

A Path to Reducing Iran's Missile Threat and Reconfiguring U.S. Missile Defenses

President Donald Trump cast his decision to withdraw from the Iran nuclear deal as part of his administration's "efforts to prevent Iran from acquiring a nuclear weapon." Along with having "unacceptable" sunset provisions, he said the Joint Comprehensive Plan of Action (JCPOA) "fails to address the regime's development of ballistic missiles that could deliver nuclear warheads."

If these issues are addressed, Trump indicated that he is "ready, willing, and able" to negotiate a new deal. The U.S. administration, he said, "will be working with our allies to find a real, comprehensive, and lasting solution to the Iranian nuclear threat."¹

European leaders declared their intent to stay in the deal and placed the onus on the Trump administration to propose "concrete" steps toward an alternative agreement with Iran. Federica Mogherini, the EU foreign affairs chief, said that "as

long as Iran continues to implement its nuclear-related commitments, as it is doing so far, the European Union will remain committed to the continued, full, and effective implementation of the nuclear deal."² European nations are exploring means of avoiding extraterritorial enforcement of U.S. sanctions, but it will be very difficult to sustain the financial benefits promised to Iran absent U.S. participation and support.

Iran, as it girds for renewed U.S. sanctions, has been cool, even hostile,

to the idea of a new arrangement that imposes restrictions beyond those of the JCPOA. Such posturing, however, may be for bargaining purposes rather than a definitive refusal to engage in negotiations. In September 2017, Iranian Foreign Minister Mohammad Javad Zarif argued that if the United States "want[s] to have an addendum, there has to be an addendum on everything," indicating the possibility of accepting restrictions beyond the JCPOA if proper economic incentives are provided.³ One prospective topic for negotiations is ballistic missiles. Iranian leaders have recently pledged to limit the range of their missiles to 2,000 kilometers, asserting that their primary national security threats lie within that range.⁴

A new agreement that formalizes this restraint, along with further restrictions on Iran's nuclear activities, would have many virtues. In addition to forestalling threats to most of Europe and all of the continental United States, an agreement on missile limitations could render unnecessary the planned U.S. deployment of missile defense interceptors in Poland and the existing deployment in Romania. The possibility of reducing or eliminating the European Phased Adaptive Approach for missile defense would reduce Russian

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Iranian Sejil (left) and Ghadr-H medium-range ballistic missiles are displayed in Tehran September 25, 2017 next to a portrait of Supreme Leader Ayatollah Ali Khamenei during annual defense-week events. (Photo: Atta Kenare/AFP/Getty Images)

motivations to deploy new nuclear weapon systems to penetrate or evade U.S. missile defenses, in turn motivating Russia to help persuade Iran to accept restraints on its missile program.

Missile Limits

As part of a new deal, Iran could agree not to flight-test missiles with ranges exceeding 2,000 kilometers.⁵ The limit on Iran's missile capabilities would be in addition to constraints on its nuclear activities. To enforce such a limitation, some combination of restrictions on missile fuel, missile dead-weight, and warhead weight would need to be imposed to ensure that tested missiles could not under any circumstances exceed the 2,000-kilometer limit.

In addition to monitoring flight tests, it may be necessary to monitor experimental test facilities, such as rocket motor development and wind tunnel laboratories, to ensure compliance. For instance, Iran might be experimenting

with long-range missile-related technologies at Shahrud.⁶ Iran may have to agree to cease such activity and provide access to verify compliance. Monitoring these facilities would help ensure Iran does not develop and test long-range missile motors and warhead re-entry vehicles.

Iran has tested a solid-fueled Sajjil missile that may be capable of delivering a 750-kilogram warhead approximately 2,200 kilometers. Iran also may have tested the Khorramshahr missile, having a range of 2,000 kilometers with a 1,800-kilogram warhead. Each exceeds the 2,000-kilometer limit. Iran must agree to verifiably retire these missiles and variants that might exceed the limit.

In addition to Iran's missile program, an agreement would be needed to permit legitimate space launch capabilities while impeding the possibility of a rapid fielding of intercontinental ballistic missiles (ICBMs). Iran has successfully launched primitive satellites into orbit using its Safir space launch vehicle. It has also displayed

a larger two-stage Simorgh launch vehicle.⁷ In order to permit space launch activities while preventing potential ICBM capabilities, Iran would have to accept restraints. For example, Iran may be asked to declare its rocket-fuel facilities and subject those to inspections or to stockpile only a limited amount or only certain types of rocket fuel. Additionally, Iran may be asked to assemble its space launch vehicles on a just-in-time basis to ensure that these vehicles are not available for use as missiles. Alternatively, Europe countries or Russia might offer guaranteed launch services at a reasonable price in exchange for a suspension of Iranian space launch activities.

U.S. Interests

A prominent concern that has animated U.S. policy toward Iran has been the possibility of it acquiring long-range missiles able to target U.S. allies in Europe and eventually the continental United States, particularly the possibility

that such missiles might be armed with nuclear warheads.

A new agreement that limits Iranian nuclear and ballistic missile capabilities could ensure that Iran will not be able to mount a “nuclear blackmail” of U.S. or European cities. This in turn would allow the United States to postpone plans for completion of a European missile defense and save considerable financial resources that the United States currently spends to develop and maintain it.

It also would help address a primary Russian complaint. In his recent address to the Russian Federal Assembly, President Vladimir Putin argued that “the United States is creating a global missile defense system primarily for countering strategic arms.... [T]hese weapons form the backbone of our nuclear forces.”⁸ The prospect of deferring and eventually canceling the deployment of the phased adaptive approach missile defense

interceptors in Poland would provide valuable leverage in future arms control talks with Russia, including in resolving disagreements over Russian violations of the Intermediate-Range Nuclear Forces (INF) Treaty. Finally, it would free up resources to develop and install more robust regional missile defense systems, such as Terminal High Altitude Area Defense (THAAD) system in the Middle East region, thereby reassuring U.S. allies, such as Saudi Arabia and Israel, which lie within reach of Iran’s short- and medium-range conventional missiles.

For more than a decade, U.S. presidents have invested considerable capital in pursuing missile defenses against Iranian missiles with ranges exceeding 2,000 kilometers. Justifying the development of a European missile defense architecture in 2007, President George W. Bush argued that “the need for missile defense in Europe is real and I believe it’s urgent.

Iran is pursuing the technology that could produce nuclear weapons and ballistic missiles of increasing range that could deliver them.... Our intelligence community assesses that, with continued foreign assistance, Iran could develop an [ICBM] capable of reaching the United States and all of Europe before 2015.”⁹

In 2009, President Barack Obama modified the missile defense plans developed by the Bush administration. The Obama administration argued that earlier plans had “been developed primarily to provide improved defenses for the U.S. homeland—not Europe—against long-range Iranian missiles launched one or two at a time.”¹⁰ Pointing out that ICBM threats from Iran had not matured as feared, the Obama administration initiated the phased adaptive approach. Although reduced in scope, the plan still aimed to defend European allies against Iranian missiles with ranges much greater than 2,000 kilometers.

The phased adaptive approach provides broad defensive coverages for the European theater against Iranian missiles having ranges between 2,000 and 5,000 kilometers (fig. 1), fired from near cities such as Tarbriz, Mashad and Zahedan, but little or no coverage for missiles having ranges less than 2,000 kilometers. Many U.S. military bases in the Middle East, Turkey, Iraq, and Afghanistan fall within a 2,000-kilometer range of those Iranian cities.¹¹ Even under the best operational circumstances, the phased adaptive approach is unable to defend against Iranian missiles targeting these the U.S. bases.¹²

A new agreement to limit the range of Iranian missiles to 2,000 kilometers would make the phased adaptive approach unnecessary. If Iranian missile threats of a range greater than 2,000 kilometers are eliminated, then the phased adaptive approach can be reconfigured to a much smaller hedge status with the goal of eventual removal. An initial hedge status, for instance, could permit the United States and Poland to “complete preparation of the missile defense sites in Poland, acquire the interceptors, but hold them in storage.”¹³

U.S. policymakers have consistently stated that European missile defense plans are directed only against Iran and if the threat vanishes so would the need for the defensive system. Former U.S. Secretary



U.S. Rear Adm. Jesse Wilson, Jr. (center), commander of Naval Surface Force Atlantic, tours the Aegis Ashore facility at Deveselu, Romania, on April 14. The complex is part of the European Phased Adaptive Approach (EPAA) missile defense system to counter the Iranian ballistic missile threat. (Photo: Jeremy Starr/U.S. Navy/Released)

of Defense Robert Gates writes in his memoir that, during the George W. Bush administration, he and Secretary of State Condoleezza Rice “told Putin that if the Iranian missile program went away, so would the need for U.S. missile defenses in Europe.”¹⁴ Similarly, speaking in Moscow in 2009, Obama said, “I’ve made it clear that this system is directed at preventing a potential attack from Iran.... [I]f the threat from Iran’s nuclear and ballistic missile program is eliminated, the driving force for missile defense in Europe will be eliminated.”¹⁵

These statements justify reconfiguring the phased adaptive approach system. One substantial benefit from such a move would be the impact on U.S.-Russian relations and bilateral arms control efforts. The Trump administration has been willing to engage Russia in arms control dialogues. A commitment to defer the deployment of interceptors in Poland would be welcome in Russia. If astutely negotiated, the reconfiguration could also be used to resolve disagreements over INF Treaty violations, extend the New Strategic Arms Reduction Treaty (New START), and provide a basis to begin negotiations on a New START follow-on agreement.

Putin has singled out the phased adaptive approach as a major point of contention in INF Treaty discussions. He has argued that the plan violates the INF Treaty because “the launch tubes where these [interceptor] missiles are stored...are the same that are used on navy ships to carry Tomahawk missiles. You can replace interceptor missiles with Tomahawks in a matter of hours, and these tubes will no longer be used to intercept missiles.... In my opinion, this is a major threat.”¹⁶ By reconfiguring the phased adaptive approach and inviting Russia to inspect the launch tubes, the United States could demonstrate its commitment to the INF Treaty. It also would provide a means to convince Russia to address its own violations of the INF Treaty.

The reconfiguration of the phased adaptive approach would have no impact on the United States and allied efforts to mount credible defenses against Iranian missile with ranges less than 2,000 kilometers. The THAAD AN/TPY-2 radars already deployed at Incirlik Air Base in Turkey, in Camp As Saliyah in Qatar, and in the Negev Desert in Israel have wide

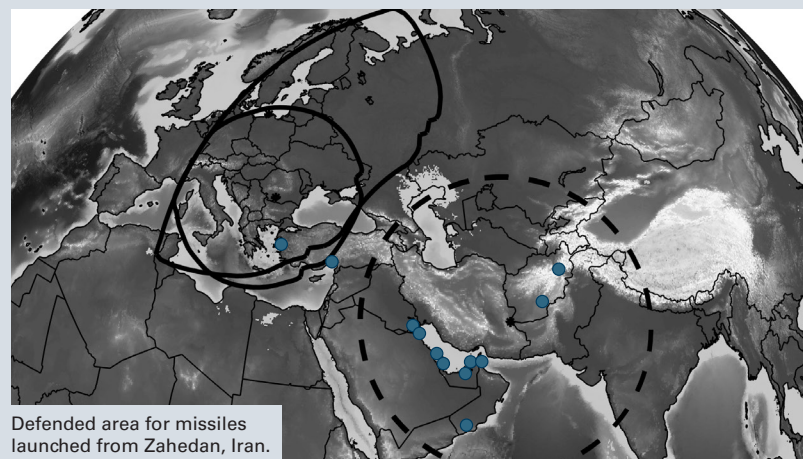
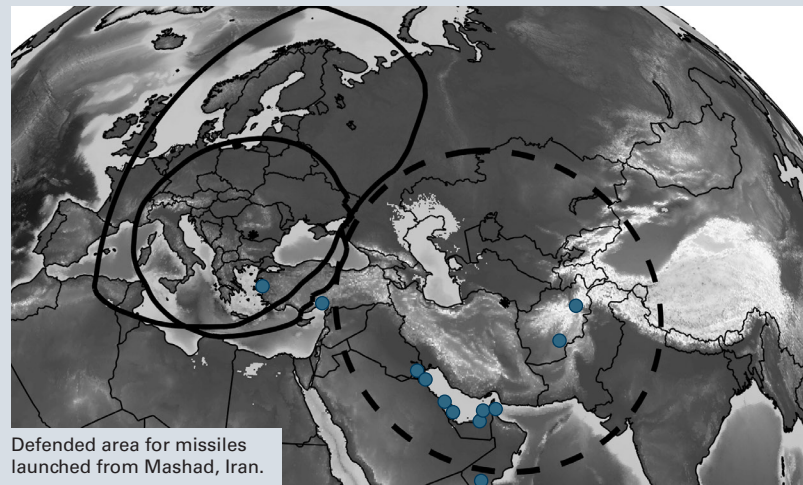
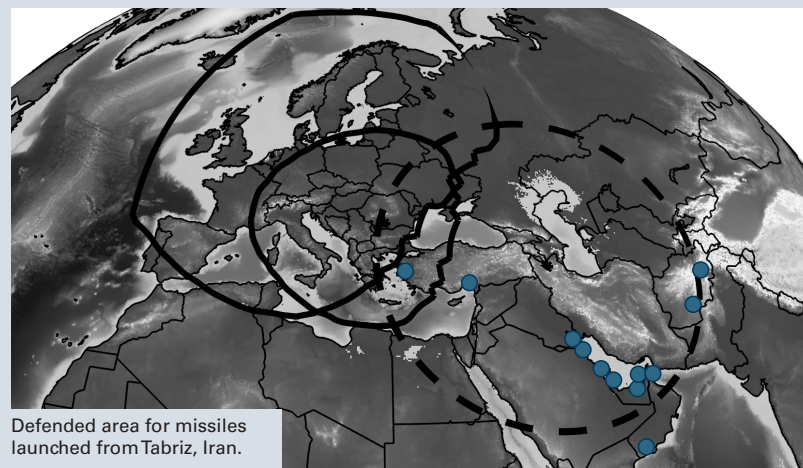


Fig. 1: Coverage Footprint for the European Phased Adaptive Approach Missile Defense System

The phased adaptive approach missile defenses would protect Europe from Iranian missiles with a range exceeding 2,000 kilometers. The dashed-line circle reflects the 2,000-kilometer range from suspected Iranian missile sites near Tabriz, Mashad, and Zahedan. The black circles show the approximate areas covered by the missile defense facilities in Deveselu, Romania, and Redzikowo, Poland. The dots are U.S. military bases in the region, which may be protected by other systems.

Source: Authors’ calculations

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tracking coverages over the region (fig. 2).¹⁷ Missile defense of critical U.S. bases and cities can be performed by additional THAAD batteries that can plug into these radar coverages. Also, U.S. allies such as Saudi Arabia, the United Arab Emirates, Turkey, and Israel have procured independent missile defense systems.

What Is in It for Iran?

The Trump administration’s unilateral

U.S. withdrawal from the JCPOA has diluted many of the incentives Iran might have in pursuing a new deal that imposed reasonable restrictions on its missile program and further limits on its nuclear activities. Yet, U.S. participation and sanctions relief is still required for Iran to obtain the broad and unhindered access to the global economy it wants.

If the P5+1 nations (China, France, Germany, Russia, the United Kingdom,

and the United States) initiated discussions for a new deal and the United States offered full and good faith political participation, including the potential approval of the U.S. Senate, it is conceivable Iran might be induced to engage. The French, German, and UK foreign ministers, in concert with Mogherini, appear to have broached a discussion with Iran on its ballistic missile program.¹⁸

Two factors could motivate Iran’s acquiescence to missile restrictions. First, Iran perceives major threats to its security emerging primarily from its neighborhood. Its offensive military programs are designed as a conventional deterrent to counter regional threats. Missiles having ranges longer than 2,000 kilometers might not be useful in a military contingency. Second, the reimposition of U.S. sanctions would prevent Iran from realizing the gains from the JCPOA that many Iranians anticipated as key to boosting the country’s troubled economy.

Further, Iran develops and deploys missiles primarily to compensate for material military weakness in comparison to its regional foes. One report stated that “Iran lacks the resources, industrial base, and scale of effort to compete with Arab Gulf states that can generally buy the most advanced weapons available.”¹⁹

Iranians seem to believe that their missile arsenal serves as the only potent weapon available to offset its military inferiority. For instance, in 2012 the commander of the aerospace division of the Islamic Revolutionary Guard Corps pointed out that all major U.S. bases are “good targets” for Iranian missiles with a 2,000-kilometer range. He also suggested Iran has “set up bases and deployed missiles to destroy all these [U.S.] bases in the early minutes after an attack,”²⁰ presumably with conventional warheads. Given that Iran is more interested in responding to military threats in its neighborhood, it may be willing to give up development of missiles with ranges more than 2,000 kilometers if sufficient incentives are provided.

Such incentives can be generated if the United States lifted nuclear and missile-related sanctions and other restrictions on trade with Iran. The economic leverage that the United States wields over Iran

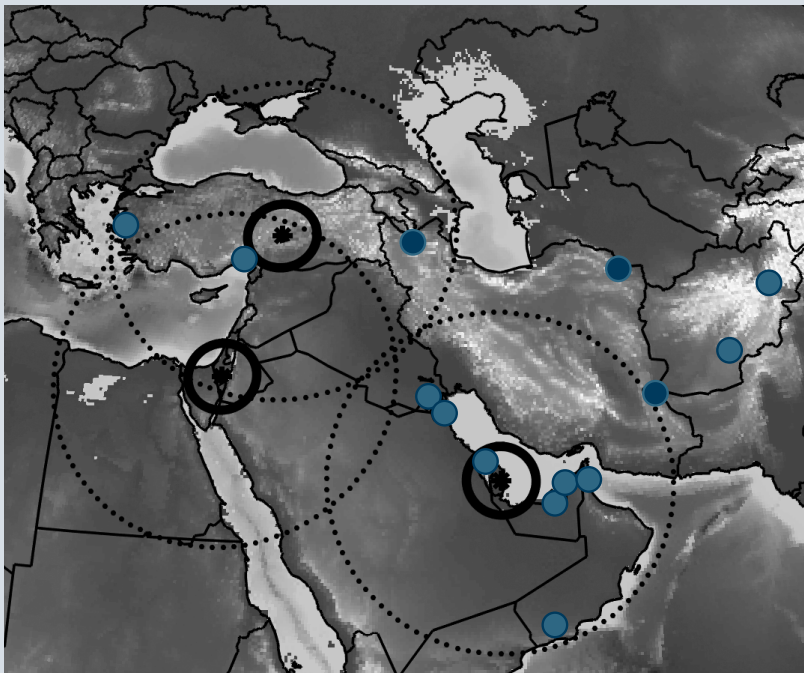


Fig. 2: Coverage of THAAD Missile Defense Systems

The dotted circles show the 1,000-kilometer range of Terminal High Altitude Area Defense AN/TPY-2 radar units at U.S. military bases in Turkey and Qatar and located in Israel’s Negev Desert. The solid black circles show the 200-kilometer defensive coverage for those locations that could be provided by THAAD interceptor missiles.

Source: Authors’ calculations

might be used to induce it to accept a reasonable set of restraints on its missile program. Although acknowledging that the United States had lifted sanctions as agreed in the JCPOA, Iranians believe that the United States was “finding other ways to keep the negative effects of sanctions” and “prevent countries from normalizing their trade and economic relations with Iran.”²¹ A new deal would have to convincingly assure Iran that such restrictions would not be used if Iran honored its commitments.

Conclusion

The possibility of a new arrangement with Iran will depend on a face-saving fix for Trump that addresses his concerns about the current deal, including the issue of Iran’s missile program.²² An agreement to restrict Iran’s missile program to those having ranges of less than 2,000 kilometers might be part of such a fix.

A U.S. commitment to hedge and reduce the scope of the phased adaptive approach in Europe, along with such a new agreement, would provide many additional advantages. It may induce Russia to use its influence to persuade Iran to accept new terms. It also would demonstrate the willingness of the United States to stand by its articulated policy that U.S. missile defense plans are a response to identified threats and that if the threat ceases to exist, the United States would remove the missile defense system. Such a commitment will buy valuable leverage in arms control negotiations with Russia.

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10. Robert M. Gates, *Duty: Memoirs of a Secretary at War* (New York: Knopf, 2014), p. 400.
11. The major U.S. bases within 2,000 kilometers of the three Iranian cities in figure 1 include Ali Al Salem base in Kuwait, Al Dhafra base in the United Arab Emirates, Al Udeid base in Qatar, Bagram air base in Afghanistan, Camp Arifjan in Kuwait, Camp As Saliyah in Qatar, Camp Buehring in Kuwait, Fujairah base in the UAE, Jebel Ali port in the UAE, Kandahar base in Afghanistan, Kuwait Naval Base, NSA Bahrain, Incirlik Air Base in Turkey, Izmir air base in Turkey, and Thumrait air base in Oman.
12. Defensive coverage footprints were calculated assuming missile tracking will be available immediately after boost-phase burnout. That may not be the case for many trajectories. Similarly, a single-shot defensive doctrine is assumed. A shoot-look-shoot mode would further reduce the defended area footprints. Finally, engage-on-remote mode is assumed to explore the maximum possible coverages provided by the European Phased Adaptive Approach.
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