

# RANGE SAFETY

*Minimizing Risks and Providing Protection*

Missile flight testing requires the evaluation and acceptance of risks from a variety of hazards. These hazards may result from premature function of explosive components, flight deviations of malfunctioning vehicles, falling debris, and high energy impacts.

Range safety incorporates a multitude of disciplines to minimize the risks involved and provides protection from these potential hazards.

APT supports the vehicle life cycle of test range operations:

- Range Safety Data Package
- Vehicle Analysis
- Assembly and Ground Handling Procedure Validation
- FTS Installation Verification
- Launch Commit Criteria
- Debris Hazard Analysis
- Abort/Hang Fire Procedures



## Example Analyses

- GMD Flight Test Scenario Feasibility Assessment
- Collision Avoidance – Space Asset Risk Assessment
- Intercept Control Volume Assessment
- LV-2 Launch Hazard Assessment
- Collision Debris
- GBI Silo Construction Risk
- GMD Deployment Site Construction Risk
- Flight Termination System Design and Assessment
- CMCM Test Scenario Feasibility
- Flight Test Scenario Development and Risk Assessment
- KLC RSTS Evaluation
- Israeli Test Range Safety System Adequacy
- Hera Flight Termination Module Design Evaluation
- Target Development Test Destruct Fragmentation
- Small Arms Range Hazards
- Flight Corridor for Spaceport Canada First Launch



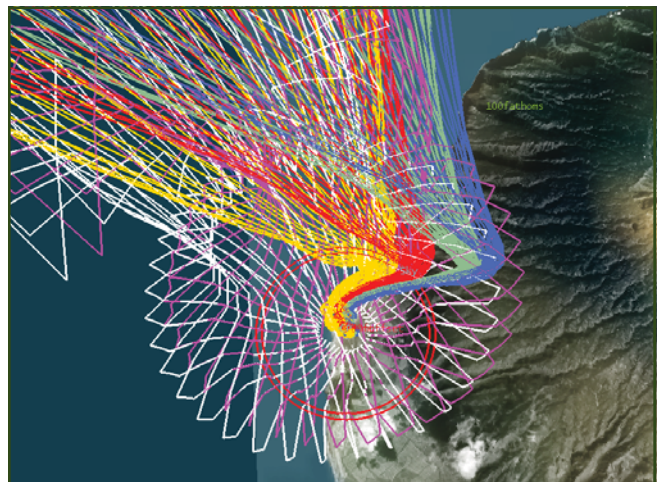
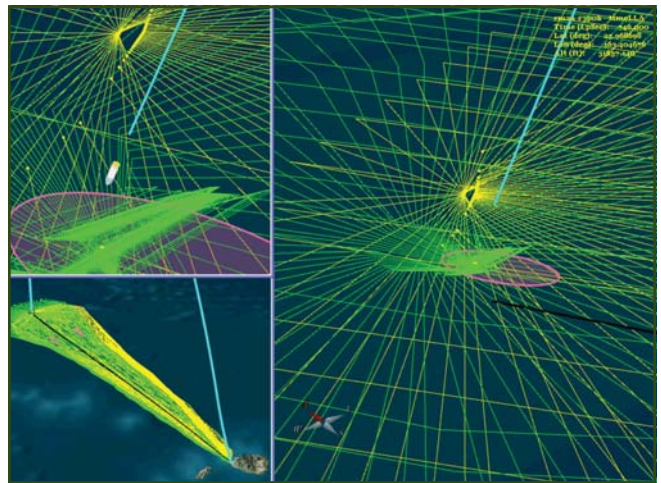
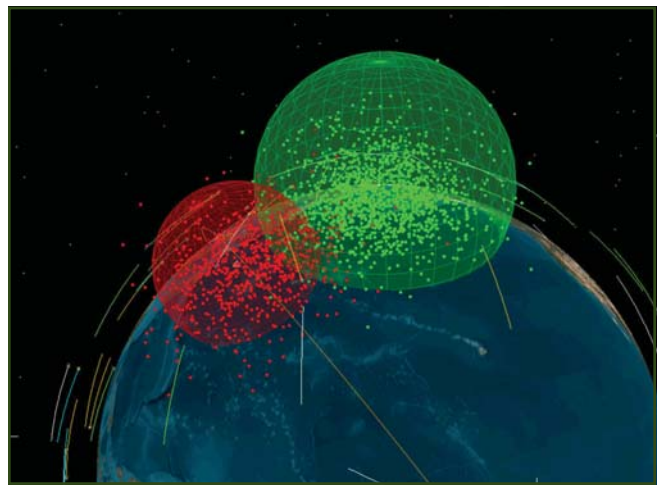
## Capabilities

- Quantitative Risk Assessment (QRA) of Flight and Ground Safety Hazards
- Collision Avoidance & Spacecraft Debris Risks
- Range Safety System Evaluation
- User Flight Termination System Design/ Performance Assessment
- Independent Assessment of Range Safety Issues
- Vehicle Breakup Modeling for Destruct and Intercept Debris
- Hazardous Procedures Development & Validation
- Evaluate Safety Quality Procedures
- Vehicle Malfunction and Safety System Reliability Assessment

## Customers

- Ground-based Midcourse Defense (GMD)
- Ground Based Interceptor (GBI)
- White Sands Missile Range
- Yuma Proving Ground
- Space & Missile Defense Command
- Missile Defense Agency
- Marshall Space Flight Center
- Arrow Interceptor
- PAC-3
- LV-2 Target System
- Hera Target System
- Critical Measurements Countermeasures (CMCM)
- THAAD

# Analysis Examples



## APT Point of Contact

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