Union of Concerned Scientists
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The Proposed European Missile Defense System

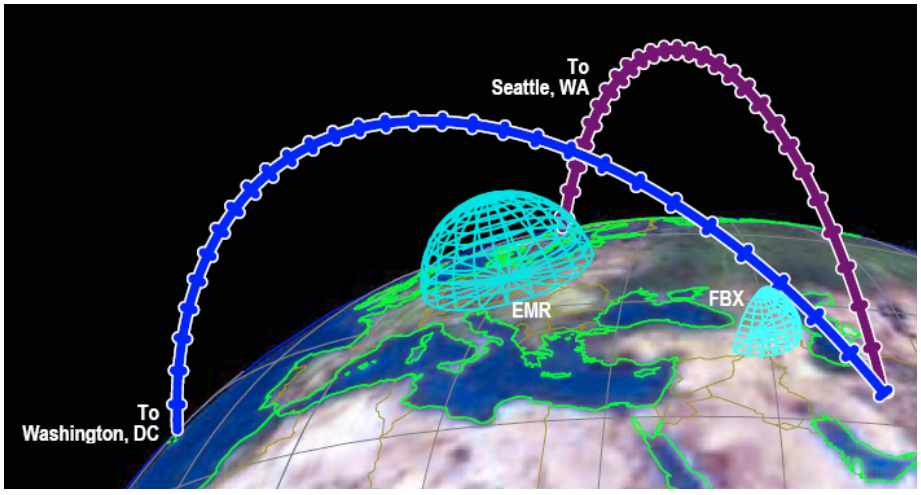
The European Missile Defense system that the Bush administration planned to deploy would include 10 interceptors in Poland and a large radar in the Czech Republic. If the United States moves forward with this system, it would incur large security and monetary costs, while acquiring no defensive capability in return. Deploying the system would therefore decrease U.S. security.

The proposed system has not been adequately tested, could readily be defeated by countermeasures, and has helped fuel a serious erosion in the U.S.-Russian relationship with far-reaching security consequences. Key concerns about this system are discussed below.

The Missile Defense System Would Not Be Effective

- *The interceptor missiles are untested:* The interceptors for the European system are modified versions of those in the U.S.-based system. Congress has required that the Secretary of Defense must certify that the interceptors have been shown to work "in an operationally effective manner" through "successful, operationally realistic flight testing" before they can be deployed in Europe. Testing of the interceptors has not begun and will not be completed for several years.

- *The Czech radar cannot do the job:* The X-band radar that would be fielded in the Czech Republic (known as the European Midcourse Radar, or EMR) is crucial to the operation of the planned system. Because of its location and high resolution, it would be the only radar in the system that could *in principle* provide information relevant to identifying the warhead and discriminating it from decoys. However, recent technical analysis[1] has shown that this radar's range is too limited to be able to detect and track enemy warheads on trajectories from Iran to the United States or large areas of Europe.



(Source: T. Postol, MIT)

In the figure above, the maximum distance at which the Czech EMR radar (and the Forward Based X-band radar (FBX)) could detect and track a missile warhead is depicted in light blue. Warheads on the trajectories (from Iran to Seattle and to Washington, DC) would fly over the radars without

being seen. A great deal is known about the Czech radar since it is currently located at the missile defense test site at Kwajalein in the Marshall Islands. Pentagon estimates of the range at which the radars could detect and track a warhead appear to assume a cross-sectional area for the warhead that is 100 times larger than that of a realistic warhead.

- *The European system can be defeated by decoys and other countermeasures:* Independent and governmental technical analyses have shown that any country that could field a long-range missile could add decoys and other countermeasures to that missile that would defeat U.S. defenses. Similarly, the September 1999 U.S. National Intelligence Estimate (NIE) on foreign missile developments concluded that countries that could field long-range missiles would also have the technologies needed to deploy countermeasures. The NIE noted that "Russia and China each have developed numerous countermeasures and probably are willing to sell the requisite technologies."

- *The overall system has no demonstrated capability*: The U.S. missile defense system is still in early stages of development, and has had no operational tests and no tests in a realistic attack scenario. None of the missile defense tests have included realistic countermeasures. The intercepts achieved in the tests so far say nothing about the system's effectiveness under real-world conditions.

Deployment Has Significant Security Costs

Despite the system's lack of effectiveness against a threat that does not currently exist—a long-range Iranian missile attack—U.S. efforts to field the European missile defense system have been an important factor in the continuing erosion of U.S.-Russian relations.

The planned European deployment is short-sighted. While Russia may be over-reacting, or objecting to the missile defense system for broader political purposes, its reactions nonetheless have negative impacts on U.S. security.

The United States needs Russia's involvement and cooperation to solve more pressing international problems, such as reducing the risk of the theft of nuclear material by terrorists or the spread of dangerous technologies to countries like Iran. U.S. security is also dependent on Russian cooperation to secure and reduce its nuclear and biological weapons, and to extend the nuclear verification measures in the START treaty that are set to expire in December.

The security costs far outweigh any benefits of fielding this system. It is not good policy to deploy a system that Russia finds provocative when it offers no security benefits.

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[1] G. Lewis and T. Postol, *Bulletin of the Atomic Scientists*, May/June 2008, http://www.thebulletin.org/files/064002009.pdf