FACT SHEET

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NATIONAL MISSILE DEFENSE INTEGRATED FLIGHT TEST PROGRAM

INTRODUCTION

The National Missile Defense Test and Evaluation (T&E) program is conducted to be affordable while still providing the necessary data for use in the development of an effective NMD system. The testing philosophy used is best described as an analytically-based test program that clearly relates system requirements to the test objectives. The NMD test program includes a variety of system testing. including Integrated Flight Tests (IFTs), Integrated Ground Tests (IGTs)and use of models and simulations. This approach increases confidence in the program and reduces program risk.

INTEGRATED FLIGHT TESTS [IFTS]

The test that receives the most publicity is the Integrated Flight Test (IFT). The IFT Program is used to ensure that various elements of the system can not only complete their individual missions, but that they also effectively communicate and work with the other elements of the system. Using prototypes of the actual system, the Weapon System, consisting of the booster and exoatmospheric kill vehicle (EKV), are launched from Kwajalein Missle Range in the mid-Pacific Ocean and the target (a look-alike dummy warhead) is flown out of Vandenberg Air Force Base in California. The goal is for the weapon system to separate (the booster and the EKV), the EKV then uses its on-board sensors to “find” the target and finally it positions itself to “kill” the target.

The JPO will seek to conduct three IFTs per year beginning in FY 2001 and as the system progresses, the prototypes will be replaced by the actual elements. A total of 21 flight tests are planned prior to the completion of this segment of the testing program. While this testing is costly, it provides significant data that allows the designers to refine the system and to improve any malfunctions that may have been found.

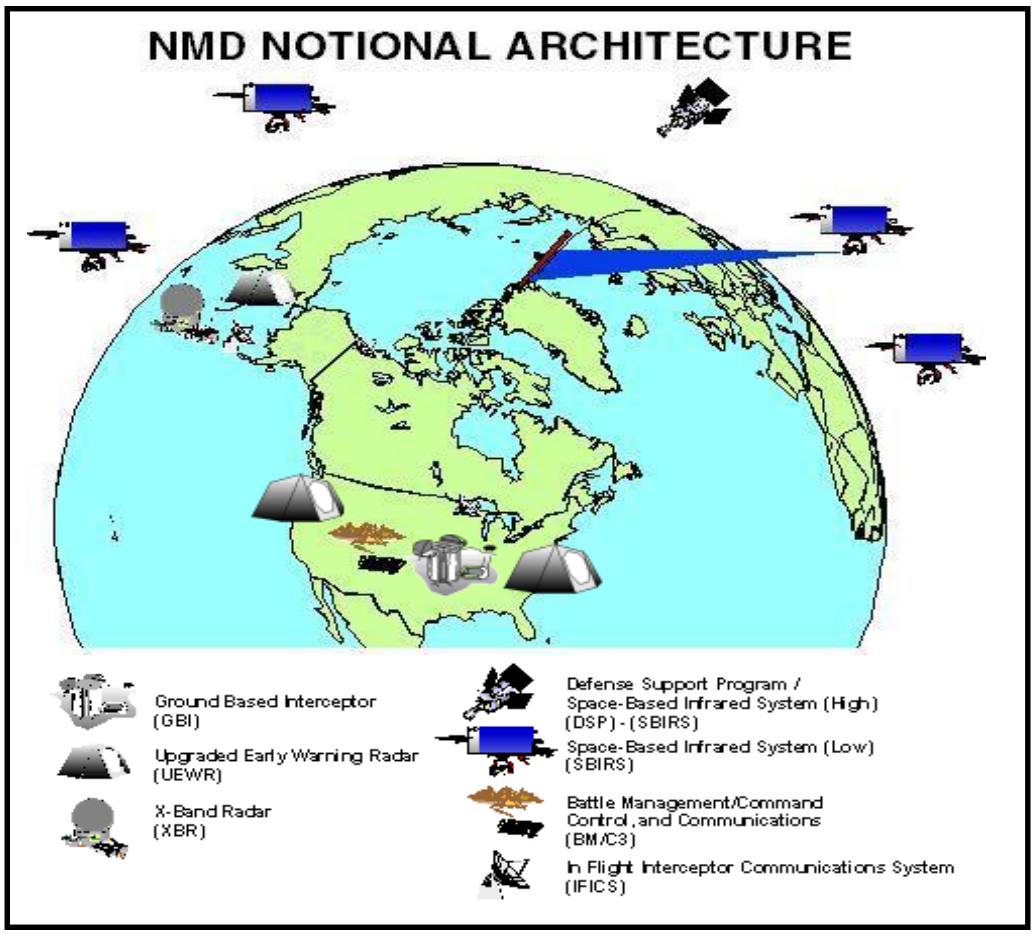
Ground Based Interceptor launches from Kwajalein Missile Range as part of an Integrated Flight Test..

INTEGRATED GROUND TESTS [IGTS]

Ground testing is a unique opportunity in testing. The main advantage of ground testing vs. flight testing is that when you have a flight test, you cannot reuse the equipment. On a ground test you can use the same hardware several times. A ground test uses computers to simulate different aspects of the flight. While utilizing some of the actual hardware that is used in NMD, the computers offer simulations of an incoming threat, how the information flow through the elements work, etc. Additionally, the use of computers in the ground test atmosphere, allows a strong understanding of each element, how it reacts in different situations and enables each element to be tested with other elements in the lab.

Modeling and Simulation

In view of the range of threats, environments and conditions under which the NMD system must operate, there is no practical, cost-effective method to verify NMD system performance through testing alone. The NMD Program's approach to system verification, therefore, integrates modeling and simulations into its ground and flight test program. NMD modeling and simulation will be useful for assessing system performance against scenarios and threats beyond those that can be tested due to physical testing limitations and cost constraints.



Frequently Asked Questions

How fast is the Kill Vehicle going when it hits the hostile reentry vehicle?

- More than 15,000 miles per hour. The reentry vehicle (warhead) is also traveling at about the same speed or slightly faster. The collision between the two occurs at relative (closing) speeds of up to 16,000 miles per hour.

Is there an explosion?

- No. There is a collision. It occurs in space. It is very powerful and generates debris, gas and dust. The gas and dust may actually look like they burn like a gas cloud does, but only for an extremely short time. The debris and dust will reenter the atmosphere and burns up like meteors do. Nothing reaches the ground.

FREQUENTLY ASKED QUESTIONS [CONTINUED]

What is the hostile reentry vehicle look like?

- It will probably look like a long, smooth cone and will probably be made of heat shield material on the outside to allow it to reenter the earth's atmosphere.

What is inside the reentry vehicle?

- The reentry vehicle will carry a bomb of some kind. That bomb could be nuclear, biological or chemical. It could cause mass destruction of people and cities if it reaches its target intact. We want to collide with it in space and prevent it from reaching earth.

What else will fly along with the hostile reentry vehicle?

- Probably some decoys of some kind to fool us into colliding with them instead of the reentry vehicle. Probably some debris from the rocket stages themselves.

How will we know we've collided with the reentry vehicle?

- We will use a wide variety of sophisticated space-based, ground-based and airborne sensors and instruments to determine the success of the intercept, including advanced radar images and tracking information, high-speed photographs and video, and radio signals from the target. A very advanced Photonic Hit Indicator system on the target provides extremely precise hit data.

Will future NMD tests be truly representative of an actual NMD engagement, or will they be "controlled" or "scripted?"

- These developmental flight tests are carefully designed to answer specific questions about elements of the NMD system. They are not controlled or scripted; rather, they are designed to create the conditions necessary to answer specific questions.

SUMMARY

Combining development testing and operational testing efforts will be coordinated to maximize benefits to the overall T&E program. While the early testing is primarily developmental in nature it is transitioning to primarily operational testing as testing progresses.

The NMD combined T&E program utilizes many different types of testing and simulations that enhance data and increase statistical confidence.

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