

SCOMM

115:6

Alaska State Legislature



Official Business

State Capitol
Juneau AK
99801-1182

SPECIAL COMMITTEE ON MILITARY AND VETERANS' AFFAIRS

Representative Lisa Murkowski, Chair

SPECIAL COMMITTEE ON ECONOMIC DEVELOPMENT AND TOURISM

Representative Gail Phillips, Chair

SPECIAL COMMITTEE ON WORLD TRADE & STATE/FEDERAL RELATIONS

Representative Ramona Barnes, Chair

Present:

General Phil Oates, Commissioner

Department of Military and Veterans' Affairs

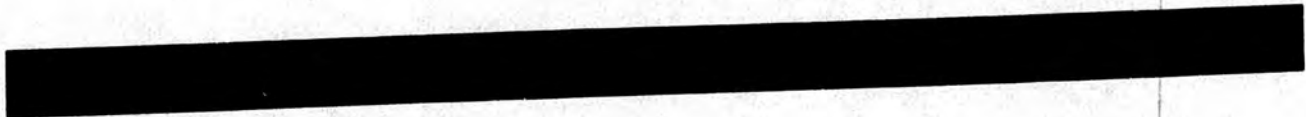
**A briefing on the potential economic benefits of the National Missile
Defense to Alaska**

**February 8, 2000
Senate Finance 532
4:30 p.m.**

NATIONAL MISSILE DEFENSE



ALASKA

A thick black horizontal bar redacts the text at the bottom of the page, positioned below the word "ALASKA".

ANTICIPATED ALASKA STATIONING (Components Effective 2005)

New Jobs : 309

Construction: \$882 M

X-Band Radar



Shemya

Fiber Optic Cable

Clear AFS

Ft. Greely

Elmendorf AFB/
Ft. Richardson

Site Activation
Organization

NORAD
Command Post

Early
Warning
Radar



Launch
Complex

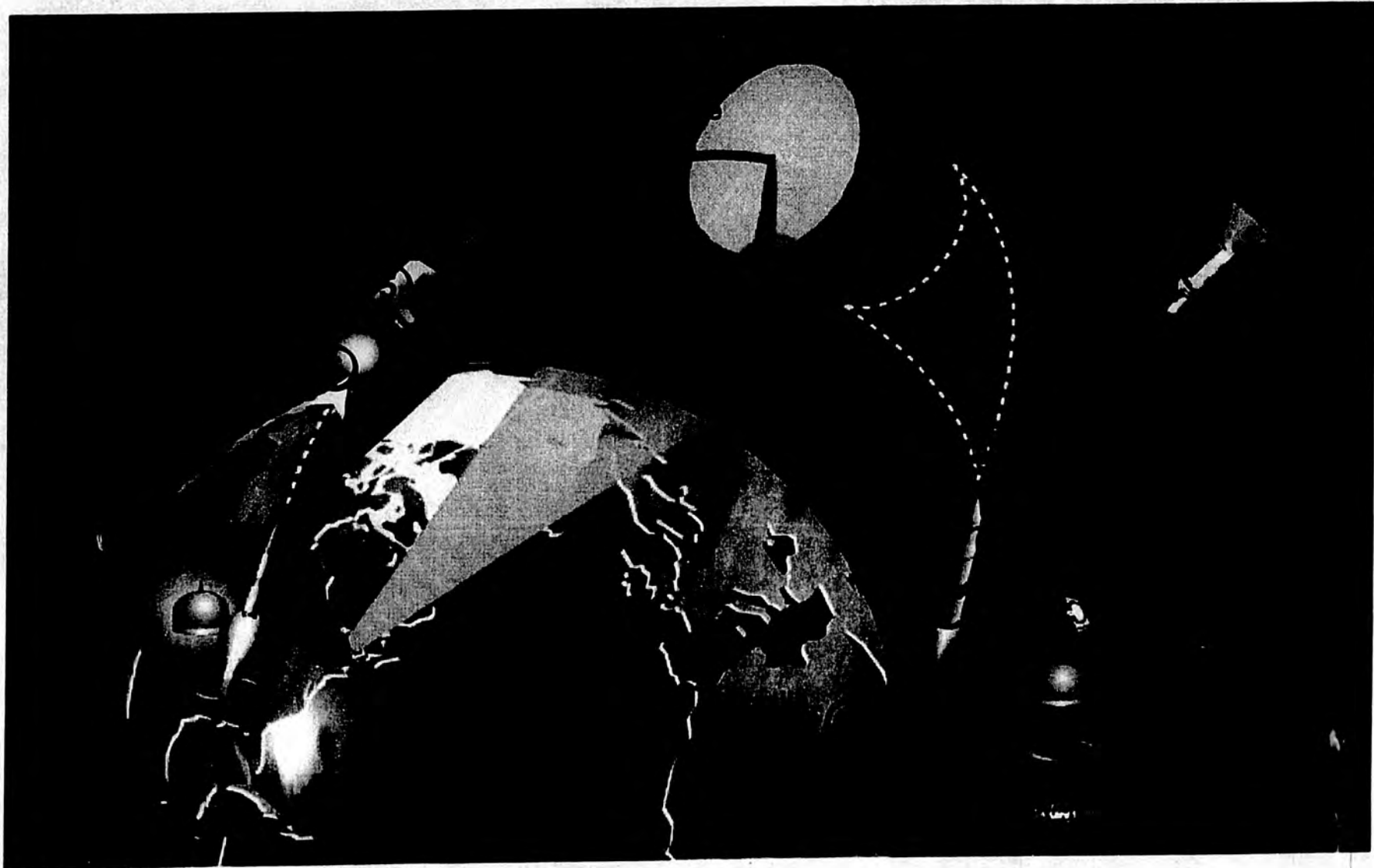


Command
Post



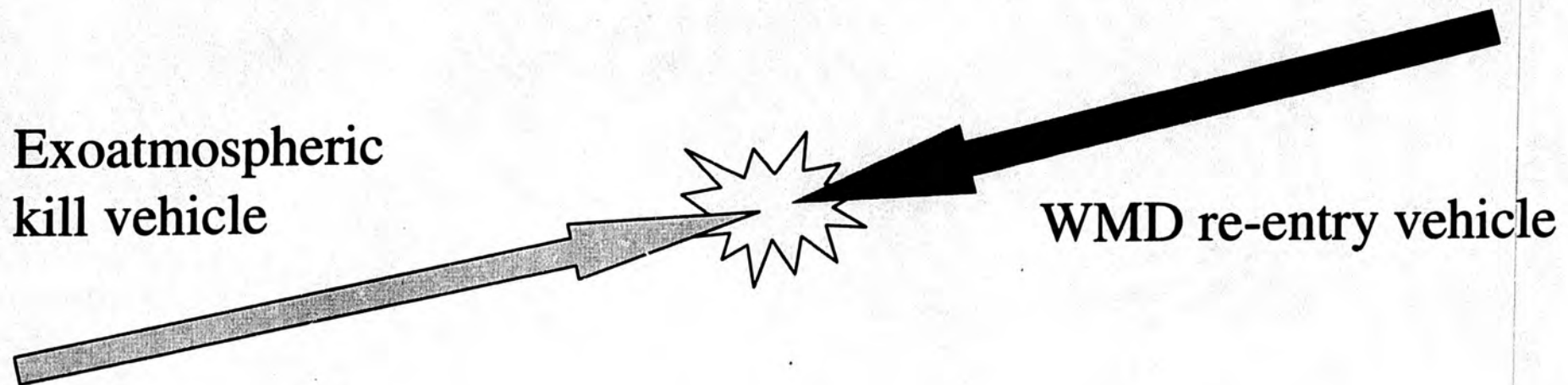
Alaska National Missile Defense Concept Briefing, January 24, 2000

OPERATIONAL CONCEPT



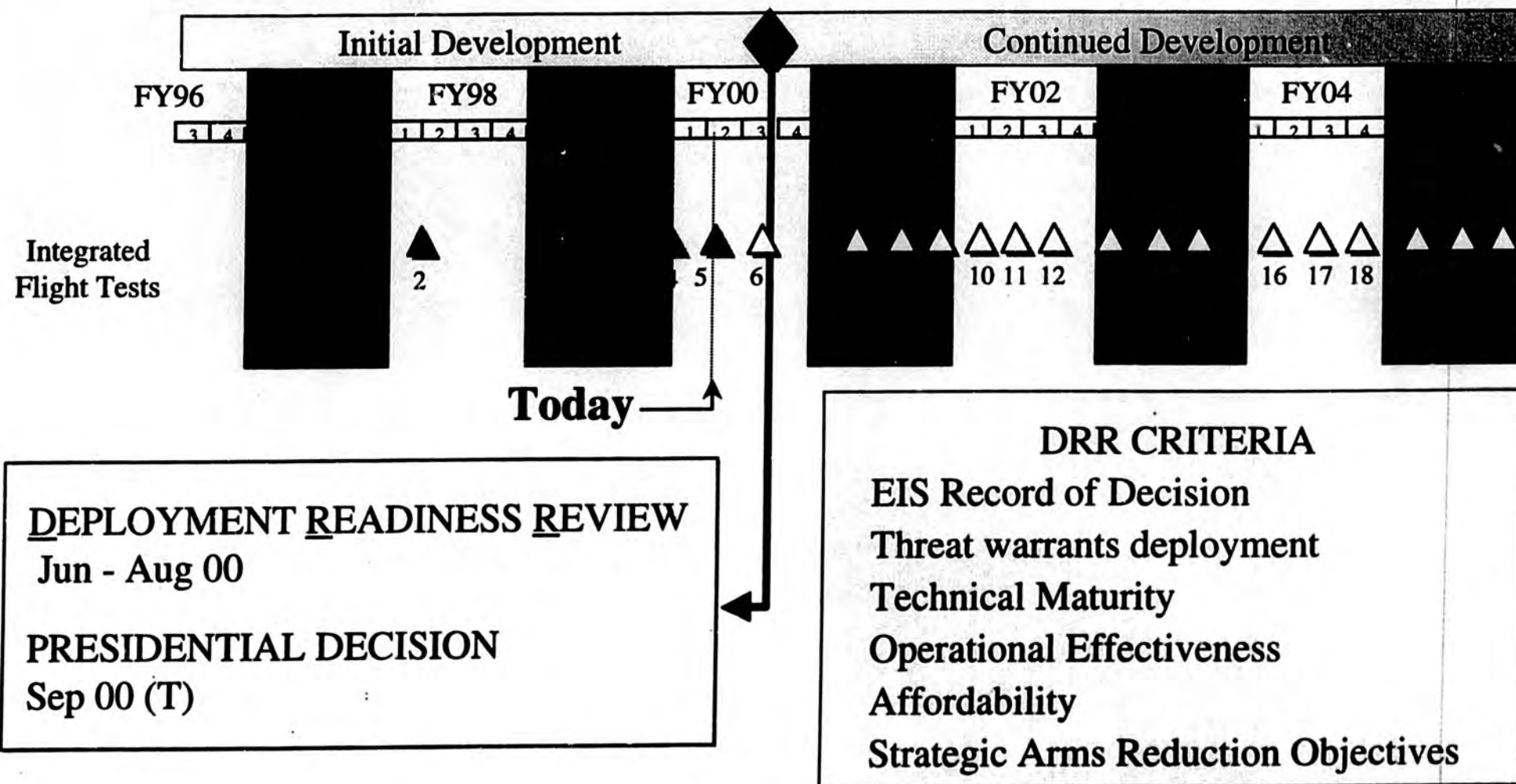
Alaska National Missile Defense Concept Briefing, January 24, 2000

THE INTERCEPT HIT-TO-KILL TECHNOLOGICAL CHALLENGE



Closure rate 30,000 mph . . .
2 rifle bullets fired at each
other close at 4,000 mph

KEY DECISION POINTS



Phased Deployment Based Upon Technical Progress

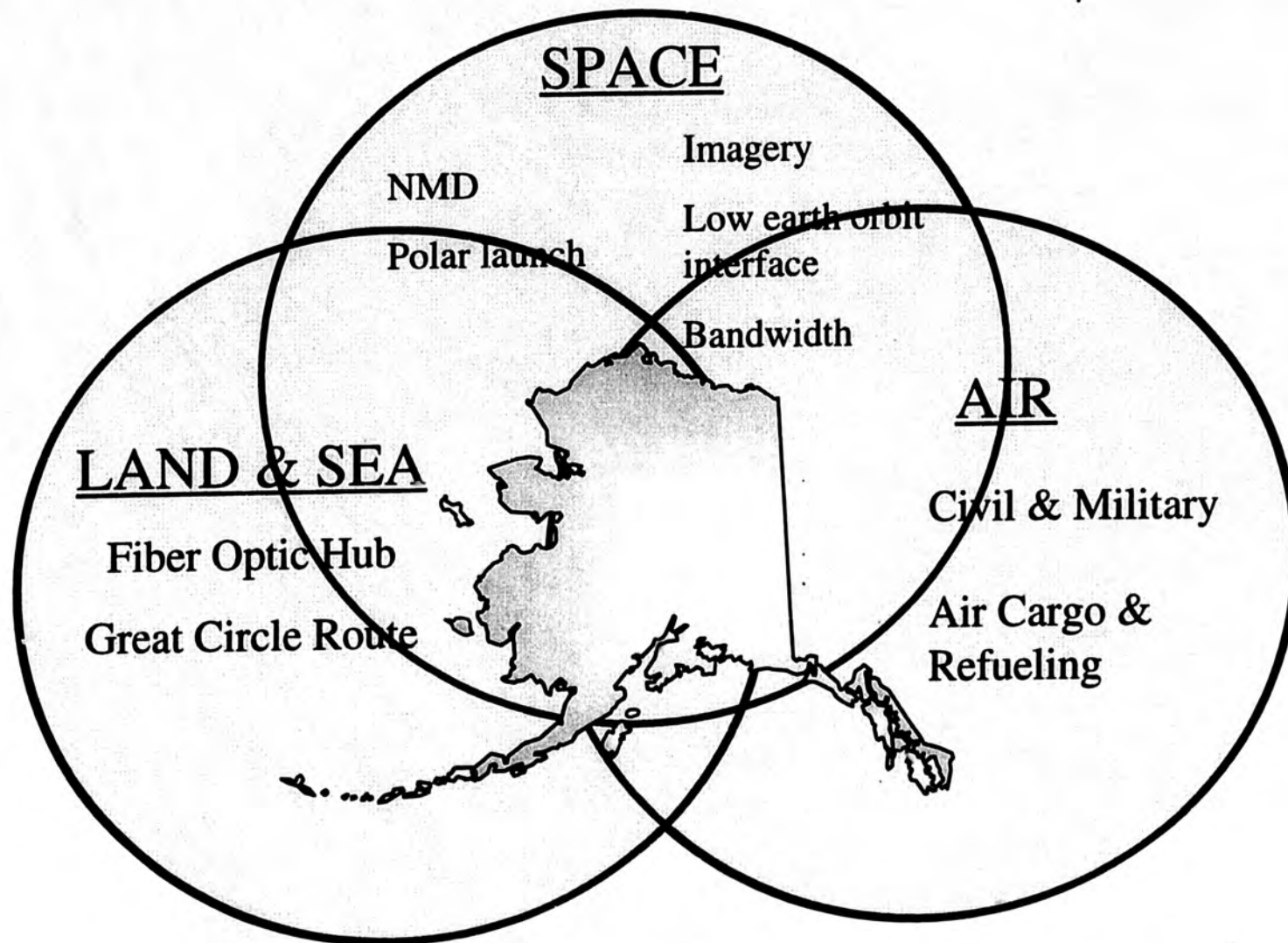
Alaska National Missile Defense Concept Briefing, January 24, 2000

NEW ECONOMIC ENGINE FOR ALASKA

Issue: NMD fielding may provide for economic and educational diversification and growth potential.

Potential solution: State government establish a partnership of leaders of academia, business, military and government to formulate a strategy.

ALASKA'S GEOGRAPHIC ADVANTAGE



Alaska National Missile Defense Concept Briefing, January 24, 2000

LEARN FROM OTHER STATES

✓ PARTNERS:

North Dakota

Florida

Mexico

Oklahoma

Alabama

Utah

✓ FORUM:

Cabinet

University

Chambers of commerce

Municipal league

Legislative levels

*There will be no great
achievement without great
effort and investment!*

OPPORTUNITIES

- ✓ Process space surveillance data in Alaska.
- ✓ Employ the UAF supercomputer for modeling.
- ✓ Increase use of the Kodiak Launch Facility.
- ✓ Extend the NMD fiber-optic cable to the Far East and Hawaii.
- ✓ Store and maintain additional interceptors in Alaska.
- ✓ Exploit competitive advantage of direct polar insertion.
- ✓ Partner with Canada for space operations over the pole.

OPPORTUNITIES

- ✓ Develop NMD related technologies.
- ✓ Expand imagery and remote sensing commerce.
- ✓ Host NMD industry forum in Alaska.
- ✓ Host DCED NMD business fairs and contractor conferences.
- ✓ Place NMD on agenda on Jobs Cabinet.
- ✓ Establish Long-term solutions in coordination with:
 - Alaska Science and Technology Foundation
 - Alaska Human Resource Investment Council

TRADES & PROFESSIONS

facility maintenance

equipment maintenance

security

custodial

construction

education

biologists

administrative

missile crews

law enforcement

communications

automated systems

transportation

radar operator

HAZMAT specialist

fuel management

DISCUSSION

**How can the State of Alaska capitalize
upon the NMD mission and fielding?**



FACT SHEET



BMDO FACT SHEET IN 00 05

NATIONAL MISSILE DEFENSE PROGRAM

INTRODUCTION

"....we are affirming that there is a threat, and the threat is growing, and that we expect it will soon pose a danger not only to our troops overseas but also to Americans here at home.... On August 31st, North Korean launched a Taepo Dong 1 missile.... The Taepo Dong 1 test was another strong indicator that the United States in fact will face a rogue nation missile threat to our homeland against which we will have to protect the American people."

—William S. Cohen, Secretary of Defense, January 20, 1999

"The primary mission of the NMD system being developed is the defense of the U.S. — all 50 states — against a limited strategic ballistic missile attack such as could be posed by a rogue nation. Such a system also would provide some capability against a small accidental or unauthorized launch of strategic ballistic missiles from more nuclear-capable states."

—William S. Cohen, Secretary of Defense, February 2, 1999

The U.S. traditionally has relied on the wide expanses of the Atlantic and Pacific oceans to keep our homeland at arms length from the turmoil of global conflict. However, the proliferation of long range ballistic missiles and weapons of mass

destruction to third world countries may negate much of this advantage and possibly deliver a serious blow to the national security of the United States.

PROLIFERATION

At present, only a few countries possess missiles that can strike the U.S., but the possibility that this number will increase cannot be ignored. Today, technology is spreading around the world at an astonishing rate, including technology dealing with ballistic missile development and, more ominously, with weapons of mass destruction.

Complementing this growing technological capability is the continuing intent among some regimes to harm the international system, particularly the U.S. and its allies. Furthermore, it is impossible to predict whether traditional notions of deterrence will operate under future conditions.

NMD MISSION

The Ballistic Missile Defense Organization (BMDO) has balanced technological development, affordability, the potential threat, international treaty considerations and competing national defense priorities to establish the National Missile Defense (NMD) program. BMDO established an NMD Joint Program Office (JPO) to manage the multiple-Service components of the NMD system and oversee their integration into an effective architecture.

The NMD program is a Major Defense Acquisition Program designed to develop and deploy an NMD system. Expected Initial Operational Capability (IOC) is in 2005. The decision to deploy



JANUARY 2000

FORGING AMERICA'S SHIELD

the NMD system will be taken at a Deployment Readiness Review in 2000. The initial deployment, Capability 1 (C1) will be limited to 20 missiles. Increasingly capable deployment options after C1 will add further capability to the NMD system.

If deployment is required, the NMD system could protect the U.S. against limited attack by long range missiles. However, it would not be capable of repelling massed attacks or attacks by short range missiles.

Development of an NMD system may reduce the strategic value of long range ballistic missiles before they become commonly viewed as an essential component of international power and prestige and thereby present a strong incentive against these missiles.

NMD SYSTEM

Although no deployment has been authorized, the NMD Deployment Readiness Program is completing technology development and initial system integration with the goal of maturing the key components enough to field as a system. The key NMD components include a ground based interceptor (GBI), an X-band radar (XBR), Upgraded Early Warning Radars (UEWR), Battle Management/Command, Control, and Communications (BM/C3) and space sensor technology.

The GBI program is developing, demonstrating and validating the technology and components for a state-of-the-art, cost-effective, lightweight, nonnuclear, hit-to-kill missile to intercept and destroy intercontinental ballistic missiles targeted against the United States. Developing the GBI is the highest priority in the NMD program. This program consists of two efforts: the Kill Vehicle (KV) and the booster. The KV efforts are currently concentrating on the technical issues of the interceptor seeker.

The NMD XBR is designed to provide target tracking and discrimination. Currently, NMD program developers are constructing a testbed radar to resolve several technical issues and to participate in the system testing.

Upgrades to America's Early Warning Radar network will provide the existing forward-based attack warning system the capability to augment the operation of a NMD system. These radars can be modified quickly and with a cost that is significantly less than the cost of building new radars.

The BM/C3 project is focused on integrating the NMD interceptor and sensor operations in support of informed decision making. Currently, TRW is building the BM/C3 element to develop the best NMD command, control and communications architecture for the entire NMD system.

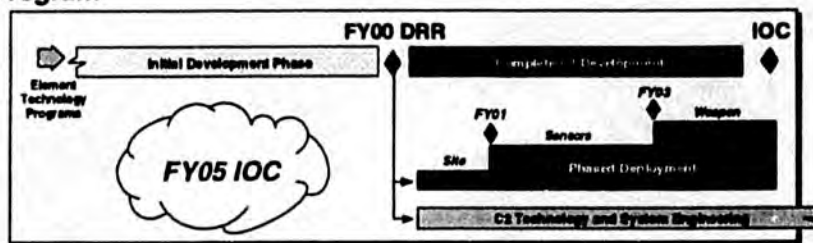
On 1 May 1998, BMDO awarded Boeing the contract to perform the responsibilities as the Lead System Integrator. Boeing's role will be that of the NMD Program "prime" contractor which will require them to integrate the development of the element programs into a system and successfully execute a test program leading to an integrated system test (IST) prior to the Deployment Readiness Review in Summer 2000. Under government oversight, Boeing will integrate the Raytheon kill vehicle into an off the shelf booster stack which was selected earlier this year. Boeing will also develop alternative architectures that could be deployed to counter a wide spectrum of potential threats.

Other components vital to NMD are the multiple components of the Space Based Infrared System. Although not funded by BMDO, these systems play critical roles in theater and national missile defense by providing surveillance, warning, and track data to overall missile defense operations.

PROGRAM SCHEDULE

Currently, flight tests are being conducted at the Kwajalein Missile Range in the Pacific Ocean. First, the elements will be tested individually, and then eventually as a system. If successful, these tests will indicate that an effective and affordable NMD system can be built if so directed. The program has already conducted two successful sensor tests and one successful "hit to kill" intercept test. The NMD Program is scheduled to conduct two more intercept tests prior to the Deployment Readiness Review, scheduled for Summer 2000.

NMD Program



Ballistic Missile Defense Organization, External Affairs,
7100 Defense Pentagon
Washington, D.C. 20301-7100
(703) 695-8743



FACT SHEET



BMDO FACT SHEET JN 00 10

NATIONAL MISSILE DEFENSE INTEGRATED FLIGHT TEST THREE (IFT-3)

Introduction

The National Missile Defense (NMD) program is being developed by the Ballistic Missile Defense Organization's (BMDO) NMD Joint Program Office (JPO). Its purpose is to protect all 50 states from a limited number of long-range ballistic missiles launched from a rogue nation or as a result of an accidental or unauthorized launch from a current nuclear power. If deployed, the expected Initial Operational Capability (IOC) is in 2005. The decision to deploy the NMD system will be based on data reviewed at a Deployment Readiness Review (DRR) in 2000.

The focus of the Integrated Flight tests are to provide the data needed to assess NMD's developing capabilities, system performance, and overall system maturity. Analysis of data collected from the IFTs is required to assess NMD maturity and capability prior to the Summer 2000 DRR.



The IFT-3 Payload Launch Vehicle lifts off from the Kwajalein Missile Range on 2 October 1999.

INTEGRATED FLIGHT TEST (IFT) PROGRAM

The IFT Program incorporates developmental flight tests that are carefully designed to answer specific questions about elements of the NMD system. NMD elements such as the Ground Based Radar (GBR) and the Battle Management/Command, Control, and Communications (BM/C3) will participate in Weapon System flight tests to test their individual capability and later at the system level (IFT-4 and beyond) to test their compatibility to work together. IFTs use targets (a look-alike dummy warhead, or reentry vehicle and decoys) flown from Vandenberg Air Force Base (VAFB), California, toward the Kwajalein Missile Range (KMR) located about 4,300 miles away in the mid-Pacific Ocean. The NMD Program conducted two successful non-intercept IFTs in 1997 and 1998. The consisted of exoatmospheric kill vehicle (KV) sensor fly-bys of test targets. During the tests, operation of the KV sensor was validated in the flight environment. Data was collected, transmitted to the ground and used to exercise and refine target discrimination algorithms for subsequent intercept tests. During both IFTs the KV sensor successfully located the target warhead from among the threat representative decoys, a very significant technical achievement.

IFT-3

IFT-3 was the first Weapon System KV flight test mission. The primary objective of this mission was to demonstrate KV flight test performance. Performance was measured by the ability of the KV to: (1) separate/deploy from the Payload Launch Vehicle (PLV) and orient toward the target complex, (2) acquire the target complex, (3) track the objects in the target complex, (4) discriminate the objects in the target complex, (5) select the RV and divert/home toward the RV and (6) to intercept the RV. Secondary objectives included demonstrating of NMD integrated prototype element and system functional capability (the GBR's ability to detect, acquire and track the target complex and BM/C3's ability to integrate system elements) and collecting data for (1) models and simulations; (2) element and system performance analyses; (3) impact and lethality analyses; (4) reliability, availability and maintainability analyses; and (5) assessment of the test infrastructure.

The IFT-3 EKV



Length ~ 55 in.
Diameter ~ 23 in.
Weight ~ 121 lbs.

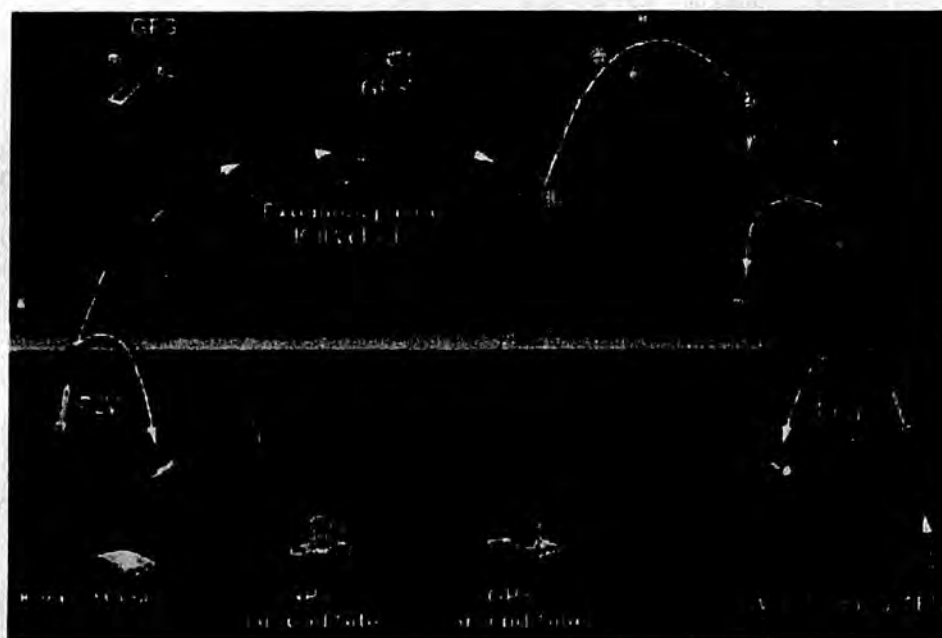
On October 2, 1999, BMDO successfully conducted the IFT-3 Weapon System test engagement. At 7:02pm PDT, IFT-3 began with the launch of the target complex aboard a specially configured Air Force Minuteman II, called the Multi-Service Launch System (MSLS), fired from VAFB toward KMR. The test target/decoy are designed to represent the type likely to be used by a hostile missile launched by a rogue nation against any of our 50 states. After target launch, VAFB radars, via VAFB mission control sent tracking information to a mid-range radar (FPQ-14) in Hawaii, which in turn provided tracking data to the KMR radars. The PLV was launched from Meck Island in the Kwajalein Missile Range in the Central Pacific Ocean. While in-flight, the PLV received target updates from PLV mission control, which it then passed to the KV. The KV then deployed from the PLV and repositioned itself to point its seeker field-of-view toward the predicted target position. Once uncapped, the on-board passive seeker sought out and acquired the target complex. From the target complex, the KV ascertained which was the RV and targeted it instead of the decoy. After target designation, the KV tracked the RV while executing "end game" maneuvers to achieve a direct impact kill. A successful interception of the RV occurred at 7:32pm PDT, some 100 miles above the earth. "Hit-to-kill" technology results in the total destruction of the warhead through kinetic energy only, with no explosives aboard the KV. "Hit-to-kill" is the only way to ensure total destruction of the RV and the nuclear,

chemical or biological weapon that an RV would carry during an actual missile attack.

During this same time period (from target launch at 7:02pm PDT until RV intercept at 7:32pm PDT) a noninterference "shadow" test of the NMD System and two additional NMD elements (GBR and BM/C3) also occurred. After target launch, early warning sensors (Defense Support Program satellite) and an upgraded early warning radar at Beale AFB, California detected the missile launch, tracked, identified, and designated the RV, and then transmitted the tracking data via the Falcon AFB (Command) BM/C3 to the KMR (Site) BM/C3. Using data from the surveillance and tracking systems, the Site BM/C3 planned the KV engagement, cued the GBR, provided weapons release authorization, and sent launch commit parameters to the test interceptor. After KV separation, the BM/C3 provided simulated target updates and a target object map (TOM) to the KV based on GBR tracking data. GBR also monitored the intercept and provided kill assessment data to the BM/C3. BM/C3 could then plan/direct further battle management actions, if required.

Since this was primarily a test to evaluate KV technology, it was necessary to ensure the target missile and the target complex were placed into the proper positions in space. A Global Positioning Satellite (GPS) receiver was placed on the target to send its position to ground control, and the target flew a pre-programmed flight path. Since the PLV did not receive target location information from the command and control center, as it would during a test using the integrated NMD system, or during an actual attack situation, it also flew to a pre-programmed position and received the necessary target location information and downloaded it to a computer in the KV. After it reached this position, which was several hundred miles from the target, it released the KV. Once the KV deployed from the PLV it used only its on-board systems to locate, track and discriminate the target, and then used its rocket-assisted divert motors to steer into the RV for a hit-to-kill collision.

Integrated Flight Test-3 Flight Profile



Ballistic Missile Defense Organization, External Affairs,
7100 Defense Pentagon Washington, D.C. 20301-7100
(703) 695-8743

**THE FOLLOWING PAGES MAY
NOT FILM LEGIBLY BECAUSE OF
THE POOR QUALITY OF THE ORIGINAL**

NATIONAL MISSILE DEFENSE



ALASKA

WHY ALASKA?



Alaska National Missile Defense Concept Briefing, January 24, 2000

ANTICIPATED ALASKA STATIONING (Components Effective 2005)

New Jobs : 309

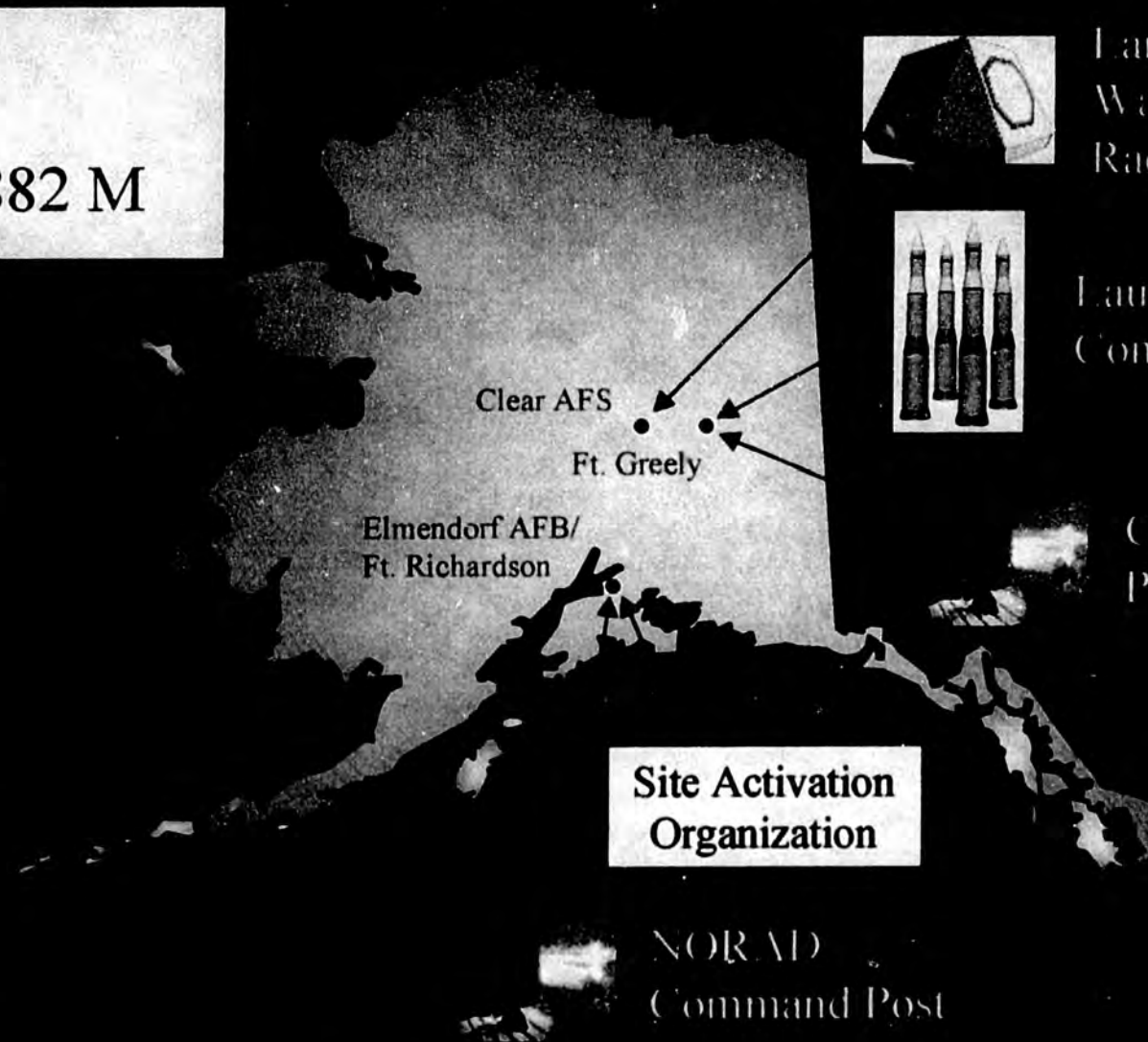
Construction: \$882 M

X-Band Radar



Shemya

Fiber Optic Cable



Early
Warning
Radar



Launch
Complex



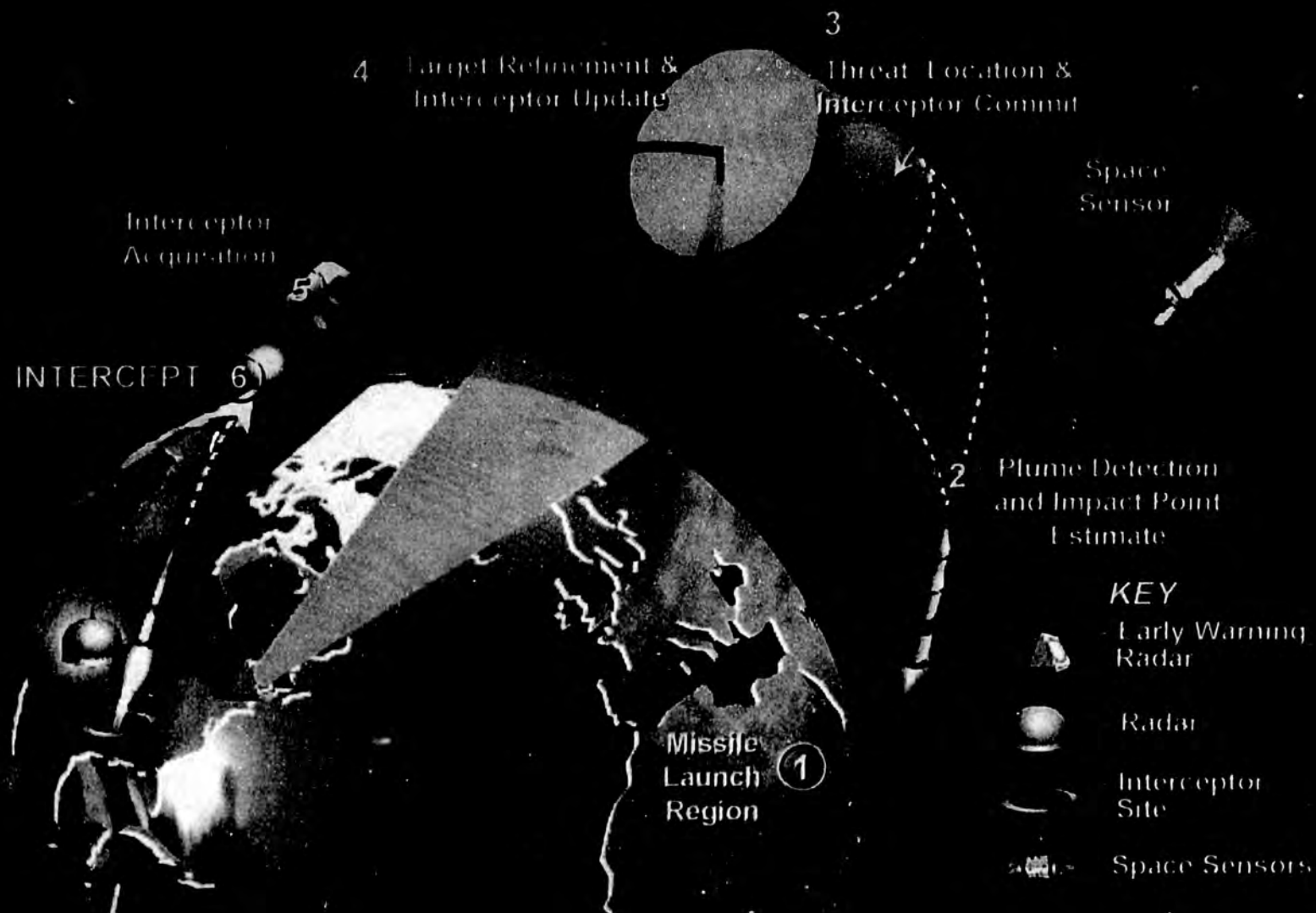
Command
Post

Site Activation
Organization

NORAD
Command Post

Alaska National Missile Defense Concept Briefing, January 24, 2000

OPERATIONAL CONCEPT



Alaska National Missile Defense Concept Briefing, January 24, 2000

THE INTERCEPT HIT-TO-KILL TECHNOLOGICAL CHALLENGE

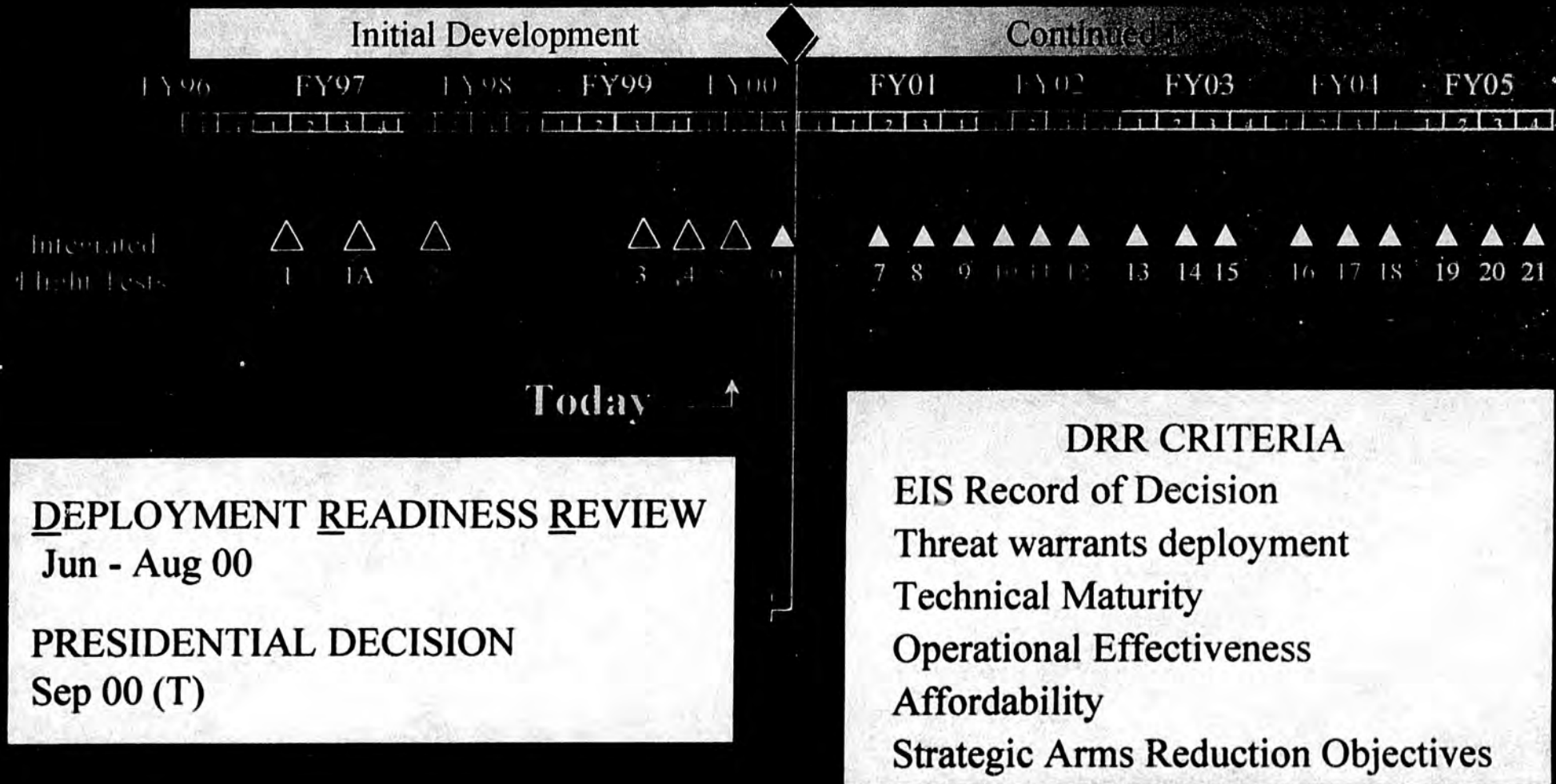
Exoatmospheric
kill vehicle



WMD re-entry vehicle

Closure rate 30,000 mph . . .
2 rifle bullets fired at each
other close at 4,000 mph

KEY DECISION POINTS

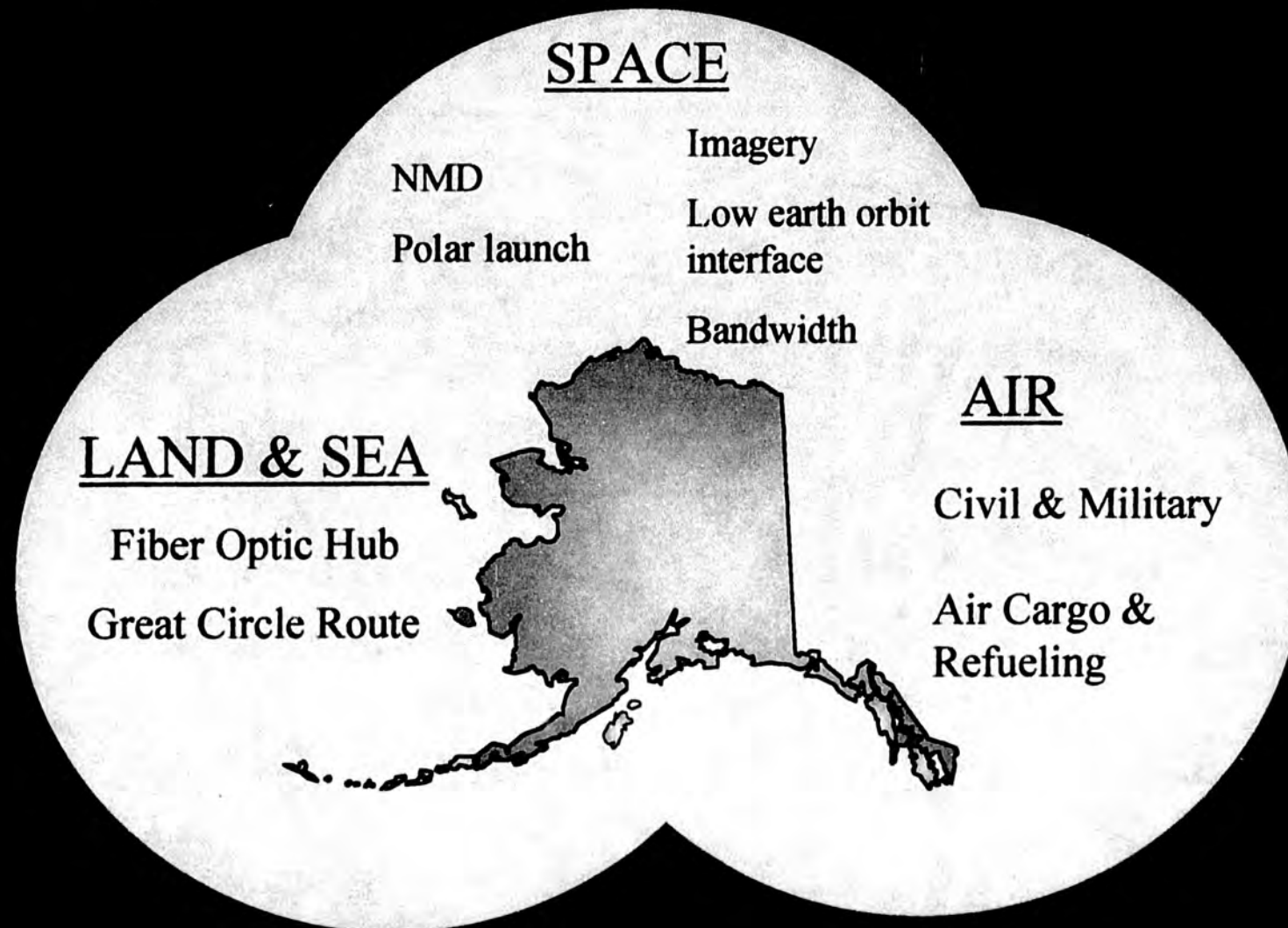


NEW ECONOMIC ENGINE FOR ALASKA

Issue: NMD fielding may provide for economic and educational diversification and growth potential.

Potential solution: State government establish a partnership of leaders of academia, business, military and government to formulate a strategy.

ALASKA'S GEOGRAPHIC ADVANTAGE



Alaska National Missile Defense Concept Briefing, January 24, 2000

LEARN FROM OTHER STATES

✓ PARTNERS:

North Dakota

Florida

Mexico

Oklahoma

Alabama

Utah

✓ FORUM:

Cabinet

University

Chambers of commerce

Municipal league

Legislative levels

OPPORTUNITIES

- ✓ Process space surveillance data in Alaska.
- ✓ Employ the UAF supercomputer for modeling.
- ✓ Increase use of the Kodiak Launch Facility.
- ✓ Extend the NMD fiber-optic cable to the Far East and Hawaii.
- ✓ Store and maintain additional interceptors in Alaska.
- ✓ Exploit competitive advantage of direct polar insertion.
- ✓ Partner with Canada for space operations over the pole.

OPPORTUNITIES

- ✓ Develop NMD related technologies.
- ✓ Expand imagery and remote sensing commerce.
- ✓ Host NMD industry forum in Alaska.
- ✓ Host DCEC NMD business fairs and contractor conferences.
- ✓ Place NMD on agenda on Jobs Cabinet.
- ✓ Establish Long-term solutions in coordination with:
 - Alaska Science and Technology Foundation
 - Alaska Human Resource Investment Council

TRADES & PROFESSIONS

facility maintenance

equipment maintenance

security

custodial

construction

education

biologists

administrative

missile crews

law enforcement

communications

automated systems

transportation

radar operator

HAZMAT specialist

fuel management

DISCUSSION

How can the State of Alaska capitalize
upon the NMD mission and fielding?