



**Air and Missile Defense in Europe**  
November 2016

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**Air and Missile Threat to NATO Europe**

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**Russia**

- Anti-Access/Area Denial (A2/AD) of NATO military power surrounding Kaliningrad
  - Nuclear-capable short-range ballistic missiles (SRBM) recently deployed in Kaliningrad
  - SA-22, SA-21 Scarab, SA-20, SS-26 Iskander, Iskander-K (ground-launched cruise missile)
- S-300/S-400 air and missile defense systems in Kaliningrad, Crimea, and Syria
- Demonstrated combat use of modernized, long-range (up to 3,500 km), and complex salvos of cruise missiles from air and sea platforms in Syria
- Demonstrated combat use of Unmanned Aerial Systems (UAS) capable of reconnaissance and fire control for precision fires in Ukraine

**Iran**

- Possesses Fateh-110, Fateh-313, Shahab-1, Shahab-2, CSS-8, and Qiam SRBMs capable of striking Turkey and NATO assets in the Middle-East
- Possesses Shahab-3, Ghadr-1, Sejil, and Emad medium-range ballistic missiles (MRBM) capable of striking Southeastern Europe
- Continued testing of ballistic missiles since signing of JCPOA

**Syria**

- Continual missile launches originating in Syria towards Turkey
- Scud-B, Scud-C, Scud-D, and M-600 short-range ballistic missiles

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**The U.S. Air and Missile Defense Gap in NATO Europe**

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- Short-Range Air Defense (SHORAD) to protect the maneuvering force (Combat Brigade Teams)
- Upper-tier ballistic missile defense capability to defend Europe from Russia
- Overhead sensors for cruise missile defense
- Ground-based discrimination and targeting sensors
- Only one Patriot battalion for ballistic missile defense with a dual mission to protect both Israel and Europe

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**Near Term Potential Capabilities to Enhance Air and Missile Defense in NATO Europe**

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- Adapt Aegis Ashore sites with air defense capability and inventory to provide air defense
- Deploy THAAD battery to Europe
- Refurbish and restore mothballed SHORAD capabilities and stockpile in Europe
  - U.S. Army recreate SHORAD force structure and capability
  - Stockpile current National Guard SHORAD capabilities in Europe
- Fix and deploy JLENS to Europe
- Additional Patriot battalion in Europe
- Implement and deploy the first Integrated Air and Missile Defense Battle Command System (IBCS) to Europe
- Integrate and make interoperable all of NATO allies' current air and missile defense capabilities

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## Current Air Defense Capabilities

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### United States

- Upgraded Early Warning Radars (UEWR)
- Hosted by the U.K. in Fylingdales
- C2BMC Command and Control hosted by Germany at Ramstein AFB
- 1 PAC-3 battalion with the 10<sup>th</sup> U.S. AAMDC hosted by Germany at Kaiserslautern
- Command Task Force 64 focused on BMD in Europe, hosted by Italy in Naples
- Aegis Ashore site with 24 SM-1 IIB hosted by Romania in Deveselu
- 4 Aegis BMD Ships hosted by Spain in Rota
- Army/Navy Transportable Radar Surveillance (AN/TPY-2) hosted by Turkey in Kurecik

### Germany

- 3 Patriot Advanced Capability-3 (PAC-3) capable battalions
- 50 Atlas short-range air defense systems (ASRAD)
- Skyshield 35 air defense system
- 3 Sachsen class frigates with Evolved Sea Sparrow medium-range air defense system

### Netherlands

- 1 Patriot Advanced Capability-3 (PAC-3) capable battalion. 3 batteries for air defense; 1 for missile defense
- 4 De Zeven Provinciën class frigates with SMART-L BMD Radar and Evolved Sea Sparrow
- 2 Karel Doorman class frigates with Sea Sparrow medium-range air defense system
- National Advanced Surface-to-Air Missile System (NASAMS) medium range air defense

### Romania

- Hosts U.S. Aegis Ashore site with 24 SM-1 IIB in Deveselu

### France

- 7 batteries of Surface-to-Air Missile Platform/Terrain (SAMP/T) Theatre BMD
- Multi-Purpose Combat Vehicle (MPCV) short range air defense system
- Vertical Launch Mica short-range air defense system
- 2 Horizon class frigates with principal anti-air missile system (PAAMS)

### Greece

- 6 PAC-2 Guidance Enhanced Missile (GEM) batteries
- 54 Atlas short-range air defense systems (ASRAD)
- 4 Hydra class frigates with Evolved Sea Sparrow medium-range air defense system

### Italy

- 3 Surface-to-Air Missile Platform/Terrain (SAMP/T) Theatre BMD Systems
- Spada 2000 air defense system
- 2 Horizon class frigates with principal anti-air missile system (PAAMS)

### Spain

- 6 PAC-2 batteries
- National Advanced Surface-to-Air Missile System (NASAMS) medium range air defense
- Spada 2000 air defense system
- 5 Alvaro de Bazan class frigates with Evolved Sea Sparrow medium-range air defense system

### Turkey

- Hosts U.S. Army/Navy Transportable Radar Surveillance (AN/TPY-2) in Kurecik
- Rapier FSC air defense system

### Belgium

- 2 Karel Doorman class frigates with Sea Sparrow medium-range air defense system

### Denmark

- 2 Absalon class frigates with Sea Sparrow medium-range air defense system
- 3 Iver Huitfeldt class frigates with Evolved Sea Sparrow medium-range air defense system

### Norway

- National Advanced Surface-to-Air Missile System (NASAMS) medium range air defense
- 5 Nansen class frigates with Evolved Sea Sparrow medium-range air defense system

### United Kingdom

- Upgraded Early Warning Radars (UEWR) at Fylingdales
- The Centurion Counter Rocket, Artillery, and Mortar (C-RAM)
- Rapier FSC air defense system
- 6 Type 45 Daring-class destroyers with Sea Viper (PAAMS)