

# National Missile Defense

## Same As It Ever Was...

Clinton to make deployment decision in September

Despite major changes over last 40 years, key conclusions remain:

- effective defense is very, very difficult
- ineffective defense can result in net decrease in security

# Outline

- How did we get here?
- The threat
- The proposed solution
- Will it work?
- How will Russia and China react?
- Conclusions

# A Brief History

- 1960s Nike, Sentinel, Safeguard
- 1972 ABM Treaty
- 1983 Reagan SDI speech
- 1991 End of Cold War  
Iraqi Scud attacks
- 1993 SDIO → BMDO, TMD focus
- 1995 Congress: NMD by 2003
- 1996 Clinton “3+3” plan
- 1998 Rumsfeld Report  
Taepo-dong launch

# 1972 ABM Treaty

The U.S. and [Russia]...Considering that effective measures to limit ABM systems would be a substantial factor in curbing the race in strategic offensive arms...Have agreed:

## Article I

1. Each Party undertakes to limit ABM systems and to adopt other measures in accordance with the provisions of this Treaty.

2. Each Party undertakes not to deploy ABM systems for a defense of the **territory of its country** and not to provide **a base for such a defense**, and not to deploy ABM systems for defense of **an individual region** except as provided for in Article III of this Treaty.

# **National Missile Defense Act of 1999**

6 January 1999

It is the policy of the United States to deploy as soon as is technologically possible an effective National Missile Defense system capable of defending the territory of the United States against limited ballistic missile attack (whether accidental, unauthorized, or deliberate)...

It is the policy of the United States to seek continued negotiated reductions in Russian nuclear forces.

Clinton to base decision on:

- assessment of threat
- technical readiness
- cost
- affect on arms control

but not...

- operational effectiveness!

# The Missile Threat

- Rogue states
  - North Korea
  - Iraq
  - Iran
- Russia
  - unauthorized, accidental, inadvertent launch
- China



# Proposed System

## Ground-Based Interceptor (GBI)

- 3-stage missile armed with EKV
- 20–100 in Alaska, Grand Forks (C3)

## Early Warning Satellites

- DSP
- SBIRS-high (after 2004)

## Ground-Based Radar (GBR)

### For over-the-horizon intercept:

- upgraded early-warning radars (C1)
- forward-based XBRs (C2/3)
- SBIRS-low (C2/3)

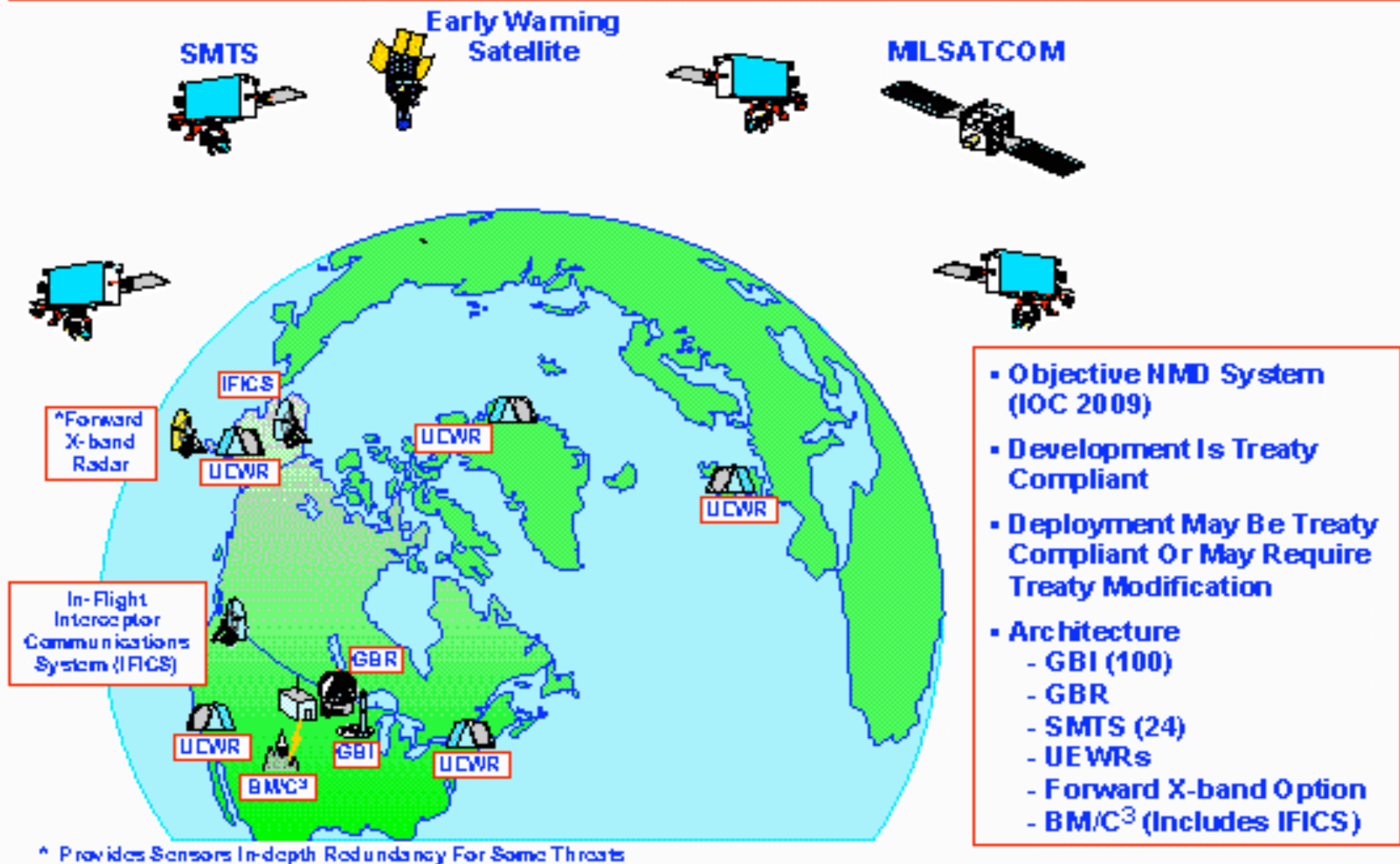
## Battle Management/Communications

	<b>C1</b>	<b>C2</b>	<b>C3</b>
Intended capability	small (5 RV) attack, no CM	small attack w/CM	larger attack with better CM
GBIs	20-100	100	125 AK
		Alaska	125 GF
Other sensors	UEWR	XBR at GBI site(s) FB-XBR, SBIRS-low DSP → SBIRS-high	
IOC	2005-07	2010	2011
Cost (billion)	\$30	\$36*	\$49*

\* not including \$11 billion for SBIRS-low



# NMD OBJECTIVE ARCHITECTURE

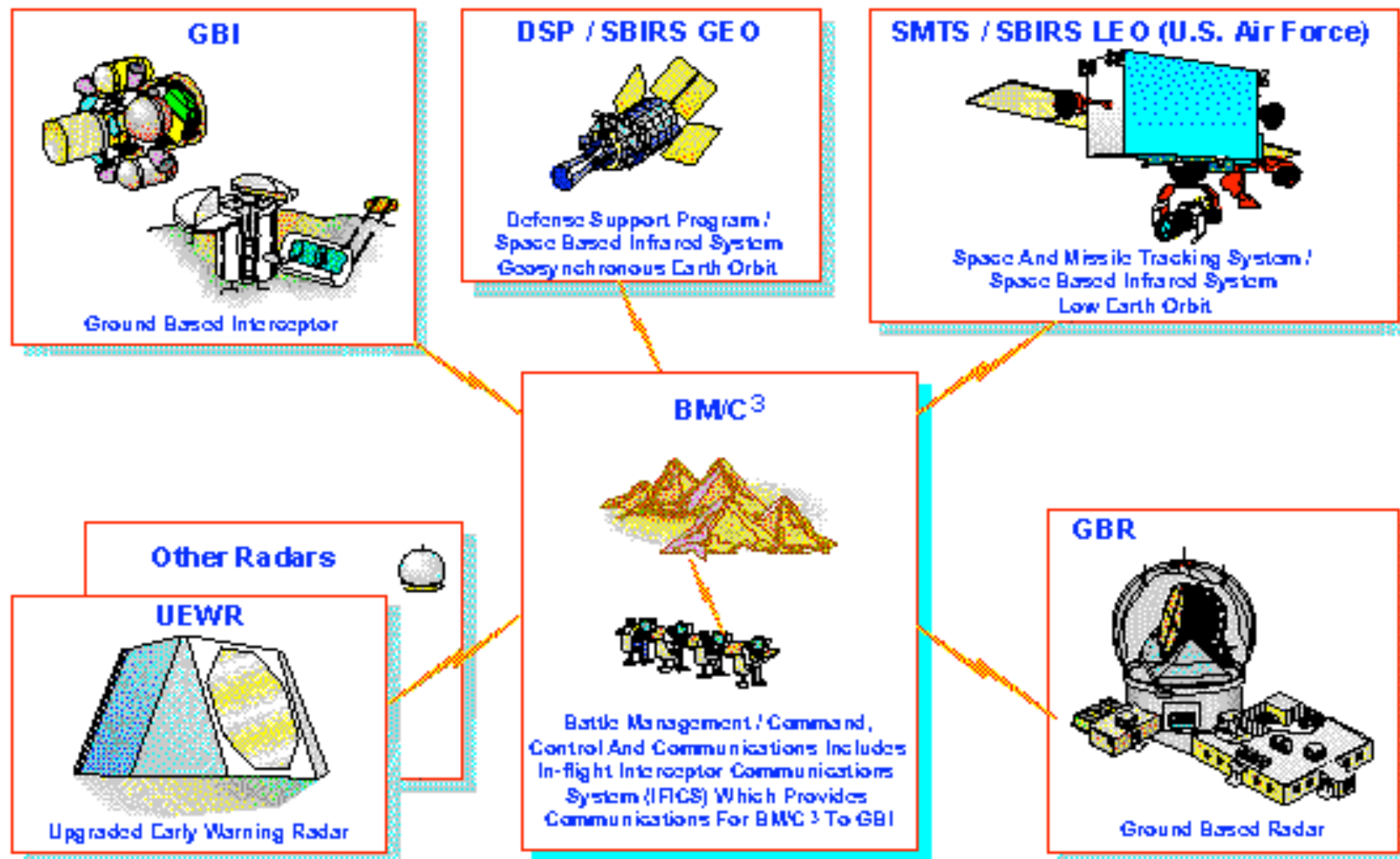


- Objective NMD System (IOC 2009)
- Development Is Treaty Compliant
- Deployment May Be Treaty Compliant Or May Require Treaty Modification
- Architecture
  - GBI (100)
  - GBR
  - SMTS (24)
  - UEWRs
  - Forward X-band Option
  - BM/C<sup>3</sup> (Includes IFICS)

^ Provides Sensors In-depth Redundancy For Some Threats



# THE NMD SYSTEM ELEMENTS



# Technical Readiness

BMDO: ready if 2 hits (including hit in IST)

- Oct: guidance errors, home on balloon, “hit”
- Jan: coolant leak, “miss”
  - EKV prototype + surrogates (e.g., GPS)
- Jun: first IST (prototypes + surrogate booster)

Welch, Coyle: “rush to failure”

- inadequate hardware, quality control, ground testing
- first test with operational components in 2003
- only one target, intercept geometry

# Operational Effectiveness

Any state capable of ICBM also capable of effective countermeasures:

- CB submunitions released after boost
- RV in mylar balloon + empty balloons
- RV with cooled shroud

ICBM isn't only—or even best—delivery means:

- short-range missile off ships
- plane, cruise missile, ship, sub, smuggling

# Russia's Reaction

Why is Russia worried? They have 5000 warheads!

- Russia would want to preserve LNOs
- after 2005-10, can deploy <1000 warheads
- only 100-200 could survive first strike
- nuclear forces vulnerable to conventional attack
- worst-case analysis
- rapid expansion of the NMD system

Russia could respond by:

- deploying countermeasures on missiles (negating protection against unauthorized use)
- launch on warning (increasing chance of use)
- increase alert rates (expensive)
- withdraw from START II (to allow MIRVs)
- deploy a (nuclear-armed) BMD system
- end military and nonproliferation cooperation

# A Deal for Russia?

- equal, low limit on offensive forces (1000)
- 1 defensive interceptor = 1 offensive warhead
- monitoring of interceptor production facility
- information exchange
- limits on sensors?

# China's Reaction

- 20 ICBMs (not on alert); no bombers
- Effective NMD would negate China's force
- China could respond with:
  - countermeasures
  - more missiles, MIRVs
  - end nonproliferation cooperation

# Conclusions

NMD intended for a small, unrealized threat

We can't tell if NMD will work as designed...

...but even if it does, it can be easily defeated

NMD can make large, real problems worse

- we can reassure Russia...for a time
- we can't reassure China