



**Understanding how North Atlantic Treaty  
Organization (NATO) countries cooperated to acquire  
the Alliance Ground Surveillance (AGS) System**

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### **Abstract**

The acquisition of systems and capabilities in an international setting is complex. A variety of factors must be considered if any level of success is to be expected. The purpose of this qualitative case study is to verify the utility and veracity of identified major themes of capability identification, support requirements, and acquisition considerations apparent in the acquisition of AGS, a wholly owned NATO capability providing strategic Joint Intelligence, Surveillance and Reconnaissance (JISR) capabilities to NATO members. These themes further answer specific questions: what mechanisms facilitate capability development (requirements); what Alliance members drive capability decisions; what support considerations drive support decisions; what new organizations are required to facilitate support decisions; and what mechanisms exist to achieve buy-in. The research will reveal how AGS, as a representative example of successfully acquiring shared capability in support of international security organizations, like NATO, serves as a model that can be applied to future efforts.

## **Introduction**

In 2021 the North Atlantic Treaty Organization (NATO) announced the Alliance Ground Surveillance (AGS) met Initial Operating Capability (IOC) requirements providing Alliance member countries an “aerial picture of worldwide threats, especially in locations close to alliance borders” (Sprenger, 2021). This accomplishment comes after years of delay, uncertain requirements, and inconsistent cooperation among NATO Alliance countries (Eugénio, 2013). AGS capabilities reflect lessons learned from NATO participation in Iraq and Afghanistan and deteriorating security conditions in locations in which North Atlantic countries have a strategic interest (Balogh, 2013). This research serves to highlight overarching thematic lessons learned from AGS as a notable example of international security and acquisition cooperation that program managers faced with similar challenges can use to guide their own success.

## **Background**

NATO capability development that results in fielded systems is a rare occurrence (Mölling, 2012). Understanding the conditions that facilitate the development, acquisition, and fielding of shared NATO capabilities in support of international security operations sheds light on the complexity of such endeavors. Program Managers of international or joint programs may be able to use AGS as a programmatic compass for setting the direction of capability development.

## **Problem Statement**

The industrial policies of military acquisition in different nations affect the acquisition of shared capabilities. Accordingly, program management of joint or international programs is incredibly complex (Eugénio, 2013). Initially drafted requirements follow a meandering process of bureaucratic oversight that rarely lead to fielded capability. Unlike other NATO capabilities

and weapon systems, AGS successfully endured competing international acquisition policies, Alliance member budget limitations, and logistics priorities, ultimately resulting in IOC in 2021 (Sprenger, 2021).

### **Statement of Purpose and Research Questions**

The purpose of this qualitative case study is to identify major themes regarding capability identification, support requirements, and acquisition considerations apparent in the acquisition of AGS. Supporting research questions further expound upon and define these major themes.

The principal research question is how did North Atlantic Treaty Organization (NATO) countries cooperate to acquire the Alliance Ground Surveillance (AGS) system?

Supporting research questions include:

- What mechanisms facilitate capability development (requirements)?
- What Alliance members drive capability decisions?
- What support considerations drive support decisions?
- What new organizations are required to facilitate support decisions?
- What mechanisms exist to achieve buy-in?

### **Conceptual Framework**

This research is intended to capture the major themes associated with international program management to establish an initial framework for success. This conceptual framework centers on content analysis to refine initially identified themes via a repetitive process, continually updating and refining issues, yielding actionable recommendations for future programs. Figure 1 establishes the major themes and thematic categories answered by this research, allowing easier categorization of findings and conclusions.

**Figure 1 – Conceptual Framework**

*Note:* This Conceptual Framework includes Capability, Support, and Acquisition Considerations.

### **Significance of This Research**

Using AGS as a particular case reveals how this capability went from loosely defined requirements initially established in 1992 by NATO’s Defence Planning Committee, reflecting lessons learned from NATO operations in Kosovo, Afghanistan, and Libya (Balogh, 2013), to IOC in 2021. AGS serves as a representative example of international cooperation with U.S. Allies, specifically addressing strategic Joint Intelligence, Surveillance and Reconnaissance (JISR) requirements in the North Atlantic, shedding light on the conditions that stalled and delayed capability selection, and exploring what ultimately led to success. This allows greater insight into the industrial policies of military acquisition in different NATO countries and the

impacts of policy, international conditions, budgets, and politics that determined why this system's capabilities proved the right mix to meet NATO Smart Defence mission needs.

In the context of recent Russian aggression with Ukraine, NATO capabilities (and gaps) have renewed attention. The *U.S. Department of Defense 2022 National Defense Strategy* indicates an increased focus on deterring Russian aggression against the United States, NATO, and other allies. It directs the modernization of capabilities and increased interoperability to “bolster conventional warfighting capabilities” (Austin, Lloyd P., 2022, p. 10).

### **Overview of the Research Methodology**

The research design is a qualitative strategy using correlative case-study methods to identify major themes apparent in the acquisition of AGS. It uses a modified 4Ps – Product, Price, Place, and Promotion framework as a basis for data collection and analysis. The 4Ps are further derived from “The Concept of the Marketing Mix” which introduces the idea there is a pattern of marketing policies that lead to successful business operations (Kubicki & Milano, 2015).

### **Limitations of the Study**

This case study is limited by a variety of factors. First, only AGS is considered to validate anticipated themes and supporting questions. Other shared NATO capabilities such as Ballistic Missile Defense and Cyber capabilities, for example, are excluded due to the limitation of time for study.

Additionally, only publicly available, unclassified data and sources are used to draw findings and conclusions. Source documents from Alliance members and NATO that reveal political, financial, and strategic decisions are unavailable to the public. This fact does not

necessarily detract from the determination of themes joint/international program managers can use to influence future program success.

Originally, the research was also intended to understand NATO's cost and funding considerations in acquiring AGS as a capability. However, it was discovered NATO common funding drawn from the annual contributions of Alliance members was used to pay for the AGS shared capability. Although Congressional funding documents showing United States contributions to AGS are available, the ability to obtain similar documents from other Alliance members is severely limited.

### **Summary**

AGS is introduced as a programmatic compass for other internationally acquired systems, and as a useful success story to avoid delays or other acquisition pitfalls of future programs. The problem of understanding military acquisition in different nations, using AGS as context, was also discussed above. The purpose of this qualitative case study and the modified 4Ps marketing framework is presented as useful for the analysis of military acquisition in different nations. This is due to a similar approach to understanding the forces affecting the procedures and policies of a successful enterprise (Borden, 1964). The significance of this research facilitates a greater understanding of effective international cooperation, particularly through the lens of industrial policies of military acquisition in NATO member countries. Finally, the research methodology and limitations of the study were also addressed.

The following literature review will reveal the body of knowledge available to confirm themes and thematic questions useful to international programs in the acquisition of capability. Literature concerning the shared acquisition of capabilities intended for international security

organizations also reveals many notable lessons learned worthy of consideration in future programs.

## **Literature Review**

### **Introduction**

This literature review reveals major themes necessary to acquire capabilities in support of international security organizations like NATO. The research centers on the acquisition of AGS as a notable example of success. AGS sheds insight into capability identification, support requirements, and acquisition considerations to understand how NATO countries cooperated to acquire capabilities. The research will examine the following topics:

- Capabilities – what mechanisms facilitate capability development (requirements), and what Alliance members drive capability decisions?
- Support – what support considerations drive acquisition decisions, and if new organizations are required to facilitate acquisitions?
- Acquisition Considerations – what mechanisms exist to achieve buy-in, and how Alliance member country security interests are considered?

### **Statement of Purpose and Research Questions**

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The principal research question is how did North Atlantic Treaty Organization (NATO) countries cooperate to acquire the Alliance Ground Surveillance (AGS) system?

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- What mechanisms facilitate capability development (requirements)?
- What Alliance members drive capability decisions?
- What support considerations drive support decisions?

- What new organizations are required to facilitate support decisions?
- What mechanisms exist to achieve buy-in?

### **Acquisition of Shared Capabilities**

NATO has consistently required shared capabilities and employed a variety of techniques, agreements, and acquisition methods to generate requirements and field capabilities. Available literature includes strategy documents defining capability needs, highlighting the rigors and challenges of attaining international cooperation. Regular NATO conferences have focused on defining shared capability requirements and set boundaries and limits that lend themselves to defining commonalities that result in fielding capabilities. Numerous conference reports demonstrate over time how requirements are defined, adjusted, and agreed to or removed. Such sources will answer Capability thematic questions.

Various articles exist that shed light on unique support methods that must be identified when acquiring shared capability. Such sources like Key.Aero, a publishing clearing house dedicated to expert aviation content, and NATO public affairs releases focusing on AGS, will answer supporting thematic questions.

Publicly available NATO planning documents, such as the NATO Defence Planning Process, literature from NATO organizations dedicated to defining and acquiring capability, and NATO websites are sources used to answer Acquisition Considerations thematic questions. This allows insight into Acquisition Considerations necessary to address Alliance member country security interests, as well as the mechanisms NATO employs to generate buy-in of shared capabilities.

AGS serves as a useful case study to compare the industrial policies of military acquisition in different nations and the policy impacts on acquisition outcomes. AGS

employment results from extensively documented lessons learned from regional conflicts, either directly within the NATO sphere of influence, or strongly impacting NATO strategic concerns in the western hemisphere. Additionally, AGS has documented operational use that yields objective evidence verifying how original requirements were ultimately met, efficiently or not, that answer questions useful for acquisition planning (Kington, 2021). Its capabilities, based in Sigonella Italy, support land and maritime operations (Kington, 2021). Five drones, “based on the American RQ-4 Global Hawk airframe”, (Kington, 2021, p. 2) began operations with a modest rotation of a single aircraft “making one 12-hour flight per week” (Kington, 2021, p. 3) reaching as high as a total of 100 hours per week after it reaches Full Operational Capability in 2024 (Kington, 2021). AGS’s operational capabilities are noteworthy if for nothing more than the fact it is currently employed supporting NATO operations. This capability emerged from updated strategic guidance, overlaid against an idea of transformational acquisition techniques, factoring in multi-national interests, addressing logistics issues, and is standing watch, an end-state that sets a high bar.

The following literature is categorized according to major themes apparent in the acquisition of shared capabilities. The literature associated with AGS also sheds light on the complexity of shared capabilities within international security organizations.

### ***Capabilities***

During the 2012 NATO conference in Chicago, the concept of Smart Defence (SD) was introduced as an overarching planning strategy, giving guidance for weapon systems that are pooled, shared, or otherwise developed in a cooperative international setting. Concepts such as SD are our first introduction to how NATO socializes and publishes capability requirements. Conferences of this nature and their subsequent reports and papers shed light on what

mechanisms within NATO generate requirements and how those requirements are communicated for Alliance acceptance and support. AGS, as a component of SD, is notable because it is “probably the most paradigmatic of all of the systems.... having some smart defense DNA” (Eugénio, 2013, p. 30). The introduction of AGS in this strategic guidance, as well as other NATO shared capabilities, is a perfect example to verify the thematic questions of what mechanisms facilitate capability development and what Alliance members drive capability decisions. The 2012 Chicago conference and its subsequent reports are the foundation from which AGS was allowed to proceed, without which IOC would never have occurred. This conference also touches on a variety of thematic questions associated with international programs including how Alliance member buy-in is achieved and how individual country security interests are considered.

The development of strategic guidance, like SD, as a mechanism to develop capability, is noteworthy for a variety of factors. SD itself is comprised of three integrated lines of effort: cooperation, prioritization, and specialization. The cooperation line of effort speaks to the affordability of capabilities, interoperability, and economies of scale in acquiring capability. The prioritization line of effort speaks to lessons learned from relying too heavily on Alliance member initiatives that first prioritize national security interests over shared capability needs. The specialization line of effort takes into consideration Alliance member sovereignty concerns while addressing capability duplication (Fleischer, 2015).

Other mechanisms to facilitate capability requirements development include NATO’s five-step NATO Defense Planning Process (NDPP). According to NATO, NDPP “is the primary means to facilitate the identification, development and delivery of NATO’s present and future capability requirements” (NATO, NATO Defence Planning Process, 2022, p. 3). The NDPP

process facilitates capability requirements development by categorizing Capability Targets according to planning domains. NDPP also provides analytical tools and NATO expert analysis on a 4-year cycle (NATO, 2019). The purpose of NDPP is to “provide a framework within which national and Alliance defence planning activities can be harmonized to meet agreed targets in the most efficient way” (Fleischer, 2015, p. 103). It publishes a single list of requirements intended to facilitate multinational cooperation and “cost-effective capability development” (Fleischer, 2015, p. 108) to support strategic guidance like SD.

Other NATO reports also shape long-term assessments of capability needs. The Framework for Future Alliance Operations (FFAO) report provides military advice and feeds the NDPP 4-year cycle, as well as other “NATO and national processes that require an assessment of the long-term future” (NATO, 2017, p. 3). In this report, the importance of capability development mechanisms is prophetically verified by suggesting an increasing conflict between states, and major powers, increases the potential for instability (NATO, 2017). Reports like the FFAO are additional mechanisms by which NATO communicates to Alliance members an understanding of the future security environment where shared capabilities are critical. In the case of this report, it describes “the future NATO expects to unfold to 2035 and beyond, depicted as political, social, technological, economic, and environmental trends” (NATO, 2017, p. 7).

### ***Support***

According to NATO’s AGS factsheet, AGS will give commanders “a comprehensive picture of the situation on the ground” (Public Diplomacy Division (PDD) - Press & Media Section, 2016, p. 1). This factsheet also introduces new NATO bodies charged with acquiring and supporting AGS, such as the NATO Alliance Ground Surveillance Management

Organization (NAGSMO) and the NATO Alliance Ground Surveillance Management Agency (NAGSMA) (Public Diplomacy Division (PDD) - Press & Media Section, 2016).

According to Key.Aero, for AGS to get off the ground, literally and figuratively, these new organizations were required to ensure logistics from an international support perspective were sufficient to facilitate operations. Originally managed by NAGSMA, today AGS support is managed by the Support Partnership Committee (SPC) and all 30 NATO members participate in some form. A variety of countries participate in providing command and control staff and logistics support, without which AGS operations would simply be impossible. These new organizations also have responsibility for such support considerations as international airworthiness certifications and European air traffic laws, critical support issues that would be almost impossible to address if left solely to Alliance member coordination (Niccoli, 2022).

From an operational perspective, the NATO Alliance Ground Surveillance Force (NAGSF) was established as the operations wing responsible for providing state-of-the-art Intelligence, Surveillance, and Reconnaissance (ISR) products for NATO (NATO, NATO Alliance Ground Surveillance Controls First RQ-4D Flight, 2020). The Journal of Joint Air and Space Power reveals NAGSF was also necessary to ensure capability acquisition and represents the interests of numerous Alliance members, including “experts from 18 different national forces with significant experience operating and maintaining high-altitude Remotely Piloted Aircraft (RPAs)” (Stewart, 2020, p. 14).

NAGSMO, NAGSMA, NAGSF, and now the SPC oversee support considerations when acquiring shared capability. Such support and logistics infrastructure address questions of what support considerations drive the acquisition of shared capabilities and whether new organizations must be established to ensure success.

### *Acquisition Considerations*

As the over-arching SD framework is defined and understood, specific challenges with implementation, revealed through a variety of articles and papers, highlight unique challenges that vary from country to country. Each stakeholder within NATO, whether a specific country or international organization, or body, has singular perspectives on what strategic guidance like SD means for NATO as a whole and heavily influences the identification of key capabilities and their use. These factors paint a picture beyond the broad definition of such guidance and more thoroughly contextualize acquisition challenges, Alliance member country buy-in, and how member country security interests are considered. As expressed by the Atlantic Council, countries like the United Kingdom, are forced to anticipate a broader political and strategic context of implementing NATO political guidance and strategy to address global security. This compels a re-analysis of strategic threats and how to meet them (Di Paola; Heisbourg; Keller; Shirreff; Szatkowski; Tamnes, 2016). In the case of the United Kingdom, a reassessment of threats resulted in a change from previous Strategic Defense and Security Reviews that asserted that country faced no existential threat to its shores. Updates to that country's assessments now recognize a resurgent Russia that (prophetically) could "put Russia on a collision course with NATO" (Di Paola, et al., 2016, p. 6). As a result, the United Kingdom's desire, and support of shared capabilities like AGS has greater interest given AGS fills critical security interest gaps (Di Paola, et al., 2016).

Connecting the acquisition of shared NATO capabilities to analysis of modern warfare trends finds "major shifts in warfare are often associated with technological innovation" (Tammen, 2021, p. 1) while "a multitude of other underlying factors – political economic, social, cultural, scientific, and industrial – also drive the way nations and alliances think about war,

prepare for war and fight” (Tammen, 2021, p. 1). This demonstrates shared capabilities designed to meet threats in the modern battlespace may fail without consideration of how international industrial policies impact acquisition outcomes.

AGS is intended to support 15 NATO member countries; “Bulgaria, Czech Republic, Denmark, Estonia, Germany, Italy, Latvia, Lithuania, Luxembourg, Norway, Poland, Romania, Slovakia, Slovenia and the United States” (Public Diplomacy Division (PDD) - Press & Media Section, 2016, p. 1). Considering the viewpoint of specific countries is useful to highlight the importance of NATO strategic guidance and the impacts on constituent capabilities. Using AGS as a representative example of NATO acquisition informs the questions of how NATO and individual country security interests are considered. For example, Hungary has paid attention to this effort and the themes of capability understanding, associated costs, and support needs. Socialization of political and funding support are called out as important issues from a Hungarian perspective, as evidenced by The University of Public Service Ludovika document *In the focus: NATO Alliance Ground Surveillance Systems* (Balogh, 2013).

*The Alliance at Risk – Strengthening European Defense in an Age of Turbulence and Competition* publication from the Atlantic Council successfully showcases how individual Alliance members understand NATO objectives and how pursued capabilities can “arrest the weakening trend in defense and foreign policy” (Di Paola, et al., 2016, p. 5). Analysis from think-tank organizations like the Atlantic Council provides a view of the implications of NATO guidance and decisions from a particular country’s point of view, without ignoring Alliance member country security interests.

The previously mentioned 2012 Chicago conference report also includes other mechanisms by which NATO achieves Alliance member country buy-in to support acquisitions

of shared capabilities. Notable major themes of NATO weapon system acquisitions are introduced such as the need to “transform the approach to defense acquisition in order to deliver capabilities in a more efficient and cost-effective manner” (Aronsson & O'Donnell, 2012, p. 45). This suggests acquisitions in organizations like NATO are impossible without such transformative mechanisms to facilitate capability acquisition. SD further is defined as “NATO’s strategy to ensure that the development of capabilities remains commensurate with the alliance’s strategic and political ambitions and the evolving security environment” (Aronsson & O'Donnell, 2012, p. 8). This further demonstrates the mechanisms by which Alliance member acceptance of shared capabilities is attained and how individual country security interests are considered. This conference report also introduces the fact that several member countries must buy into the defined capability for a variety of reasons including funding, political will, and logistics support, providing insight into how particular Alliance country interests connect (Aronsson & O'Donnell, 2012). Lessons learned are also shared with one notable example, “successful operation combines strong political will, a clear vision of job sharing, and significant financial or industrial gains” (Aronsson & O'Donnell, 2012, p. 47) suggesting failure would occur if such mechanisms for capability development are ignored.

### **Summary**

The literature surrounding the success story of AGS shines a bright light on a complicated roadmap of capability identification, support requirements, and acquisition considerations necessary to understand how to acquire shared capability. The mechanisms that facilitate capability development, stakeholders that drive capability decisions, support considerations, and other mechanisms necessary to facilitate buy-in are also revealed by the existing body of literature.

Analysis will identify the major themes program managers within DoD should consider when pursuing the development of capabilities intended for use in an international setting. This case study will document these themes and provide useful findings and conclusions that can serve as a baseline for future programs.

Considering NATO's deterrence and defense positions to understand how AGS fits within SD helps to identify acquisition themes that prove useful for future efforts. NATO's website spells out its Strategic Concept, alliance member commitments, planning methodology (The NATO Defence Planning Process), and acquisition guidelines, all of which shed light on why AGS development, given its success, is a case study worth investigating (NATO, 2022).

The following section will establish the research methodology used to identify major themes. These themes include the capability identification, support requirements, and acquisition considerations apparent in the acquisition of AGS.

**Research Methodology**

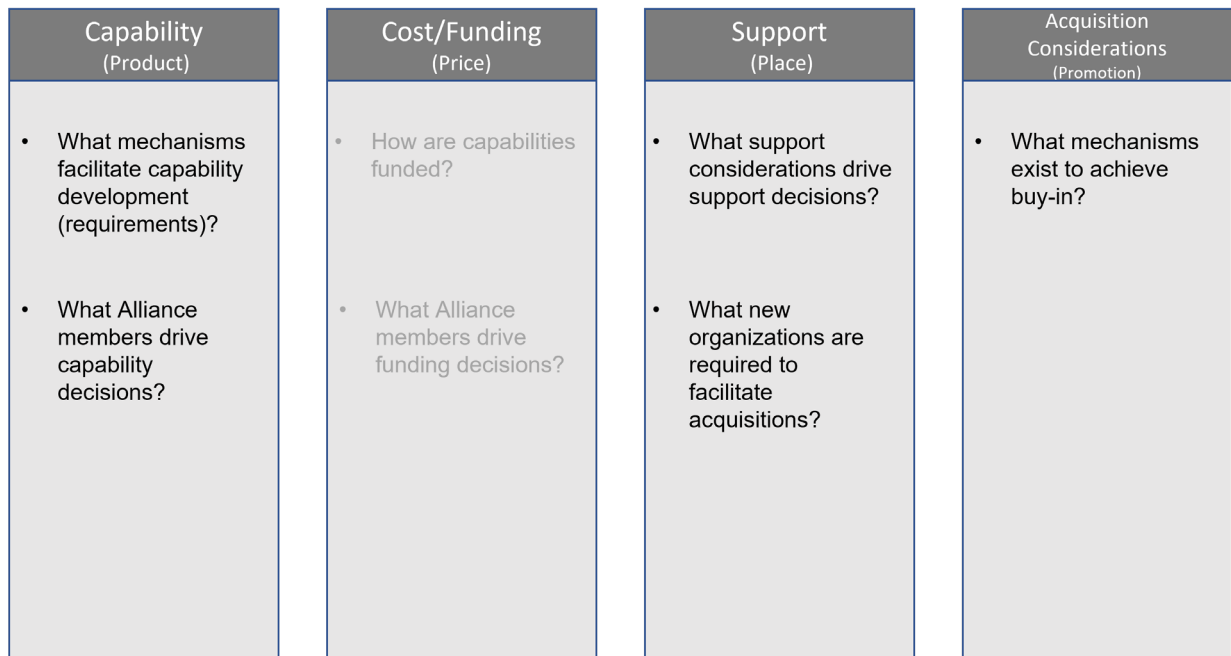
**Statement of Purpose and Research Questions**

The purpose of this qualitative case study is to identify major themes regarding the capability identification, support requirements, and acquisition considerations apparent in the acquisition of AGS. The principal research question is how did North Atlantic Treaty Organization (NATO) countries cooperate to acquire the Alliance Ground Surveillance (AGS) system?

**Framework of Analysis**

**Figure 2 - International Acquisition Framework**

International Acquisition Framework



Note: This figure is modified from the 4Ps (Product, Price, Place, and Promotion) framework to reflect NATO acquisition themes. Cost/Funding is excluded from this research and grayed out in the figure above.

The International Acquisition Framework (Figure 2) is derived from the 4Ps framework and adjusted to reflect NATO acquisition themes, revealing specific questions to be answered to understand how AGS was acquired. The 4Ps framework facilitates theme identification of new capabilities acquired in international organizations.

The following major themes are the basis for this research:

- Capabilities (Product): These are the performance characteristics identified to support NATO SD.
- Support (Place): This identifies the infrastructure necessary to facilitate IOC.
- Acquisition Considerations (Promotion): These are the factors that facilitate NATO member country buy-in and acceptance.

This 4Ps framework would normally include a “Price” component, changed to “Cost/Funding” as modified to support this research. However, AGS was funded via NATO common funding drawn from the annual contributions of Alliance members. Although Congressional funding documents showing United States contributions to AGS are available, the ability to obtain similar documents from other Alliance members are not available.

### **Data Collection**

Data for this research are defined as existing written and published artifacts that will be examined for context in which keywords specifically relating to the major themes are revealed.

Written and published artifacts include (but are not limited to):

- Performance and capability requirements drawn from papers published after such conferences as the *Smart Defense and the Future of NATO: Can the Alliance Meet the Challenges of the Twenty-First Century?*, and other publicly available NATO requirements documents.

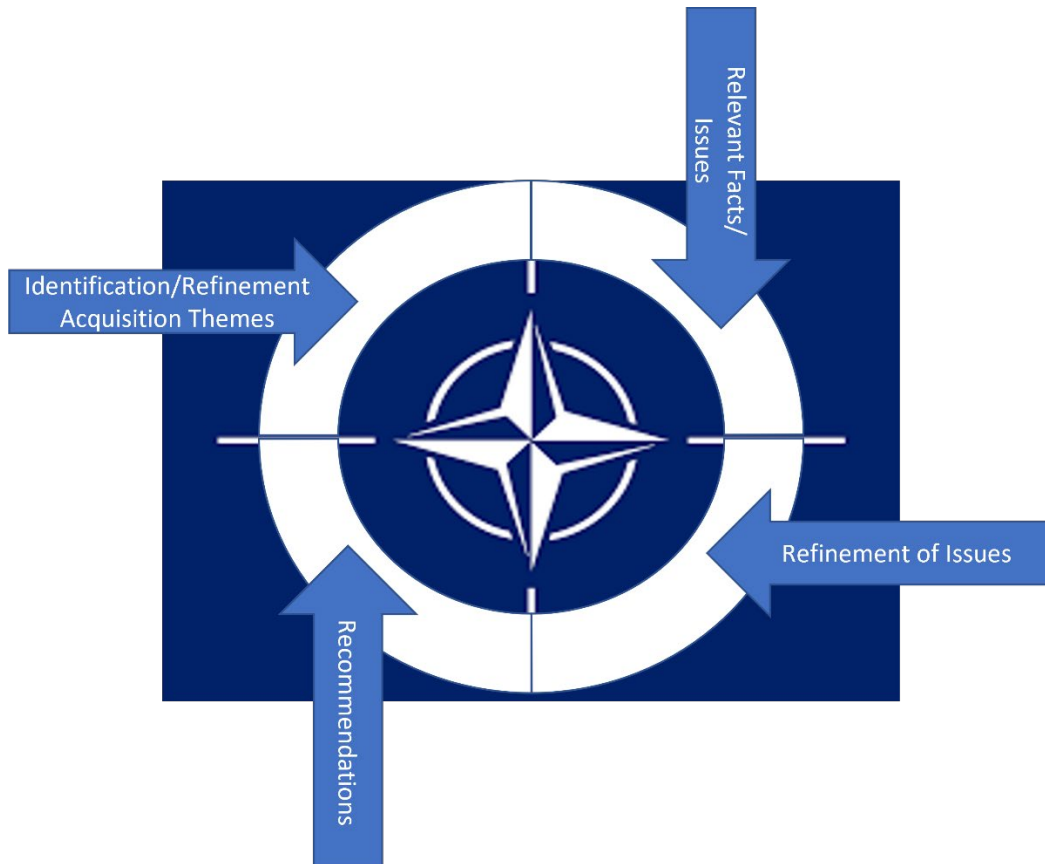
- Logistics agreements available via such sources as the *International Armaments Cooperation Handbook*.
- Notifications of Intent, Requests for Information, and Requests for Proposals, as well as NATO audits focused on NATO Defence Planning Process Acquisition documents.

### **Data Analysis**

Content analysis will serve as the primary method for identifying themes of interest drawn from the collection of data. Analysis of these data follows the following steps:

- Identification of common themes.
- Refinement of themes.
- Identification of relevant facts, with emphasis on identifying issues of consideration.
- Refinement of key issues.
- Recommended solutions/outcomes.

Figure 3 pictorially describes the content analysis process described above. This data analysis methodology facilitates the continued refinement of themes and thematic questions revealed through relevant literature revealed through research.

**Figure 3: Data Analysis Methodology**

*Note:* This Data Analysis Methodology is repeatable for refinement of analysis and findings.

### **Bias and Error**

The following describes reliability and validity of the proposed research methodology. The qualitative nature of this research necessitates assessment of reliability and validity considerations as addressed below.

### ***Reliability***

The qualitative nature of researching and comparing industrial policies of military acquisition in different nations and their policy impacts on acquisition outcomes introduces reliability challenges. This is due to the subjective nature of related, but not necessarily directly or intuitively linked, written and published data. Given the broad range of stakeholders,

environmental conditions, budgetary, and political considerations, analyses and critiques of what contributed and led to capability fielding do not connect in any obvious way. To ensure stability, equivalence, and internal consistency, data is arranged according to framework themes by source. Each source is individually evaluated against these themes and terms, and results are documented according to their relationship to framework questions. Subsequent research, using this thematic approach, will yield the same results.

### *Validity*

Revealing major programmatic themes affecting AGS development proved straightforward, but the scarcity of weapon systems acquired by NATO or other security-minded international organizations is noteworthy. Where AGS data is insufficient, other programs are reviewed according to the same research methodology applied to AGS to corroborate or refute identified themes. AGS serves as the baseline for analysis given its development led to a fielded capability, but it may not necessarily be a panacea.

Data associated with qualitative research introduces validity challenges mitigated by a structured, repeatable process of analysis. In this case, collected data is grouped thematically using numerous and varied sources to ensure consistency. This approach ensures data pulled from grouped sources are logically and comprehensively arranged in support of findings. Themes are identified and validated by answering associated questions shaped through analysis of sources, providing answers that inform findings. Data is formatted in the same manner according to each theme ensuring ease of review and understanding.

Findings are also grouped thematically linking the relationship between conclusions and data. Findings are further defined by framework themes and questions, demonstrating a direct correlation.

**Summary**

When themes are proven valid and thematic questions successfully answered, the resulting analysis can serve as a baseline for future international acquisitions. Follow-on research can use this same methodology, apply it to emerging requirements and capability needs, and anticipate pitfalls.

## Findings

### Introduction

The following findings are the result of the application of the previously described conceptual framework and research methodology. The results of this analysis produced three major findings:

- How capabilities are identified, developed, and socialized via strategic guidance using structured acquisition processes are necessary mechanisms to facilitate capability development.
- New organizations specifically charged with acquisition and deployment of shared capability are required.
- Existing infrastructure must be leveraged to ensure shared capability meets IOC.

### Statement of Purpose and Research Questions

The purpose of this qualitative case study is to identify major themes regarding capability identification, support requirements, and acquisition considerations apparent in the acquisition of AGS. Supporting research questions further expound upon and define these major themes.

The principal research question is how did North Atlantic Treaty Organization (NATO) countries cooperate to acquire the Alliance Ground Surveillance (AGS) system?

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## Capabilities

The following findings inform the Capability theme. Questions centered on capability development and capability decisions are also addressed.

### *Mechanisms that Facilitate Capability Development (Requirements)*

**NATO Strategic Guidance.** NATO routinely publishes strategic guidance intended to inform Alliance members of the current state of international security, peace, and stability (NATO, NATO 2022 Strategic Concept, 2022). This guidance comes in a variety of forms. Approximately every 10 years, NATO publishes an updated Strategic Concept that reflects changes in international security, informing Alliance members of current and emerging threats, and setting conditions for capabilities that must be acquired (NATO, 2022). Such strategic guidance is also updated, modified, and provided through a variety of other mechanisms that facilitate timelier updates to NATO concerns. AGS once again serves as a representative example of the results of such updates.

AGS planning has been ongoing since 1992, originating via a NATO Defence Planning Committee that led to a true capability acquisition effort in 1995 (Balogh, 2013). However, numerous approaches to realizing this capability “failed to obtain sufficient support by the NATO nations to allow their realization” (Balogh, 2013, p. 166). Only after a summit held in Lisbon in 2010 was the operational need for NATO-owned ground surveillance reconfirmed. Subsequent post-conference publication of conference reports and an updated Strategic Concept, combined with emergent international security concerns such as the Arab Spring, ensured AGS capabilities garnered broader Alliance support. NATO’s Operation Unified Protector (OUP) efforts, intended to provide intelligence to NATO to protect Libya’s civilian population from regime militias, revealed NATO intelligence apparatus was simply not up to the task. NATO was

forced to acknowledge acquisition of AGS capabilities, intended to provide intelligence flexibility during crises, was languishing (Balogh, 2013).

The concept of SD was developed and socialized via the 2012 Chicago Conference, finally attracting the attention of numerous Alliance country members. Rather than waiting for NATO to publish an updated Strategic Concept, anticipated almost a decade into the future, NATO recognized additional mechanisms were necessary to facilitate capability development and drive capability decisions. This resulted in the development of the SD concept. Subsequent reports and articles from the 2012 Chicago conference firmly established AGS as a core component of SD solidifying Alliance member country support (Aronsson & O'Donnell, 2012).

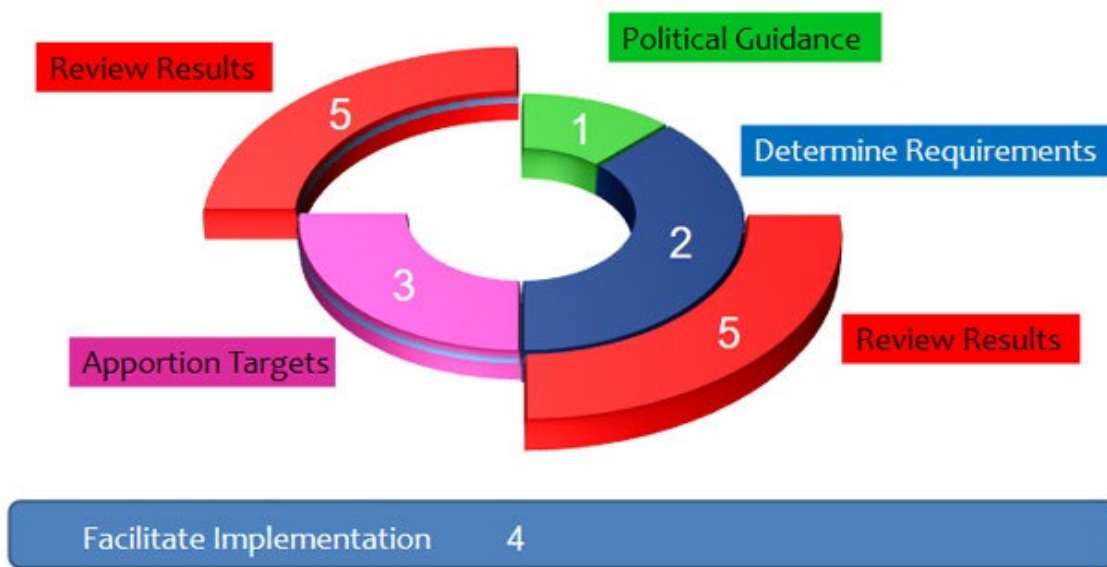
**NATO Capability Planning.** Once NATO strategic guidance is updated and Alliance member country acceptance is attained, NATO can then proceed with acquisition activities in earnest, beginning the NDPP process. In 2009, NDPP was introduced as an updated acquisition methodology, replacing an earlier process called the Defence Requirements Review (DRR) (NATO, 2016).

AGS requirements predate this 2009 launched NDPP process, beginning originally with DRR. Initial efforts to define AGS requirements began in 1995, suffering major delays and sporadic Alliance member support. (Balogh, 2013). Original requirements including both manned and unmanned aircraft differ significantly from the system finally acquired (Von Kospoth, 2004). The currently deployed capability resulted from NATO's 2012 Chicago Conference which socialized political guidance and introduced SD to "transform the approach to defense acquisition in order to deliver capabilities in a more efficient and cost-effective manner" (Aronsson & O'Donnell, 2012, p. 45), showcasing AGS as a key component of this new acquisition guidance.

The NDPP framework defines planning domains which include: “Air and missile defence; aviation planning; armaments; civil preparedness consultation, command and control; cyber defence; force planning; intelligence; logistics; medical; nuclear deterrence; resources; science and technology; and standardization and interoperability” (NATO, NATO Defence Planning Process, 2022, p. 2). These domains are intended to facilitate efficient capability identification and development while minimizing duplicative efforts chasing similar requirements (NATO, 2019, p. 197).

NDPP follows a four-step, four-year cycle (Figure 4):

**Figure 4: NATO Defense Planning Process**



*Note:* This model was produced by NATO, summarizing the 4-step NDPP process. From *NATO Defence Planning Process*, by NATO, 2022, p.197.

Step 1 – Establish political guidance: Political guidance is distributed through a variety of documents including the NATO Strategic Concept as well as reports and articles after regular

NATO conferences. This political guidance is translated via the planning domains to develop requirements of capabilities intended to support future operations, “commonly referred to as NATO’s level of ambition” (NATO, NATO Defence Planning Process, 2022, p. 5). NATO’s Defence Policy and Planning Committee (DPPC) has overall responsibility for this guidance and reviews it every four years.

Step 2 – Determine requirements: Two organizations within NATO identify and publish requirements. The first, Allied Command Operations (ACO) oversees Alliance operations and shapes capability requirements to meet strategic, operational, and tactical military operations and tasks. The second, Allied Command Transformation (ACT) charged with the responsibility of transformation of NATO to meet current and future needs (NATO, 2019).

Step 3 – Apportion requirements and set targets: During this stage, Minimum Capability Requirements (MCPs) are distributed to Alliance members. ACT establishes a burden-sharing methodology via Target Packages (TP) that include MCPs which are reviewed for concurrence by individual countries. Assuming concurrence, defense planning within individual member countries begins in support of a particular country’s commitment to NATO’s level of ambition (NATO, 2019).

Step 4 – Facilitate implementation: During this phase of the NDPP process, NATO assists Alliance members in understanding and fulfilling TP objectives (NATO, 2019).

Step 5 – Review results: This phase of NATO’s NDPP process focuses on assessments of the degree Alliance force’s capabilities can meet objectives described in the previously mentioned political guidance. These assessments also seek to align capabilities with NATO’s established level of ambition, verifying Alliance member political will, alignment with internal national security plans, and funding commitments. Bi-annually, Alliance members who have

committed to supporting a particular capability support a Defence Planning Capability Survey, led by NATO strategic commands, to formally document progress with particular emphasis on cost and funding estimates, equipment investments, and research and development. The objective of this assessment is to formally document Alliance member contributions to “conduct NATO’s current and expected mission and tasks” (NATO, 2019, p. 199).

Closely related to NDPP is yet another mechanism to facilitate capability development, NATO’s Capability Package (CP) process. A CP defines “the required capability, compares assets needed against assets available and provides initial information on the projects necessary to achieve the capability, including cost estimates” (NATO, 2016, p. 4). It is a 5-phase process that serves to define the “capability needs developed and documented by Strategic Commands” (NATO, 2016, p. 4). Fundamentally it represents the implementation of the NATO Security Investment Program and links resource planning to operational needs (NATO, Allied Command Transformation - Who We Are, 2022).

Phase 1 identifies and prioritizes requirements. This phase is overseen by NATO’s Defense Policy and Planning Committee and is aligned with NDPP steps 2 – Determine requirements, and 3 – Apportion requirements and set targets. ACT is also a key participant with responsibility for considering end user needs and developing a comprehensive set of requirements and is aligned with NDPP step 4 – Facilitate implementation (NATO, 2016).

Phase 2 is the development phase. Led by ACT, capability development planning is undertaken, and initial cost, schedule, and scope estimates are completed. During this phase, NATO strategic commanders can endorse CPs for further development (NATO, 2016).

Phase 3 is the approval phase. NATO's office of resources confirms affordability while NATO headquarters staff review CPs to ensure "standardization, interoperability, architecture and technical coherence" (NATO, 2016, p. 35).

Phase 4 is implementation. In the case of AGS, this resulted in interested Alliance members submitting funding requests as well as engaging with industry to ensure contracts were in place to facilitate timely delivery and support considerations (NATO, 2016).

Phase 5 is the culminating phase of the CP process and results in the operational employment of the newly acquired capability. In the case of AGS, this was achieved upon IOC (NATO, 2016).

Figure 5 is a synopsis of the phases described above and identifies the CP process as a structured, repeatable process NATO utilizes for capability planning. Figure 5 further ties responsibilities of key NATO organizations and staff and approval gates necessary for proposed CPs to result in an acquired capability. Without such structured, repeatable methodologies, the ability of international security organizations, like NATO, to acquire shared capability will be significantly reduced. Figure 5 sheds insight on the complexity and necessity of established mechanisms to facilitate capability development.

**Figure 5: NATO's Capability Package process**

CP phase	Significant management responsibilities	Significant governance roles
(1) Identification and prioritisation of requirements	NATO defence planners develop and prioritise courses of action and collective targets (NDPP steps 2 and 3)	Defence Policy and Planning Committee and Resource Board approve targets.
	ACT collects requirements from defence planning and other sources and requests CP initiation. ACO provides operational user input (NDPP step 4).	Bi-Strategic Command CP Board <sup>1</sup> approves CP initiation.
(2) Development	ACO defines required capabilities and develops military justification. ACT generally leads the management of overall CP development and makes initial estimates of project scope, cost and schedule.	Bi-Strategic Command CP Board endorses CP requirements and resource proposal. Strategic Commanders endorse CP for submission.
(3) Approval	NATO Office of Resources reviews CP eligibility and technical soundness and develops CP implementation plans. International Military Staff ensures that CPs meet NATO military goals and Minimum Military Requirements. <sup>2</sup> NATO Headquarters C3 Staff screen C3 CPs for C3 policies, standardisation, interoperability, architecture and technical coherence and propose advice to the C3 Board. All staff recommendations are submitted to NATO committees with the Joint Staff Screening Report <sup>3</sup> .	Military Committee confirms requirement and priority. Resource Board determines eligibility and affordability. Council approves CP. C3 Board provides advice on C3 policies, standardisation, interoperability, architecture and technical coherence to the Resource Board, if necessary.
(4) Implementation	NATO Office of Resources screens requests and makes recommendations to the Investment Committee, collects and presents data and certifies project completion. Host Nations submit fund requests, contract with industry, manage and report on all implementation activity. Strategic Commands monitor and confirm requirements; assess risk; certify completion. IBAN certifies expenditure.	Investment Committee agrees CP implementation plan; authorizes project scope, funds and changes; monitors, evaluates and controls Host Nation performance; accepts completed projects that together comprise the material portion of a "delivered capability"; approves payment.
(5) Operation	End user (often ACO) feeds lessons learned during operations, exercises and experimentation into ongoing requirements definition activities.	Not audited

*Note:* This synopsis identifies the CP process with responsibilities and approvals. From *Summary*

*Note to Council on the need to improve NATO's capability package process*, 2016, p. 35.

**Capability Development Infrastructure.** The previously introduced NATO organization, ACT, represents the infrastructure necessary to ensure capabilities are developed in consideration of NATO strategic requirements, acquisition limitations, training, support, exercises, and Alliance member cooperation. Within ACT, a variety of directorates and staff

serve as additional mechanisms to facilitate capability development. The Capability Development Directorate (CDD) is the largest of such directorates and oversees the administration of NATO's warfare development functions. This directorate has the most direct responsibility for the development of new Alliance capabilities, with full lifecycle responsibility from requirements development to delivery. CDD is closely tied to NATO's NDPP methodology feeding NATO security concerns and trends, minimum capability requirements tied to the Alliance's level of ambition, and "interoperability, command and control, deployment and sustainment capabilities" (NATO, Allied Command Transformation - Who We Are, 2022, p. 4).

A variety of other NATO organizations and staff support capability development and are tightly integrated with NDPP and CP development. Notably, ACO represents capability end-user interests, and as already identified, shapes capability requirements to meet strategic, operational, and tactical military operations and tasks (NATO, 2019). Other organizational and staff support includes the Defence Policy and Planning Committee responsible for the development and prioritization of capability courses of action; the NATO Office of Resources that approves affordability targets; and Strategic Commanders that are heavily involved in endorsing requirements via NDPP and the CP phases (NATO, 2016).

### ***Alliance Members That Drive Capability Decisions***

At the end of the 2012 Chicago conference, Alliance members concurred with the *Summit Declaration on Defence Capabilities: Toward NATO Forces 2020* concept of building AGS to improve JISR capabilities on behalf of NATO. This commitment was designed to meet the need of Alliance members to have near-real-time unrestricted and unfiltered ground surveillance, a lesson learned from NATO operations in Libya, Afghanistan, and Kosovo (Balogh, 2013). A lack of intelligence interoperability and delays in information sharing particularly revealed

during Operation Unified Protector in Libya led to the conclusion that NATO should “speed up to get an AGS Joint ISR capability as an Alliance’s asset” (Balogh, 2013, p. 168).

Realizing the importance of AGS and the JISR capabilities, the North Atlantic Council (NAC) decided to utilize NATO common funding for the benefit of the Alliance. Rather than solicit commitment by Alliance members to provide funding for a shared capability, NATO common funding would provide the budget necessary for “infrastructure, satellite communications and operations” (Balogh, 2013, p. 168) on behalf of 13 (now 15) Alliance member countries. These 15 NATO Allies participating in the acquisition of AGS include “Bulgaria, Czechia, Denmark, Estonia, Germany, Italy, Latvia, Lithuania, Luxembourg, Norway, Poland, Romania, Slovakia, Slovenia and the United States” (NATO, Alliance Ground Surveillance, 2022, p. 3). Additionally, the United Kingdom and France would provide “contributions-in-kind” (Balogh, 2013, p. 168) with the inclusion of the Sentinel and Heron systems respectively.

Original requirements included an air segment with airborne radar sensors and a ground component to disseminate JISR products for all 30 NATO members. Although the air segment underwent numerous revisions in concept and capability, the ground segment remained largely unchanged and was primarily developed by Canadian and European industry (Balogh, 2013).

The air component of AGS is based upon the United States Air Force Block 40 RQ-4D Global Hawk platform with operational mission payloads specifically designed to support NATO JISR needs. These capabilities include near real-time broad-spectrum ISR imagery. This platform has extensive operational use and has been deployed continually since 2001 (United States Air Force, 2014).

Capitalizing on the operational record of the RQ-4 Global Hawk, NAGSMA awarded the prime contract for AGS to Northrop Grumman in 2012. However, the larger industrial team included “Airbus Defence and Space (Germany), Leonardo (Italy) and Kongsberg (Norway), as well as leading defence companies from all acquiring countries” (NATO, Alliance Ground Surveillance, 2022, p. 7) ensuring AGS represented a true international acquired capability for all NATO Alliance members.

### **Support**

The following findings inform the Support theme. Questions centered on support decisions and organizations are also addressed.

#### ***New Organizations Required to Facilitate Acquisitions***

To ensure AGS effectively meets Alliance needs, a variety of organizations were deemed necessary to support the successful acquisition of shared JISR capabilities. The first of these organizations, NAGSMO, is the executive body responsible for ensuring the procurement of this new NATO capability. Its organizational structure includes a Board of Directors with representatives of each of the 15 participating Alliance member nations. NAGSMO serves principally to oversee the implementation of the program and acquisition of AGS capabilities (NATO, NATO Alliance Ground Surveillance Management Organisation, 2022).

Subordinate to NAGSMO is NAGSMA, which came as a result of the signing of the AGS Program Memorandum of Understanding (PMOU) by the 15 acquiring Alliance countries. Established in 2009 and billed as NATO's newest agency, its function is to deliver AGS to intended Alliance users according to the traditional cost, schedule, and performance triad of program management. Other objectives include fielding support, international operational cooperation, and stakeholder management (NATO, NATO Alliance Ground Surveillance

Management Agency, 2022). Figure 6 shows the organizational hierarchy of NAGSMO/NAGSMA highlighting traditional program management infrastructure.

**Figure 6: NAGSMO/NAGSMA**



*Note:* This organizational chart shows key NATO bodies with acquisition activities. From *NATO Alliance Ground Surveillance Management Agency*, by NATO, 2016, p.35.

In February 2022, NAGSMA was replaced by another new organization charged with ensuring continued support by NATO Alliance members, the AGS SPC. SPCs are not unique to AGS and are a NATO mechanism designed to facilitate cooperation between two or more Alliance members for common mission support. SPCs include representatives of each participating Alliance member and oversee policy, logistics, operations, and operational and administrative costs according to Alliance member commitments. As already mentioned, SPCs are not unique to AGS and numerous support partnerships cover a variety of domains including

Aviation and Unmanned Aerial Systems (including AGS), Land Combat, Surveillance Command and Control, Missiles and Ammunition, and Special Programs (NATO, 2022).

Another newly established organization, intended to support the operational employment of AGS, is NAGSF. NAGSF is yet another example of an organization NATO established specifically to operate on behalf of the Alliance and its members. NAGSF is the first such organization, in the history of NATO, operationally activated and reporting to the Supreme Allied Commander Europe (SACEUR). NAGSF maintains operational capabilities on behalf of NATO and Alliance members centered on JISR mission sets. NAGSF is based at the United States Naval Air Station Sigonella in Sicily, Italy, and represents the full complement of AGS platforms and support systems and provides command and control of AGS operations. NAGSF itself has five internal organizations including a general staff, an operating wing, an ISR unit, an operations support squadron, and an intelligence unit (Niccoli, 2022).

Although not established with the formation of AGS as an acquisition program, ACT has been heavily involved in the evaluation of the threats AGS is intended to defeat. ACT is one of two NATO Strategic Commands and is specifically responsible for ensuring “NATO’s military structure and capabilities remain relevant, capable and credible in a rapidly changing world” (NATO, 2019, p. 36). ACT leads NATO efforts to transform its “military structure, forces, capabilities, and doctrine” (NATO, 2019, p. 37) with the objective of improving NATO readiness in anticipation of emerging crises while maintaining relevance in the North Atlantic sphere of influence. More specifically, ACT oversees capability and Joint Force development including the capability development process itself, from requirements identification to production (NATO, 2019).

### ***Support Considerations That Drive Acquisition Decisions***

The acquisition of AGS for NATO introduced unique support considerations. Due to the fact AGS platforms would be based in Italy it was discovered the Global Hawk RQ-4D aircraft type had never been fully certified by the United States for international use (other than contingency operations). Prior Global Hawk variants had only received United States domestic authorizations presenting unique support considerations that had to be resolved for NATO use. The Italian Directorate for Air Armaments and Airworthiness (DAAA) organization was required to certify AGS platforms for airworthiness, which was achieved, uniquely resulting in the 5 NATO RQ-4D aircraft possessing Italian military serial numbers. DAAA had prior experience with other remotely piloted aircraft developed by the United States, having previously certified the Predator A and B, operated by the Italian Air Force. Without this certification these aircraft would never have been allowed to fly from the United States to Italy, nor operate with approval in Italian airspace (Niccoli, 2022).

AGS represents international cooperation to ensure the operational capability of shared JISR. Support staff also reflects this international cooperation, comprised of approximately 400 personnel predominantly represented by the three largest contributors to NAGSF's annual operating budget. The United States provides the largest portion of support at about 26%, the Germans at about 19%, and the Italians at about 11% (Niccoli, 2022). In addition to this international mix of staff, a Spanish-led support wing is responsible for "technical, logistical and maintenance support elements" (Niccoli, 2022, p. 14). AGS has three main facilities at Sigonella for administrative, operational, and maintenance operations housing all the staff and organizations while also hosting a liaison division with representatives from NATO's Allied Air Command and Supreme Headquarters Allied Powers Europe (United States Air Force, 2014).

### **Acquisition Considerations**

The following findings inform the Acquisition Considerations theme. Questions centered on buy-in mechanisms are also addressed.

***Mechanisms That Exist to Achieve Buy-in***

As previously indicated, NATO strategic guidance, its updates, and formal planning and acquisition process like NDPP and the CP process not only facilitate capability development but also serve to socialize Alliance member responsibilities. Also, NATO organizations like ACT, serve as the conduit to disseminate strategic guidance, ensuring Alliance member country commitments are understood and fulfilled (NATO, Allied Command Transformation - Who We Are, 2022).

Within NATO's ACT, the Strategic Plans and Policy Directorate (SP&PD) has responsibility for drafting supplementary strategic guidance including the *Strategic Foresight Analysis* and the *Framework for Future Alliance Operations*. These documents shape NATO strategic guidance in the general sense feeding supplemental strategy updates, such as SD. Significantly, SP&PD guidance updates are an integral component of NDPP, shaping the acquisition of capability directly via such guidance updates (NATO, Allied Command Transformation - Who We Are, 2022).

Another tertiary directorate within ACT is the Resources and Management Directorate, charged with responsibility for a variety of mechanisms to ensure Alliance country buy-in, in support of NATO leadership's long-term transformation planning. This directorate oversees "Human Resource Management, Protocol, Strategy Management, NATO Security Investment as well as Base Support and Allied Command Transformation Office of Security" (NATO, Allied Command Transformation - Who We Are, 2022, p. 10). Significantly this also includes NATO strategic communications that feed NATO's "strategic engagement plan, community outreach

and Supreme Allied Commander Transformation's (...) long-term planning" (NATO, Allied Command Transformation - Who We Are, 2022, p. 10). The Strategy Management branch within this directorate is charged with managing non-programmatic risks associated with delivering capability to Alliance customers. The NATO Security Investment Branch within this directorate is charged with the responsibility of facilitating Alliance member buy-in to new capabilities by managing capital investments of military capability and budgetary support. This includes the acquisition and development of major end items and their support facilities in support of NATO strategic commands.

Also within ACT is the Joint Force Development Directorate (JFDD). This organization achieves Alliance member buy-in of shared capabilities by validating NATO transformation goals enabling the Alliance "to maintain the requisite capabilities now and into the future, and functions as a mechanism for strategic communications at the political, strategic, and operational level" (NATO, Allied Command Transformation - Who We Are, 2022, p. 12).

Beyond ACT's organizational structure, NATO has established a variety of formal mechanisms to facilitate Alliance member buy-in of identified capabilities. One such mechanism is a global programming methodology intended to inform Alliance members of training solutions in support of capability requirements. It has a three-part approach that includes a systems approach to training, a production planning methodology using metrics to measure training effectiveness, and governance of the previous two parts. Another buy-in mechanism is NATO's Collective Training and Exercises program. Along with SD (and AGS as a fundamental component of SD), NATO's Collective Training and Exercises program is a result of socializing emerging needs at the 2012 Chicago conference. This program allows Alliance members the

opportunity to exercise emergent capabilities intended to support NATO collective defense (NATO, Allied Command Transformation - Who We Are, 2022).

### **Summary**

The findings presented represent the analysis of information revealed via the body of knowledge summarized in the literature review. This analysis addressed the identified major themes of acquiring capability for international security-minded organizations like NATO. Supporting thematic questions were validated through findings centered on understanding capability development and capability decisions, support organizations and support decisions, and the mechanisms by which NATO achieved Alliance member country buy-in of proposed strategies and capabilities. By considering the complexity of acquiring shared capability for international organizations, future efforts can potentially mitigate delays or cancellations by establishing a similar framework and starting point for acquisitions. In the next chapter, a summary of conclusions will yield recommendations for program managers chartered with responsibility for delivering capability into international environments, as well as describing other areas for additional research.

## **Conclusions and Recommendations**

### **Introduction**

This chapter provides conclusions of the research themes and questions. Recommendations are included as well as areas of further research. There are 5 recommendations appropriate for consideration, in similar acquisition efforts, of internationally shared capabilities. Areas of additional research are identified to include research of other shared capabilities to determine commonalities, budgetary factors that affect acquisition, and comparisons to U.S. acquisition methods.

### **Conclusions**

Acquisition of shared capability, particularly material solutions, in support of international security organizations, like NATO, are both complex and rare. Department of Defense acquisition professionals charged with joint or international programs will likely find reduced program lifecycle times and must rely on examples of success, like AGS, to ensure timely delivery of capability. Understanding the factors and major themes associated with acquiring a shared capability can potentially reduce the time required to field capabilities ensuring initially developed requirements are relevant and timely to meet international security mission needs.

The nature of acquiring shared capability for international organizations like NATO requires careful consideration of numerous factors atypical of the traditional cost, schedule, and performance method of program management. AGS demonstrates that weapon systems are not only about the capabilities provided but reflect a canvas of political will and international interest. When set against a shared threat or need, capabilities like AGS, present challenges that

must be incorporated into program planning, without which the successful acquisition of shared capabilities is an unlikely outcome.

### **Capabilities**

The following conclusions support thematic questions centered on understanding how NATO pursues and achieves capability development and acquisition. Supporting research questions are also answered.

#### ***Mechanisms That Facilitate Capability Development (Requirements)***

A foundational mechanism that must exist for internationally shared capability is clear, unambiguous, executable strategic guidance. This research has shown that not only must NATO publish strategic guidance on a regular basis, but also updates and refinements are required to ensure continual Alliance member country understanding and acceptance of shared capability needs.

NATO typically publishes its Strategic Concept every 10 years; however, this periodic publication of NATO's assessment of international security affecting the North Atlantic sphere of influence is not sufficiently flexible, or timely enough, to ensure rapidly emerging capability needs are addressed. NATO recognizes this fact and schedules yearly summits to address new and updated policy and proposed response to security threats. During these conferences, strategic concepts are often updated, reflecting changes in global security threats (Barry, 2022). The emergence of SD after the 2012 Chicago Conference is but one example (Aronsson & O'Donnell, 2012).

The shared JISR capability represented by AGS only began to make true traction after the 2012 Chicago Conference that introduced and socialized SD with AGS as an integral component. Lessons learned from natural disasters and regional conflicts including the former "Yugoslavia,

Iraq, Kosovo, Afghanistan, Arab Spring” (Balogh, 2013, p. 177) etc., as well as the emergence of Russia as a threat to Europe, contributed to renewed interest in NATO shared capabilities. Prior to this conference, research revealed there was a lack of broad or consistent progress in identifying shared needs and mixed results with respect to actual capability employment. Frameworks like SD prove indispensable in developing and communicating shared capabilities (Aronsson & O'Donnell, 2012).

Recognizing these conclusions to be true, those responsible for the development and acquisition of capability in support of international programs must seek strategic guidance mechanisms to socialize and obtain support and acceptance. If such strategic guidance is available, program managers should seek to incorporate their material solutions in such guidance, tying the typical challenges of costs, schedule, and requirements delivery to strategic outcomes of organizations like NATO. If overarching strategic guidance is absent, the ability to achieve success is firmly limited, presenting what may become insurmountable challenges in acquisition success.

Once strategic guidance is provided and socialized, formal acquisition planning mechanisms are required to ensure successful delivery of capability. In NATO's case, this involves several processes.

NDPP is NATO's overarching framework of defense planning activities in support of NATO's Strategic Concept. NDPP's purpose is to identify interoperable forces that are prepared, equipped, and supported to provide capabilities in support of NATO's range of mission requirements (Fleischer, 2015). Prior to 2009, NATO's formal acquisition planning mechanism was DRR, and it is no coincidence that AGS capability acquisition languished until the emergence and implantation of NDPP. Only 17% of CPs (yet another mechanism that facilitates

capability development), implemented prior to the establishment of NDPP as an acquisition planning process, resulted from DRR. Prior to NDPP, CPs typically did not originate from DRR or any other formal NATO acquisition planning process. Only until the introduction of NDPP did CP requirements, like AGS, result from normal practice (NATO, 2016).

NATO's CP process supports and is integral to NDPP. This 5-phase process defines capability needs and links planning to operational needs through prioritization of requirements, development of capabilities, implementation, and operational employment in support of NATO field commanders (NATO, Allied Command Transformation - Who We Are, 2022). CPs "identify the assets available to and required by NATO military commanders to fulfill specified tasks" (NATO, 1998, p. 203) and combine national and NATO funds to acquire a specific military capability. CPs, when combined with formal acquisition planning ensure the identification of available and required assets in support of NATO Commanders (NATO, 2019).

### ***Alliance Members That Drive Capability Decisions***

AGS acquisition represents a rare occurrence within NATO. Typically, Alliance members bring native capabilities to support NATO national security interests and mission requirements. In order to ensure capabilities meet NATO requirements consistently, NATO establishes standards Alliance members are expected to adopt. These Standardization Agreements (STANAGS) ensure combat effectiveness of forces under NATO Command and Control by ensuring interoperability and mission sustainability requirements are established and met in advance of operations (NATO, 2019). AGS, however, represents something else entirely through the acquisition of shared capability, and as such STANAGS are not applicable.

Shared capability, in the case of this research as represented by AGS, implies multi-national interest, support, and funding. AGS capability approval required the acceptance of 15

Alliance members (originally 13). Not only did this infer the acquisition of specific end items, such as the RQ-4B Global Hawk airframe, it also included the inclusion of similar capabilities of Alliance members with an interest in the mission capabilities themselves. The 15 nations that required AGS included “Bulgaria, Czech Republic, Denmark, Estonia, Germany, Italy, Latvia, Lithuania, Luxembourg, Norway, Poland, Romania, Slovakia, Slovenia and the United States” (Public Diplomacy Division (PDD) - Press & Media Section, 2016, p. 1), while the United Kingdom and France provided contributions-in-kind with the inclusion of the Sentinel and Heron systems respectively (Balogh, 2013).

Unsurprisingly, logistics support of shared capability, again represented by AGS, involves multi-national support and cooperation. Support staff are represented by the United States, Germany, and Italy. Additionally, Spain provides the AGS support wing providing “technical, logistical and maintenance support elements” (Niccoli, 2022, p. 14).

## **Support**

The following conclusions inform the Support theme. Questions centered on how NATO supports shared capabilities such as AGS are also answered.

### ***New Organizations Required to Facilitate Acquisitions***

For shared capabilities, such as AGS, to be operationally effective, NATO had to establish a variety of new organizational infrastructures. NATO additionally leveraged existing infrastructure and the combination of new and existing organizations ensured AGS was postured for emerging European security crises such as the Russian invasion of Ukraine.

Entirely new organizations, such as NAGSMO, NAGSMA, and NAGSF had to be established to provide the necessary acquisition support as well as operational command and control mechanisms necessary to support NATO operations. As already mentioned, AGS is a

shared NATO capability. Traditionally provided Alliance member native capabilities offered in support of NATO operations typically supported by those countries is absent. This results in the need for new organizations to ensure acquisition of AGS, and ultimately IOC.

### ***Support Considerations That Drive Acquisition Decisions***

AGS is a unique example of NATO shared capability; however, it ran afoul of circumstances that failed to acknowledge support considerations impacting operational employment. The fact that AGS did not receive an airworthiness certification outside of airspace controlled by the United States is a good example of international limitations ordinarily absent with the contribution of native Alliance member capability. Logistics support is yet another example of unique support considerations in the case of AGS that would otherwise remain an Alliance member specific concern with little impact on shared capability. However, the approach NATO took to acquiring AGS as a NATO owned and operated capability introduced atypical support considerations, that if unaddressed or planned for, would result in significantly diminished operational readiness. Fortunately, NATO planned for such support requirements, establishing necessary infrastructure and international support in advance of IOC. However, in the case of airworthiness, even this advance planning failed to capture all logistics and support considerations, and only through the commitment of Alliance members were such challenges overcome.

### **Acquisition Considerations**

The following findings inform the Acquisition Considerations theme. These findings provide insight on thematic questions centered on mechanisms for buy-in and Alliance member security interests.

### ***Mechanisms That Exist to Achieve Buy-in***

Beyond unique organizational overhead, such as NAGSMO, NAGSMA, and NAGSF in the case of AGS, existing NATO organizational infrastructure provides necessary mechanisms to achieve international buy-in of shared capability. Dissemination of strategic guidance, commitment expectations, national security investments, strategic engagements, community outreach, risk management, and budgetary support, is a required component of acquisition planning for internationally shared national security capability. In the case of NATO, such infrastructure and their associated buy-in mechanisms exist. However, in the absence of such infrastructure, acquisition planning must include the development of discrete mechanisms to facilitate buy-in. Particularly if shared capability is designed to support new international relationships in response to emerging crises affecting the national security interests of a particular country.

### **Recommendations**

The following are recommendations for consideration of acquisition of shared capabilities for international security organizations and other joint programs. These recommendations support themes identified within this research.

#### ***Recommendation 1: Capabilities – Mechanisms That Facilitate Capability Development (Requirements)***

As with the importance of capitalizing on strategic guidance, those responsible for acquiring shared capability must follow an established acquisition process. NATO is notable in that it has an established process that yields results. However, it is also notable that prior to NDPP, NATO's previous acquisition planning process had little to do with the publication of CPs or requirements in general, or acquisition of capabilities. For other shared programs, in the absence of an established internationally agreed to acquisition planning process, program

managers should follow nationally established processes, such as the Adaptive Acquisition Framework in the case of the United States Department of Defense (Office of the Under Secretary of Defense for Acquisition and Sustainment, 2020).

***Recommendation 2: Capabilities – Alliance Members That Drive Capability Decisions***

If a capability is expected to be shared internationally, the concept of programmatic stakeholder management needs to include active consideration of all countries and international bodies that have an interest in shared capability. This research concludes that ignoring such stakeholders invites disinterest and lack of support, without which fielding of capability is an unlikely outcome.

***Recommendation 3: Support – New Organizations Required to Facilitate Acquisitions***

Acquisition planning including budgetary and support considerations of organizational logistics and support is indispensable when acquiring shared capability. Failure to enact such planning will result in a lack of management infrastructure leading to the inability to deliver shared capability. Thus, countries involved in international acquisition need to be open to forming and funding new organizations as required to deliver capability.

***Recommendation 4: Support – Support Considerations That Drive Acquisition Decisions***

Support considerations, such as airworthiness, type classification, and logistics infrastructure, typical of a particular nation's employment of military capability, should/need to include consideration of similar requirements on an international level.

***Recommendation 5: Acquisition Considerations – Mechanisms That Exist to Achieve Buy-in***

Those responsible for the program management of shared capability need to consider existing examples of infrastructure, policy, and procedural mechanisms and incorporate such considerations into the overall acquisition strategy.

### **Areas for Future Research**

AGS is not the only example of shared capability acquired by international organizations such as NATO. Even within NATO other shared capabilities are in development, particularly in areas of Ballistic Missile Defense, Cyber operations, and other ISR support systems. The expectation of this research is that thematic considerations and associated questions are universal, but this research only includes one example, AGS. Subsequent researchers and program managers may be able to utilize this research methodology and assess other programs procured in joint or international environments and expect to see similar results. That research themes proved true for AGS is useful, only to a point, and further research is necessary to conclude these are a panacea.

Further, AGS is funded by NATO common funding, a condition of political expediency that may not prove to be true in all cases of shared capability. Further research into the funding mechanisms of Alliance members may shed insight into additional considerations worthy of inclusion in future shared capability acquisitions.

Finally, a comparison of NATO's acquisition process with U.S. DoD methodologies would be useful to establish a baseline of similarities and differences. Given strong influence the U.S. has on NATO processes in general, efficiencies could be revealed that may make socialization and acceptance of requirements more successful.

### **Summary**

This chapter provided conclusions, recommendations, and areas for future research against the backdrop of AGS as a successfully acquired shared capability in support of international security organizations, like NATO. As previously indicated where AGS does not

prove to be a panacea, the same thematic grouping of data, linked to conclusions, if applied to other NATO shared capabilities will provide insight into broad applicability.

Finally, notably, AGS is fulfilling the promise of this acquired capability by providing ISR capabilities to missions in support of Ukraine's response to Russian aggression. AGS Global Hawk aircraft have been conducting missions providing critical intelligence to NATO, and by extension the Ukraine, since the beginning of the war (Allied Air Command Public Affairs Office, 2022). During the month of May 2018 "a NATO RQ-4D aircraft was launched every other day to conduct flights along the eastern flank [of NATO]" (Allied Air Command Public Affairs Office, 2022, p. 1). NAGSF, the AGS Command and Control element, has also demonstrated the capability of conducting complex surveillance missions, providing "decision-makers with critical and timely information, based on a comprehensive picture of what is happening on the earth's surface" (Allied Air Command Public Affairs Office, 2022, p. 1). "Most certainly, AGS supports NATO's strategic decision-makers by providing valuable information on the Ukrainian situation and by bolstering the Alliance's defensive posture along the eastern flank" (Allied Air Command Public Affairs Office, 2022, p. 1). AGS has proven to be a critical, strategic enabler of international defense, achieving operational readiness at exactly the right moment, loudly proclaiming NATO remains ready to meet the challenges of international security in the 21<sup>st</sup> century.

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**Appendix A – Glossary of Acronyms**

ACO .....	Allied Command Operations
ACT.....	Allied Command Transformation
AGS.....	Alliance Ground Surveillance
CDD .....	Capability Development Directorate
CP.....	Capability Package
DAAA .....	Directorate for Air Armaments and Airworthiness
DPPC.....	Defence Policy and Planning Committee
FFAO.....	Framework for Future Alliance Operations
IOC.....	Initial Operating Capability
ISR .....	Intelligence, Surveillance, and Reconnaissance
JFDD .....	Joint Force Development Directorate
JISR.....	Joint Intelligence, Surveillance, and Reconnaissance
NAC .....	North Atlantic Council
NAGSF.....	NATO Alliance Ground Surveillance Force
NAGSMA.....	NATO Alliance Ground Surveillance Management Agency
NAGSMO.....	NATO Alliance Ground Surveillance Management Organization
NATO.....	North Atlantic Treaty Organization
NDPP.....	NATO Defense Planning Process
NSPA.....	NATO Support and Procurement Agency
OUP.....	Operation Unified Protector
PDD.....	Public Diplomacy Division
PMOU .....	Program Memorandum of Understanding
RPA.....	Remotely Piloted Aircraft
SACEUR .....	Supreme Allied Commander Europe
SD .....	Smart Defense
SP&PD .....	Strategic Plans and Policy Directorate
SPC.....	Support Partnership Committee
STANAG.....	NATO Standardization Agreement
TP.....	Target Packages
US .....	United States

## **Appendix B – Author Biography**

Mr. Jason T. Craft previously served as Product Manager for the Global Force Information Management System within Program Executive Office Enterprise Information Systems and is slated to take over as Project Manager – Mid-Range Capabilities in Program Executive Office – Missiles and Space. Before becoming a Department of the Army Civilian, he retired after 30 years of service in the Active Component in the rank of Colonel.

### **CAREER CHRONOLOGY:**

- 2023: Project Manager – Mid-Range Capabilities
- 2019-2021: Product Lead GFIM • 2017-2019: Director – Army Aviation Programs, Assistant Secretary of the Army – Acquisition, Logistics and Technology.
- 2014-2017: Project Manager (O6 CSL) – Mine Resistant Ambush Protected Vehicles, U.S. Army, PEO Combat Support Combat Service Support
- 2011-2014: Chief of Staff/Deputy Brigade Commander/Program Director, 405th Army Field Support Brigade, Kaiserslautern, Germany
- 2008-2011: Commander (O5 CSL) – Defense Contract Management Agency (DCMA) Milwaukee

### **EDUCATION:**

- Masters, Information Systems, Florida Institute of Technology, 1999
- Bachelors, Graphics Production, Longwood University, 1989

### **CERTIFICATIONS:**

- Defense Acquisition Workforce Improvement Act (DAWIA) Program Management – Advanced

- DAWIA Engineering and Technical Management – Practitioner
- DAWAI Contracting – Foundational

**AWARDS AND HONORS:**

- Special Awards: Order of Saint Maurice, Infantry Association, Order of Mercury, Army Signal Association
- Military Awards: Legion of Merit, Bronze Star, Defense Meritorious Service medal (1 OCL), Meritorious Service Medal (2 OCL), Army Commendation Medal (2 OCL), Joint Service Achievement Medal, Army Achievement Medal (1 OCL), National Defense medal (1 Camp Star), Afghanistan Campaign Medal (1 Camp. Star), Iraqi Campaign Medal (4 Camp. Stars), Global War on Terrorism Expeditionary Medal, Global War on Terrorism Medal, Humanitarian Service Medal, NATO Medal
- Other awards: British Jump Wings, Parachute Rigger Wings, Air Assault Wings, Master Parachutist Wings, the Expert Infantry Badge, the Ranger Tab, and the Combat Action Badge.