

# NATO's NEED TO KNOW

By Col. Gregg Vander Ley, U.S. Air Force

**The alliance must pool  
resources in intelligence,  
surveillance and  
reconnaissance**

“

N

ATO Summit paves way for a renewed Alliance...!” the headlines proclaimed.<sup>1</sup> The New Strategic Concept, approved at the 2010 NATO Lisbon Summit and the first in 11 years, provides a road map for the coming decade. The decade will offer NATO numerous internal and external challenges: two active war zones outside Alliance borders (ISAF and Libya), expanded commitments within the region (an air-policing mission in the Baltic Region) and counter-piracy initiatives near the Horn of Africa. Adding to these challenges are significantly reduced military budgets across NATO nations, budgets further constrained by global economic problems, impacting NATO capabilities. The methodology for realizing Strategic Concept goals is through informed decision-making and real-time information awareness, necessitating an information dominance system of systems that currently eludes NATO commanders. A comprehensive Intelligence, Surveillance and Reconnaissance (ISR) architecture is necessary to achieve this level of dominance. Specifically, this article makes three recommendations to NATO. First, rapidly develop and expand interoperable systems for command and control (C2) and information dissemination. Second, radically adapt C2 procedures for deploying shared assets. And third, build a NATO-operated Unmanned Aerial Vehicle (UAV) Rapid Deployment Force.

The application of sophisticated ISR systems and the use of UAVs have exploded since the start of operations in the Balkans, Afghanistan and Iraq. This transformed operational speed, depth and effectiveness of ISR information dissemination. The only NATO-owned surveillance asset is the NATO Airborne Early Warning (NAEW), with the remaining ISR systems proffered by other participating nations. The NAEW is a multinational and immediately available airborne surveillance, warning and control capability in support of Alliance objectives with deployment authority controlled by the North Atlantic Council (NAC). Seventeen of NATO's 28 member nations provide financial support and 14 provide personnel to the combined command.<sup>2</sup> Most national forces in the Alliance have UAV systems in their inventories or are acquiring the capability over the next few years. Seventeen of the 28 Alliance members have nearly 5,000 UAVs, from hand-held micro UAVs to airline-size reconnaissance platforms, in their current inventories.<sup>3</sup> New technologies and increased reliability mean that UAVs offer significant operational benefits, and governments across the globe are increasingly recognizing the key roles they play in traditional defense. In the civil sphere, they conduct myriad missions such as tracking Somali pirates, scouting forest fires and counting migratory animals. Unfortunately, most of these systems are developed in a proprietary environment and do not rapidly integrate into existing C2 structures.

NATO, in addition to standardizing policy and doctrine for each element of the ISR system, is pursuing two parallel strategies to remove incompatible systems within its architecture. First, it is developing a NATO-owned ISR capability, similar to the NAEW, which is derived from the RQ-4B Global Hawk UAV platform. It is also finalizing a C2 system capable of integrating diverse UAV platforms into a single system.

NATO is bridging the gap between nationally derived ISR capabilities and its stated requirements with the development of the Alliance Ground Surveillance (AGS) program, the first real attempt to have a coordinated ISR enterprise under NATO control. AGS will be an integrated system, consisting of an air and a ground segment, enabling the Alliance to perform persistent surveillance over wide areas from high-altitude, long-endurance, unmanned air platforms operating at considerable stand-off distances. The intent is to provide by the year 2016 a single surveillance data node to interface and exchange information with

component commands, tactical operation centers and intelligence networks. Figure 1 depicts the system architecture composition of the AGS Core system.

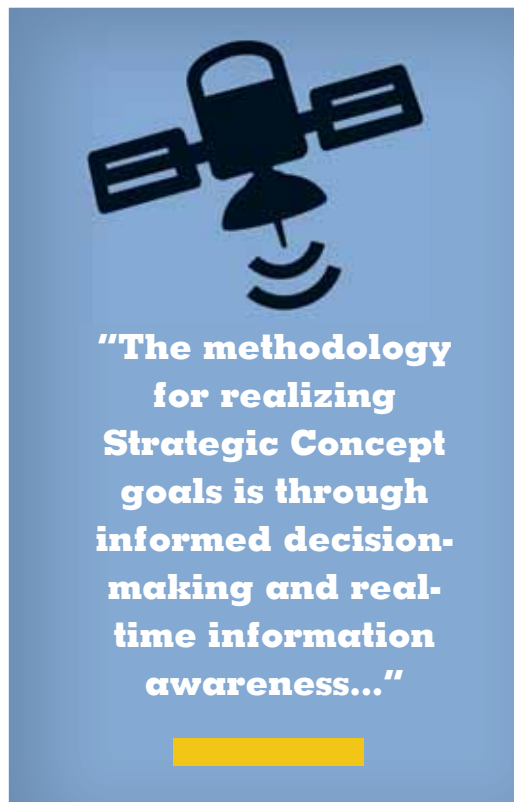
In an impressive step in the right direction to develop greater UAV interoperability, NATO recently announced the Multi-sensor Aerospace-ground Joint ISR Interoperability Coalition (MAJIIC2) program aimed at linking participating nations' sensor data from their ISR, surveillance and EW systems, even if their individual platforms were not originally designed for that kind of compatibility. While the name behind the original acronym suggests a focus on aerospace platforms like UAVs, the project aims to handle any sensor platform on ground, sea, or air. The specific benefit of MAJIIC2 is that the data itself is exchanged outside the

boundaries of any collecting system and can be shared with (or denied to) anyone with network access. It greatly multiplies the available ISR to a commander. He can instantly access imagery from other nations' UAVs, meaning that he does not have to deploy his own asset, or he can deploy his own UAV in another area, allowing for the most efficient use of the assets.<sup>4</sup> Though mutually supporting, AGS and MAJIIC2 are separate, parallel networks providing leaders with similar data streams necessary to develop information awareness.

Up to this point, it seems that NATO is pursuing a sound strategy. It has policies in place to regulate new system development, it is building a multinational surveillance program, and it is building a communications architecture to enable all ISR systems to feed into it. So what is the problem? Time and money. The AGS program has been conceived and developed for more than 15 years, and costs are

expected to exceed \$4 billion.<sup>5</sup> Only 14 nations participate in the program, and budget constraints forced Denmark to drop out. Program aircraft are undergoing their first successful test flights. Radar and other sensors are still in design phase. It is not expected to reach full operational capability until 2016 at the earliest. MAJIIC2, on the other hand, is expected to cost approximately \$100 million, a cost spread among nine nations. It's not expected to reach full operational capability until 2016, but has been integrated successfully into realistic exercises and passed a deployed operational test in Afghanistan.

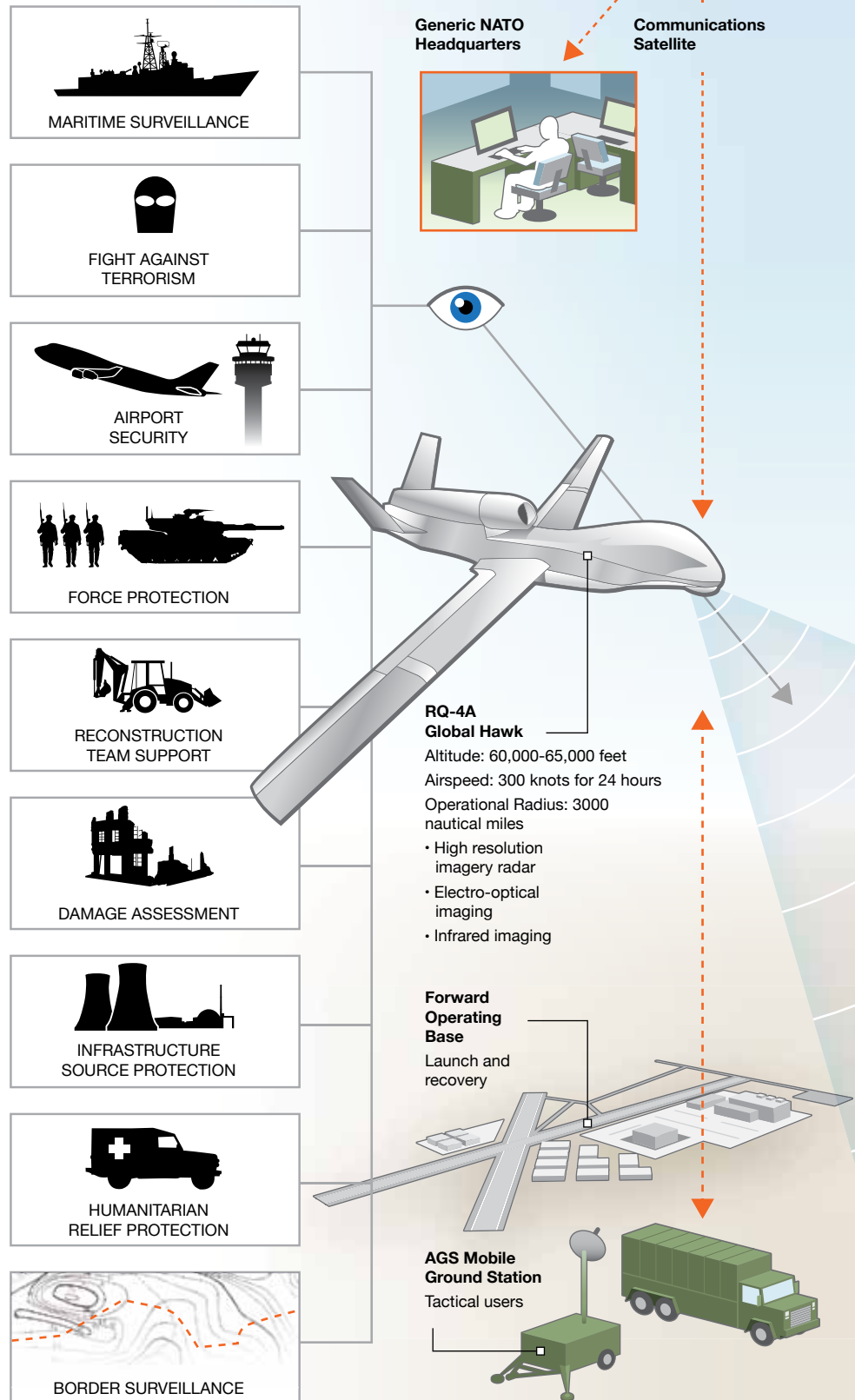
NATO should consider ceasing development of the AGS and fully develop, fund and accelerate MAJIIC2. Having one system as the Alliance standard is the single most important thing NATO can pursue to expand information



sharing, not just for UAVs, but as a base line of interoperability across all NATO members. The Alliance must fully develop a single, synchronized ISR network and implement a rapid imagery and intelligence sharing capability to enable the diverse operations they expect to encounter. The AGS system is not revolutionary and incorporates relatively older and less capable technology. The sensors designed for the AGS program will integrate with MAJIIC2. Cutting AGS would save billions of dollars. Additionally, MAJIIC2 is capable of incorporating other sensors, like battlefield surveillance radars, and NATO should therefore encourage all of the 28 member nations to join the development of the system. NATO should also strive to cut the implementation timeline of the system in half, by reinvesting a portion of the AGS money.

The second recommendation is that NATO should establish a crisis-action cell with standing authorities to deploy NATO-operated ISR forces (as well as necessary supporting forces) in a non-combat role, to support intelligence/information requirements. As the main forum for collective security and defense in the Euro-Atlantic area, NATO has adapted to its new security environment and attempted to respond to new demands. Since the September 11, 2001, terror attacks in the U.S., the Alliance has had to rethink its role in response to terrorism and the role it plays in security outside of its traditional mandate and borders. This has led to the development of new missions and strategies, but has done little to change the decision-making model within the North Atlantic Council with respect to deploying forces. Displayed in the recent resolution to support air strikes in Libya, the consensus-based decision-making process is cumbersome and not time-sensitive. Additionally, the

# Alliance Ground Surveillance (AGS)



Sources: NATO Alliance Ground Surveillance (<http://www.nagsma.nato.int/default.aspx>), Northrup Grumman

information utilized by NATO leaders to make the decisions is derived from numerous and sometimes sensationalized sources such as the media. The purpose is to enable the right force structure to mobilize rapidly and gain the requisite information to assist the North Atlantic Council to make informed, yet rapid, consensus-based decisions for further employment of follow-on NATO forces.

As mentioned above, the only NATO-operated surveillance system is the NAEW, which is not capable of providing the spectrum of intelligence and information required by NATO leaders. NATO should construct a UAV rapid deployment force by pooling existing UAV forces or through the development of niche capabilities. The Alliance should develop a NATO-owned package of smaller UAV systems with the ability to rapidly deploy to feed the information requirements of senior policymakers. As an example, a low-cost and rapidly mobile approach is to procure systems like the INSITU Integrator or the South African ATE Vulture UAVs, which are capable of launch, flight and recovery operations without a runway or prepared sight. Additionally, for these and similar systems, training is simple and the aircraft are easy to fly and maintain. They operate at low-altitude and therefore do not require extensive knowledge of the airspace structure, and can operate autonomously or linked to a larger network.

There are two methodologies for developing this capability: pooling and niche operations. The greatest advantage of pooling resources is that it offers the Alliance a capability that is rapidly deployable in the near-term and offers nations the ability to contribute equipment and/or personnel without the potential for negative effects of national caveats.

Similar in capability, yet diverse in size, NATO's military force has not changed structure since its inception. Most member nations have similar force constructs as their fellow members. As NATO expanded into Eastern Europe, the force model for the new members mirrored the western military defense model. In addition to some of the newer members of the Alliance, some of the smaller member

nations such as Iceland, Luxembourg and Portugal have little ability to support a larger military contribution to the Alliance. NATO should encourage nations such as Iceland, Estonia, Luxembourg and Albania to develop niche UAV capabilities. By encouraging a common-funding approach, costs could be minimized and NATO could multiply its number of tactical UAVs and significantly add to its overall ISR architecture. These assets could either be owned and operated by each member nation, or supported under a NATO-operated construct similar to the NAEW.

The final statements of the 2010 Strategic Concept focus on promoting international security through coop-

eration and partnering. "At the root of this cooperation is the principle of seeking security 'at the lowest possible level of forces' by supporting arms control, disarmament and non-proliferation."<sup>6</sup> The methodology for realizing these goals is through informed decision-making and real-time information awareness. Financially, there will be costs that will be difficult to agree upon, but the lasting effect of developing a comprehensive ISR capability enables the Alliance to converge capabilities instead of developing diverging systems. The recommendations are a paradigm shift for NATO. Instead of developing capabilities nationally and then re-engineering them (and paying again) at the Alliance level to make them interoperable, the Alliance must seek to develop a comprehensive approach that will deliver capabilities designed to be interoperable, and enabling member nations to maintain a flexible, mutually support-

ing relationship without overburdening smaller nations, or excessively taxing larger ones. □



The unmanned reconnaissance drone Luna X-2000 sends video and data to a ground station in real-time. The German government has employed the lightweight craft in Iraq and Kosovo.



French Soldiers prepare a medium-range unmanned aerial vehicle in Afghanistan in 2011. UAVs are an important tool for MAJIC2, a coalition of nine countries, including France, that shares surveillance, reconnaissance and intelligence data.

1. NATO Summit paves way for renewed Alliance, [http://www.nato.int/cps/en/SID-57BF50A0-2C87BAC8/natolive/news\\_68877.htm](http://www.nato.int/cps/en/SID-57BF50A0-2C87BAC8/natolive/news_68877.htm).
2. [http://www.nato.int/cps/en/natolive/topics\\_48904.htm](http://www.nato.int/cps/en/natolive/topics_48904.htm) (28 April 2011)
3. NATO JAPCC 2008 Flight Plan, Annex B [http://www.japcc.de/fileadmin/user\\_upload/projects/nato\\_flight\\_plan\\_for\\_uas/Flightplan\\_2008/03\\_-\\_2008\\_Flight\\_Plan\\_-\\_Annex\\_B\\_and\\_B1.pdf](http://www.japcc.de/fileadmin/user_upload/projects/nato_flight_plan_for_uas/Flightplan_2008/03_-_2008_Flight_Plan_-_Annex_B_and_B1.pdf) (18 Dec 2010)
4. [http://www.nato.int/cps/en/natolive/news\\_71562.htm](http://www.nato.int/cps/en/natolive/news_71562.htm) (1 April 2011)
5. <http://www.ainonline.com/news/single-news-page/article/nato-nearing-alliance-for-ground-surveillance-25406/> (25 April 2011)
6. [http://www.nato.int/cps/en/natolive/topics\\_56626.htm?selectedLocale=en](http://www.nato.int/cps/en/natolive/topics_56626.htm?selectedLocale=en) (10 April 11)