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# Navy Awards Next-Gen Radar Contract



By <u>Kris Osborn</u> Tuesday, October 15th, 2013 1:13 pm Posted in <u>Naval</u>

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The Navy awarded Raytheon a possible \$1.6 billion deal to develop, manufacture and integrate a new air-and missile defense radar on Navy destroyers that is substantially more powerful and sensitive than existing radar systems used on ships today, service officials said.

The new radar, called Air and Missile Defense Radar, or AMDR, is slated for integration on the next-increment or Flight III Arleigh Burke-class destroyers in 2019, according to Navy spokesman Lt. Kurt Larson.

The contract was awarded Oct. 10. Initial funds for this deal are available despite the ongoing government shutdown because the money was budgeted for fiscal year 2013. During the shutdown, no new contracts can be awarded with fiscal year 2014 dollars unless they are for "excepted" activities because there are no approved funds.



The AMDR radar system is more powerful in its ability to detect and locate potential threats than the current Aegis AN/SPY-1D radar on ships today, service experts said.

"AMDR will see and differentiate between objects half the size and twice the distance of a SPY-1(D) radar," Larson said

"Unlike the legacy SPY-1 (D) radar which is a passive phased array, AMDR will be an active array radar that will use gallium nitride semi-conductor technology. This allows AMDR to achieve much greater power efficiency with far less transmitter noise," he added.

AMDR consists of S-band and X-band radars and a Radar Suite Controller, or RSC; together, these technologies are able to scan, track and search the horizon and surrounding area for potential threats by sending an electromagnetic signal into the atmosphere — then analyzing the return signal of what it bounces off or hits; this information, generally speaking, can in many cases provide dimensions of an incoming threat, such as a missile, by identifying its size, shape, location and trajectory.

Similar to its predecessor, the Aegis AN/SPY-1D radar, the AMDR includes a phased-array radar, Navy officials indicated; the S-band radar is engineered for long-range detection and the engagement of advanced threats, whereas the X-band radar performs the over-the-horizon search capability.

"AMDR S-band is a new development radar providing sensitivity for long-range detection and advanced threats. The X-band radar is a horizon-search radar based on existing technology," Larson said

"Under the contract, Raytheon will build, integrate and test the AMDR S-band and Radar Suite Controller engineering development models. For the ship sets covered under this contract, the AMDR suite will integrate with the existing AN/SPQ-9B X-band radar," Larson said.

The base contract begins with design work leading to preliminary design review and culminates with system acceptance of the AMDR-S and RSC engineering development models at the end of testing at the Advanced Radar Detection Laboratory, Pacific Missile Range Facility, Kekaha, Hawaii, he said.

The contract includes options for procurement up to nine radars which may be exercised following a Milestone C procurement decision which is planned for fiscal year 2017. The options, if exercised, would bring the cumulative value of this contract to \$1.6 billion, Larson explained.

The AMDR radar is performing very well in its current technology development phase, however the Navy is currently immersed in a series of technological adjustments or engineering change proposals needed so that that DDG 51's can accommodate the new radar, Navy officials said

In particular, the DDG 51s will need more on-board power and more cooling capability integrated into the ship platform, Navy officials said. As a result, Navy officials are working on installing larger megawatt generators and cooling plants than are currently on the ship in order to accommodate the AMDR system.

Among other things, this involves changing the existing DDG 51's 200-ton Air Conditioning plant to a 300-ton plant, Navy officials said.

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Big-Dean · 5 weeks ago

Twice as powerful eh. Perhaps now we can simply "fry" incoming missiles and aircraft with radiated energy ;-)

Any experts want to chime in here?

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1 reply active 4 weeks ago

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LtKitty · 4 weeks ago

Maybe if we point them at North Korea we can fry Honorable Leader's junk off.

"Ooops... sorry, we were just polling for missiles. Sooo sooorry."

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extreme\_one -60p · 5 weeks ago

As soon as I saw the words "gallium nitride semi-conductor technology" my thoughts went to Shane Todd. https://en.wikipedia.org/wiki/Death\_of\_Shane\_Todd

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blight 115p · 4 weeks ago

I assume they'll also be intended to have miniaturized electronics with reduced power draw? Are we ambitiously hoping to be able to back-fit them to older Burkes too? The allusion to a larger air conditoning cooling plant seems to suggest that increased heat is inevitable; thus RCS return or IRST will be used to detect these ships.

I'm wondering if the next Burkes will incorporate revisions to the superstructure to lower RCS?

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2 replies · active 4 weeks ago

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Greg · 4 weeks ago

I personally think we should start mature the 1000. Isn't this also the same radar to be used on the 1000?

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blight 115p · 4 weeks ago

Zumwalt is intended to have a SPY-3 and a AMDR. Not sure of the specifics though.

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1 Star (ret) · 4 weeks ago

Shape?? Every missile I've ever seen had a nose cone, was round and had fins

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2 replies · active 4 weeks ago

+2 Vote up Vote down



JRT · 4 weeks ago

Shoot the ducks, not the decoys.

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+2 Vote up Vote down



diogenesofnj 2p · 4 weeks ago

You haven't seen much of what goes on in the exo-atmosphere - not many have. You may get a good look in the near future when those contrails appear high overhead and the entire sky lights up.

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TonyC. · 4 weeks ago

The power consumption is a result of the phased array antenna elements, the more elements in the array; the more power needed to supply the array. This will lead to 4KVDC power generation on US Navy ships in the future. There will be advantages to larger generators for future upgrades, but there are disadvantages for battle damage and personnel safety as well. The US Navy desire for rail guns and lasers may push the power requirements to beyond 4KVDC power generation. The Electrician's Mate rating may become more in common with an industrial lineman for maintaining ships power.

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2 replies · active 4 weeks ago



+1 Vote up Vote down



blight 115p · 4 weeks ago

Soon we'll need contract electricians to sail with the ships from the factory. Or on the plus side, it'll mean job security once they leave the service.

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+1 Vote up Vote down



diogenesofni 2p · 4 weeks ago

Don't forget what's happening to the electric plant on the next generation aircraft carrier. The Everyready bunny doesn't power the electromagnetic catapults.

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"that have been educated through the public money" What public money? There's student loan debt, so it's more like indentured servitude.

blight\_

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