The International Impact of U.S. National Missile Defenses

Dean Wilkening
Center for International Security
and Cooperation (CISAC)
Stanford University

MONTEREY NONPROLIFERATION STRATEGY GROUP
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NMD Deployment Options

National missile defense (NMD) deployment, depending on its size and scope, could undermine a range of non-proliferation treaties and regimes. The trick is to determine which effects, from among the logical possibilities, might actually occur. This is not a trivial task.

Currently, three NMD deployment phases are being discussed:

- The phase one deployment (the initial capability or so-called "C1" phase) currently is planned for the year 2005, and consists of 20 ground-based interceptors (GBIs) deployed at a single site either in central Alaska or at Grand Forks, North Dakota, along with a single X-band tracking radar and upgraded early-warning sensors.[1] The advantage of the Alaskan site is that coverage of all 50 states is possible for near-term hypothetical threats (e.g., North Korea), whereas coverage of Hawaii and Alaska would be difficult from North Dakota.
- The second phase (so-called "C2") deployment would nominally occur around 2010, and consist of up to 100 GBIs at the site selected in the initial phase along with more robust sensor architecture.[2]
- The third phase (so-called "C3") deployment would nominally occur around 2015 and may consist of up to 125 GBIs at the then existing NMD site, possibly an

[1] The C1 deployment includes a single X-band radar at or near the GBI site, upgrades to all five existing early-warning radars, use of the Defense Support Program (DSP) satellite or the Space-Based Infra-Red System-High Earth Orbit (SBIRS-High) when it becomes available after 2004 for ballistic missile early warning, and three in-flight interceptor communication systems (IFICS) deployed around the United States. In the C1 architecture, DSP and early-warning radars cue the X-band radar, which then provides accurate track data for the GBI. Decoy discrimination, to the extent it exists, is provided by the single X-band radar and sensors aboard the exoatmospheric kill vehicle (EKV).

[2] In addition, the C2 architecture includes three X-band radars collocated with the early-warning radars at Clear, Alaska, Thule, Greenland, and Flyingdales, England, one additional IFICS, and the possible deployment of the Space-Based Infra-Red System-Low Earth Orbit (SBIRS-Low) for warhead tracking (currently planned for deployment around 2006). The C2 architecture could handle somewhat larger threats and the additional X-band radars and SBIRS-Low would provide better decoy discrimination.

additional 125 GBIs at another site, in addition to several new early-warning and X-band tracking radars.[3]

Recently, more compressed deployment schedules have been suggested, namely deploying the C1 architecture by 2005, 100 interceptors (i.e., the C2 interceptor deployment) at the C1 site by 2006, and some subset of the sensor and interceptor deployments from the C2 and C3 options by 2010.

In June 2000, the U.S. Department of Defense Deployment Readiness Review will assess whether NMD technologies are mature enough to warrant deployment of the C1 option, along with the recommended NMD site (Alaska or North Dakota). This technical assessment will then be forwarded to an interagency process that will formulate NMD deployment recommendations for the President (probably during July or August 2000) based on the following four criteria:

(1) that a threat exists to the continental United States,

(2) that the system is technically and operationally effective,

(3) overall system cost, and

(4) whether deployment is allowed by an amended ABM Treaty and, if not, the extent to which unilateral U.S. withdrawal from the Treaty would have an adverse impact on other arms control efforts.

The actual decision to deploy will be made by the President, probably in the Fall of 2000. In any case, the United States must provide six month notice of its intention to withdraw from the ABM Treaty before any actions can be taken that actually violate the Treaty, e.g., beginning construction of a new ABM site in Alaska, an event that must take place in late Spring 2001 to remain on schedule for a 2005 deployment date.

With respect to the first criterion, there is bipartisan consensus in the United State that the long-range ballistic missile threat is growing, in large part due to the findings of the Rumsfeld Commission.

As for the second criterion, the June 2000 Deployment Readiness Review will decide whether the C1 architecture is technically feasible, based in part on the success or failure of the three NMD interceptor flight tests scheduled to occur before June 2000–the first of which occurred in October 1999 and was a success. It is important to note, however, that even a successful string of flight tests leaves unanswered the question of whether the system will be effective against a responsive opponent who deploys decoys or other countermeasures to foil the defense. This technical debate is subtle and will be difficult to resolve in public.

As for affordability, the projected 20-year life-cycle cost (i.e., research and development, acquisition, and operating costs for 20 years) for an initial 20-interceptor NMD system has been estimated at between $18–28 billion, depending on when and where the system is deployed. Cost estimates for larger deployments, possibly involving up to 250

[3] A new early-warning radar located in South Korea has been proposed along with five additional X-band radars to be located at Beale Air Force Base, California, Cape Cod, Massachusetts, Grand Forks, North Dakota, Hawaii, and at the new early-warning radar site in South Korea. One additional IFICS has also been proposed.

interceptors located at two sites, will be at least two to four times this amount. Therefore, an initial single-site NMD system may be affordable in the current political environment, but this may not be true for the more robust NMD architectures projected for deployment 10–15 years from now.

All of the current U.S. NMD deployment options violate Article I of the ABM Treaty. In addition, the Alaskan deployment option violates Article III. While it is conceivable that agreement might be reached between the United States and Russia to amend the ABM Treaty to allow an initial U.S. NMD deployment, it is more difficult to imagine Russian agreement to amend the Treaty to allow future NMD architectures that include multiple sites, up to 250 NMD interceptors, the transfer of ABM components to other countries, and more extensive radar and space-based sensors architectures. This leaves unilateral ABM Treaty withdrawal as a possible option, which is legal on six months notice if U.S. supreme national interests are in jeopardy. The United States will have to assess carefully the impact that Treaty withdrawal will have on other foreign policy and arms control interests–in particular, possible Russian and Chinese reactions.

Consequences of U.S. NMD Deployment

Russian and Chinese leaders tend to view U.S. NMD deployment with suspicion because they disagree with U.S. threat assessments, doubting that developing countries can deploy long-range missiles in the next decade and, even if they could, doubting that these missiles would ever be used against the United States because of the overwhelming U.S. retaliatory capability. Consequently, both Russian and Chinese leaders fear that U.S. missile defenses are aimed at them as part of a conscious U.S. strategy to maintain global strategic superiority. In both cases, this perception is feeding an emerging view among Russian and Chinese hard-liners that the United States will become the dominant future threat to their security.

There are also some significant differences between potential Russian and Chinese reactions. Russia may be amenable to amending the ABM Treaty to allow an initial single-site U.S. NMD system with up to 100 NMD interceptors, for two reasons. First, such a defense would not pose a realistic threat to Russia's strategic nuclear force provided Russia maintains a future force with more than approximately 1,000–1,300 weapons (a realistic force size given Russia's current modernization efforts). Second, because Russia wants U.S. concessions in the parallel START III talks (e.g., reducing the overall START III ceiling to 1,500 weapons instead of 2,000-2,500 weapons, and allowing MIRVed land-based mobile ICBMs). However, ABM Treaty amendments that allow for more robust U.S. sensor architectures may be difficult to negotiate due to Russia's fear that such a "thin" defense could become "thick" simply by adding more interceptor missiles. If the United States unilaterally withdraws from the ABM Treaty to deploy a thin NMD system, U.S.-Russian strategic nuclear arms control likely will come to an end.

Unlike Russia, China is sensitive to even a small NMD deployment because this would pose a threat to the Chinese strategic nuclear force, assuming it remains the same size as the current force (i.e., fewer than approximately 24 single-warhead missiles). Such a defense would psychologically and militarily expose China's weakness. While China's strategic force currently is undergoing modernization with the addition of the DF-31 and

DF-41 mobile ICBMs and the JL-2 SLBM, their future force will have to contain several hundred strategic warheads if Chinese leaders wish to maintain a limited deterrent in the presence of a U.S. NMD system with up to 100 interceptors. This level of strategic force modernization is unattractive to most Chinese leaders because they prefer to emphasize economic development. Having said this, China's greatest concern is with possible U.S. theater missile defense (TMD) deployments to territories around its periphery, with TMD deployments to South Korea causing little concern, Japanese TMD deployment being a potential long-term problem, and TMD assistance to Taiwan being quite provocative.

At the very least, U.S. deployment of a thin NMD system, especially after unilaterally withdrawing from the ABM Treaty, will sour U.S.-Russian and Sino-American bilateral relations. In addition, it likely will have the effect of exaggerating the nuclear dimension of the security dialogue between Russia and the United States and within the Asian region. While neither Russia nor China is apt to play the role of spoiler, it may cause both states to become less cooperative on a range of security issues of interest to the United States. For example, Russia and China may show less interest in ratification of the Comprehensive Test Ban Treaty (although this seems less relevant after the U.S. Senate failed to ratify the Treaty), cooperating in the negotiation of a Fissile Material Cutoff Treaty, cooperation with the Missile Technology Control Regime, and other non-proliferation efforts aimed at chemical, biological, and nuclear weapons.

In the case of China, missile defenses could stimulate greater nuclear force modernization than would otherwise be the case, possibly reducing China's interest in future arms control agreements that limit the size of its nuclear arsenal. Chinese nuclear force modernization could, in turn, lead to an Indian nuclear buildup, which subsequently could lead to a Pakistani nuclear response.

However, an uncontrolled offense-defense arms race between the United States and Russia or China is unlikely, at least in the near term, because both countries face serious economic constraints. In the case of Russia, its 1998 defense budget was approximately 12 percent that of the United States (recent figures suggest a level as low as two percent) while China's defense budget was approximately four percent. More broadly, U.S. NMD deployment may cause Russia and China to withdraw from engagement with the West on a range of political/military issues, although one should not underestimate the extent to which the interests of both states, particularly with respect to economic recovery/development, lie with continued cooperation with the United States and its allies.

Finally, U.S. NMD deployment might lead to greater Sino-Russian military cooperation, especially on NMD countermeasures, as a bulwark against what these states regard as rising U.S. global dominance–although this cooperation probably will not become a formal military alliance.

It is difficult to generalize about U.S. allies' reactions to U.S. NMD deployment without reference to individual countries. Nevertheless, many NATO allies believe that the United States is overreacting to the threat posed by the proliferation of ballistic missiles. Moreover, they see NMD deployment as potentially upsetting the status quo–especially if it leads to withdrawal from the ABM Treaty–by undermining strategic stability and the continued viability of strategic doctrines based on retaliatory deterrence, and by upsetting the consensus in favor of continued nuclear force reductions.

Japanese reactions to U.S. NMD (and TMD) deployments are mixed. These is some concern that U.S. deployments will exacerbate tensions with China, potentially leading to a regional arms race or possibly torpedoing the Agreed Framework which froze North Korea's nuclear program, but also appreciation of the benefits of strengthened U.S.-Japanese security cooperation. In Japan, TMD deployment may become one of the focal points of the emerging debate on the appropriate role for Japan with respect to Northeast Asian security, as well as the weight of effort Japan should devote to its own defense.

Finally, if U.S. NMD (and TMD) systems appear to be technically feasible and affordable, U.S. allies increasingly will become interested in joint cooperation on missile defense, if only to avoid being left behind as the United States gains proficiency in this emerging area of military technology.

Policy Options Regarding U.S. NMD Deployments

The challenge before U.S. leaders is to strike the right balance between competing foreign policy and defense objectives regarding an NMD deployment decision. A thin NMD system could provide insurance against the failure of deterrence in a conflict with a "rogue" state or a small accidental or unauthorized ballistic missile launch, assuming it is technically effective. The question is whether the insurance is worth the cost, both in terms of money spent and in terms of the international political costs incurred. Most Russian, Chinese, and U.S. allies' reactions to date have been against NMD deployment, especially if it requires withdrawal from the ABM Treaty. While some of these reactions can be dismissed as rhetorical, it would be a serious mistake for U.S. leaders to proceed unilaterally without regard for the genuine security concerns of other states.

U.S. policy options regarding NMD deployment can be cast in several lights. The list below frames three options by reference to the degree to which the ABM Treaty must be amended.

Retain the ABM Treaty without Amendment

If the United States abides by the original ABM Treaty, it cannot deploy any of the NMD options currently under consideration.

Advantages:

1) Minimizes the potential adverse impact on U.S.-Russian and Sino-U.S. relations.
2) Minimally perturbs relations with NATO allies who, as so often during the Cold War, favor maintaining the strategic status quo.
3) Maximizes the opportunity for further U.S.-Russian nuclear force reductions.
4) Maximizes the chance that other non-proliferation treaties will remain viable (e.g., CTBT, FMCT, the Agreed Framework, NPT, BWC Protocol, and MTCR), although many of these arms control efforts will either founder or succeed independent of U.S. NMD deployments.[4]

[4] For example, the CTBT may be dead due to the recent action by the U.S. Senate; Russian interest in nuclear force reductions beyond START III may be low, especially if such

Disadvantages:

1) Forecloses national missile defense as insurance against the breakdown of deterrence or accidental launches.

Incremental Amendments to the ABM Treaty

Incrementally amending the ABM Treaty appears to be the preferred option for the U.S. government, assuming it wishes to retain the Treaty in some form. In particular, the C1 option only requires modification of Article I, and Article III if the initial site is in Alaska. On the other hand, Russia's greatest fear is likely to be U.S. NMD breakout capability, especially for NMD systems with robust sensor architectures (i.e., the C2 and C3 options).

Advantages:

1) Establishes the precedent that the ABM Treaty can be amended.
2) Legitimizes thin nationwide ABM systems.
3) Leaves the more difficult amendments (e.g., for more robust sensor architectures) to a later date.[5]
4) Many of the political benefits associated with retaining the original ABM Treaty may still hold if Russia agrees to amend the Treaty.[6]

Disadvantages:

1) A thin NMD system would pose a realistic threat to China's strategic nuclear force, thereby stimulating greater Chinese strategic nuclear force modernization than might otherwise be the case.
2) U.S.-Russian reductions below 500–1,000 strategic nuclear weapons will be difficult in the presence of a thin NMD system.

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reductions include tactical nuclear weapons, due to Russia's increased reliance on nuclear forces to compensate for weak conventional forces; while arms control efforts to curb chemical and biological weapons may succeed regardless of U.S. NMD deployments, because of mutual interest in these treaties.

[5] Even amendments that allow for two sites and up to 200 interceptors may not be too difficult to negotiate with Russia since the original ABM Treaty allowed for two sites with 100 interceptors each–although these were supposed to be regional ABM sites and not systems with nationwide coverage.

[6] For example, U.S.-Russian strategic nuclear force reductions may proceed to START III levels; indeed, START III may only be possible if the ABM Treaty is amended. Similarly, progress on other arms control treaties may proceed apace. Amending the ABM Treaty may underscore the legitimacy of strategic stability and the status quo of retaliatory deterrence doctrines for the medium nuclear powers, China being the sole exception.

3) Amending the ABM Treaty may open Pandora's Box with respect to other states' desires to amend other treaties (e.g., the INF Treaty to allow Russia to re-deploy intermediate-range nuclear forces, the CTBT to allow low-yield tests, the NPT to allow Indian and Pakistan membership as nuclear powers, the CFE to alter flank limits, etc.)
4) Deploying a thin NMD may be viewed as contrary to Article VI obligations under the NPT.
5) Russia's breakout fears may be difficult to address unless:
   - Russia retains the ability to load additional warheads onto their strategic missiles,
   - Russian deploys decoys and other penetration aids,
   - Russia deploys a modern strategic bomber/cruise missile force, or
   - The United States devises adequate confidence building measures (CBMs) to convince Russian (and Chinese) leaders that a thin NMD will not pose a realistic threat to their strategic missile forces. Such CBMS could include:
     - Annual data exchanges on U.S. NMD plans,
     - Monitoring of U.S. NMD interceptor production facilities, and
     - No rapid reload or mobile NMD interceptors.

Withdrawal from the ABM Treaty

Withdrawal from the ABM Treaty is the most provocative option.

Advantages:

1) Allows future sensor architectures for ground-based NMD systems (assuming Russia does not agree to such amendments).
2) Allows space-based NMD and TMD weapon systems, unless they involved nuclear explosives (in which case they violate the Outer Space Treaty).[7]

Disadvantages:

1) Maximizes the chance of adverse political/military reactions, especially from Russia and China.
2) Further U.S.-Russian strategic nuclear arms control would come to an end.
3) Undermines other non-proliferation treaties (e.g., CTBT, FMCT, the Agreed Framework, NPT, BWC Protocol, and MTCR)–although one cannot be too sanguine about the future prospects for some these treaties in any case.

[7] The TMD demarcation accord, if ratified, bans space-based weapons for TMD applications on the grounds that space-based weapons for theater missile defense cannot be distinguished from national missile defense.

4) Cooperative efforts in other areas may come to an end, including:
   - MPC&A programs for fissile materials,
   - Improved export controls and border controls, and
   - Military-to-military exchanges.
5) May foster closer Russia and China military cooperation.[8]

[8] China and Russia are already discussing joint responses to potential U.S. NMD deployments. How serious this cooperation might become is an open question. It certainly will include political condemnation, it may include some form of cooperation on NMD countermeasures, and it might include more extensive cooperation on a broader range of military sales or other activities–although a formal Sino-Russian military alliance seems unrealistic.