

# MDA Test Overview



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# Missile Defense Flight Testing Challenges

- Distances flown by targets and interceptors can exceed 7,000 km
- Hazard debris areas for interceptor tests can cover thousands of square miles (far exceeding range limits)
- Interceptor costs range from \$50M to \$250M per test
- Test instrumentation requirements exceed all US Western Range assets
- MDA must develop all classes of BMD targets from SRBMs to ICBMs
- Only validated Models & Simulations can characterize the full performance of the integrated BMDS

***MDA Flight Test Designs are Optimized to  
Validate Models & Simulations***

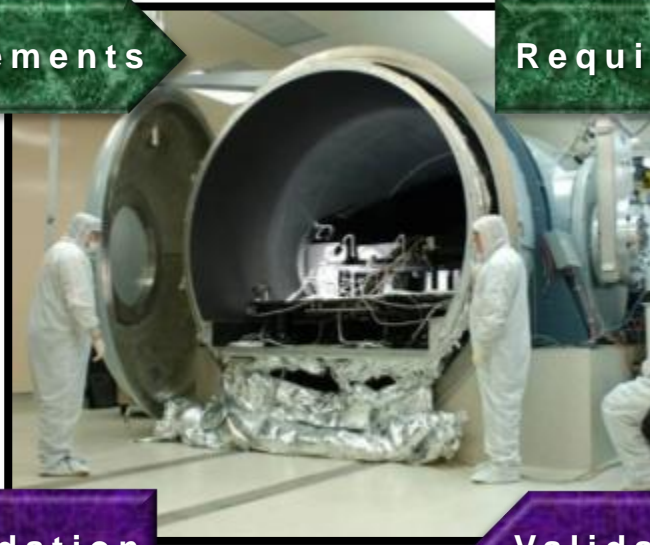


# Missile Defense Test Venues

## All-Digital Modeling & Simulation Tools



## Hardware-In-the-Loop



## Flight Tests



Requirements

Requirements

Validation

Validation

Target Launch  
Pacific Missile Range  
Facility  
Kauai

<b>Cost:</b>	<b>\$1000s per Test Run</b>	<b>\$100s of Thousands / Test</b>	<b>\$10s of Millions / Test</b>
<b>Number:</b>	<b>1,000s of Runs</b>	<b>100s of Test Runs per Year</b>	<b>&lt; 20 per Year</b>



# BMDS Test Planning & Design “A Collaborative Process”

## Stakeholders



Missile Defense Agency



Director, Operational Test & Evaluation



Combatant Commands



Director, Developmental Test & Evaluation



Operational Test Agencies (OTA)

### Phase I Data Requirements

Critical Engagement Conditions (CEC)

Empirical Measurement Events (EME)

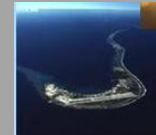
Performance Assessment Objectives (PAO)

Critical Operational Issues (COI)

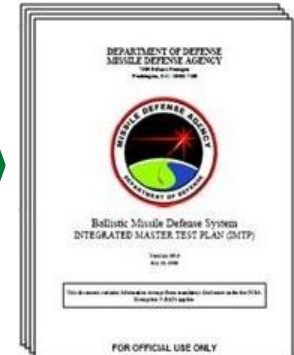
### Phase II Test Designs



### Phase III Resources, Targets, and Infrastructure



### Integrated Master Test Plan (IMTP)



**IMTP Updated Twice Per Year, Signed by All Stakeholders**



# FTM-15: Aegis Flight Test Highlights

- **First SM-3 Block 1A intercept of Intermediate Range Ballistic Missile target**
- **First use of AN/TPY-2 as remote sensor in fire control loop with Aegis BMD**
- **First live fire event using C2BMC in control of a forward based radar**
- **First Combatant Command led Theater Regional Test Operational Overlay in a live fire event**



(Click picture to play mission video)



# Flight Test Schedule

