EASI

EURO-ATLANTIC SECURITY INITIATIVE

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Missile Defense: Toward a New Paradigm

No issue is more urgent or central to achieving progress toward the goal of creating an inclusive Euro-Atlantic Security Community than making European missile defense a joint project of the United States, the North Atlantic Treaty Organization (NATO), and Russia.

This paper, the intense work of an expert group drawn from the Euro-Atlantic Security Initiative's membership and a wider circle of former senior policymakers and defense specialists, shows the way. It provides a basic concept for a cooperative NATO-Russian missile defense system, describes the principles that should underlie it, and lays out an architecture that gives practical expression to the concept. The architectural design, it is noteworthy, was jointly created by a former director of the U.S. Department of Defense's Missile Defense Agency and a former chief of staff of the USSR Strategic Rocket Forces.

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CARNEGIE ENDOWMENT

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I. Contribution of missile defense cooperation to the strategic objectives for a common security space

The Euro-Atlantic Security Initiative (EASI) seeks to create a Euro-Atlantic Security Community: "an inclusive, undivided security space free of opposing blocs and gray areas."[1] Such a security community requires a shared understanding and expectation that within this security space disputes will be resolved by diplomatic, legal, or other nonviolent means and not by recourse to military force or the threat of its use. It also requires that its members have a shared strategic understanding that they face common threats from outside this security space, and that the best and most efficient way to tackle those threats is cooperatively.

The days of the Cold War are long gone, but the strategic relationship among the states in the Euro-Atlantic space has not fully reflected that change. To operate as a Euro-Atlantic Security Community, these relationships must be transformed. Historically, missile defense has been a source of tension and a barrier to transforming the strategic relationship among the states of the Euro-Atlantic Security Community. It has often been perceived as destabilizing the strategic balance and threatening strategic stability.

Successful cooperation on ballistic missile defense would be a game changer. It would go a long way toward overcoming the legacy of historical suspicion and achieving the strategic transformation that is needed. The Euro-Atlantic nations would be cooperating to solve a common security threat faced by all states. Cooperation on missile defense would establish a pattern for working together, build trust, and encourage further cooperation in other areas. It would lay the foundation for the Euro-Atlantic states to lead the broader international effort to meet the global threats posed not only by ballistic missile proliferation but also by nuclear proliferation and terrorism.

II. Basic principles for, and characteristics of, a successful cooperative approach to missile defense

For cooperation on ballistic missile defense to succeed, it must meet three principles.

First, the parties must share a common assessment of threats against which the missile defense system is conceived, must believe that these threats are real, and must be convinced that their own security interests require development of an effective response.

Second, the parties must believe that cooperation will make a real contribution to the effectiveness of that response.

Third, cooperation on missile defense must contribute to reducing tension and suspicion and to creating a Euro-Atlantic Security Community.

The Working Group on Missile Defense (WGMD) believes that cooperation on missile defense meets these principles:

- **First,** there is sufficient consensus regarding the threat risk from medium- and intermediate-range ballistic missiles (up to 4,500 km) to begin now to develop a response, with deployment commensurate with the progression of the threat.

There has been growing concern about the threat posed by the proliferation of ballistic missiles, especially when coupled with efforts to obtain nuclear weapons. The WGMD assesses that the most serious and near-term ballistic missile threat is from medium- to intermediate-range missiles (up to 4,500 km, see Figure 1 for a depiction of ranges). While there is disagreement within the WGMD on the exact timeline of the progression of the threat, the WGMD believes these differences can be accommodated by adjusting the pace of the deployment of ballistic missile defenses. The WGMD agrees that the Euro-Atlantic states should begin now to develop a common program for meeting this threat.

FIGURE 1

Short to Intermediate Missile Ranges

- **Second,** there is consensus that cooperation would enhance the effectiveness of the response to the threat over what any of the states could develop on its own.

  Cooperation would enhance the threat picture and launch information available to each of the parties and provide a framework for coordinating responses among the parties to ballistic missile attack to the extent the parties wish to do so.

  Our approach envisages technology cooperation which might expand over time but would be subject to the right of each party to protect sensitive data and information. In particular, sensitive technologies such as hit-to-kill and advanced radar algorithms would be protected. Technology cooperation would be of significant assistance to the industrial establishments of the parties as they pursue cooperative approaches as well as their own missile defense efforts.

- **Third,** cooperation on missile defense would help to lay a material foundation for the Euro-Atlantic Security Community.

  Cooperation would enhance the security perception among the countries in Europe and contribute decisively to the demilitarization of international relations in the Euro-Atlantic area. The WGMD is persuaded that incremental, practical cooperation in meeting ballistic missile threats is the best route to mutual reassurance that over time will help replace tension and suspicion with trust and confidence.

The cooperative approach we have in mind would have the following characteristics:

(i) Data and information from radars and satellites would be pooled and shared in one or more Cooperation Centers staffed jointly by U.S./North Atlantic Treaty Organization (NATO) and Russian officers working together to provide an enhanced threat picture and notification of missile attack.

Under a cooperative approach, NATO and Russia would pool data and information derived from a network tying together their respective satellite and radar sensors and those of other participating states. This sharing of data and information could give all participants a more transparent and more complete picture of the threat environment and notification of ballistic missile attack.

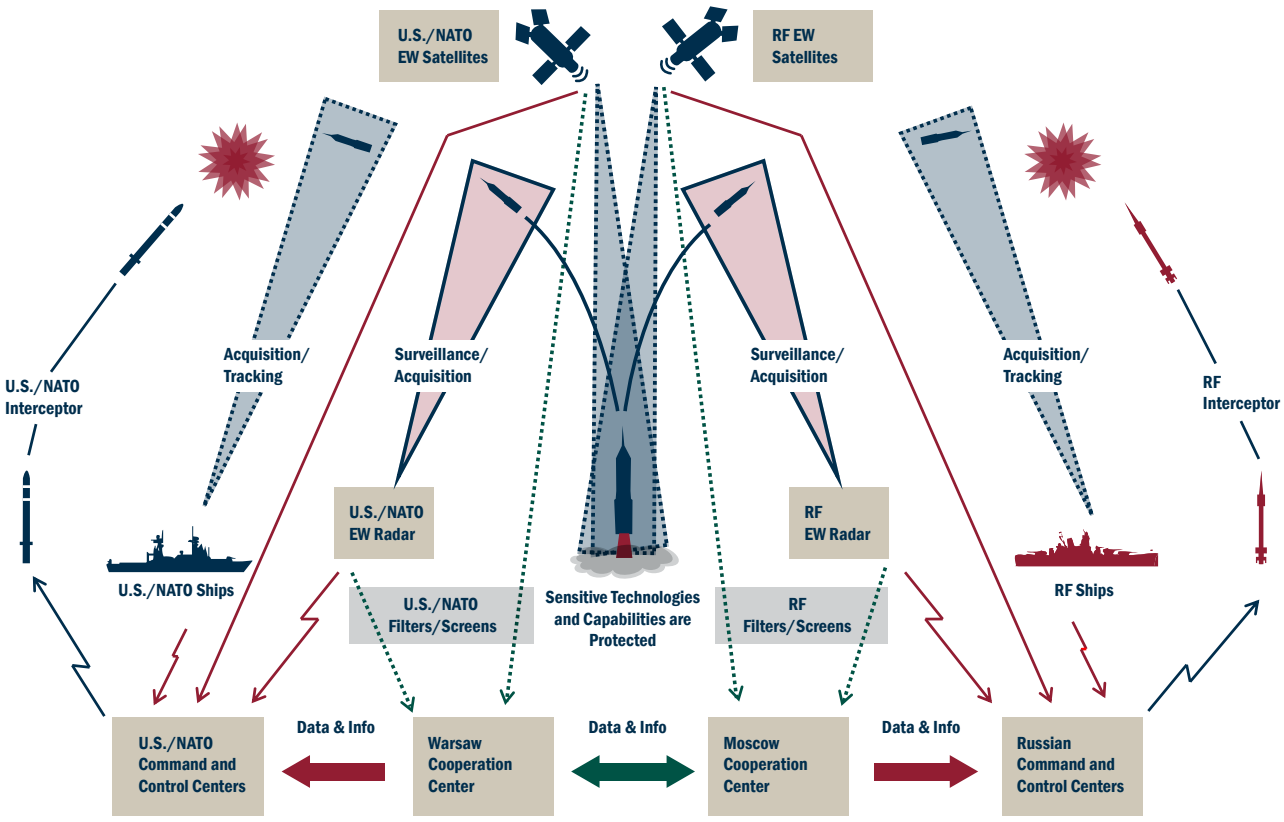
As Figure 2 illustrates, data and information from NATO/U.S. satellites and radars, and data and information from Russian satellites and radars would continue to go to their respective Command and Control Centers. But data and information from their respective launch detection satellites and surveillance/acquisition radars would also go in real time to the Cooperation Centers subject to prior screening or filtering to protect sensitive data and information by each party. This shared data and information would be fused in the Cooperation Centers to give all parties an enhanced threat picture and notice of ballistic missile attack. This fused data and information would in turn be passed in parallel to both the NATO/U.S. and the Russian Command and Control Centers. This approach would enhance the data and information available to both Command and Control Centers—giving the NATO/U.S. Command Center(s) data and information from Russian launch detection satellites and Russian surveillance/acquisition radars and giving the Russian Command and Control Center data and information from NATO/U.S. launch detection satellites and NATO/U.S. surveillance/acquisition radars.

NATO and Russia already have operational experience in this type of cooperation. Before 2008, the NATO-Russia Council (NRC) led several missile defense simulations, each designed to test techniques of data exchange. In the conventional air safety and security domain, there is the Cooperative Airspace Initiative under the NRC.

It prescribes an air surveillance system that ties parallel data coordination centers (in Warsaw and in Moscow) with six data nodes (three in Russia and three in NATO countries). Similarly, information and data on medium- and intermediate-range ballistic missiles could be brought together in one or more Cooperation Centers staffed jointly by military officers from Russia, NATO, and other participating states. (See Figures 3–8 for more detail on the potential architecture.)

FIGURE 2

Functional Architecture



Missile defense cooperation would be accomplished through pooling of sensor data and information fed into jointly staffed Cooperation Centers with common situational awareness. Command and Control remains a sovereign responsibility and would not be affected.

Note: Russian Federation (RF)

FIGURE 3

Potential Architecture Elements

SENSORS

LAUNCH DETECTION

Defense Support Program Satellites
- Early launch warning
- Impact prediction
- 24/7 coverage

Early Warning Satellites
- Early launch warning
- Impact prediction
- 24/7 coverage

SURVEILLANCE/ACQUISITION

TPY-2 Transportable Radar
- X-band—persistent coverage
- Transportable
- Precision tracking
- Phased array
- Data transmission

Qabala Radar (Azerbaijan)
- VHF band—persistent coverage
- Reporting only
- Dated technology

Armavir Radar
- UHF band—persistent coverage
- Phased array
- Data transmission

Several existing sensors could provide valuable information for launch point location and impact prediction as well as initial threat missile track acquisition.

FIGURE 4

Potential Architecture Elements

COOPERATION CENTERS

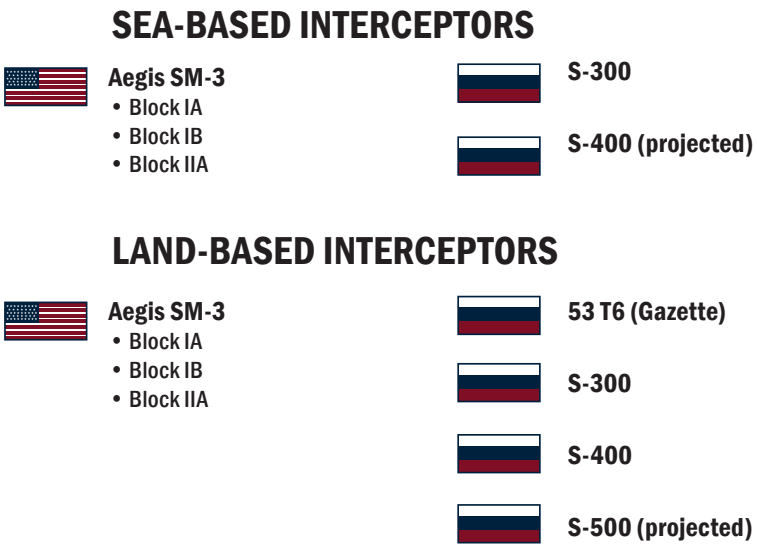
MOSCOW **BRUSSELS?** **WARSAW**

- Launch alerts/impact prediction
- Threat depictions
- Radar track data display
- Operations situational awareness
- Information exchange and clarification

Existing Cooperative Airspace Initiative Operations Centers in Warsaw and Moscow could be expanded to receive missile defense information with others added as needed.

FIGURE 5

Potential Architecture Elements



Interceptors which would be used to provide the short-range to intermediate-range defense would remain totally under sovereign Command and Control.

(ii) There would be no compromise of sovereignty. Each party would protect its own territory. But separate operational protocols could be negotiated in advance to commit one party to intercept a missile flying over its territory aimed at the territory of another party.

The sovereignty of all participating states would be respected. While each party would still have the responsibility for defending its territory from ballistic missile attack, a cooperative approach would make an enormous contribution to that end. Cooperative measures, such as information and data exchanges in the Cooperation Centers, would enhance the effectiveness of those defenses.

A closer and deeper cooperation could be developed in the Cooperation Centers. NATO, Russia, and other participating states might develop operational protocols that would commit the ballistic missile defense interceptors of any one of the parties to be used to intercept and shoot down ballistic missiles flying over its territory but aimed at the territory of another party (if the trajectory of the incoming missile and the technical capabilities of the interceptors made such an intercept possible). In any case, Russia, NATO, and other participating states would retain the ultimate responsibility for defending their respective territory against ballistic missile attack.

(iii) Russia and NATO would develop together a cooperative approach based on full partnership.

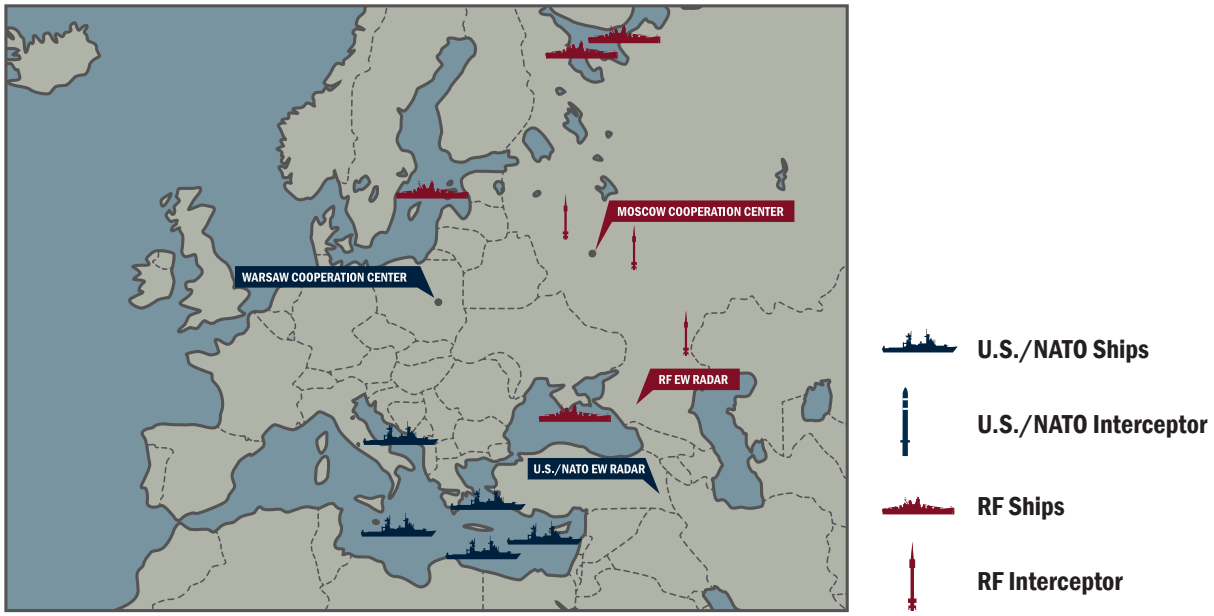
The actual contributions to a deployed system are likely at least initially to vary among the partners, based on differences in the investments in missile defense that they have made to date and other factors. Given the need for an equitable sharing of risk and burdens, the expectation would be that cooperation over time would lead to more equal contributions to the system.

(iv) We are addressing at this time only the threat from medium- and intermediate-range ballistic missiles (up to 4,500 km).

Cooperating in the defense against these missiles could build an important foundation for future cooperation against longer-range threats as well. Therefore, for now, issues associated with long-range (or "strategic") ballistic missiles and Phase IV of the U.S. Phased Adaptive Approach would be left for later consideration. Russia continues to worry about the impact of strategic ballistic missile defense on its strategic nuclear

FIGURE 6

Potential Architecture Deployment—Phase I (2011)



Phase I expands Cooperation Centers in Warsaw and Moscow to receive information from surveillance sensors: Aegis ships with SM-3 Block IAs in the Mediterranean Sea and S-300s on land and Russian ships in the Baltic, Barents, White, and Black Seas. The operational control of each party's sensors and interceptors would remain under the sovereign Command and Control Centers of each party and would not be under the operational control of the Cooperation Centers.

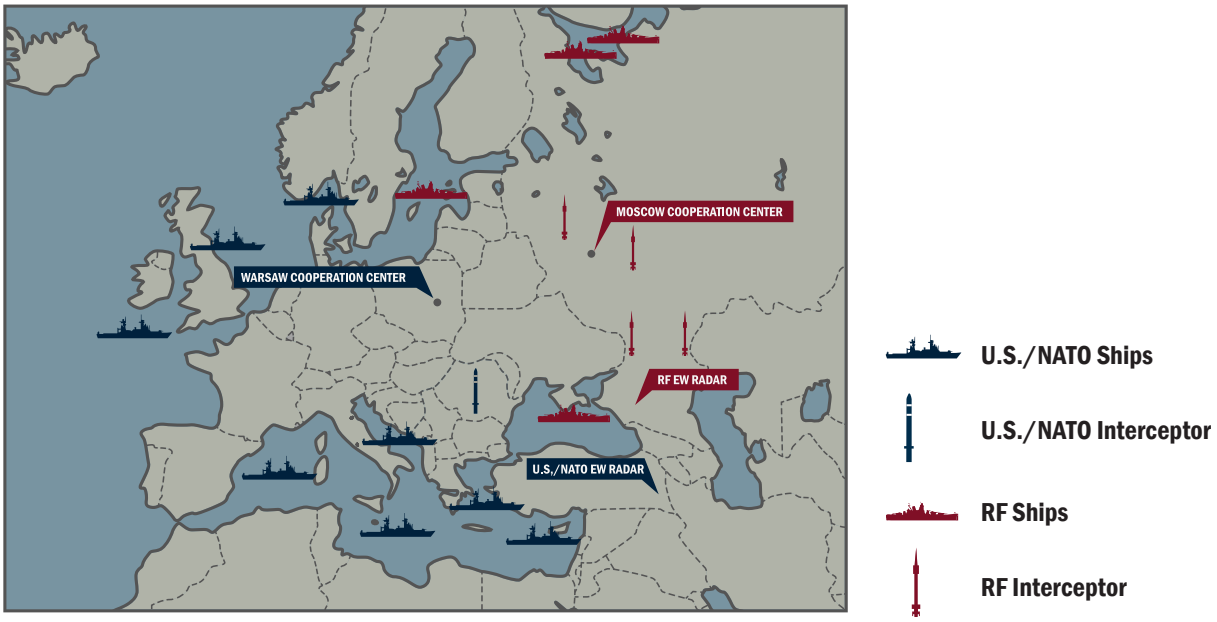
deterrent. Cooperation on the medium- and intermediate-range threat will build trust and confidence among the parties and should make it easier to resolve the more difficult issues associated with long-range ballistic missiles.

(v) This would be an open architecture.

Other countries could participate if they do not develop or acquire their own medium- or intermediate-range ballistic missiles and cooperate in efforts to prevent the proliferation or spread of these missiles.

FIGURE 7

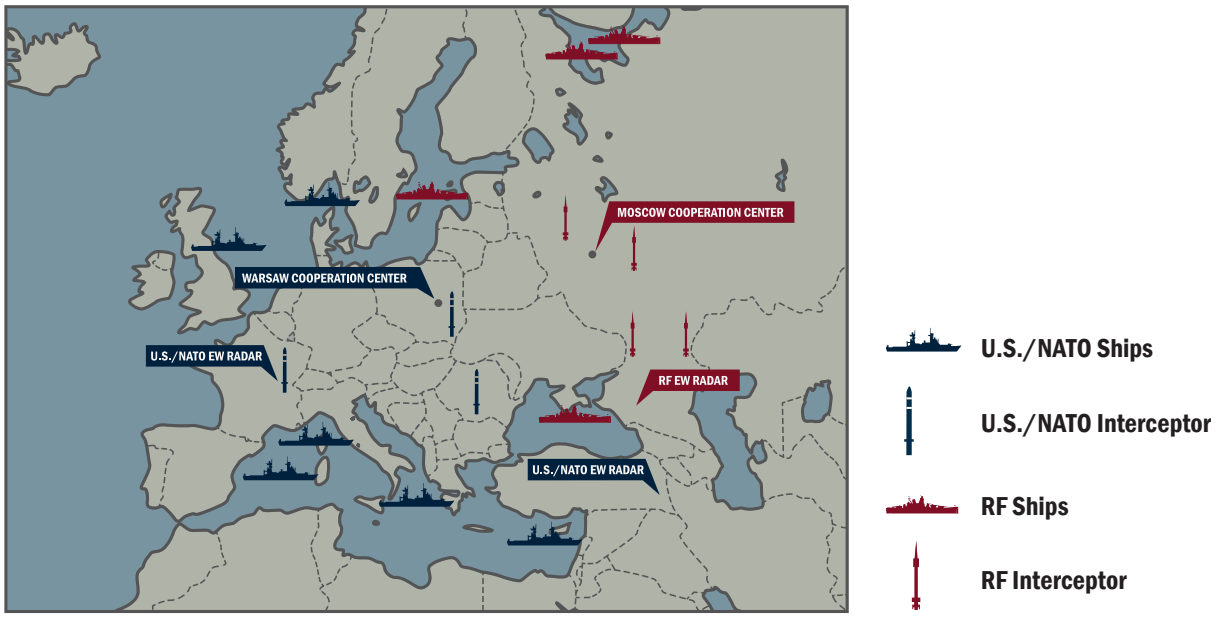
Potential Architecture Deployment—Phase II (2015)



As sea- and land-based interceptors are added, such as the SM-3 Block IBs and S-400s, they again would remain under the sovereign Command and Control Centers of each party and would not be under the operational control of the Cooperation Centers.

FIGURE 8

Potential Architecture Deployment—Phase III (2018)



As other nations develop missile defense capabilities, they could be added to the architecture, while continuing to protect sensitive technologies and capabilities.

III. Public case for cooperation

To appeal to our broader and more youthful publics, as well as our political and expert communities, we must explain this cooperative effort as a new approach.

Cooperation on ballistic missile defense can rightly be framed as reflecting a twenty-first-century approach to twenty-first-century threats. Those threats include extremist elements and regimes able to get their hands on nuclear weapons and the means to deliver them. There is increasing concern that these elements and regimes cannot be deterred by the threats of retaliation that are the basis of traditional deterrence theory. Defensive measures such as ballistic missile defense supplement deterrence by threat of retaliation with deterrence by denial of objective.

This furthers the agenda of all those who seek to move away from traditional deterrence and particularly the reliance on nuclear weapons that was the hallmark of that theory. It also taps into the aspirations and hopes of those who favor further progress toward disarmament generally. It holds out the prospect of dealing with ballistic missile threats from outlaw regimes at least initially without resort to military action by combat

forces. Finally, the open architecture and information sharing that is at the heart of our cooperative approach resonates with an information-age culture that is built on these very principles.

Part of the difficulty in bolstering public support for cooperation on missile defense is that the threat is not "real" to the public. The challenge for politicians will be to frame the issue of missile defense in a way that brings home the seriousness of the missile threat to the public, the contribution that a cooperative approach can make to meeting this threat, and the broader contribution that such cooperation can make to creating a Euro-Atlantic Security Community for the twenty-first century.

From a national security perspective, there are compelling reasons to engage in missile defense cooperation. First, such cooperation would result in a more effective defense against ballistic missile threats to the territories of the parties while still respecting each party's sovereignty and its right and responsibility to defend its own territory. Missile defense cooperation would not only provide all participants with greater security but also would be responsive to the need to conserve financial resources and reduce budgets and deficits. The cooperation the WGMD proposes would be based in significant part on assets that already exist among the parties. The pooling of assets would minimize duplication of capabilities while maximizing the security benefit to all participating nations. A cooperative approach should collectively be less expensive than if NATO, Russia, and the other participating countries each pursued this capability on its own.

Second, such cooperation will improve the strategic relationship between Russia and the United States and encourage cooperation between them in other security areas. Genuine cooperation will bolster the nuclear nonproliferation regime and add momentum to the already impressive achievements in securing nuclear weapons and materials. It will also help Washington and Moscow to render their nuclear relationship safer and more stable.

Third, such cooperation will contribute to the building of a Euro-Atlantic Security Community that is very much in the security interest of all nations in the region. Cooperation on ballistic missile defense substitutes collective action among former adversaries for destabilizing go-it-alone national security policies. Such a cooperative approach is at the heart of the European project that is producing a Europe that is whole, free, and at peace. Missile defense cooperation can be seen as an extension of that concept to the entire Euro-Atlantic region that will offer greater security for the whole region.

IV. The immediate steps toward cooperation on ballistic missile defense should be:

(i) Creation of Cooperation Centers for pooling and sharing information and data from satellites and radars operating in real time to provide a common notification about missile attack. (See Figure 9 for more details.)

(ii) Resumption of joint command-staff exercises on ballistic missile defense, with the expansion of their scope to include defense against medium- and intermediate-range missiles.

FIGURE 9

Proposed Activities

- **Identify a team to begin working on the cooperation challenges**
- **Initiate planning for Cooperation Centers' capabilities and functional architecture**
- **Begin initial data exchanges between technical agencies to provide a baseline for situational awareness displays**
- **Conduct tabletop exercises to help inform the planning and design**
- **Continue threat discussions and analyses**
- **Restart series of exercises to include live, virtual, and constructive war-gaming**

The first steps to creating the Cooperation Centers involve identifying the resources, initiating the planning, and beginning the initial information exchange.

1 Euro-Atlantic Security Initiative Commission, "Why Euro-Atlantic Unity Matters to World Order" (Washington, D.C.: Carnegie Endowment for International Peace, 2010). Available at www.carnegieendowment.org/publications/index.cfm?fa=view&id=41902.

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To move toward the goal of an inclusive Euro-Atlantic Security Community, a unique process was created in 2009 called the **Euro-Atlantic Security Initiative** (EASI) by the Carnegie Endowment for International Peace.

For the first time, former policymakers, diplomats, generals, and business leaders from Russia, the United States, Canada, Central Europe, and European Union nations came together to chart a roadmap of practical action that would allow the region to leave its past behind and to start to build a more secure future based on mutual trust and cooperation.

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As it celebrates its Centennial, the Carnegie Endowment is pioneering the first global think tank, with flourishing offices now in Washington, Moscow, Beijing, Beirut, and Brussels. These five locations include the centers of world governance and the places whose political evolution and international policies will most determine the near-term possibilities for international peace and economic advance.

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