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THE DANISH BUSINESS COMMUNITY MUST CONTRIBUTE TO THE DEVELOPMENT OF THE DANISH DEFENSE

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BRIEF ABOUT THE PROJECT

This report is a presentation for the upcoming preparation of an updated defense industrial strategy for Denmark. The primary objective is to illustrate potentials for developing more companies capable of enhancing Denmark's capacity to provide solutions for both domestic use and our NATO partners. This endeavor aims to bolster our supply security while fostering the growth of Danish companies, capitalizing on the expanding defense budgets across Europe. Within this report, a range of recommendations is presented to fortify Danish defense suppliers. Particular emphasis has been placed on strategies to further cultivate the small and medium-sized enterprise (SME) sector and dual-use applications within Denmark.

The creation of this report has involved close collaboration with an advisory board established in early 2023. The process included three meetings and a concluding conference. Additionally, a round table discussion was conducted with Danish institutional investors. Nevertheless, it is essential to note that the recommendations within the report represent Axcelfuture's perspective. Crafting recommendations that can garner widespread support among stakeholders has been a paramount objective.

The consultancy firm, Navigate PA, provided invaluable assistance to Axcelfuture by offering insights into the Danish defense industry and its international counterparts. Navigate PA also authored the chapter on international experiences, drawing from interviews with senior figures in Norway, the Netherlands, and Sweden. The selection of these countries was a collaborative effort between Navigate PA and Axcelfuture.

Financing of the project

The project has received support from Industriens Fond, Dansk Metal, EIFO, DI, Thomas B. Thriges Fond.

Project execution and timeline

The work began in January 2023 and the report is completed in early September 2023.

Advisory board

- o Colonel of the Reserve Sven Blomberg, former EVP for BRFkredit and Jyske Bank
- o Deputy director Torsten Andersen, Erhvervsstyrelsen (The Danish Business Authority)
- o CEO Cecilie Brøkner, Innovationsfonden (the Innovation Fund)
- o CEO Joachim Finkielman, Dansk Industri Forsvar og sikkerhed (The Confederation of Danish Industry)
- o CEO Peder Lundquist and Carsten Søndergaard, EIFO (Denmark's Export and Investment Fund)
- o EVP Steen Lynenskjold, and head of communication and public affairs Kasper Hyllested, Terma
- o EU manager Johan Moesgaard, Dansk Metal
- o Public affairs manager Andreas Steenberg, Systematic
- o CEO Charlotte Wetche and adviser Klaus Bolving, CenSec
- o Former ambassador Michael Zilmer-Johns, the Defense Academy and Axcelfuture

THE TIME HAS COME TO UPDATE THE DEFENSE INDUSTRIAL STRATEGY

The current strategy, dating back to 2021, aimed to strengthen cooperation, access international supply chains, and foster technological advancements in the defense industry. Its overarching goal was to build a robust and sustainable Danish defense sector, thereby safeguarding national security interests while generating economic growth and job opportunities. But the need for an updated Danish defense industrial strategy has become imperative due to significant developments in the threat landscape, both in Europe and globally.

Several critical areas demand attention when revising the defense industrial strategy:

- 1. Security of Supply and Competence Development:** Denmark, as a sub-supplier in arms production, must enhance its security of supply within international value chains. Denmark cannot become self-sufficient in arms production. The strategy should emphasize the importance of maintaining critical competencies, such as equipment maintenance, to ensure self-sufficiency during crises. Examples from countries like Norway, with their aviation expertise, can provide valuable insights.
- 2. Economic Development:** The defense industry has the potential to create jobs, stimulate research, and drive innovation. Technological advancements made in the defense sector can also find applications in civilian industries, contributing to broader economic development.
- 3. Geopolitical Influence:** A stronger domestic defense industry enables Denmark to adapt swiftly to evolving threats by developing or adapting equipment and technology. This enhanced capability can grant Denmark greater influence on the global stage, serving as a diplomatic tool and promoting alliances. However, the strategy must align with Denmark's unique needs, capabilities, and geopolitical position.

To ensure an effective updated strategy, it is vital to improve execution and involve defense industry companies more actively. Leveraging their technical expertise and market knowledge can make the strategy more robust and forward-looking. Increased dialogue between the Danish Armed Forces' needs and the industry's opportunities regarding operational needs and opportunities is essential to enhance mutual understanding.

Furthermore, the revision process should involve all key stakeholders in the defense industrial ecosystem, including authorities, industry, research institutions, contractors, and asset managers. The updated strategy should be binding for both the state and the industry, with concrete objectives and initiatives aimed at promoting cooperation and improving framework conditions.

Lastly, the strategy should address the integration of small and medium-sized enterprises (SMEs) into the supply chains of larger companies. Existing business promotion initiatives relevant to defense and security should serve as a foundation, focusing on areas aligning with force positions, the Danish Armed Forces' needs, and national security interests.

THE DANISH BUSINESS COMMUNITY MUST BE A DETERMINING FACTOR FOR DENMARK'S DEFENSE

The shifting security policy landscape is leading to increased defense spending in Denmark and across NATO nations. This change is driven by a reevaluation of defense responsibilities and the evolving security situation.

These developments present an opportunity to strengthen the Danish business community, particularly in defense and security technologies, enhancing national security while creating export opportunities and jobs.

The war in Ukraine highlights the importance of secure defense supply chains. Addressing bottlenecks requires closer collaboration between Danish industry and businesses and the defense sector, as well as stronger partnerships with EU countries to expand the European defense industry.

While the U.S. remains a key ally, Europe's defense capacity must grow. Denmark can now engage fully in EU defense cooperation after lifting defense reservations.

Denmark's strengths in various sectors, such as maritime, IT, robotics, and green energy, can foster a robust domestic defense industry and strengthen ties between civilian and military sectors.

Although Denmark's defense industry is advanced, it primarily serves as an export engine, unlike other countries with stronger domestic defense industries.

To build a larger and stronger defense industry, close collaboration between the defense sector and Danish companies is vital. This may involve direct allocations, support for innovative firms, and collaboration with major players like the EU, the Innovation Fund, EIFO, and CenSec.

INNOVATION MUST BE A TURNING POINT IN THE DEFENSE INDUSTRIAL STRATEGY

In an era marked by ever-evolving technology, shifting geopolitical landscapes, and asymmetric threats, the ability to innovate—embracing new technologies, tactics, and strategies—is of utmost importance.

Military research and development have historically birthed innovations that later found civilian applications. Historically, military innovations have often reshaped power dynamics, from medieval longbows to 20th-century advancements like steamships and encryption. Today, the digital realm, with its cyber threats, drone technology, and artificial intelligence, is a pivotal battleground, with civilian sectors driving innovation that is subsequently applied militarily.

Defense innovation encompasses more than technology; it also involves new approaches to thinking, organizing, and collaborating, both internally and with allies. A flexible and adaptive defense can respond swiftly to emerging threats and harness the potential of technology. Additionally, innovation is an economic necessity, given rising global defense budgets and the complexity of modern weapon systems, where efficiency and cost savings through innovative solutions are imperative.

DANISH DEFENSE INDUSTRY MUST BE BETTER INTEGRATED INTO EUROPEAN COOPERATION

The EU's defense industry has historically faced market fragmentation and limited competition due to national procurement preferences. However, recent developments, including EU Commission involvement and initiatives like PESCO and EDF, have propelled defense industrial cooperation to the center stage of EU priorities. This shift aims to build an efficient defense industry capable of global competition and providing strategic capabilities currently sourced from the United States.

Denmark's new defense agreement commits to active participation in EU defense cooperation, emphasizing the value of EU collaboration, including in defense industry and capability development. Catching up on knowledge, contacts, and placement in EU institutions is essential, requiring a substantial investment that can benefit the Armed Forces and Danish companies and research institutions.

PESCO has initiated 68 projects across various defense areas, offering exciting prospects for Danish companies and research institutions. Denmark's proposed participation in two projects is just the beginning, with numerous relevant projects in areas like underwater infrastructure protection and missile defense. Denmark's involvement lags behind comparable countries, such as Sweden, which participates in all 11 new PESCO projects.

Notably, PESCO lacks projects for developing the next generation of frigates. Denmark should take the lead in such a project, benefiting its Navy and bolstering its design capacity.

The European Defense Fund (EDF) supports defense equipment research and development, with substantial funding for projects involving partners from at least three EU countries. PESCO and SME participation projects receive priority, but Danish companies have seen limited EDF benefits.

The innovation platform HEDI and Defense Agency's CapTechs work to enhance defense innovation, while the newly established National Defense Technology Centre (NFC) can be a valuable platform for Danish participation, improving research institutions' European networks and EU fund access.

DENMARK'S POSITION IN THE INTERNATIONAL VALUE CHAIN CAN BE STRENGTHENED IN SELECTED AREAS

To meet Denmark's operational goals and handle a necessary 100% increase in equipment purchases over several years, involving the business community in partnerships is crucial. This approach frees up resources for developing and maintaining critical competences, particularly in areas like maritime, surveillance, infrastructure protection, and digitization of processes and existing equipment. The armed forces can employ various methods, such as direct allocations, public-private partnerships (PPP), or other private sector involvement (OPI). Accelerated security approvals and increased insight into operational experiences and challenges for businesses and knowledge institutions are essential for success.

A promising collaboration has emerged between PensionDanmark, OMT, and Terma for the delivery of patrol ships. Instead of specifying detailed functional requirements, the framework is set by the The Ministry of Defence's Materiel and Procurement Agency (FMI), specifying standards that the materials must meet. This approach fosters innovation and involves Danish SMEs, particularly in the maritime and dual-use sectors. This model, which promotes innovation and security of supply, should be expanded into other areas, involving foreign "prime" partners with sufficient financial capacity to take on long-term projects. Involving a broad circle of Danish companies, potentially leading projects, is vital.

Enhancing public support for companies selling to foreign defense industries and militaries can be achieved through prioritizing this sector in the Ministry of Foreign Affairs' export promotion efforts. Upgrading representations' capacities to identify market opportunities and facilitate Danish companies' cooperation with foreign defense firms is also important. This can involve increasing the presence of defense-savvy attachés at Danish embassies, ultimately bolstering the defense sector's export capabilities.

DENMARK MUST DEVELOP INDUSTRIALLY IN CLOSE COOPERATION WITH THE OTHER NORDIC COUNTRIES

The repeal of Denmark's EU defense reservation and Sweden and Finland joining NATO mark a historic moment where the Nordic countries unite as military allies in NATO and partners in EU defense cooperation. With a combined defense budget exceeding DKK 150 billion in 2023, they possess substantial military capabilities on land, at sea, and in the air. Strengthening Nordic cooperation can create a formidable force within NATO, enhancing influence and bolstering the EU's defense capacity. This collaboration also facilitates a shared perspective on sustainability and the green transition, including energy-efficient military infrastructure.

Geographical proximity, cultural similarities, and aligned political-military objectives offer significant potential for deepening defense cooperation. This extends to operational aspects, exercises, information sharing, procurement, host nation support, and joint defense planning. The Nordic countries can draw from experiences like joint uniform procurement and Danish-Norwegian F-16 cooperation. Enhanced collaboration opens new opportunities for the defense industries of these nations, promoting joint projects, closer cooperation between companies, and leveraging EU funding initiatives such as EDF and PESCO. Denmark can benefit from Nordic cooperation to secure and sustain supply chains, especially for critical raw materials and technology components.

Participation in EDF enables investments in joint research and development projects, fostering closer industrial collaboration among Nordic companies. PESCO offers a platform for the Nordic countries to take a leading role in areas like maritime security, cyber defense, and surveillance technology.

To maximize the benefits of increased commitment to EDF and PESCO, coordination is crucial at the political, administrative, and industrial levels. This coordination should ensure that national defense industries receive necessary support and collaborate effectively on shared goals and visions. This encompasses

coordinated policies, joint participation in tenders and applications, and collaborative education and training programs.

RECOMMENDATIONS FOR STRENGTHENING DENMARK'S DEFENSE INDUSTRY

Denmark's increased defense budget, amounting to an additional annual expenditure of DKK 18-20 billion, necessitates a doubling of defense materiel purchases. This aligns with the trend of rising defense spending in Europe, including Denmark's key trading partner, Germany, and many other NATO countries.

To ensure Danish companies can participate in the global defense technology investments, cooperation between defense, research, and Danish industry must improve. This should involve a broader range of companies beyond the traditional defense industry, with a focus on facilitating small and medium-sized enterprises' involvement in defense supply chains. Emulating successful models, like Norway's approach in developing a strong defense industry with strategic significance, should be considered to enhance Denmark's defense industry capabilities.

Based on this, Axcelfuture presents six recommendations:

<u>Recommendation 1:</u> Strengthen the power of innovation through more collaboration between FMI (The Ministry of Defence's Materiel and Procurement Agency), companies and existing knowledge institutions
<u>Recommendation 2:</u> Use the industrial policy instruments to strengthen the Danish defense industry
<u>Recommendation 3:</u> A strengthened effort in the EU and NATO is necessary
<u>Recommendation 4:</u> Strengthen Nordic cooperation on the development of new innovative defense solutions
<u>Recommendation 5:</u> Strengthen the Industrial Agreement complex for the benefit of innovation
<u>Recommendation 6:</u> Strengthen the financial foundation in the SME segment

1. RECOMMENDATION: STRENGTHEN THE FORCE OF INNOVATION THROUGH COOPERATION BETWEEN THE DEFENSE AND EXISTING ACTORS

- Establish a larger innovation unit under the Ministry of Defence's supervision, capable of organizing development programs with innovative SMEs. This can draw inspiration from Defense Innovation Unit (DIU) and leverage experiences from the Defense Research Institute in Norway. The unit's mission could involve conducting development programs with both Danish and international companies, particularly focusing on EDF collaborations and special projects of national significance.
- The Innovation Fund possesses extensive experience in competitively tendering tasks within partnerships involving larger companies, SMEs, universities, GTS institutes (approved technological service-institutes) and other stakeholders, along with subsequent project oversight. Thus, it is feasible to leverage the Innovation Fund's capabilities to realize parts of the Defense's forthcoming investments in research and innovation through targeted programs that can be subject to competition. Using existing structures allows for quicker implementation compared to building entirely new authority structures and implementation mechanisms. Additionally, the Innovation Fund, CENSEC, and GTS, such as the Technological Institute, can jointly identify and prioritize technologies with the potential to shape the future of the defense industry, capitalizing on Denmark's existing strengths, such as artificial intelligence, quantum technology, drones, and more.
- The Innovation Fund can finance research and development projects specifically tailored to the needs of the defense industry. This may encompass technologies like drones, cybersecurity, satellite communications, radar, and other strategically important areas.
- Encourage the further development of incubators or accelerator programs targeting defense-related startups. CenSec already hosts Denmark's inaugural startup incubator for the defense sector. Such programs, including similar initiatives, can provide mentoring, funding, access to testing facilities, and other resources crucial for assisting entrepreneurs in developing and scaling their solutions. Collaboration between the Technological Institute and EIFO can facilitate this process.

2. RECOMMENDATION: USE BUSINESS POLICY INSTRUMENTS TO STRENGTHEN THE DANISH DEFENSE INDUSTRY

Denmark can capitalize on opportunities to bolster its domestic defense industry to a greater extent than is currently the case, aligning with practices in most other countries we typically benchmark against. This can be achieved in areas where Denmark demonstrates strength and where maintaining capacity aligns with national interests.

To realize this, the formation of robust consortia is necessary, with entities possessing adequate knowledge and resources serving as pivotal players, akin to Terma's role in the patrol ship domain. These consortia should enhance the procurement capabilities of the Danish Defense Acquisition and Logistics Organization (FMI), which includes FMI's participation in the defense cluster's innovation steering group. However, a critical

prerequisite is that the defense sector backs areas where Danish companies can establish competitive positions, enabling their access to broader markets, including export opportunities.

- Explore the applicability of TFEU Article 346 in the defense industry, assessing its potential implementation in specific domains.
- Establish targets, guided by an updated defense industrial strategy, to determine the proportion of total materiel procurement to be allocated through direct means, allowing Denmark to build a robust position.
- Increase Danish defense investment in supporting and fostering the domestic defense industry.
- Enhance the transparency of FMI regarding the technologies that the defense sector will prioritize in the future.

3. RECOMMENDATION: A STRENGTHENED EU, EDF AND NATO EFFORT IS NECESSARY FOR SECURITY OF SUPPLY AND TO BUILD A STRONGER DEFENSE INDUSTRY FOR THE BENEFIT OF EXPORTS

If we are to realize the Danish Parliament's ambition for wholehearted Danish integration in the EU's defense industry cooperation and within NATO, we need to create new opportunities for development, financing, and exports for Danish companies and research institutions. This can be achieved through the following initiatives:

- We should engage much more strongly in PESCO (Permanent Structured Cooperation) and, at a level comparable to a country like Sweden, participate in many more relevant PESCO projects. This would not only benefit our Defense but also enhance the chances for Danish companies to secure funding from the European Defense Fund (EDF). Furthermore, Denmark should take the initiative for new projects, often in collaboration with other Nordic countries. A possible Danish initiative could involve the development of the next generation of frigates. This would be beneficial for replacing the Navy's five large ships and strengthening the export potential of Denmark's robust design capacity.
- Since the removal of the opt-out, the Danish EU representation has received additional resources for the defense sector, but it is still insufficient to cover the backlog resulting from decades of non-participation. The representation's defense industry capacity should be expanded to match that of the Washington embassy. Denmark should also strengthen its position in the European Commission's Defense Directorate, DG DEFIS, and within the European Defence Agency (EDA) by seconding at least three national experts, potentially with backgrounds from organizations like DI FoS or CenSec, which have been engaged in this area for several years.

¹ Article 346 of the EU Treaty allows Member States to take special measures (ie derogate rules for tenders, etc.) to protect their essential security interests, especially in relation to production and trade in defense equipment.

- A working group on EU defense policy should be established within the Government's Advisory Group for Danish Defense Industry. This group could establish common positions and approaches to EU defense policy issues and opportunities for Danish defense industry and research. Danish authorities could receive input from the industry and universities regarding specific industrial and economic challenges. The industry could benefit from end-user feedback and be informed about the government's defense policy goals.
- We should identify a number of additional "regional primes" in Europe with which we can develop partnerships, enabling us to participate in the development of a stronger European defense industry. Potential partners could include companies like Rheinmetall, ThyssenKrupp, or Thales.
- Danish companies' ability to prepare relevant applications for the European Defense Fund (EDF) should be strengthened by establishing a dedicated facilitation unit under the Innovation Fund or within CenSec.

Consider the establishment of an international "Center of Excellence" in a field where Denmark holds a strong position, such as drones or sensors:

Denmark has already been granted a NATO center for quantum technology at the Niels Bohr Institute, as part of the DIANA project. We should explore the possibility of complementing this initiative by creating an international "Center of Excellence" centered around a Danish area of expertise, such as drones or sensors. It will be essential to investigate the feasibility of garnering interest and significant financial contributions from a critical mass of other countries for the establishment of such a center.

This center could potentially be structured as a NATO Center of Excellence or modeled after "The European Center of Excellence for Countering Hybrid Threats in Helsinki," which was jointly established by the EU and NATO and initially included nine countries, now counting 33 participating nations. A preliminary proposal for a NATO Center of Excellence focused on drones in Odense could serve as a starting point, estimating an annual operating cost of approximately 250 million DKK.

Enhance international research and innovation endeavors:

- Explore new opportunities for Danish companies and knowledge institutions to engage in international collaborations and secure funding through Horizon Europe, particularly in specific domains related to defense and security (with synergy to the European Defense Fund).
- Develop expertise within organizations like the Innovation Fund or CenSec, which can provide valuable assistance to small and medium-sized enterprises (SMEs), particularly in preparing applications for programs such as the European Defense Fund (EDF).

4. RECOMMENDATION: STRENGTHEN NORDIC COOPERATION ON THE DEVELOPMENT OF NEW INNOVATIVE DEFENSE SOLUTIONS

- Promote collaboration among defense industries in the Nordic countries through joint research and development projects, joint application submissions, participation in tenders, and the formation of partnership agreements.
- Enhance these opportunities by collaborating on joint Nordic applications for the European Defense Fund (EDF). By combining expertise and resources, the Nordic countries can improve their chances of securing funding and successfully implementing projects. A dedicated Nordic unit can be established to coordinate and promote joint defense technology initiatives, serving as a liaison between the Nordic countries and the EDF.
- Reinforce Nordic cooperation by identifying and participating in joint PESCO (Permanent Structured Cooperation) projects that align with the region's specific needs and strengths.
- Increase the number of workshops for the defense industry in the Nordic countries, fostering the exchange of ideas, identification of common Nordic challenges, and the development of innovative solutions.
- Encourage regular exchanges of attachés, researchers, and other experts among companies in the Nordic countries to share best practices and accelerate the advancement of cutting-edge defense technologies.
- Consider the establishment of a Nordic fund dedicated to financing research and development in critical defense technology. This fund could complement EDF funding and enhance the region's standing within the EU and NATO.
- Coordinate joint Nordic exhibitions and seminars to showcase the region's capabilities, particularly in defense technologies, to the broader European and global audiences.
- Establish collaborative Nordic education programs and training centers focused on emerging defense technologies to ensure that the armed forces of the Nordic countries are well-prepared to integrate and utilize new technologies effectively.

5. RECOMMENDATION: STRENGTHEN THE VALUE OF INDUSTRIAL COOPERATION – AND MAKE EXPORT CONTROL EASIER

- Participation in the development of new and innovative defense systems is crucial to avoid the Danish defense industry becoming predominantly component suppliers. Therefore, collaboration agreements with companies should increasingly prioritize development-oriented projects compared to the current approach.
- Lockheed Martin and Raytheon are the most significant primes in terms of cash flows for Denmark, but there are other important players as well. A future defense industrial strategy should identify several international companies with which stronger relationships can be nurtured. It is essential to devise methods that provide Danish SMEs with better opportunities to establish relevant and long-term collaborations.

- Presently, many foreign suppliers are left to navigate independently because it can be challenging to identify meaningful offset arrangements in all cases. Strengthening the system may involve establishing a clearer framework for how offset arrangements can support Danish areas of expertise.
- Industrial cooperation should be employed more strategically, with the needs of the armed forces and the advancement of Danish areas of expertise serving as guiding principles for fulfilling industrial cooperation obligations.
- Danish export controls should be made more transparent for the industry. In this regard, consideration should be given to streamlining export control, such as consolidating all related tasks under a single authority and enhancing guidance options.

6. RECOMMENDATION: STRENGTHEN THE FINANCIAL FOUNDATION IN THE SME SEGMENT

- It is important to enhance the visibility of the SME segment, especially to business angels who typically invest directly in companies and engage in board-level activities.
- The government might consider establishing a "matching fund" that doubles private investments, a principle successfully employed in other sectors.
- Given that pension funds may encounter challenges in creating dedicated funds focused on defense areas, EIFO could establish a dedicated fund, potentially with an initial allocation of approximately 500 million DKK.
- The government should actively promote potential Public-Private Partnership (PPP) projects that pension funds could participate in. These projects could encompass collaborations on the development of larger weapons systems, operation of barracks, vehicle operations, and similar initiatives.
- Opportunities for supporting research and innovation efforts within the Norwegian Armed Forces should be explored, with a focus on fostering competition and implementation through the Innovation Fund.