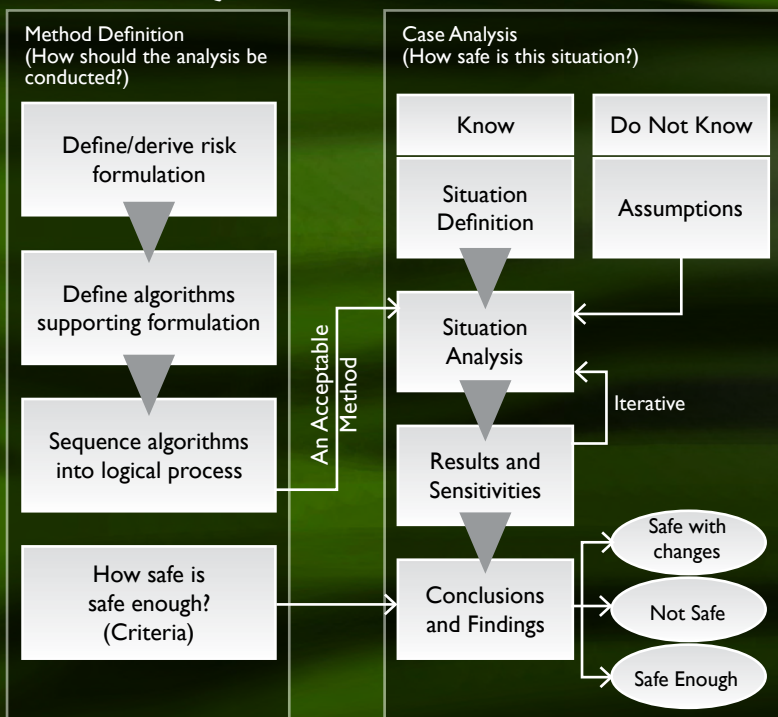
Capabilities

- Conduct Reliability Studies
- Evaluate High Risk Scenarios
- Derive Applicable Risk Equations
- Compile Statistical Analyses
- Minimize the Worst Case Risk

Customers

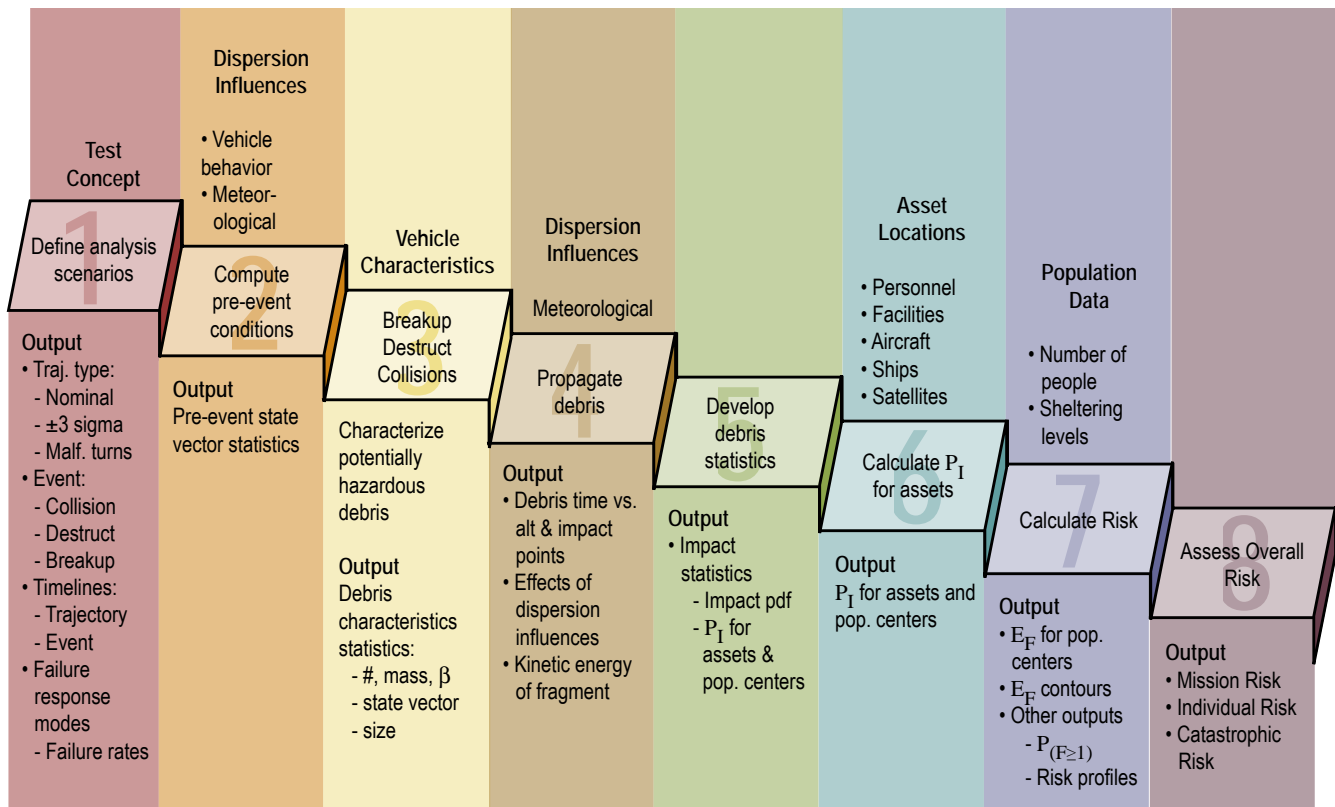
- Ground-Based Midcourse Defense (GMD) Ground-Based Interceptor (GBI)
- GMD Test and Evaluation (T&E)
- White Sands Missile Range (WSMR)
- Space and Missile Defense Command (SMDC) Safety
- National Aeronautics and Space Administration (NASA) Marshall Space Flight Center (MSFC)
- Edwards Air Force Base
- UK
- North Atlantic Treaty Organization (NATO)
- All Armed Services

GENERIC QRA PROCESS



Industry Standard Approach Defined in RCC Standard 321

The 8-Step Process applies to many missile systems and to all national ranges.



Accomplishments

- GMD Integration, Analysis, Test, and Checkout (IAT&C) Procedure Review
- X-34 Quantitative Risk Assessment
- GMD System Integration Assessment
- Reusable Launch Vehicle (RLV) Reliability Study
- Risk Assessment for Commercial Industries

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