

Missile Defense: Challenges and Opportunities for NATO

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Missile Defense and the New Strategic Concept

In November 2010, NATO will adopt a new strategic concept at its summit in Lisbon. Finding agreement about the Alliance's purposes, strategies and required capabilities will not be an easy task. In the lead-up, the allies appointed a Group of Experts led by Madeleine Albright to make recommendations for the new concept, and which published its report in May 2010. One of the core recommendations of the Group is that "NATO should recognize territorial missile defence as an essential mission of the Alliance".² NATO Secretary General Anders Fogh Rasmussen had also put Alliance missile defense on the agenda of the recent meeting of NATO foreign ministers in April.³ Hence, missile defense is shaping up as a core practical issue where NATO will have to agree on a new, coherent and meaningful policy at the Lisbon summit.

In this context, President Obama's missile defense policy of late 2009 has not received much attention so far. But it altered many of the controversial aspects of the Bush Administration's earlier proposals, and is designed for, indeed dependent on, allied participation. The NATO debate on missile defense is thus, once again, entering into a new phase, and has become a major factor in the allies' deliberations on the future of the Alliance.

The purpose of this research paper is to analyze the challenges, as well as the opportunities for NATO as it develops a new policy on missile defense. In particular, it will address the following questions:

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The views expressed in this paper are the responsibility of the authors and do not necessarily reflect the opinions of the NATO Defense College or the North Atlantic Organization.

² Group of Experts on a New Strategic Concept for NATO, NATO 2020, Brussels, NATO, 2010, p. 44.

³ See Press Conference by NATO Secretary General Anders Fogh Rasmussen at the Informal meeting of NATO Foreign Ministers, Tallinn, 22 April 2010, www.nato.int/cps/en/natolive/opinions_62810.htm

- How does the new US missile defense policy differ from that of the Bush Administration announced in 2007?
- Why has missile defense been such a contentious issue for the Alliance in the past?
- What are the missile defense challenges for the Alliance today as it develops a new strategic concept?
- What options do European NATO allies have to contribute to a NATO system for the defense of their continent?

What Is New in the New US Missile Defense Policy?

In February 2010, the Obama Administration laid out its new missile defense policy in the congressionally mandated Ballistic Missile Defense Review.⁴ The policy overall is characterized by many elements of continuity to that of the preceding Bush Administration. Already in his speech in Prague on April 5th, 2009, Obama stressed that the US would promote a “cost-effective and proven” missile defense system as long as the threat of Iranian nuclear and ballistic missile programs persists.⁵ In this respect, the administration’s FY2010 defense budget did indeed scale back or cancel several longer-term programs,⁶ but it even increased funding for more mature systems, such as the Terminal High Altitude Area Defense (THAAD) System or Standard Missile 3 (SM-3). Under Obama, the United States plans to further develop and deploy an integrated global missile defense system to protect the US homeland against limited intercontinental ballistic missile (ICBM) attacks, as well as deployed force and allied territory from short-, medium- and intermediate-range ballistic missiles.

The current US missile defense system continues to be based on four types of interceptors:⁷

- Patriot Advanced Capability-3 (Patriot PAC-3) for the defense of point targets against short- and medium-range ballistic missiles in the lower atmosphere. Patriot are also operated by a number of NATO and non-NATO allies;

- THAAD for area defense against short-, medium- and intermediate-range ballistic missiles in the upper atmosphere. THAAD missiles are only now entering service and are of higher speed and longer range than Patriot;
- Sea-based SM-3 for defense against medium- and intermediate-range ballistic missiles. SM-3 intercept incoming warheads in space. Japan and the United States cooperate in the development and production of the SM-3, which are deployed on Aegis air defense ships operated by the US and Japanese navies;

and

- 30 Ground-Based Interceptors (GBI) in Fort Greely, Alaska and Vandenberg Air Force Base, California, for the destruction of incoming ICBM warheads in space. These GBI are primarily intended to defend against North Korean missiles. The Obama administration cancelled the acquisition of additional interceptors, but development work continues and the existing missiles will be upgraded over coming years.

In addition to the interceptors themselves, the US missile defense system also includes a whole range of ground and sea-based radars, early warning satellites, communication links and missile defense headquarters.

In 2007, the Bush administration had planned to establish a third GBI base for the defense of the US homeland against an ICBM attack from Iran, which for technical and geographic reasons had to be located in Eastern Europe. The administration entered into negotiations with Poland on the deployment of 10 GBI, and with the Czech Republic on the installation of high performance radar. While the GBI base would have provided the capacity to defend the United States and Northwestern Europe against Iranian ICBMs, it technically would not have provided protection for NATO members in Southeast Europe against medium- and intermediate-range ballistic missiles. Moreover, the system was to remain outside the political control of the North Atlantic Council.

⁴ See Department of Defense, Ballistic Missile Defense Review Report, February 2010.

⁵ Office of the Press Secretary, White House, Remarks by President Barack Obama, Hradcany Square, Prague, 5 April 2009.

⁶ Most notably the Airborne Laser and the Multiple Kill Vehicle Interceptor program. The Airborne Laser is a powerful laser in a modified Boeing 747 aircraft, intended to destroy ballistic missiles in their boost-phase soon after launch. It has been plagued by significant technical problems for years and is now reduced to research work. The Multiple Kill Vehicle Interceptor program was to develop small kill vehicles that would be deployed by one interceptor to destroy incoming warheads as well as advanced decoys. This program has been terminated.

⁷ In addition, the United States cooperate with Israel in the development and production of the Arrow 2 interceptor, which is however only operated by Israel.



In September 2009, President Obama halted work on the third base and radar, and replaced them with a new 'phased adaptive approach' to missile defense in Europe. The essence of this approach is to replace the planned GBI, deployed in fixed silos for defense against Iranian ICBMs, with a more flexible architecture of ship- and land-based SM-3 interceptors that focuses, in the first instance, on the defense of Southeastern Europe against Iran's growing medium-range missile arsenal.

SM-3 in the current configuration (Block IA) on US Aegis air defense warships, which are already occasionally deployed off the Israeli coast, will be deployed as required from 2011 in the Adriatic Sea, the Black Sea and the Baltic Sea. They will be supplemented by newly operational THAAD batteries for area defense, and Patriot PAC-3 missiles for point defense, against short-range and medium-range missiles. Transportable, land-based versions of improved SM-3 missiles (Block IB)⁸ are planned for 2015 and will be based in Eastern Europe, including Romania, which has recently agreed to host such interceptors.⁹ By 2020, yet another, improved version of the SM-3 missile (Block IIA)¹⁰ will replace the earlier versions, and provide increasing capability to intercept even ICBM. Research and development of the modified version of the GBI that was planned for deployment in Eastern Europe will continue as an insurance against set-backs in the development of the more advanced SM-3 derivatives to intercept longer-range missiles.

The planned radar in the Czech Republic was dropped in favor of a more flexible, but also less defined architecture. This includes a land-based AN/TPY-2 radar similar to systems already deployed in Japan and Israel, and a new, airborne sensor network currently under development. Infrared early-warning satellites, modified early-warning radars in the United States, Greenland, and Great Britain, as well as radars on US Aegis warships in Europe and the Middle East, also remain part of the overall defense system.

Even though the rationale of the new US missile defence architectures has not been extensively discussed in public, the Obama Administration provided three specific re-

asons for the revision of the program: (1) Promising technical progress in the development of SM-3 missiles that may ultimately lead to the ability to intercept longer-range missiles, and in the integration of various existing radars in the missile defense system; (2) Iran's greater than anticipated progress in the development of medium-range ballistic missiles that could pose a threat to Southeast European allies; and (3) the greater potential of integrating existing and future capabilities of European allies into a combined missile defense system. All three of these developments, however, are also of direct interest to NATO as a whole, and pose both challenges and opportunities as the Alliance develops a missile defense policy.

Why Has Missile Defense Been so Contentious in the Past?

Missile defense is not a new issue for NATO. It has been an issue of debate amongst the allies ever since the 1980s, when US plans for a 'star wars' system to defend the North American continent raised concerns about the further deterioration of the relationship with the Soviet Union. The Anti-Ballistic Missile Defense (ABM) treaty of 1972 was widely seen in Europe as a central pillar of Cold War arms control, because it enshrined the superpowers' vulnerability to each other's strategic forces, and hence stabilized the condition of Mutual Assured Destruction (MAD) that persists between Russia and the United States to this day. The abrogation of the ABM treaty by the Bush Administration in 2001 was therefore seen by many European NATO members as a direct challenge to MAD, and hence also as a challenge to the foundations of the European post-Cold War security order. Any US missile defense proposal is thus always also seen through the lens of allied relations with Russia.

Ironically enough, however, the provisions of the ABM treaty also prevented the United States from sharing most of its missile defense technology with its allies. Although they supported short-range missile defense as part of alliance air defense capabilities, European NATO members tended not to question this political and legal distinction between 'theater' and 'strategic' missile defense systems

⁸ Block IB missiles will include improved optical seekers and divert mechanisms.

⁹ See Nicholas Kulish and Ellen Barry, "Romanians Accept Plan for basing of Missiles", *New York Times*, 5 February 2010, p. A4.

¹⁰ Block IIA missiles will include further improved seekers and divert mechanisms, and a more powerful third propulsion stage.

in the ABM treaty. But it was only after 2001 that it became possible for the United States and NATO to seriously consider a missile defense system for the European continent, which meant that the strategic reasoning for missile defense systems to defend European populations had very little exposure in the public and policy debate in Europe, in marked contrast to the United States.

In light of the 9/11 attacks and the growing proliferation of WMD and ballistic missiles, NATO initiated a study in 2002 of a missile defense system for the protection of the entire allied territory, which concluded in 2006 that a defense system for the allied territories was technically feasible. But although it was approved by NATO's Conference of National Armaments Directors,¹¹ no program was initiated in subsequent years for political as well as financial reasons. In 2007, the US plans for the 'third' GBI base in Poland caused an outcry, especially among West-European politicians and commentators, that was fuelled by general disenchantment with the US administration and massive objections by the Russian leadership.

Russia's official criticisms focused on the alleged capability of the US base to negate Russia's ICBM force, which would threaten the strategic balance between both countries. However, the technical basis of these claims was always questionable, in light of the capability of the GBI interceptors and given the small number planned for deployment in Europe. More legitimate were concerns about the planned radar, which could have been turned inside of its dome to look into Russian airspace. Moreover, Russia also expressed concerns about the future perspectives of a U.S. system – i.e. the long term possibility of expanding the number of interceptors and support systems. But the main reason for Russia's adverse reaction seemed to be its fundamental opposition to the permanent stationing of Western forces in former Warsaw Pact member countries, and a desire to limit their strategic independence from Moscow.

However, Russian threats to target missiles on Poland and the Czech Republic, should they agree to host the US facilities, in turn revived old anxieties in Eastern Europe. Given the opposition of many Western European allies to the US plans, this reinforced existing differences

within the Alliance about NATO's relationship with Russia. The Bush administration's missile defense policies thus caused a major rift among European allies, and led to a significant crisis of confidence within NATO.

When Obama announced a changed missile defense posture in late 2009, however, Russian criticism was notably absent. This was all the more surprising as the new plans still included the stationing of US forces in Eastern Europe. However, Russia's economic situation was dire after the collapse of the commodity boom, and the country was visibly interested in mending fences with the West. The lesser speed of the SM-3 interceptors pulled the rug from under the direst Russian claims about the effect of the system on Russia's arsenal, and the new radar is to be deployed in the open, which makes it impossible to orient it towards Russia unobserved. And, correctly or not, the cancellation of the Bush plans could be read as a US concession to Russia, including the agreement of the Obama administration at least to discuss missile defense in the then-ongoing negotiations of the new START treaty.

This perception was then also the main concern that Obama's changes raised among East European allies, who had not been consulted in advance. Their concerns were all the greater since the cancellation of the Bush plans had been leaked to the press several weeks before the new policy was announced, and it was for a while uncertain whether the United States would deploy its own forces to the region, or honor the commitments of its predecessor to supply Poland with Patriot batteries. To repair the damage from the 'botched' launch of the new policy, the White House saw it necessary to dispatch Vice-President Joseph Biden to Eastern Europe in late 2009,¹² which contributed to alleviating those allies' concerns.

Hence, missile defense has been contentious in the past because it has tended to pit two of the Alliance's core interests against each other: on the one hand, reassurance that members would be defended against any attack, including from Russia; and, on the other hand, the maintenance of good relations with that country. It will continue to be important for the Alliance to reconcile as much as possible these two demands.

¹¹ See www.nato.int/cps/en/natolive/topics_49635.htm

¹² Peter Baker, "Mending Fences, Biden Assures Poland that U.S. Is Watching Over It", *New York Times*, 22 October 2009, p. A16.



However, the technological characteristics of current US plans, and the changed political climate between Russia and the West, make it likely that missile defense will be a much less contentious issue in the future than it has been in the past. Should the overall relationship between NATO and Russia become closer in future years, to the point that cooperation at the operational level may become politically feasible, it would be important to have the practical ability to do so. Hence, the command and control architecture of NATO's missile defense system should include a technical option to link it with comparable Russian systems.

Should NATO Make Missile Defense an Alliance Mission?

However, NATO would first have to make the decision to consider missile defense an Alliance mission. With its revised missile defense program, the United States will make a significant contribution to the defense of the European continent against ballistic missiles. While the previously planned architecture would have left the defense of Southeast Europe against medium- and intermediate-range ballistic missiles to the initiative of NATO, the plans of the Obama administration now focus squarely on this task. Hence, the United States is committed to deploy capabilities specifically for a purpose that all members of the alliance have committed themselves to in solidarity. But few US missile defense systems, which are in heavy demand in other regions as well, will be permanently stationed in Europe. Without a wider NATO program to which US forces could be assigned, there will be few factors that would encourage the United States to integrate its forces into the political (North Atlantic Council, NAC) and military (Supreme Allied Commander Europe, SACEUR) Alliance structures. And widespread endorsement of role specialization notwithstanding, the practical meaning of solidarity in the NATO context has always been the sharing of the operational and financial burdens between all allies. This is especially the case with regard to issues that touch on Article 5 as the core of the alliance.

Iran is in geographic proximity to Turkey and other allies in Southeastern Europe, and most allies are committed to political and economic, if not yet military, sanctions against the Iranian regime over its nuclear program. Both factors make Iranian nuclear and ballistic missile capabilities a concern for the Alliance as a whole, which could easily develop into an Article 5 contingency. According to the International Institute for Strategic Studies, Iran is now more competent in missile technology than North Korea. This includes the production of larger, liquid-fuel missile engines that could power longer-range missiles, and solid-fuel technology that is easier to handle and makes ballistic missiles less vulnerable, because it does not require time-consuming refueling before launch. Iran's new, solid-fuel Sajiil 2 and the older, liquid-fuel Shahab 3 missiles have claimed ranges of 2000km, which would be sufficient to reach parts of Greece, Bulgaria and Romania. With a three-stage missile based on its existing programs, however, the country could achieve a range of 3,700km by the middle of the decade which would also place Western European countries under threat. In contrast, the development of a true ICBM that could target North America is still more than a decade away, at least five years later than had been estimated possible when the Bush administration developed its missile defense plans for Europe.¹³

NATO Secretary General Rasmussen remarked in May 2010 that offensive and defensive systems should be seen as complements, not substitutes:¹⁴ a credible missile defense capability would deny any adversary the ability to threaten or execute successful strikes against Alliance territory.¹⁵ Iran's confidence in the strategic effect of its missile arsenal would be further reduced by the option of NATO retaliation, including of a nuclear kind, even after a failed attack.¹⁶ But a robust Alliance missile defense capability would make it possible to de-emphasize reliance on NATO's remaining nuclear weapons, by further narrowing the scenarios in which they would be used. This would also help fulfill the commitment by nuclear weapons states to reduce the saliency of nuclear weapons in their strategic postures.

So far, however, NATO's only missile defense program

¹³ See *Iran's Ballistic Missile Capabilities: A Net Assessment*, London, International Institute for Strategic Studies, 2010.

¹⁴ See Press Conference by NATO Secretary General Anders Fogh Rasmussen at the Informal meeting of NATO Foreign Ministers, Tallinn, 22 April 2010, www.nato.int/cps/en/natolive/opinions_62810.htm

¹⁵ A posture referred to as 'deterrence by denial'.

¹⁶ A posture of 'deterrence by punishment'.

is focused on the defense of deployed forces, rather than of Alliance territory. In 2001, NATO had commissioned several feasibility studies to examine a defense system for deployed forces against short- and medium-range ballistic missiles with a range of up to 3000 km. The first stage of the resulting Active Layered Theatre Ballistic Missile Defense (ALTBMD) program was launched in 2006. ALTBMMD does not include interceptors, but will connect sensors and command and control elements of missile defense systems operated by various NATO allies, so that they can function as one integrated system. Initial operational capability is planned for 2012.

But as potential adversaries, especially Iran, are engaged in the development and deployment of missiles that can cover greater parts of the European continent itself, the strategic logic of complementing ALTBMMD with a capability to defend Alliance territory becomes highly compelling. This is all the more so since the price of extending ALTBMMD to include the territorial mission has been estimated as low as 200m Euros over 10 years. In the words of Secretary General Rasmussen: "Why would we protect our soldiers –and we should– but not everybody else? That, I hope, will be the context as Allies discuss this issue in the run up to Lisbon."¹⁷ With its new missile defense architecture, the United States has already committed itself politically and financially to the defense of Europe. A NATO missile defense system would enhance not just deterrence but also transatlantic sharing of responsibility. However, financial implications must be taken into account.

Hence, NATO should now recognize missile defense as one aspect where the Alliance needs to work together if it is to give substance to its willingness and capability to respond to Article 5 contingencies. But even after a NATO decision to provide a missile defense capability, based on the proposed US architecture and an extended NATO ALTBMMD program, European allies are faced with a number of particular challenges of their own as they contemplate possible contributions.

What Could European Countries Contribute to NATO Missile Defense?

In principle, European contributions to NATO missile de-

fense can consist of interceptors, sensors, communication links, headquarters, and other elements of an integrated missile defense system. Any such contribution could be made in three ways, through: (1) Capabilities that are already in, or planned for, service in national forces; (2) Additional national capabilities, procured specifically to support the new NATO posture, and that would be integrated into the NATO system; and (3) New, cooperative programs for the acquisition and operation of multi-national capabilities. While European alliance members will likely pursue all three options, the technical and financial difficulty of individual countries operating some of the available missile defense interceptors suggests that the third, multinational option will be of particular importance.

Even though missile defense is primarily an American technology, European NATO members already operate capabilities that could be usefully integrated into a NATO system. Germany, the Netherlands, Greece and Spain operate Patriot batteries that can be used as point defense systems against short- and medium-range ballistic missiles, and Germany and Italy cooperate with the United States in the Medium Extended Air Defense System (MEADS) program to develop a more capable successor system. Italy and France have similar capabilities with the SAMP/T air defense system. Modern air defense ships of the German (F-124 Sachsen class), Dutch (LCF De Zeven Provinciën class), Spanish (F-100 Alvaro de Bazan class) and Norwegian navies (F-310 Fridtjof Nansen class) have already successfully participated in US missile defense tests with their ship-borne radar systems. Various land-based radars of several European armies could also be integrated into a NATO missile defense system.

Under ALTBMMD, NATO develops a missile defense test-bed, communications and command infrastructure, which are co-financed by both the United States and European NATO members. If Europeans wanted to make an additional contribution to the overall system, the procurement and operation of dedicated missile defense sensors, e.g. an AN/TPY-2 radar, as it is included in the Obama plans for deployment to Southeast Europe, could also be included in the program. This would be relatively easy, given that ALTBMMD is an existing program and that the operation of sensors would avoid potentially difficult questions relating to the rules of engagement in peacetime that would arise

¹⁷ http://www.nato.int/cps/en/natolive/opinions_63153.htm



with multinational interceptors.

However, there are good reasons to also seriously consider contributions to the sharp end of the spear. No European country today operates interceptors that can provide defense over larger areas, rather than point defense of installations such as air- or sea-ports. Here, Europeans completely depend on the United States, which is in the process of fielding five THAAD batteries. These systems are well-suited as an area defense system for Southeast Europe, or for the protection of population centers in other parts of the continent.¹⁸

However, US THAAD batteries are also in strong demand elsewhere where the US has military commitments, from the Middle East to East Asia: the first battery, for example, was rushed to protect Hawaii in early 2009, after North Korea readied a long-range missile for launch. Hence, it would by no means be guaranteed that the defense of Europe would always receive the highest priority when such scarce resources are globally allocated by the United States.¹⁹ In addition THAAD is also a very expensive system: the United Arab Emirates ordered three THAAD batteries at the price of seven billion US dollars; a financial dimension that would pose significant problems if it was to be met from individual European national budgets, without any pooling or cost-sharing arrangements.²⁰

Hence, if individual European NATO members are looking to acquire new interceptors as a national contribution to a NATO-wide system, they would be more likely to consider the sea-based SM-3 interceptor, with a unit price of some 10 million US dollars apiece.²¹ SM-3 could provide a valuable European contribution to the first stage of the Obama administration's 'phased adaptive approach' to the defense of Europe. For area defense against intermediate-range missiles, SM-3 interceptor missiles are in any case superior to THAAD thanks to their longer range and their ability to intercept missiles during the midcourse

flight phase in outer space. Moreover, like THAAD batteries, US missile defense capable ships are also in limited supply, and do not regularly deploy to the North and Baltic seas. Integrating SM-3 into European navies would therefore significantly increase the areas under the permanent coverage of at least a small numbers of interceptors.

There is, however, a severe limitation of the SM-3, which relates to the type of launch container from which it can be fired: like other US missiles, it requires the US-made Mk 41 container, which is also in use on modern air defense vessels of the German, Dutch, Spanish and Norwegian navy. The French, British and Italian navies, however, mostly use the European PAAMS launch container system that is unable to fire the SM-3.²² If European countries decide to increase their contribution to NATO's missile defense capabilities, financial burden-sharing arrangements would thus be called for so that efforts could be focused on the deployment of SM-3 on those navies' vessels that are capable of using them.

Recommendations: Towards a NATO Political and Capability Initiative

The core of NATO remains the commitment to common defense in Article 5 missions. To this end, the allies have long recognized the need for the integration of their air defense systems, and missile defense is in many ways no different. The US missile defense program of the Obama administration now focuses squarely on the defense of its European allies, and it has addressed most of the political objections that had made missile defense such a divisive issue in the past. NATO members should recognize missile defense of NATO territory and population as an essential mission of the Alliance. Fulfilling that mission will then require a number of practical steps in capability as well as political areas:

¹⁸ The area that a missile can defend depends, amongst other factors, on the relative speed of the interceptor and the incoming missile. Therefore, THAAD could defend, for example, a large part of Southeast Europe against medium-range missiles, or population centres such as Paris or London against longer-range systems, which have a much higher velocity.

¹⁹ See also Stephan Frühling and Benjamin Schreer, "NATO's New Strategic Concept and US Commitments in the Asia-Pacific", *RUSI Journal*, vol. 154, no. 5 (2009), pp. 98-103.

²⁰ See Pierre Tran, 'UAE buy of THAAD seen in 18 months', *Defensenews*, 23 February 2009, <http://defensenews.com/blogs/index/2009/02/23/uae-buy-of-thaad-missile-seen-in-18-months/>

²¹ In addition, there would be additional systems integration work on suitable air defense ships.

²² Integrating the SM-3 into the PAAMS system is not a realistic option. Past experience suggests that fitting an existing missile into a new container poses a surprisingly large financial and technological challenge. This would be even more the case here as the SM-3 itself continues to evolve. However, even ships equipped with PAAMS could still be modified to participate very usefully in the missile defense system with their ship-borne radars.

First, with the ALTBMD program, NATO is currently creating the technical basis for the integration of European and American sensors and interceptors in an integrated, deployable regional missile defense system. Allies should decide at their summit in Lisbon to expand that program to provide the command and control backbone of a system to defend the European continent. At the same time, the extended ALTBMD should be able to integrate contributions by non-member partner countries. Once it is operational, NATO commanders should operate core alliance missile defense systems on a continuous basis. Intercept timelines would not allow for political consultation in the event of a deliberate or accidental attack, so that launch authority would have to be pre-delegated under specific rules of engagement by the NAC. As a matter of principle, US forces that are specifically assigned to the defense of Europe should be assigned to NATO. In practice, ships may remain under US national command for other tasks, in which case arrangements involving the double-hatting of commanding officers is already an established solution.²³

Second, as a first visible and prominent contribution, European NATO member countries should establish pooled funding for the acquisition of a limited number of SM-3 interceptors assigned to NATO vessels. Pooled funding acknowledges the very real fiscal constraints facing European defense budgets in the current macroeconomic climate. It is a powerful political symbol of NATO allies' commitment to common defense. In addition, it is a practical solution to the problem of unsuitable launch canisters in many important European navies. In the first instance, about 10 interceptors, at a cost of about 100m US\$, could be stored in Naples, and be embarked on any missile defense-capable naval vessel part of Standing NATO Maritime Group 2 (formerly STANAVFORMED). Before SM-3 are integrated on European ships, these NATO SM-3 would only be deployed on US Navy vessels in the Group, but all participating ships would gain valuable experience from adding missile defense to the Group's core mission. Over time, as more European ships become equipped to

embark SM-3 interceptors, the required number of interceptors could then be adjusted in light of the development of the threat and complementary Alliance capabilities.

Third, NATO should regularly monitor the development of the missile threat and missile defense technology, in order to adapt the defense system in the future to changes in threat and technology. The United States will most likely choose to operate national capabilities that could be deployed elsewhere around the globe. European countries, however, should consider the pooling of funding and capabilities of more advanced missile defense systems a default position. THAAD batteries and land-based versions of the SM-3, once they become available from the middle of the decade, would be suitable candidates for such a scheme, and could be operated by multinational crews along the lines of NATO's existing AWACS and air transport fleets.

Fourth, missile defenses can ultimately only mitigate, but never eliminate the threat of ballistic missiles, as long as such systems exist in the world's arsenals.²⁴ But NATO has in recent years not been able to fuse the powerful political narratives of disarmament and collective defense in the way that it did with its famous double-track decision of 1979, which ultimately led to the Intermediate Nuclear Forces (INF) treaty of 1987. Hence, NATO should provide an allied missile defense capability to provide an effective and visible commitment to Article 5, and meet the military challenge posted by ballistic missile capabilities. At the same time, however, it should also consider the proliferation of ballistic missiles as a political challenge that, ultimately, requires a political solution. Hence, while strengthening its military capabilities to defend against the ballistic missile threat, NATO should at its summit in Lisbon also support opening the INF treaty to other signatories, beginning with the accession of its own member countries.²⁵ A verifiable, global regime banning medium- and intermediate-range missiles may be a long-term goal, but it provides an important political context and narrative for NATO's efforts to defend against them.

²³ SACEUR / COMEUCOM is only the most prominent example, but double hatting has also a long tradition for US naval forces in the Mediterranean.

²⁴ A point forcefully made in Kenneth Adelman's op-ed, "A long-term fix for medium-range arms", *New York Times*, 25 September 2009, p. A29.

²⁵ Unknown to most, the member states of the European Union have already called for a universal treaty to eliminate short- and medium-range ballistic missiles. With the retirement of the French land-based nuclear missile force, no NATO country is operating systems that would fall under the categories prohibited by the INF treaty any more anyway. See Statement on behalf of the European Union by H.E. Miguel Aguirre de Carcer, Special Ambassador for Disarmament, 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), Main Committee I, New York, 7 May 2010.