

NMMD Joint Program Office

NMMD Program Update to AIAA/BMDO Technology Readiness Conference



**Cleared For Open Publication, Directorate
For Freedom Of Information And Security
Review, Department Of Defense**

3 August 1998

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Director, System Test and Evaluation**

19981110 081



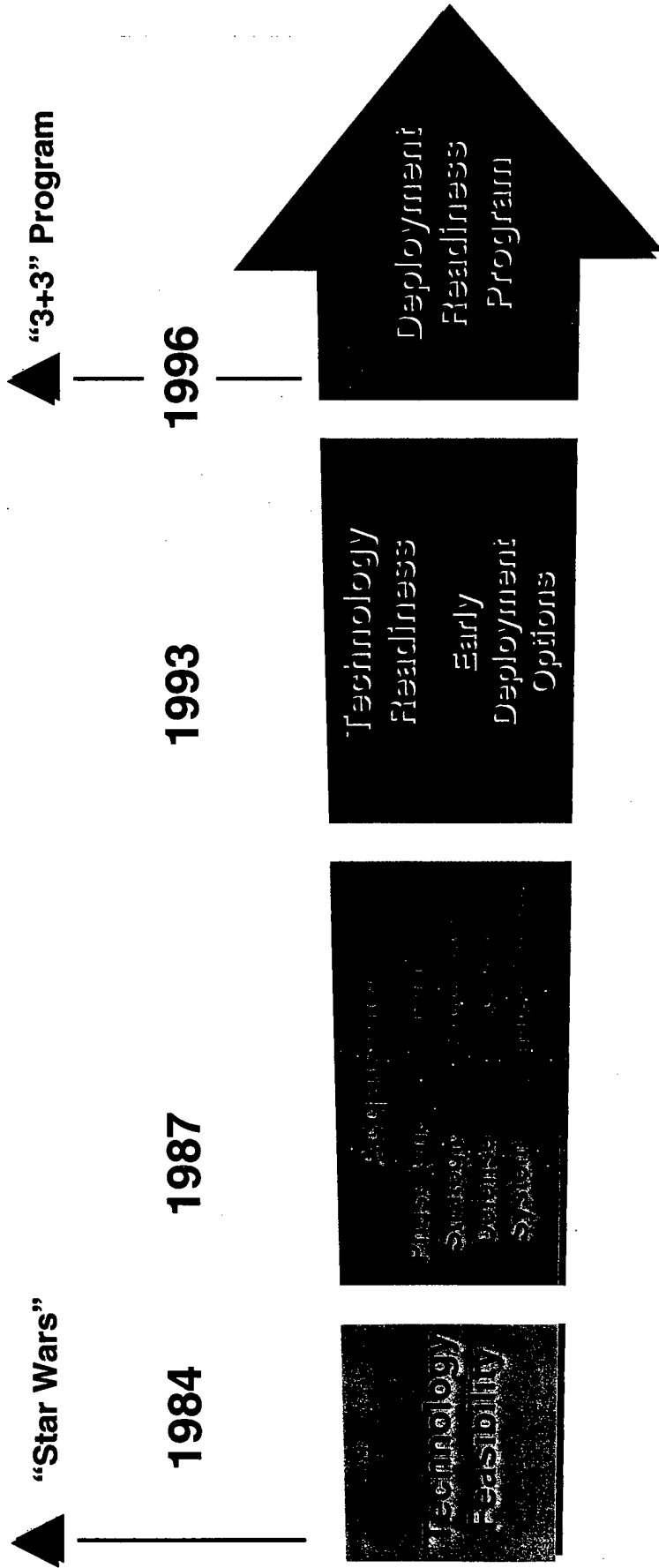
PURPOSE



**Provide Overview of the Ongoing National Missile
Defense Program to the AIAA/BMDO Technology
Readiness Conference**



NATIONAL MISSILE DEFENSE EVOLUTION



- Program Evolved from "Star Wars" Global Protection Vision
- To Hedge Against Emergence of Rogue Nation Ballistic Missile Threat to U.S.



NMD KEY CHALLENGES



- ***Uncertain Threat*** - Gaining Consensus on Threat Type and when Threat Will Emerge
- ***Compressed Schedule*** - Conduct FY99 Demo and Deploy if Directed By FY03
- ***Treaty*** - Compliant During Development; May Not Be for Deployment
- ***System Integration*** - Integrate Existing National Missile Defense Elements
- ***Performance*** - Ability to Protect All 50 States



ILLUSTRATIVE NMD THREAT

User Threshold

Few / Simple

Few / Complex

User Objective

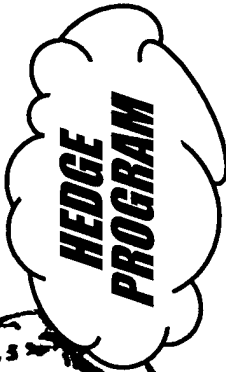
Many / Complex



Rogue Nation Launches



Rogue Nation & Small Accidental / Unauthorized Launches



Capability 1

Capability 2

Capability 3

System Configuration

Proliferation Challenges to Missile Technology Control Regime (MTCR)

- CIA Report To Congress (1997)
 - Chinese Transfer Guidance Systems & Tools To Iran

- Rep Weldon's Comments On The Record (26 MAR 97)
 - Russian Guidance Systems To Iraq
 - SS-4 / SSN 19 Components To Iran

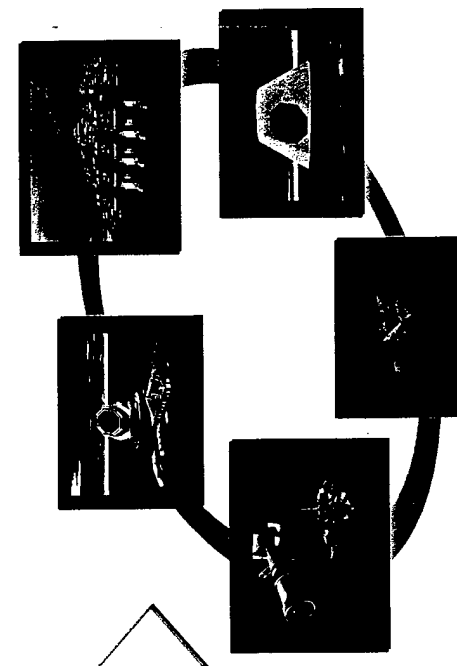
- Senate Proliferation Primer (JAN 98)
 - Jordan Seizes 115 Russian Guidance Systems (Nov 95)
 - UN Divers Seize 30 SSN-18 Gyroscopes In Tigris River



NMD PROGRAM DEFINING ASSUMPTIONS



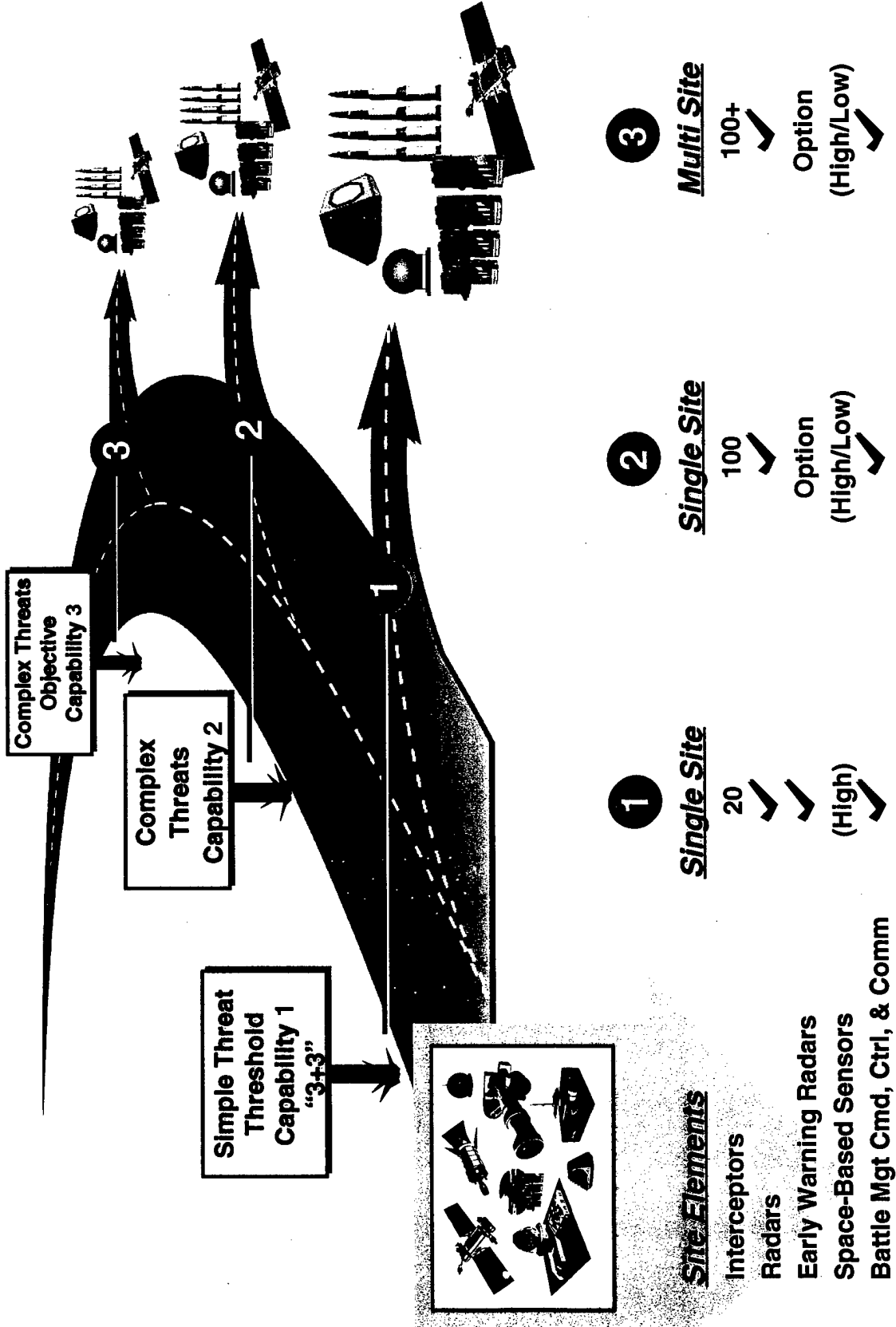
- Sense of Urgency
 - Uncertain Threat
 - NIE 95
 - Rumsfeld Commission



- NMD Requires a Systems Approach
 - Each Service has a Role
 - USCINCSpace is the User
 - Trade Requirements between Elements



NMD ROADMAP

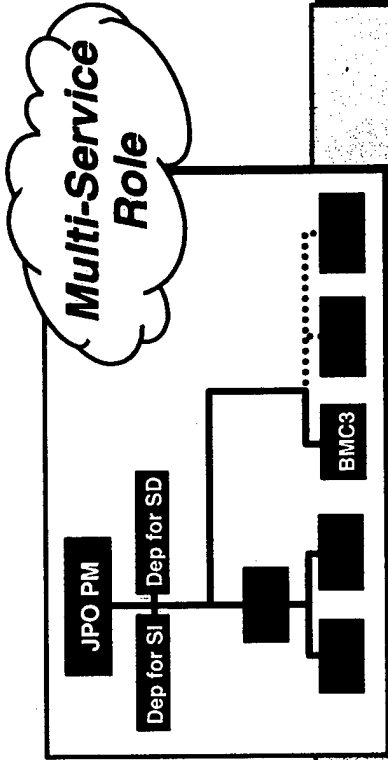




NMD PROGRAM STRATEGY



Joint Program Office



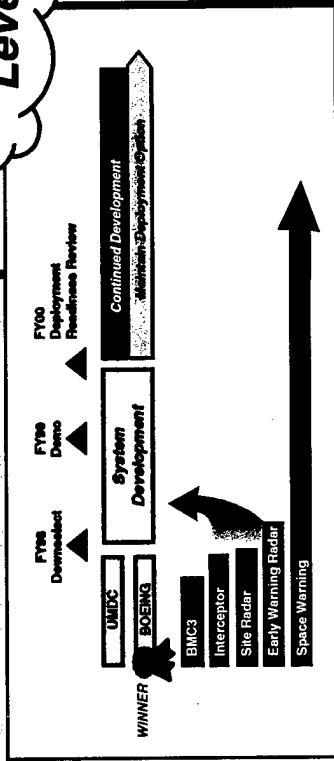
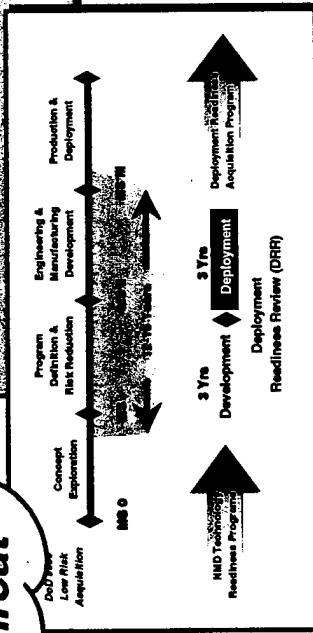
Management Approach

Uncertain Threat

Program Structure

Contracting Approach

System Level

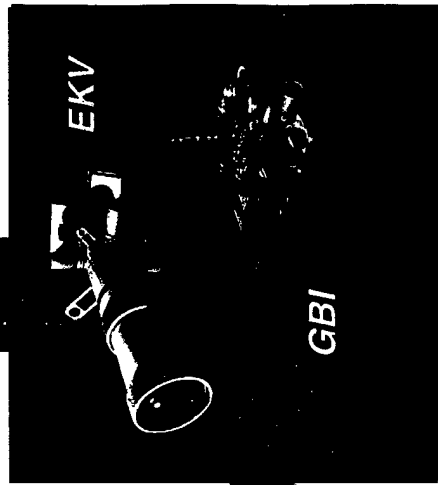
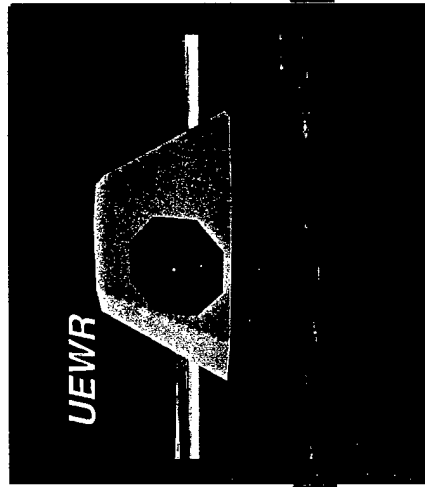
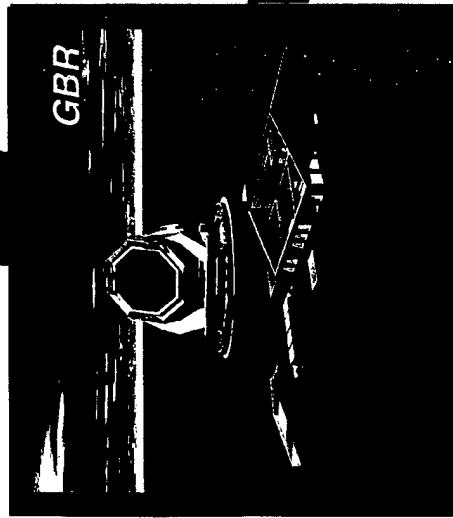
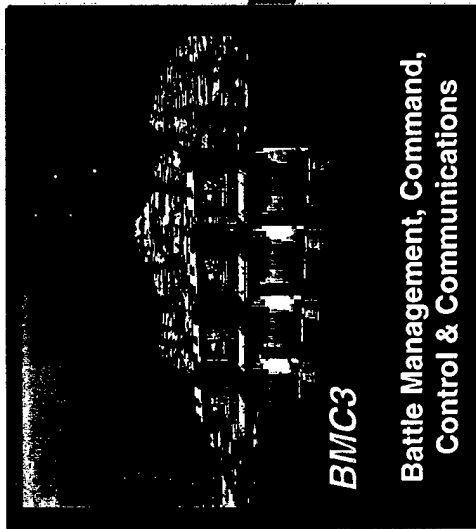
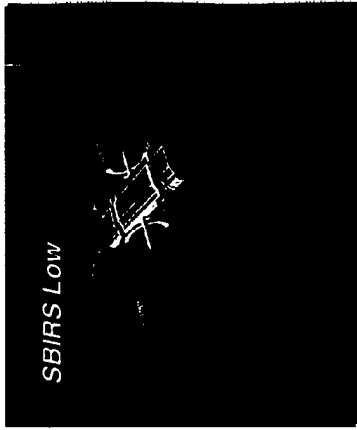
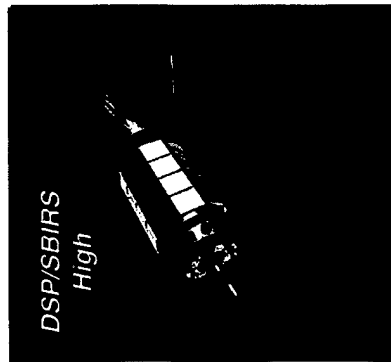


"3+3"

Lead System Integrator (LSI)



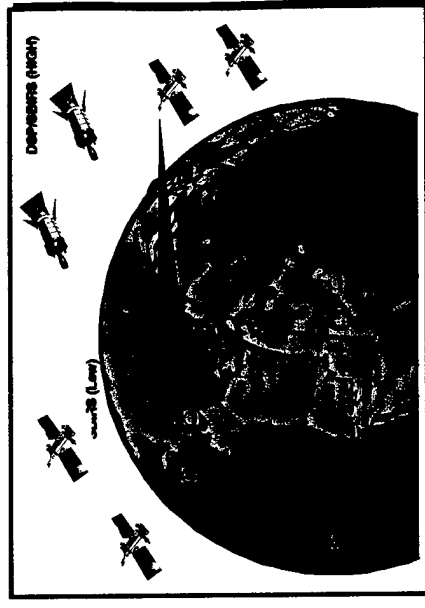
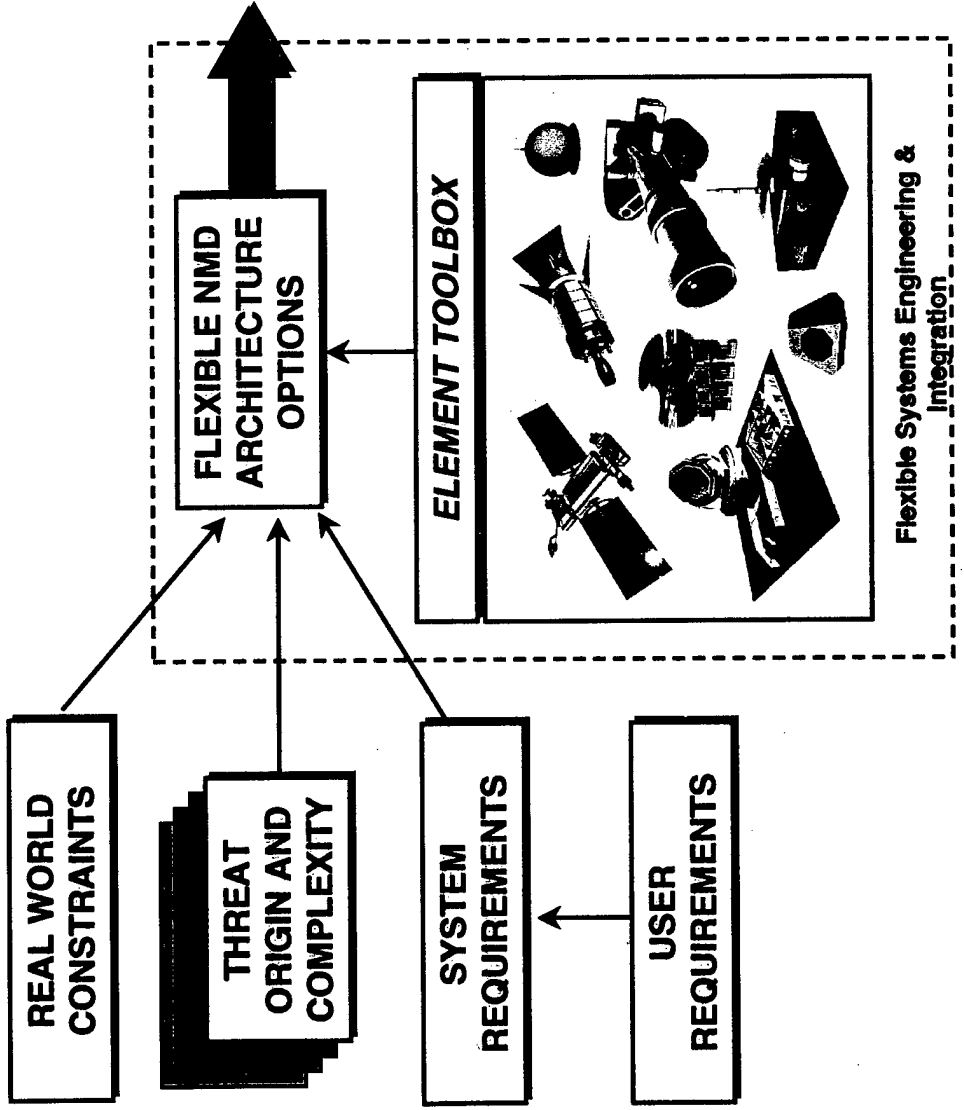
THE NMD SYSTEM ELEMENTS





NMD SYSTEM ARCHITECTURE

"Plug and Defend"



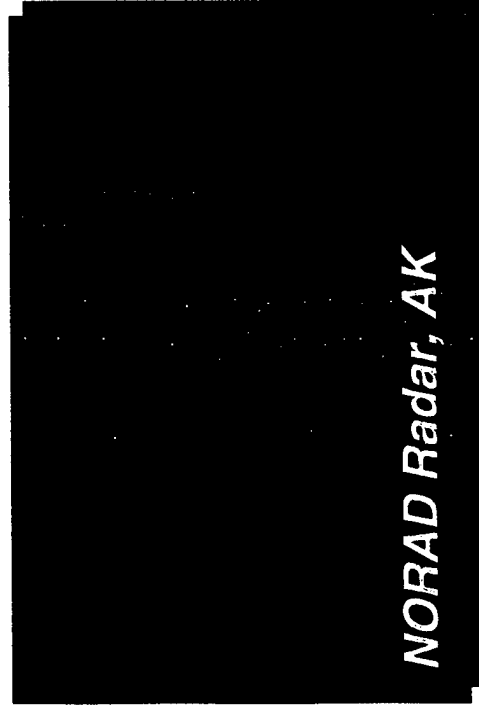
"Plug & Defend"
National Missile Defense
Options to Respond to
Unknowns
in Threat and Constraints



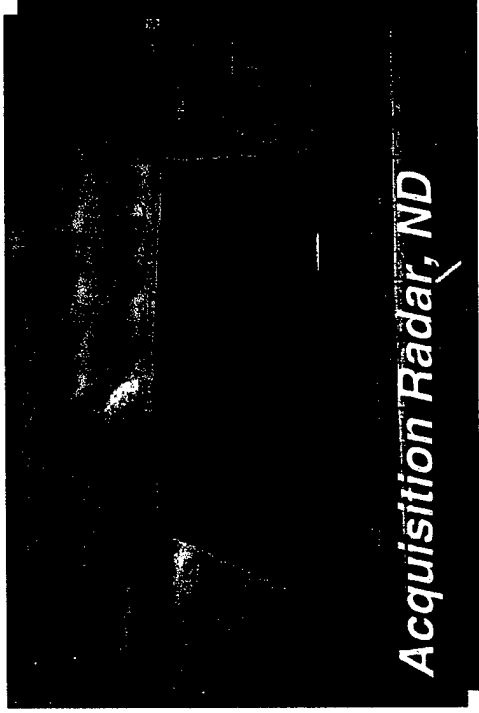
NMD SITE ACTIVITIES



- Fact Finding Visits Conducted in Both North Dakota and Alaska



NORAD Radar, AK



Acquisition Radar, ND

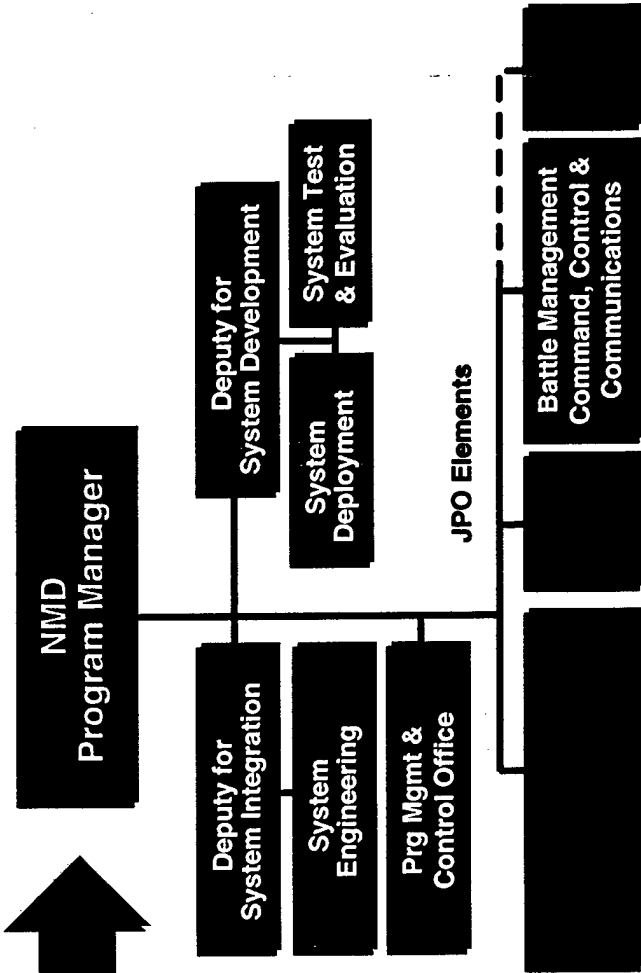
Next Activities:

Area Narrowing Visits to Support Environmental Impact Process

The Specific Architecture and Site will be Threat Driven - No Decision Yet

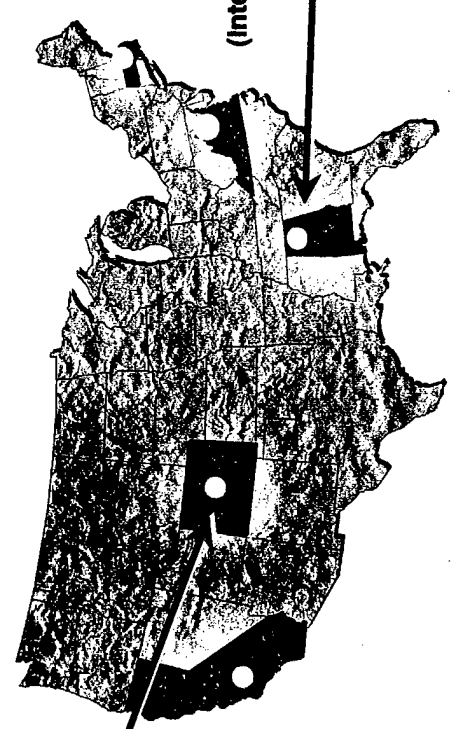


MANAGEMENT APPROACH JOINT PROGRAM OFFICE



Implement "3+3" Strategy

- **No Service Lead**
- **(SPACCOM Supported)**
- **Federated Organization**
- **Direct Reporting**
- **Maximum Use of Prime**



Joint National Test Facility (BM/C3)

Space and Missile Systems Center (Space Based Sensors)

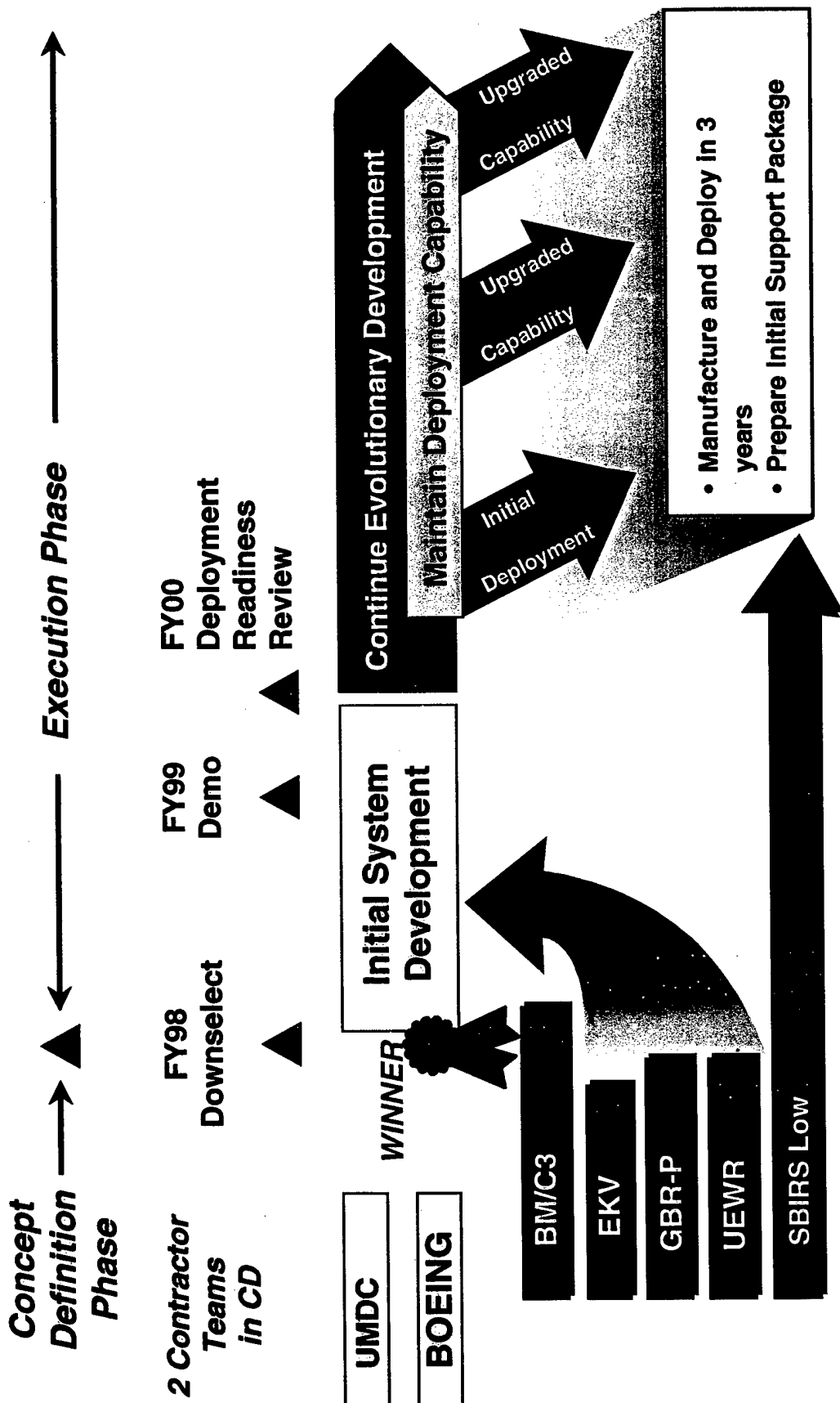
Electronic Systems Center (Early Warning Radars; BM/C3)

Joint Program Office (Integration; System Engineering; BM/C3)

Ground Based Elements PM (Interceptor / Radar; BM/C3)



CONTRACTING APPROACH LEAD SYSTEM INTEGRATOR





BOEING TEAM



Company

- Boeing
- Xontech
- TBE
- Booz-Allen Hamilton
- Logicon
- Photon Research Association
- Ryan Associates
- Schafer
- SRS Technologies
- Raytheon
- TRW

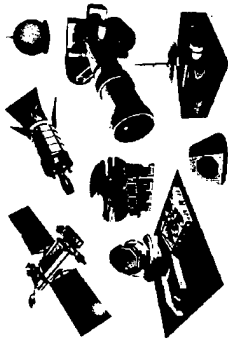
Responsibilities

- Prime
- Sensors
- Test & Evaluation (T&E), System Eng (SE)
- SE, Battle Management Command and Control (BMC3), Test & Evaluation
- SE, Weapon
- SE
- SE, Sensors
- SE, Battle Management Command, Control & Communication, Test & Evaluation, Weapon
- Test & Evaluation, Weapon
- Radar
- Battle Management Command, Control & Communication



WHAT IS LSI PROVIDING?

Basic Period



Develops the NMD Elements



Produce



Transport



Install



Train

Tests and Demonstrates NMD Capability



Plans the NMD Deployment

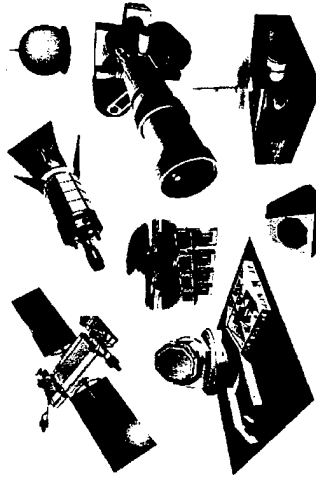
Change in Culture!
No Longer Will the Technology Programs have Contracts -- One LSI Contract ---

Deployment Option

Deploys the NMD System

Continuing Development

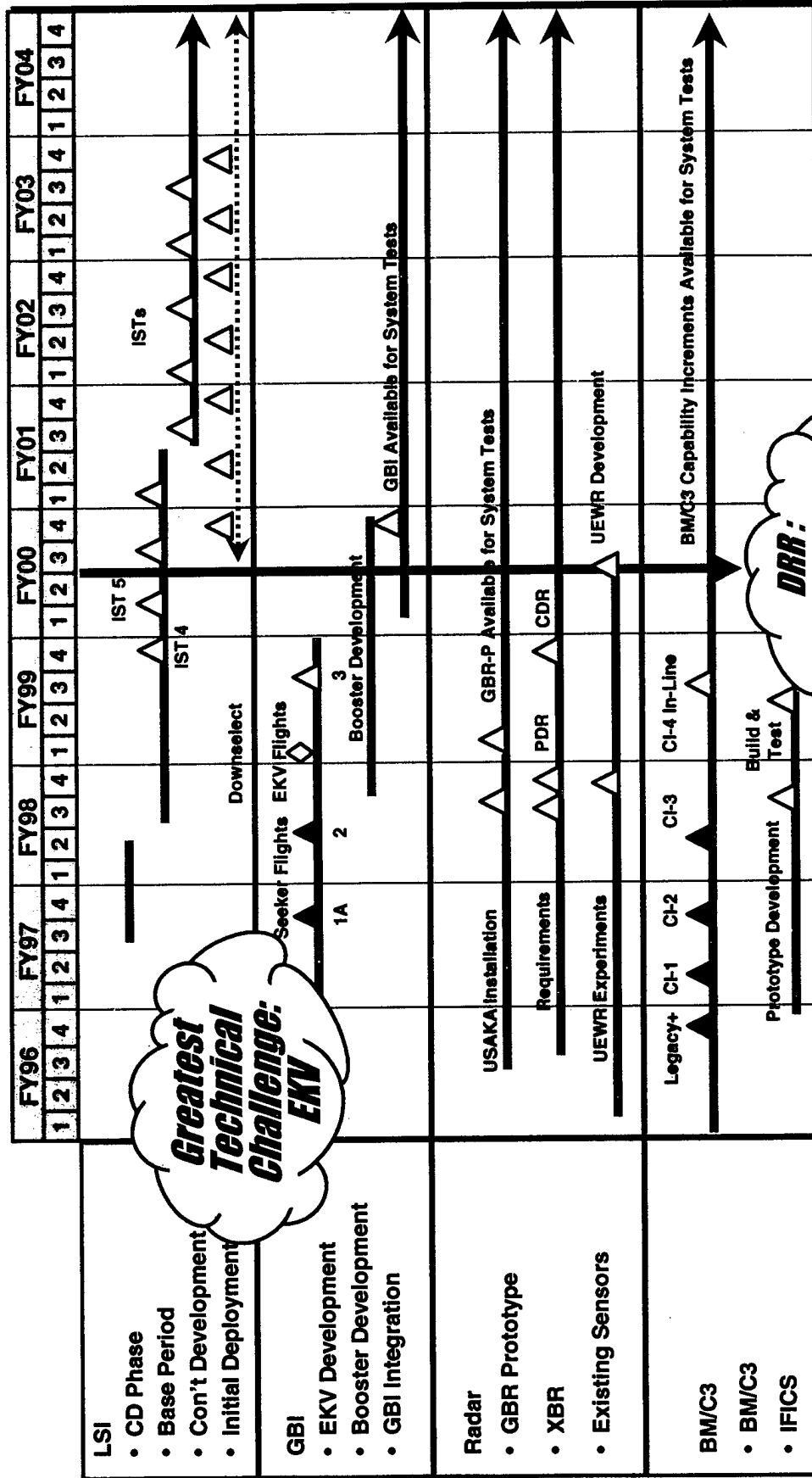
Maintains Deployment Readiness



Enhances NMD Capability Through Upgraded Elements



NMD PROGRAM SCHEDULE



Greatest Technical Challenge: EKV

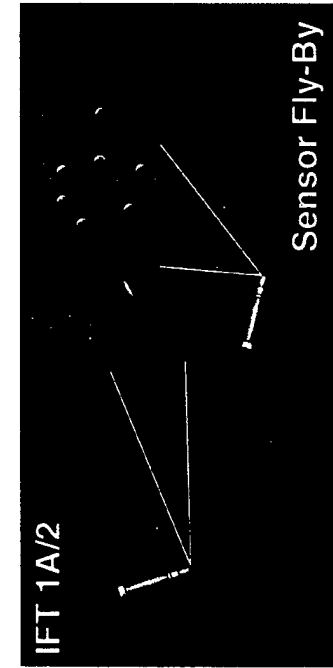
DRR: First Deployment Decision Point



SYSTEM FLIGHT TESTS

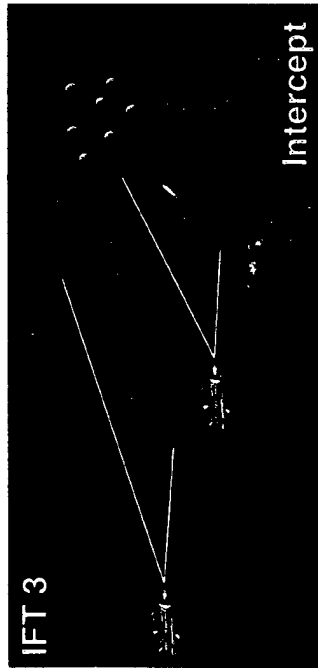


Flights

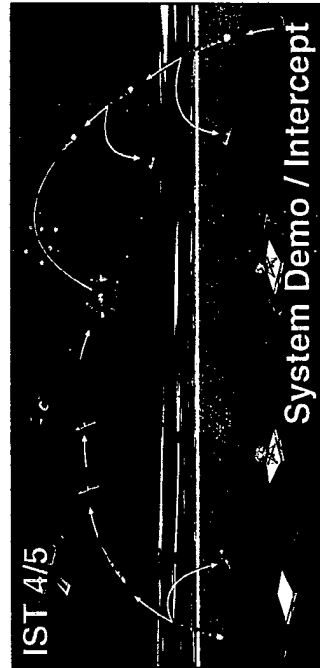


Program Objectives and Goals

- Risk Reduction for Kill Vehicle Tests
 - Demonstrate Kill Vehicle Sensor Performance
 - Collect Target Signatures to Validate Discrimination Algorithms
- Activate Test Infrastructure



- Demonstrate Target Complex Acquisition
- Demonstrate Onboard Discrimination and Target Selection
- Demonstrate Endgame and Lethality Performance
- Demonstrate Interoperability of Elements



- Demonstrate End-to-End Integrated System Performance
- Demonstrate Endgame and Lethality Performance



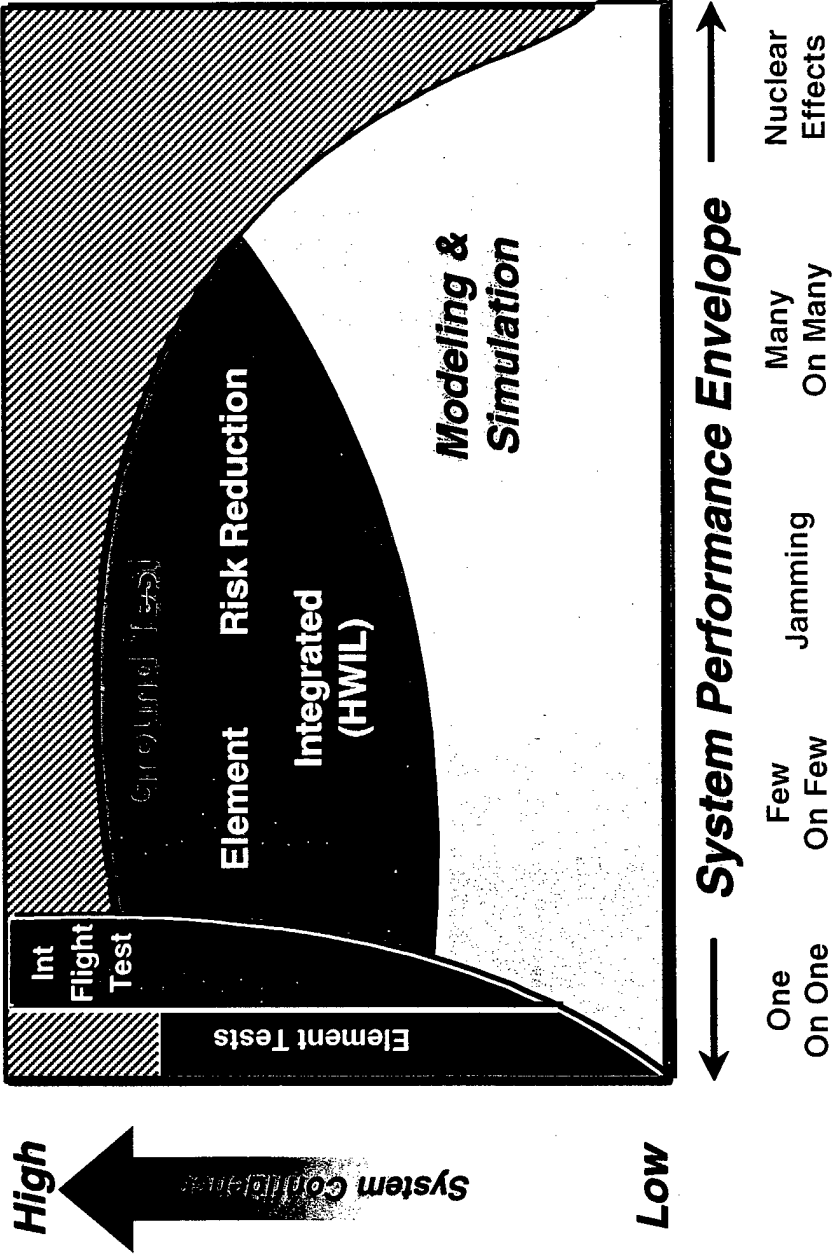
NMD FLIGHT TEST PROGRAM SCHEDULE

FY98				FY99				FY00				FY01	
1	2	3	4	1	2	3	4	1	2	3	4	1	2

<p>LSI Current Program</p>	<p>▲ EKV Selection Objective Threshold</p> <p>LSI Awarded</p>	<p>Objective Threshold</p> <p>IST Δ</p> <p>Δ DRR Δ</p> <p>Objective Threshold</p>
<p>IFTs</p>	<p>Δ Δ Δ</p> <p>3 4 4</p>	<p>Δ Δ Δ</p> <p>5 6 7</p>



ESTABLISHING SYSTEM CONFIDENCE



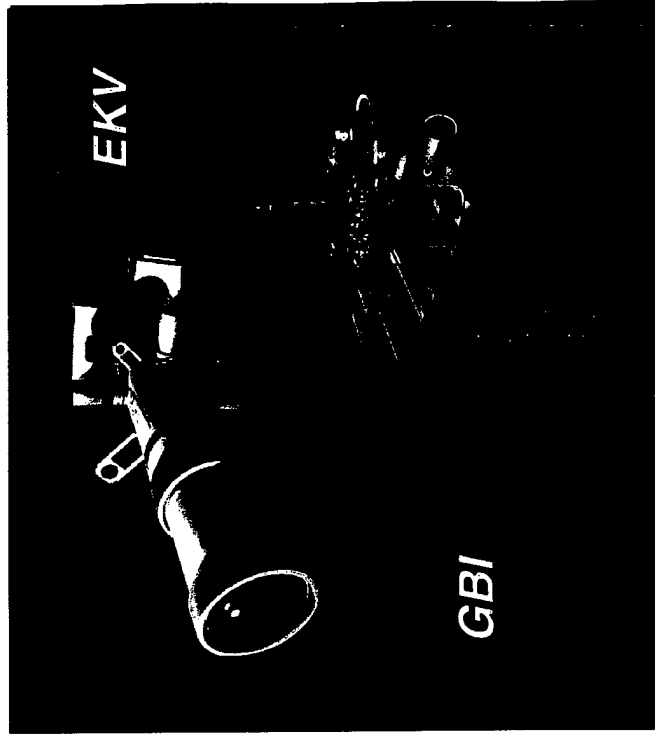
Evaluation of Test Results Establishes System Performance and Confidence Levels



MAJOR DECISIONS THROUGH NOV 98



- **Government Select Ground Based Interceptor (GBI) Booster**
- **Refine Deployment Readiness Review Completion Criteria**
- **Exo-Atmospheric Kill Vehicle (Interceptor) Selection**





MAJOR EVENTS THROUGH NOV 98



- **System Functional Review**
- **Integrated Baseline Review**
- **Cost As An Independent Variable (Ongoing)**
- **Senior Department Review**





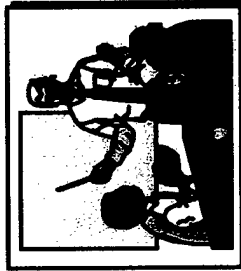
NMD PROGRAM ACCOMPLISHMENTS



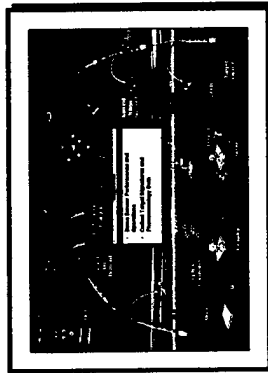
**National Missile Defense
Joint Program Office**



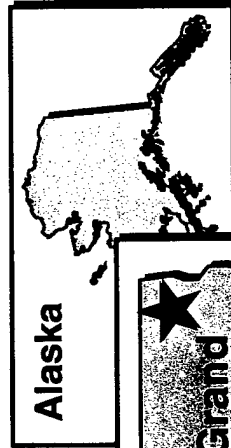
**Battle Management
Cmd, Ctrl, & Comm
Capability
Increment 3**



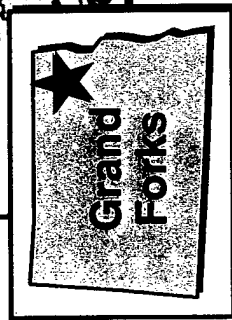
**Defense Acquisition
Board Process**



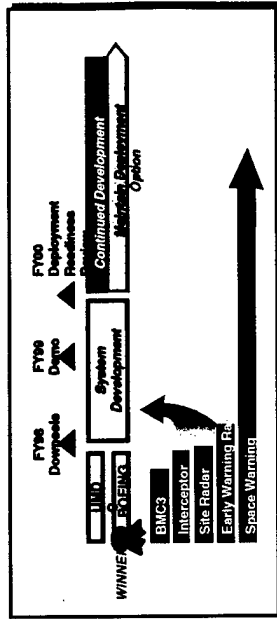
Integrated Flight Tests 1A & 2



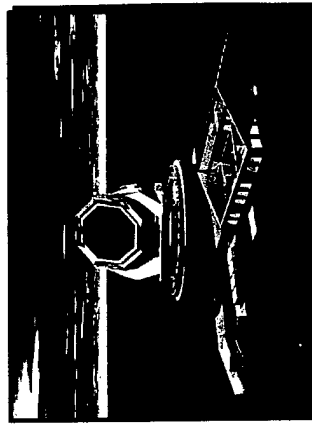
Alaska



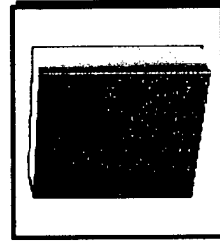
**Site Planning
and Visit**



**Lead System Integrator
- Contract Awarded**



**Construction at
Kwajalein**



**System
Requirements
Documents**



SUMMARY

- **Uncertain Threat** → **Flexible Architecture**
- **Multi-Service Contributions** → **Joint Program Office
(No Service Lead)**
- **Stove - Piped Element Development** → **Lead System Integrator**
- **Compressed Schedule** → **High Concurrency**

“3+3” Program

High Schedule Risk...

**But Structured and Funded for Greatest Opportunity
to Achieve Success**