

# Ground truth

## Bad European economy makes NATO surveillance proposal a tough call

BY DAVE MAJUMDAR

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For nearly two decades, NATO members have dreamed of fielding a fleet of ground surveillance aircraft that would be similar to the U.S. Air Force's Joint Surveillance Target Attack Radar System (JSTARS) aircraft in their ability to map features beneath the clouds and spot moving vehicles.

After a 15-year struggle and despite economic turmoil in some European countries, NATO is in negotiations with Northrop Grumman on an estimated 1 billion euro (\$1.2 billion) contract to provide the Alliance Ground Surveillance (AGS) Core Capability — a small fleet of radar-equipped Global Hawk unmanned aircraft whose coverage would be supplemented by planes owned by member countries. Combining AGS with the aerial and maritime surveillance capacity provided by NATO's E-3 Sentry Airborne Warning and Control Systems (AWACS) aircraft would grant the alliance a “complete operational picture” of the airspace and ground, said U.S. Air Force Maj. Gen. Steve Schmidt, commander of the NATO AWACS force, whose command would fly the AGS aircraft

The funding memorandum signed last year by 15 of 28 NATO countries so far shows no signs of fraying amid Europe's economic turmoil, but advocates like Schmidt are taking no chances. They are publicly underscoring what they see as the importance of the project: NATO has its own E-3 aircraft but, at the moment, no independent means to conduct ground surveillance. If Northrop and NATO reach an agreement by October as planned, the alliance could start AGS flights as early as 2013 or 2014. Feeding ground and air radar into NATO's information network would improve intelligence for members during out-of-area deployments in places such as Afghanistan, peacekeeping operations such as those in Kosovo and the Balkans, or during the aftermath of natural disasters, such as the earthquake in Haiti, Schmidt said. The AGS “is an extremely important asset for NATO and a lot of people have been struggling for this the last 15 years — so we can't [afford] to fail on this,” said Danish defense expert Bo Leimand, general manager of the NATO Alliance Ground Surveillance Management Agency.

Under the new approach, all levels of the alliance, from the boots-on-the-ground troops up to the theater commanders and political leaders would share a common operational picture, Schmidt said.

Outside NATO, not everyone sees the priority of spending a billion euros on the new planes. Ben Friedman, a defense analyst at the Cato Institute in Washington, D.C., said NATO should scrap the AGS program and rely on the aircraft flown by member nations. “They can't afford it. They've already sacrificed the JSTARS component,” he said, referring to a 2007 decision to rely on unmanned aircraft for the AGS core capability.

### TURNING POINT

While the requirement for a NATO-led ground surveillance capability had been identified as early as 1992, the AGS project received a boost in September when 15 members signed a program memorandum of understanding calling for the joint acquisition of such a capability.

The agreement said that while the acquisition costs of the aircraft and its associated equipment would be borne by the signatories, the NATO alliance as a whole should pay for the cost of operations out of the alliance's common budget. Further, the agreement said the AGS aircraft should be based in Sicily, and should fall under the command of a new single operational headquarters based at Mons, Belgium, that would be responsible for both the NATO AWACS fleet and the new aircraft.

The agreement said NATO should issue a request for proposal for a variant of the Block 40 Global Hawk jet-powered high-altitude unmanned plane, the version designed to carry the Multi-Platform Radar Technology Insertion Program (MP-RTIP) radar system. The MP-RTIP combines a synthetic aperture radar mode, which delivers black-and-white images, with a moving target indicator mode, and displays the

results on the same screen, making the operator's job much easier than on previous systems, according to Northrop Grumman, which makes the Global Hawk planes and the MP-RTIP radars.

As originally conceived, the AGS requirement was to have been met with a combination of manned and unmanned aircraft. The manned component was supposed to have been an aircraft similar to JSTARS, but NATO members decided to pursue a purely unmanned approach primarily due to financial considerations, Schmidt said. The alliance member states determined that the Global Hawks combined with the networked capability of the NATO AWACS could approximate the capabilities of JSTARS, Schmidt said.

"It's a very expensive commitment — just like when we originally procured the NATO AWACS, not all the nations participated. It's a big financial contribution, and obviously everyone's budget is tight," Schmidt said. He expects the program to cost over a billion euros, he said, though the final number has yet to be negotiated.

Program costs are especially pertinent in light of the current financial meltdown in Europe. Many of the signatories are new NATO members from Eastern Europe, such as Lithuania, Bulgaria, Estonia and others with comparatively weak economic positions. Even some of the stronger participants such as Italy have their own serious economic problems, Friedman said.

Despite the signatories' financial woes, Schmidt and other NATO and industry officials said the participating nations are firmly committed to the AGS program. Bob Zeiser, Northrop Grumman's business development director for AGS, said, "I fully expect to see additional nations sign this [memorandum of understanding] once the program gets underway."

NATO, which already applies nationally owned aircraft as "in-kind contributions" to supplement the alliance's AWACS force, plans to do the same with the AGS as countries field their own ground-surveillance aircraft, possibly including Block 40 versions of Global Hawks. Individual participants could contribute coverage by national aircraft in lieu of financial contributions, Schmidt said.

Northrop submitted its AGS proposal in June, and the company expects to negotiate the details of the AGS program in anticipation of a contract award by October.

Details that need to be worked out include which countries will contribute which components and services under an agreement to spread the work among the countries funding the project. Each country will receive an industrial work share based on how much money it contributes. Schmidt said the amount pledged by some nations had changed over the last year and Northrop had to adjust its proposal accordingly. The details of the participation will be finalized in negotiations over the price, Zeiser said.

NATO's plans call for the alliance to purchase eight Block 40 Global Hawks along with four transportable ground stations and 11 mobile ground stations. Both NATO and Northrop Grumman officials declined to disclose the price target for the contract. The memorandum says that 60 percent of the funding should come from the European partners, Zeiser said.

### **NON-U.S. GROUND STATIONS**

The ground stations included in the proposal would be built to NATO specifications by European and Canadian subcontractors under the aegis of Northrop Grumman as systems integrator. They would rely on proven technologies developed by European industry. The ground stations would make up the bulk of the non-U.S. partner nations' industrial participation. Because the ground stations have no U.S. content, the equipment would not be subject to U.S. export control laws and could be reused on other programs, Zeiser said. As for the Block 40 Global Hawk airframes, they would be "missionized" with components from Canadian and European contractors.

The idea is to incorporate "the best of the best national industries, core capabilities, products and technologies into the NATO AGS," Zeiser said. Some of the subcontractors would include EADS, Selex Galileo, General Dynamics Canada and Kongsberg, among a host of other defense companies.

While the AGS' networking abilities remain undefined until contract negotiations are complete, what is known is that at a minimum the aircraft would be equipped to transmit data in NATO's standard Link-16 format.

At the heart of the AGS is the MP-RTIP active electronically scanned array radar developed by Northrop Grumman. NATO abandoned plans to build a new radar for the AGS, choosing instead to purchase the MP-RTIP, which was already being produced for U.S. forces. The lack of funding was a major factor in NATO's decision, Zeiser said. But the radar also could be available at a much earlier date because it was already in production for U.S. Global Hawks.

The MP-RTIP radar can be scaled up or down by tailoring the number of transmitter/receiver modules to the size of the airframe. The primary role of the MP-RTIP is to create synthetic aperture radar maps of the ground that are highly detailed black-and-white photo-quality images created by processing radar returns. The MP-RTIP is also capable of tracking moving ground targets, much like the JSTARS's AN/APY-7 radar. The new radar is capable of simultaneously overlaying the synthetic aperture mode with the moving target mode. The interleaving of radar modes is a huge advantage for operators and is a lesson taken from JSTARS operations, Zeiser said. A larger MP-RTIP variant will also eventually be retrofitted to the U.S. Air Force JSTARS, which will afford further opportunity for interoperability with the NATO Global Hawk, Zeiser said.

### **UNDEFINED SPECIFICS**

Concurrently with Northrop Grumman's contract proposal submission, which was expected in June, the NATO Military Committee was scheduled to update and finalize the AGS concept before approving the stand-up of the combined AGS and AWACS headquarters "possibly in June," Schmidt said. This is necessary because while the memorandum is an agreement "in concept," much of the specifics were left undefined in the original document. Funding of operations by all 28 NATO members is one such area that needs to be finalized.

"In the end, will it even be common funded? The expectation is that it will be, and previously NATO had agreed that it should be. But now is the time to actually finalize those decisions," Schmidt said. In addition to the acquisition contract, and standing up the headquarters, NATO is also trying to finalize the capabilities package, Schmidt said. This portion of the agreement will deal with basing arrangements and sharing of resources at Sigonella, on the Italian island of Sicily. The major issues involve infrastructure and the responsibilities of the host nation and NATO to each other.

Because the U.S. Air Force and U.S. Navy intend to base their respective Global Hawk variants at Sigonella, there may be opportunities to share facilities and equipment, Schmidt said. A similar German offer to share basing and maintenance facilities with the Luftwaffe's Eurohawk derivative was turned down by the alliance, according to Lt. Col. Holger Neumann, a spokesman for the German Ministry of Defense. If everything goes according to plan in the negotiations, the next year and a half will see the finalization of the capabilities, contracts and acquisition of the aircraft. "Signing the contract. That's the biggest step in the entire program. That will lock in the rest of the process for us," Schmidt said. "The next 18 months are key."

Schmidt said one of the biggest challenges that NATO faces is integrating the Global Hawk into its concept of operations.

"When you come in with a new system like AGS, we don't have the core backbone to support primarily the ground commander. So we will not only be developing the capability, but also the concepts of operations and how best to integrate it, not just for the air, but to support the ground commander," Schmidt said. He said the alliance would undergo a strategic concept review later this year, and he expects that the new capabilities of the AGS will feature prominently.

"AGS is the biggest capability improvement in NATO in the last 30 years since we brought on the NE-3A [NATO AWACS]. It is the key to the future," Schmidt said.

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