



**BACKGROUND PAPER**

# DEFENCE PROCUREMENT ORGANIZATIONS WORLDWIDE: A COMPARISON

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*Defence Procurement Organizations Worldwide: A Comparison*  
(Background Paper)

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## EXECUTIVE SUMMARY

In Canada, defence procurement is a complex process involving several federal departments and agencies, notably the Department of National Defence; Public Services and Procurement Canada; Innovation, Science and Economic Development Canada; and the Treasury Board of Canada Secretariat. This decentralized, multi-departmental approach to defence procurement is unique to Canada.

Other industrialized countries have used different defence procurement models, with procurement undertaken by individual armed services, defence departments, centralized defence organizations, separate government organizations or independent civilian corporations.

Notwithstanding the existence of these various defence procurement models and reforms in a number of countries in recent years, most processes – regardless of the model – continue to face similar challenges and criticisms. Many processes are characterized by bureaucratic hurdles, political influence, cost overruns and delays in delivering major projects.

No existing defence procurement model seems to be able to address adequately all of the challenges associated with defence procurement in the 21<sup>st</sup> century. These challenges include the growing complexity and rising cost of major weapon systems and of global supply chains, as well as the increased speed of technological changes in certain fields.

The mandate letters that the Prime Minister of Canada provided to several ministers in December 2019 refer to “analyses and options for the creation of Defence Procurement Canada.” In that context, an examination of the full range of defence procurement models used by Canada’s allies and other countries may occur in an effort to identify some of the advantages and disadvantages of each model, and their respective lessons learned.

# DEFENCE PROCUREMENT ORGANIZATIONS WORLDWIDE: A COMPARISON

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## 1 INTRODUCTION

The surge in military spending that has occurred since the terrorist attacks of 11 September 2001 in response to an unpredictable and volatile international security environment has led governments around the world to increase their focus on the issue of defence procurement.

Since those attacks, global military spending has grown significantly, rising from US\$839 billion in 2001<sup>1</sup> to more than US\$1.8 trillion in 2018.<sup>2</sup> A large proportion of this spending has been allocated to new weapon systems and military equipment, including artillery, small arms, automotive and armoured vehicles, military aircraft and helicopters, warships and submarines, and a wide range of other defence products. Global arms sales and trading have also increased. Total arms sales by the world's top 100 largest arms-producing companies increased by 47% between 2002 and 2018, and totalled US\$420 billion by the beginning of 2019.<sup>3</sup> Between 2015 and 2019, the volume of international arms transfers was 5.5% higher than it was between 2010 and 2014, and it was 20% higher than in the 2005-to-2009 period.<sup>4</sup>

In many countries, the volume of – and increases in – military spending have generated considerable interest in defence procurement issues among governments, militaries, domestic and international defence industries, the media and the public. In addition, growing concerns about delivery delays, cost overruns and other challenges encountered with major defence procurement projects in a number of countries have added to the interest in reviewing defence procurement organizations and processes.

Several models of defence procurement exist around the world, as shown in the appendix to this paper. Each country operates a military acquisition process that is tailored to the specific needs and requirements of its armed services but that also reflects its economy and defence industrial base. In recent years, several governments have implemented measures designed to reform and streamline their national defence procurement organizations and processes to accelerate the acquisition and improve the management of defence materiel.

This paper examines some of the existing defence procurement organizations in the industrialized world, including in Canada. After providing a general overview of the defence procurement process in Canada, the paper discusses the defence procurement organizations in the United States, India, Mexico, New Zealand, Australia, France, Germany, the United Kingdom, Pakistan, Singapore, South Korea, Turkey, South Africa, Sweden and Switzerland. Many of these countries, including Canada, are among the world's largest military spenders.<sup>5</sup> The paper then describes recent defence

procurement reforms in Canada, Australia, the United Kingdom and the United States, and highlights some of the existing defence procurement challenges for these countries.

## 2 THE CANADIAN DEFENCE PROCUREMENT PROCESS

In Canada, defence procurement is a complex process involving several federal departments and agencies, notably the Department of National Defence (DND), Public Services and Procurement Canada (PSPC), Innovation, Science and Economic Development Canada (ISED) and the Treasury Board of Canada Secretariat.<sup>6</sup> This multi-departmental approach to defence procurement, whereby each department and agency is responsible for a particular stage in the process, is unique to Canada.

### 2.1 THE DEPARTMENT OF NATIONAL DEFENCE AND PUBLIC SERVICES AND PROCUREMENT CANADA

Although the *Defence Production Act* gives PSPC the “exclusive authority” to purchase the defence products required by DND,<sup>7</sup> the two departments maintain a “partnering relationship” within the defence procurement process. They have agreed to a “division of responsibilities” for the “acquisition of goods and services” and for the “quality assurance of materiel and services, as it applies to military specifications, acquired on behalf of DND.” New weapon systems and military equipment are generally the types of defence products procured to military specifications. This division of responsibilities does not apply to “materiel and services to non-military specifications,” such as the acquisition of office supplies and civilian-type products.<sup>8</sup>

PSPC’s *Supply Manual* details the various roles and responsibilities of DND and PSPC in the defence procurement process. Although both departments are engaged in most phases of the process, each has distinct lead responsibilities within it. For example, PSPC is the lead department responsible for:

- developing the procurement plan and strategy;
- soliciting and evaluating bids;
- coordinating industry engagement; and
- preparing, awarding, administering and closing contracts.<sup>9</sup>

Among other things, DND is the lead department responsible for:

- defining operational requirements;
- developing specifications;
- preparing the procurement instrument;

- providing technical expertise;
- conducting acceptance trials and tests relating to the delivery of the materiel or services procured; and
- managing the integration of the newly acquired weapon systems and military equipment into the armed forces.<sup>10</sup>

In sum, DND establishes the requirements in terms of defence procurement, but responsibility for contracting and acquiring materiel or services rests with PSPC.

## 2.2 INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA

ISED is responsible for coordinating and administering the Government of Canada's Industrial and Technological Benefits (ITB) Policy. Introduced as part of the Defence Procurement Strategy, which was released in February 2014, the ITB Policy replaced the Industrial and Regional Benefits (IRB) Policy, which had been in place since 1986. The ITB Policy applies to defence procurement contracts announced after February 2014; the obligations under the IRB Policy continue to apply to contracts signed before that date.<sup>11</sup>

Like the IRB Policy, the ITB Policy allows the Government of Canada to use defence procurement contracts to leverage industrial and economic benefits for Canada. Contractors continue to be required to make business investments in the country's economy in an amount that is equal to 100% of a contract's value.

The main difference between the IRB Policy and the ITB Policy is a shift in focus from investments in regions to investments in technologies that are strategic to Canada and to its defence industry. Under the ITB Policy, companies bidding for defence contracts are rated based on their value proposition: the value of the industrial and technological benefits for Canada. Bidders' value propositions are evaluated and scored based on how they plan to do the following:

- invest in Canada's defence industry;
- provide work to Canadian suppliers;
- undertake research and development in Canada;
- promote exports from Canada; and
- foster skills development and training for Canada's workforce.

Bidders are also encouraged to provide gender and diversity plans, and to focus investments in certain "key industrial capabilities" that PSPC has pre-identified.<sup>12</sup>



### 2.3 TREASURY BOARD OF CANADA SECRETARIAT

The Treasury Board of Canada Secretariat is responsible, among other things, for:

- developing the Government of Canada’s overall procurement policies, directives and guidelines;
- approving preliminary funding for major capital projects that have been approved by Cabinet; and
- conducting financial oversight of those projects.<sup>13</sup>

### 2.4 OTHER FEDERAL DEPARTMENTS AND AGENCIES

Other federal departments and agencies – including the Department of Finance, the Department of Fisheries and Oceans, the Department of Foreign Affairs, Trade and Development and the Privy Council Office – are involved in different stages of the defence procurement process.<sup>14</sup>

### 2.5 GOVERNANCE AND ACCOUNTABILITY

No single department or minister is responsible for the entirety of Canada’s multi-departmental defence procurement process. However, with the introduction of the Defence Procurement Strategy, a Defence Procurement Secretariat was created within PSPC to oversee the defence procurement process and to coordinate the strategy’s implementation across the various federal departments and agencies that are involved.<sup>15</sup>

The Secretariat reports to the Deputy Ministers Governance Committee (DMGC), which is chaired by PSPC and comprises the deputy ministers from DND, ISED, the Department of Foreign Affairs, Trade and Development, and the Department of Fisheries and Oceans, which is responsible for the Canadian Coast Guard. The DMGC acts as the key decision-making body for defence procurement and provides the Working Group of Ministers with guidance on defence procurement matters.<sup>16</sup>

The Working Group of Ministers was established “to ensure shared accountability in defence procurements,” as well as to “act as a forum for discussion, advice and to resolve issues in the implementation of major procurement projects.”<sup>17</sup> It is chaired by the Minister of Public Services and Procurement and comprises the ministers from DND, ISED, the Department of Foreign Affairs, Trade and Development, and the Department of Fisheries and Oceans.<sup>18</sup>

### 3 DEFENCE PROCUREMENT MODELS IN OTHER COUNTRIES

No other country has a defence procurement model that is the same as Canada's current multi-departmental model. Instead, other countries' defence procurement models can be divided into the following five broad categories:

- procurement by individual armed services;
- procurement by defence departments;
- procurement by centralized defence organizations;
- procurement by separate government organizations; and
- procurement by independent civilian corporations.

These models are described below.

### 4 MODEL 1: INDIVIDUAL ARMED SERVICES

In several countries, the individual armed services – army, navy and air force – are responsible for acquiring the weapon systems and military equipment they require, and they operate their own procurement processes. In most cases, the procurement actions of the individual armed services are supervised by the country's defence department, which also often develops and manages the defence procurement policies and regulations used by the armed services. This model allows the individual armed services to have almost complete control over their respective defence procurement actions. The United States is among the countries that use this decentralized defence procurement model.

#### 4.1 UNITED STATES

The United States' defence procurement process is managed by the Department of Defense (DOD), with several organizations within the DOD playing a role. The Office of the Under Secretary of Defense for Acquisition and Sustainment is responsible for overseeing the procurement activities of the various segments of the DOD.<sup>19</sup> In particular, the Under Secretary is directly responsible to the U.S. Secretary of Defense

for all matters pertaining to acquisition; contract administration; logistics and materiel readiness; installations and environment; operational energy; chemical, biological, and nuclear weapons; the acquisition workforce; and the defense industrial base.<sup>20</sup>

In executing its defence procurement, each individual armed service (the U.S. Army, the U.S. Navy, the U.S. Marine Corps, the U.S. Air Force and the U.S. Coast Guard) is supported by a distinct procurement office:<sup>21</sup>

- for the U.S. Army, the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology;
- for the U.S. Navy and the U.S. Marine Corps, the Office of the Assistant Secretary of the Navy for Research, Development and Acquisition;
- for the U.S. Air Force, the Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics; and
- for the U.S. Coast Guard, the United States Coast Guard Acquisition Directorate.

Each of these procurement offices operates a range of sub-organizations that specialize in specific aspects of procurement, such as research and development, the acquisition of weapon systems, military equipment and infrastructure, the purchase of commercial products and the provision of support services.<sup>22</sup>

Moreover, some of the DOD's combatant commands – for example, U.S. Special Operations Command and U.S. Cyber Command – have their own acquisition authorities and budgets for equipping their forces.<sup>23</sup>

As well, more than 30 different DOD agencies are actively engaged in defence procurement, including the following:<sup>24</sup>

- the Defense Logistics Agency, which procures many of the supplies and services used by U.S. military forces, including food, fuel, medical supplies and spare parts;<sup>25</sup>
- the Defense Contract Management Agency, which provides contract administration services for the DOD and manages approximately 350,000 contracts valued at more than US\$5 trillion annually;<sup>26</sup>
- the Defense Advanced Research Projects Agency, which is the central research and development agency for the DOD;<sup>27</sup>
- the Missile Defense Agency, whose mission is to develop and deploy a layered missile defence system to defend the United States and its deployed forces from hypersonic and ballistic missile attacks;<sup>28</sup> and
- the National Security Agency, which is involved in signals intelligence, cryptology, cybersecurity and information security for the DOD.<sup>29</sup>

In 2019, approximately 175,000 military and civilian personnel worked in defence procurement within the various armed services, combatant commands and DOD agencies in the U.S.<sup>30</sup>

## 4.2 OTHER COUNTRIES

As in the United States, each of Ireland's armed services is primarily responsible for its defence procurement.<sup>31</sup>

## 5 MODEL 2: DEFENCE DEPARTMENTS

In some countries, the defence department has overall responsibility for procuring the weapon systems and military equipment required by its armed forces. In this context, the defence department's functions often include the following:

- administering the procurement policies, processes, budgets and other resources;
- managing individual defence procurement projects;
- liaising with industry;
- negotiating contracts with suppliers; and
- overseeing all stages involved in the purchase and delivery of defence products for the armed forces.

These activities are usually undertaken through a dedicated materiel, procurement or contracting unit within the defence department, which typically comprises both civilian and military personnel. The units generally work in close cooperation with the armed forces. India, Mexico and New Zealand are examples of countries where defence departments are responsible for defence procurement.

### 5.1 INDIA

In India, the Defence Acquisition Council (DAC) within the Ministry of Defence is responsible for procuring the defence products needed by the country's armed force. DAC was established in 2001 to oversee the entire procurement process, and its decisions are implemented by ministry units focused on defence procurement, defence production, and defence research and development.<sup>32</sup> However, in January 2020, the Ministry of Defence announced that oversight responsibility for defence procurement will soon be shared between DAC and the newly established Department of Military Affairs (DMA) within the Ministry of Defence. DAC will continue to oversee "large capital procurement requirements," such as military aircraft, tanks, surface warships and submarines. The DMA will have responsibility for "administration and revenue procurement matters" pertaining to "common user items required by the armed forces," which encompass "weapons, ammunition, explosives, vehicles, signal equipment, stores, clothing, night-vision devices and spares." DMA will also oversee maintenance and overhaul services for major defence equipment.<sup>33</sup>

## 5.2 MEXICO

In Mexico, responsibility for national defence and the armed forces rests with two separate defence departments, each of which administers relevant defence procurement programs: the Secretariat of National Defence (Secretaría de la Defensa Nacional, or SEDENA) for the army and the air force; and the Secretariat of the Navy (Secretaría de Marina, or SEMAR) for the navy.<sup>34</sup>

## 5.3 NEW ZEALAND

New Zealand's Ministry of Defence and the New Zealand Defence Force (NZDF) are responsible for defence procurement. The Secretary of Defence and the Chief of Defence Force share accountabilities for delivering defence products and capabilities to the NZDF. The Secretary of Defence leads and is accountable for the strategic policy, capability development and procurement phases of the capability life cycle, while the Chief of Defence Force leads and is accountable for the introduction-into-service, in-service and disposal phases.<sup>35</sup>

The Ministry of Defence's Capability Delivery Division oversees defence procurement and is "responsible for the total life cycle of the procurement process."<sup>36</sup> Its primary responsibility is to "lead the multi-disciplinary teams that define, develop and deliver military capability for the NZDF which meets the Government's defence policy objectives."<sup>37</sup> The teams comprise civilian and military personnel from the Ministry of Defence and the NZDF. Among other things, the Capability Delivery Division is responsible for the following:

- working with the NZDF to develop defence equipment requirements;
- obtaining government approvals for defence procurement projects;
- carrying out the tendering and evaluation processes;
- liaising with industry;
- selecting sources of supply;
- negotiating contracts; and
- managing procurement projects.<sup>38</sup>

## 5.4 OTHER COUNTRIES

Like India, Mexico and New Zealand, Czechia<sup>39</sup> and Finland<sup>40</sup> are examples of countries where defence procurement is administered and coordinated through defence departments.

## 6 MODEL 3: CENTRALIZED DEFENCE ORGANIZATIONS

A number of countries have established centralized defence organizations to manage their defence procurement process. These entities are responsible for acquiring all of the weapon systems and military equipment required by their country's armed forces. Most of these organizations operate within the purview of their country's defence department, although they generally are independent of the military and have their own budgets. Australia, France, Germany and the United Kingdom are among the countries that conduct defence procurement through centralized defence organizations.

### 6.1 AUSTRALIA

In Australia, the Capability Acquisition and Sustainment Group (CASG) – which is part of the Department of Defence – is responsible for the purchasing, through-life support and disposal of all of the weapon systems and military equipment used by the Australian Defence Force. Led by the Deputy Secretary CASG, the CASG was formed in 2015 to replace the Defence Materiel Organisation (DMO), which had been established in 2000 and operated as a prescribed agency of the Government of Australia beginning in 2005.

As of 2019, the CASG employed about 5,000 people.<sup>41</sup>

### 6.2 FRANCE

In France, a single government organization is responsible for defence procurement: the Direction générale de l'armement (DGA). Created in 1961, the DGA is the central procurement agency of the Ministère des Armées. It is responsible for the acquisition – from conception to delivery – of all weapon systems and military equipment used by France's armed forces. The DGA is also responsible for promoting export sales by the country's defence industry.

As of 2019, the DGA employed about 9,700 people.<sup>42</sup>

### 6.3 GERMANY

Established in 2012, Germany's Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (Bundesamt für Ausrüstung, Informationstechnik und Nutzung der Bundeswehr, or BAAINBw) is responsible for defence procurement. It reports to the Federal Ministry of Defense and is headed by a director-general.

With main tasks that include the development, field testing, procurement and in-service support of defence products for Germany's armed forces, the BAAINBw

essentially acts as a central purchasing agent. It is responsible for several subordinate agencies, including six technical centres, two research institutes and a naval arsenal.

As of 2019, the BAAINBw employed about 10,500 people.<sup>43</sup>

#### 6.4 UNITED KINGDOM

Defence procurement in the United Kingdom is administered by a single agency – Defence Equipment and Support (DE&S) – that describes itself as a “bespoke trading entity and arm’s length body of the Ministry of Defence.”<sup>44</sup> DE&S is headed by a chief executive officer and is overseen by the Minister for Defence Procurement, a junior defence minister within the Ministry of Defence.

DE&S was created in April 2007 through the merger of two Ministry of Defence organizations: the Defence Procurement Agency; and the Defence Logistics Organisation. The aim was to create a new integrated procurement and support organization.

As of 2019, DE&S employed approximately 12,000 people.<sup>45</sup>

#### 6.5 OTHER COUNTRIES

Like Australia, France, Germany and the United Kingdom, such other countries as Brazil,<sup>46</sup> China,<sup>47</sup> Denmark,<sup>48</sup> Estonia,<sup>49</sup> Greece,<sup>50</sup> Hungary,<sup>51</sup> Italy,<sup>52</sup> Japan,<sup>53</sup> Lithuania,<sup>54</sup> the Netherlands,<sup>55</sup> Norway<sup>56</sup> and Spain<sup>57</sup> undertake defence procurement through a centralized defence organization.

In the past, Russia had this model. However, in September 2014, the Government of Russia announced that it was disbanding its two centralized defence procurement agencies (Rosoboronzakaz and Rosoboronpostavka) and concentrating the procurement process within the country’s Ministry of Defence.<sup>58</sup>

## 7 MODEL 4: SEPARATE GOVERNMENT ORGANIZATIONS

Some countries centralize defence procurement in a single government department or agency that is independent from the country’s defence department. In most cases, these organizations are managed by civilian authorities, and they have their own chains of command and budgets. Their mandates tend to include responsibility for:

- defence procurement;
- the country’s defence industry;
- domestic production of defence products;
- defence research and development; and

- exports of defence products.

Pakistan, Singapore, South Korea and Turkey are among the countries that have this procurement model.

### 7.1 PAKISTAN

In Pakistan, defence procurement is managed by the Ministry of Defence Production, a government department that functions separately from the country's Ministry of Defence. Established in 2004, it is headed by its own Cabinet-level minister: the Federal Minister for Defence Production. The Ministry of Defence Production is responsible for:

- procuring defence products for Pakistan's armed forces;
- undertaking defence research and development;
- producing weapon systems and defence equipment; and
- promoting and overseeing Pakistani defence exports.<sup>59</sup>

### 7.2 SINGAPORE

Established in 2000, the Defence Science and Technology Agency (DSTA) is a statutory board of the Government of Singapore that is responsible for all aspects of the country's defence procurement. The DSTA is led by a chief executive who is accountable to a board of directors that operates under the leadership of a chairman. In particular, the DSTA's roles and functions include:

- acquiring weapon systems and defence equipment for Singapore's armed forces;
- advising the Ministry of Defence on all defence science and technology matters;
- designing, developing and maintaining defence equipment and infrastructure;
- providing defence-related engineering and related services; and
- promoting and facilitating the development of defence science and technology.

In 2019, the DSTA employed about 3,000 people.<sup>60</sup>

### 7.3 SOUTH KOREA

In South Korea, the Defense Acquisition Program Administration (DAPA) – which is led by the Minister of Defense Acquisition – is the government organization responsible for defence procurement and production. Established in 2006, the DAPA was created as a centralized administrative centre for:



- acquiring defence products for South Korea's armed forces;
- fostering the country's domestic defence industry;
- strengthening the accountability, transparency and efficiency of South Korea's defence procurement process; and
- improving domestic defence production capabilities.

Prior to the DAPA's establishment, eight defence organizations were responsible for defence procurement in South Korea, including each of the country's armed services.<sup>61</sup>

#### 7.4 TURKEY

Established in 1985, Turkey's Presidency of Defence Industries (SSB) is the "sole procurement authority under the Presidency of the Republic of Turkey."<sup>62</sup> It is headed by the President of Defence Industries, who reports directly to the President of the Republic of Turkey. The SSB's main function is to implement the decisions taken by Turkey's Defence Industry Executive Committee, which is the country's main decision-making body concerning defence procurement and production; it is led by the President of the Republic of Turkey and comprises the country's Vice-President, the Treasury and Finance Minister, the Minister of the Interior, the Minister of National Defence, the Commander of the Turkish Armed Forces and the President of Defence Industries.

In particular, the SSB is responsible for:

- procuring defence products for Turkey's armed forces;
- developing the country's defence industry;
- promoting Turkey's defence exports; and
- undertaking defence research and development.

The SSB originally operated under the Ministry of National Defence. It was rebranded and restructured several times before becoming affiliated with the Presidency of the Republic of Turkey in December 2017 and being renamed the SSB in July 2018.<sup>63</sup>

#### 7.5 OTHER COUNTRIES

Like Pakistan, Singapore, South Korea and Turkey, Saudi Arabia<sup>64</sup> has a single government organization that is responsible for defence procurement and production. As well, Iraq recently announced plans to establish an "independent body" to oversee defence procurement and domestic production of defence products.<sup>65</sup>

## 8 MODEL 5: INDEPENDENT CIVILIAN CORPORATIONS

In a number of countries, responsibility for defence procurement is contracted to civilian organizations that are either state-owned or part of the private sector. Such is the case in South Africa, Sweden and Switzerland, among others.

### 8.1 SOUTH AFRICA

In South Africa, defence procurement is managed by the Armaments Corporation of South Africa Ltd. (ARMSCOR), a state-owned civilian company that was created in 1948. It is controlled by a board of directors that operates under the leadership of a chairperson, and has the Minister of Defence and Military Veterans as its executive authority.<sup>66</sup>

ARMSCOR is mainly responsible for acquiring, maintaining and disposing of defence materiel for the South African National Defence Force, South Africa's Department of Defence, and any South African government departments and agencies requiring similar services, such as the South African Police Service.<sup>67</sup>

In 2019, ARMSCOR employed more than 1,460 people.<sup>68</sup>

### 8.2 SWEDEN

In Sweden, the Försvarets materielverk (Swedish Defence Materiel Administration, or FMV) was established in 1968 as an independent civil "authority under the Ministry of Defence."<sup>69</sup> It is led by a board of directors that is directly accountable to the Government of Sweden, and deals directly with the Försvarsdepartementet (Swedish Ministry of Defence). The board meets five times per year, with daily operations led by a director general.<sup>70</sup>

The FMV:

- procures the weapon systems and military equipment that the Swedish armed forces require;
- provides procurement services to such other security sector organizations as the Swedish Coast Guard, the Swedish Civil Contingencies Agency and the Swedish Police;
- assists the Swedish defence industry in promoting exports; and
- represents the Government of Sweden in international matters relating to defence procurement and materiel cooperation.<sup>71</sup>

As of 2019, the FMV employed about 1,600 employees.<sup>72</sup>

### 8.3 SWITZERLAND

In Switzerland, defence procurement is undertaken by Armasuisse, an independent procurement organization that operates outside the scope and responsibility of the Swiss armed forces. It reports directly to Switzerland's Federal Department of Defence, Civil Protection and Sport (DDPS), and its board of directors is led by a National Armaments Director who is directly accountable to the Head of the DDPS.<sup>73</sup>

Armasuisse's origins date back to the 1960s, when technical problems and massive cost overruns occurred with some major weapon systems acquired by the Swiss armed forces. These challenges prompted the Government of Switzerland to conclude that the country's armed services, which had until then purchased all defence materiel themselves, could no longer properly manage the acquisition of complex and sophisticated modern weapon systems. Consequently, in 1968, the Government centralized defence procurement under a single government organization: the Gruppe für Rüstungsdienste (Defence Procurement Agency, or GRD), which was reorganized into Armasuisse in 2000. The main reason for the reorganization was the integration, in 1999, of several government-owned armament factories formerly managed by the GRD into Rüstungs Unternehmen Aktiengesellschaft, or RUAG, a new state-owned defence technology company.<sup>74</sup>

In 2019, Armasuisse employed about 800 people.<sup>75</sup>

## 9 DEFENCE PROCUREMENT REFORMS AND CHALLENGES

The surge in global defence spending over the past two decades has placed significant pressure on the defence procurement processes of the countries with the highest military spending. In most cases, these processes have been unable to respond effectively to rising military demand or to avoid bureaucratic challenges, political influence, technological difficulties, cost overruns and delivery delays. In some countries, these challenges have generated public criticism and a desire to reform defence procurement processes in order to maximize efficiency, accelerate product delivery times, reduce costs and provide better oversight. Examples of countries that are considering or undertaking defence procurement reforms include Canada, Australia, the United Kingdom and the United States.<sup>76</sup>

### 9.1 CANADA

In recent years, DND and PSPC have implemented a number of initiatives designed to improve Canada's defence procurement process and to reduce the length of acquisition cycles.<sup>77</sup> As well, in June 2010, the Government of Canada launched the National Shipbuilding Procurement Strategy; in 2016, the strategy became known as the National Shipbuilding Strategy. Moreover, in February 2014, it announced a Defence Procurement Strategy aimed at streamlining and enhancing the efficiency of

the defence procurement process, increasing accountability, and leveraging greater industrial and economic benefits from defence contracts.<sup>78</sup> In 2017, the Government announced new initiatives to streamline and improve the defence procurement process when it released *Strong, Secure, Engaged: Canada's Defence Policy*.<sup>79</sup>

However, despite recent efforts to simplify, streamline and modernize Canada's defence procurement process, challenges continue to affect defence procurement projects.<sup>80</sup> In particular, a number of projects that are large, expensive and high-profile continue to face scheduling delays and cost overruns.<sup>81</sup>

While some observers believe that the introduction of the National Shipbuilding Strategy and the Defence Procurement Strategy are positive developments, most agree that challenges remain. They maintain that additional reforms, and more human and financial resources, are needed. As well, a number of commentators feel that the multiple ministerial points of authority and accountability under Canada's current multi-departmental defence procurement process should be addressed to reduce bureaucracy, improve the speed with which military requirements are met, avoid inefficiencies and duplication, and enhance accountability. In their view, a simpler process with a clearer line of ministerial responsibility could be achieved with a single government organization controlling defence procurement.<sup>82</sup>

Most recently, the mandate letters that the Prime Minister of Canada provided to three ministers – the Minister of National Defence, the Minister of Public Services and Procurement, and the Minister of Fisheries, Oceans and the Canadian Coast Guard – on 13 December 2019 directed those ministers to support each other in

bringing forward analyses and options for the creation of Defence Procurement Canada, to ensure that Canada's biggest and most complex National Defence and Canadian Coast Guard procurement projects are delivered on time and with greater transparency to Parliament.<sup>83</sup>

Centralizing defence procurement under a single government organization would represent a significant shift in the way that defence procurement occurs in Canada, and would end 50 years of decentralized, multi-departmental defence procurement.<sup>84</sup>

## 9.2 AUSTRALIA

Over the last decade, Australia has undertaken several defence procurement reviews and reforms. One of the most important reviews, which was commissioned by the Government of Australia in 2008, examined the DMO and the country's defence procurement process. The review resulted in 46 recommendations aimed at improving both the DMO, and the efficiency and cost-effectiveness of the acquisition process. One recommendation proposed that the DMO should be separated from the

Department of Defence and become an independent executive agency of the Government. The goal of this recommendation was greater control for the DMO over its resources and activities, and better accountability and transparency.<sup>85</sup>

Although the Government of Australia accepted 42 of the 46 recommendations, and had implemented most of the accepted reforms by 2012, it did not agree that the DMO should become an executive agency. In its view, making this change would not result in a more efficient organization, would likely affect Department of Defence operations, and would potentially entail significant costs.<sup>86</sup>

In 2014, the Minister for Defence commissioned a review of the Department of Defence to ensure that the organization remains “fit for purpose and able to promptly respond to future challenges.”<sup>87</sup> The results of the review were released in April 2015 and contained 76 recommendations, 75 of which were adopted by the Government of Australia. In particular, in finding that the DMO had become “top heavy, complex and unnecessarily deep,”<sup>88</sup> the review recommended that the DMO should be disbanded and that its core responsibilities should be transferred to a new Capability Acquisition and Sustainment Group within the Department of Defence. It also recommended that “a new organisational design and structure” should be developed for the CASG “with reduced management layers.”<sup>89</sup> The CASG officially replaced the DMO in July 2015.<sup>90</sup>

Since then, additional reforms have been introduced to improve and streamline the defence procurement process, strengthen project management accountability and reporting, revise the capability life cycle and defence investment approval process, identify challenges early in the defence procurement process, minimize risks, and enhance the training and reskilling of the CASG workforce.<sup>91</sup>

Despite these reforms, concerns about Australia’s defence procurement process remain. For example, in 2019, the Australian National Audit Office (ANAO) reported average schedule “slippage” of approximately 27% on the 26 largest defence procurement projects in 2018–2019, representing – collectively – 691 months of slippage. ANAO also reported a cumulative total budget increase of 38.0%, or A\$24.4 billion, for these major projects.<sup>92</sup>

### 9.3 UNITED KINGDOM

In the United Kingdom, several defence procurement reforms have been implemented over the last two decades, resulting in the establishment of the DE&S in 2007, as well as numerous changes to processes and oversight mechanisms.<sup>93</sup>

Despite these reforms, however, challenges with the defence procurement process continue to exist. In 2009 and 2010, for example, reports by the House of Commons Defence Committee and the National Audit Office noted significant delays and cost

overruns with existing defence procurement projects. The reports also highlighted a major funding gap between defence procurement orders and the funds available to pay for the weapon systems and military equipment ordered. The funding gap was estimated to be between £6 billion and £36 billion.<sup>94</sup>

In 2009, the Ministry of Defence ordered an independent study of the United Kingdom's defence procurement process. The study identified several challenges with the process and found that the average delay of five years for individual defence procurement projects resulted in cumulative additional costs of between £900 million and £2.2 billion annually. The study made several recommendations designed to enhance the defence procurement process and improve skills, efficiency, project management and transparency. One of the recommendations was that DE&S should cease to be part of the Ministry of Defence and should be transformed into a Government-Owned and Contractor-Operated (GOCO) company.<sup>95</sup> In 2010, the Ministry of Defence accepted most of the recommendations, but rejected the GOCO proposal.<sup>96</sup> As noted earlier, in 2014, the DE&S was reformed and transformed into a "bespoke trading entity and arm's length body of the Ministry of Defence."<sup>97</sup>

Additional reforms have since been implemented in an effort to improve and modernize the United Kingdom's defence procurement planning, process and budgeting, among other things. For example, since 2012, the Ministry of Defence has published an annual equipment plan that outlines expected expenditures for defence procurement projects over the next decade. Also, the Ministry has released several strategic documents pertaining to defence procurement, including a National Shipbuilding Strategy in September 2017, a Combat Air Strategy in July 2018 and a Defence Industrial Policy in December 2018.<sup>98</sup>

However, despite reforms and some improvements to the United Kingdom's defence procurement process, challenges persist. For instance, in 2019, the National Audit Office reported that the Ministry of Defence's equipment plan "remains unaffordable, with the Department estimating that costs [of £183.6 billion] will be £2.9 billion higher than its budget [of £180.7 billion] between 2019 and 2029."<sup>99</sup> In 2018–2019, the delays in the forecast time to complete the 27 largest defence procurement projects increased by 69 months.<sup>100</sup>

#### 9.4 UNITED STATES

Over the past decade, the Government of the United States has initiated a number of reforms aimed at improving its defence procurement process.<sup>101</sup> These reforms include introducing legislative changes to reform the process, and redrafting defence procurement policies, rules and regulations to achieve greater accountability, efficiency, effectiveness and flexibility. It has also implemented new initiatives designed to improve the overall performance of the defence procurement process, including to streamline defence procurement, eliminate unproductive practices and

bureaucratic processes, achieve greater efficiency and productivity, increase competition, strengthen oversight, improve the management and protection of intellectual property rights, reinforce cybersecurity standards for defence acquisition, control project costs, reduce delivery times, and enhance the quality and professionalism of the workforce.<sup>102</sup>

However, assessments of the success of the United States' defence procurement reforms are mixed. For example, a 2019 Government Accountability Office report noted that, despite reforms, many of the DOD's major defence procurement projects still face significant cost overruns and scheduling delays.<sup>103</sup>

## 9.5 OTHER COUNTRIES

Like Canada, Australia, the United Kingdom and the United States, such other countries as Chile,<sup>104</sup> France,<sup>105</sup> Germany,<sup>106</sup> Hungary,<sup>107</sup> India,<sup>108</sup> Iraq,<sup>109</sup> Japan,<sup>110</sup> Lithuania,<sup>111</sup> New Zealand,<sup>112</sup> the Philippines,<sup>113</sup> Saudi Arabia,<sup>114</sup> Spain,<sup>115</sup> South Korea<sup>116</sup> and Vietnam<sup>117</sup> have made reforms to their defence procurement processes in recent years. The reforms, which vary across countries, range from improving and streamlining procurement methods and processes to revising contracting and financing systems to establishing new defence procurement organizations.

However, despite such reforms, delivery delays, cost overruns and other challenges continue to affect defence procurement worldwide. For example, in 2019, the Comptroller and Auditor General of India (CAG) identified major challenges with several key Indian Air Force procurement projects and criticized India's "unjustifiably lengthy and cumbersome" defence procurement process, which the CAG said is "fraught with inordinate delays and inefficiency" and is in need of a "thorough overhaul." The CAG recommended that "an integrated autonomous procurement organization" should be established to improve the management and accelerate the delivery of defence procurement projects in India.<sup>118</sup>

## 10 CONCLUSION

Several models of defence procurement exist throughout the industrialized world, with countries choosing an approach and, generally, customizing their acquisition process to meet the specific needs and requirements of their armed forces.

With its decentralized, multi-departmental model, Canada is unique in its approach to defence procurement. Industrialized countries worldwide have adopted other models, with procurement undertaken by individual armed services, defence departments, centralized defence organizations, separate government organizations or independent civilian corporations.

That said, despite their differences and the introduction of defence procurement reforms in recent years, most processes – regardless of the model – continue to face similar challenges and criticisms. Many processes are characterized by bureaucratic hurdles, political influence, cost overruns, and delays in delivering major projects. All industrialized countries, including Canada and its closest allies, have encountered difficulties with their defence procurement processes.

In sum, no existing defence procurement model seems to be able to address adequately all of the challenges associated with defence procurement in the 21<sup>st</sup> century. These challenges include the growing complexity and rising costs associated with major weapon systems and global supply chains, as well as the increased speed of technological changes in certain fields.<sup>119</sup>

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## NOTES

1. Elisabeth Sköns et al., "Military Expenditure," in *SIPRI Yearbook 2002: Armaments, Disarmament and International Security*, Stockholm International Peace Research Institute [SIPRI].
2. Nan Tian et al., "[Trends in World Military Expenditure, 2018](#)," *SIPRI Fact Sheet*, April 2019.
3. Aude Fleurant et al., "[The SIPRI Top 100 Arms-Producing and Military Services Companies, 2018](#)," *SIPRI Fact Sheet*, December 2019.
4. Pieter D. Wezeman et al., "[Trends in International Arms Transfers, 2019](#)," *SIPRI Fact Sheet*, March 2020.
5. Nan Tian et al., "[Trends in World Military Expenditure, 2018](#)," *SIPRI Fact Sheet*, April 2019.
6. See Government of Canada, Department of National Defence [DND], "[The five stages of military equipment acquisition](#)," *Defence purchases and upgrades process*; and Government of Canada, Public Services and Procurement Canada [PSPC], *Defence Procurement Strategy*. For more information about Canada's defence procurement process, see Charles Davies, "[Understanding Defence Procurement](#)," *Canadian Military Journal*, Vol. 15, No. 2, Spring 2015; Douglas Dempster, "Capability Acquisition and Canadian Defence Policy: Programme Achievability and Resilience?," in *Canadian Defence Policy in Theory and Practice*, eds. Thomas Juneau, Philippe Lagassé and Srdjan Vucetic, Palgrave Macmillan, Cham, Switzerland, 2020; Kim Richard Nossal, *Charlie Foxtrot: Fixing Defence Procurement in Canada*, Dundurn, Toronto, 2016; Aaron Plamondon, "Equipment Procurement in Canada and the Civil–Military Relationship: Past and Present," *Calgary Papers in Military and Strategic Studies*, Occasional Paper No. 2, Centre for Military and Strategic Studies, University of Calgary, Calgary, 2008; Aaron Plamondon, *The Politics of Procurement: Military Acquisition in Canada and the Sea King Helicopter*, University of British Columbia Press, Vancouver/Toronto, 2010; Craig Stone, "Defence Procurement and the Need for Disciplined Capital Investment," in *The Public Management of Defence in Canada*, ed. Craig Stone, Breakout Education Network, Toronto, 2009; and Alan S. Williams, *Reinventing Canadian Defence Procurement: A View from the Inside*, McGill–Queen's University Press, Montréal/Kingston, Ont., 2006.
7. PSPC, "[Chapter 1 – Public Procurement](#)," in *Supply Manual*, version 2019-3, effective 12 December 2019, art. 1.20.10.
8. *Ibid.*, "[Annex 1.1.2: Specific Division of Responsibilities Agreements](#)."
9. *Ibid.*
10. *Ibid.*
11. The Industrial and Technological Benefits Policy applies to all defence procurement projects that have a value that exceeds \$100 million. All eligible projects valued between \$20 million and \$100 million are also reviewed to determine whether a value proposition may be applied. See Government of Canada, *Industrial and Technological Benefits*; Government of Canada, *Industrial and Regional Benefits Policy*; and Government of Canada, *Industrial and Technological Benefits Policy: Value Proposition Guide*, 31 May 2018.



12. There are 16 key industrial capabilities; five are classed as “emerging technologies” (advanced materials; artificial intelligence; cyber resilience; remotely piloted systems and autonomous technologies; and space systems) and 11 as “leading competencies and critical industrial services” (aerospace systems and components; armour; defence systems integration; electro-optical/infrared systems; ground vehicle solutions; in-service support; marine ship-borne mission and platform systems; munitions; shipbuilding, design and engineering services; sonar and acoustic systems; and training and simulation). See Government of Canada, [Industrial and Technological Benefits Policy: Value Proposition Guide](#), 31 May 2018, pp. 19–22.
13. See Government of Canada, [Policies, directives, standards and guidelines](#); Government of Canada, [Contracting Policy](#); Treasury Board of Canada Secretariat, [Sources of Federal Government and Employee Information \(Info Source\): Treasury Board Secretariat](#); and PSPC, “Chapter 1 – Public Procurement,” in [Supply Manual](#).
14. See Global Affairs Canada, [Government Procurement](#); and Aaron Plamondon, *The Politics of Procurement: Military Acquisition in Canada and the Sea King Helicopter*, University of British Columbia Press, Vancouver/Toronto, 2010, p. 9.
15. PSPC, [Streamlined and coordinated decision-making](#).
16. Ibid.
17. Ibid.
18. Ibid.
19. United States, Office of the Under Secretary of Defense for Acquisition & Sustainment [OUSD A&S], [Welcome](#).
20. OUSD A&S, [Ellen M. Lord, Under Secretary of Defense Acquisition & Sustainment](#).
21. U.S. Department of Defense [DOD] Instruction 5000.02 is the overarching policy governing the operation of the defence acquisition system in the United States. As the U.S. Government Accountability Office [GAO] summarized in a recent report, “DOD Instruction 5000.02 delegates responsibility for developing and procuring weapon systems to the military departments [i.e., Department of the Air Force; Department of the Army; and Department of the Navy] and other defense agencies.” See United States, GAO, [Defense Acquisitions: Information on Workforce, Organizational Structure, and Budgeting for Selected Programs](#), March 2019, pp. 6–7; DOD, *DOD Instruction 5000.02: Operation of the Adaptive Acquisition Framework*, 23 January 2020; and DOD, *DOD Instruction 5000.02T: Operation of the Defense Acquisition System*, 7 January 2015 (Incorporating Change 6, 23 January 2020).
22. For more information, see United States, [Assistant Secretary of the Navy for Research, Development & Acquisition](#); [Assistant Secretary of the Army for Acquisition, Logistics and Technology](#); [Air Force Acquisition](#); and [United States Coast Guard Acquisition Directorate](#).
23. The DOD has 11 combatant commands, each with a geographic or functional mission that provides command and control of U.S. military forces worldwide. There are six geographic and five functional commands. The geographic commands are U.S. Africa Command (AFRICOM); U.S. Central Command (CENTCOM); U.S. European Command (EUCOM); U.S. Northern Command (NORTHCOM); U.S. Indo-Pacific Command (INDOPACOM); and U.S. Southern Command (SOUTHCOM). The functional commands are U.S. Special Operations Command (SOCOM); U.S. Strategic Command (STRATCOM); U.S. Transportation Command (TRANSCOM); U.S. Cyber Command (CYBERCOM); and U.S. Space Command. See DOD, [Combatant Commands](#); and Moshe Schwartz and Jason A. Purdy, [United States Special Operations Command Acquisition Authorities](#), CRS Report for Congress, Congressional Research Service, United States Library of Congress, 9 July 2018.
24. The DOD’s agencies are commonly referred to as the “4th Estate.” According to the DOD, “the 4th Estate agencies include all organizational entities in the DOD that are not a military branch or a combatant command.” DOD agencies “within the 4th Estate provide acquisition functions for the entire DOD.” See DOD, [Acquisition Career Management in the 4th Estate](#), 20 June 2019.
25. Defense Logistics Agency, [DLA At A Glance](#).
26. Defense Contract Management Agency, [About the Agency](#).
27. Defense Advanced Research Projects Agency, [About DARPA](#).
28. Missile Defense Agency, [Agency in Brief](#), and Missile Defense Agency, [Our Mission](#).
29. National Security Agency Central Security Service, [Mission and Values](#).

30. United States, GAO, [Defense Workforce: Steps Needed to Identify Acquisition Training Needs for Non-Acquisition Personnel](#), September 2019, p. 3.
31. In Ireland, defence procurement activities are carried out by the Department of Defence's Contracts Branch and by the various military units of the country's Defence Forces; these units include the Irish Air Corps, Irish Army and Irish Naval Service. See Ireland, Department of Defence, [Procurement](#); and Ireland, Department of Defence, [How We Purchase](#).
32. See India, Ministry of Defence, [About the Ministry](#); Government of India, Ministry of Defence, [Defence Procurement Procedure 2016: Capital Procurement](#); and Deba R. Mohanty, "Who's Who in the Indian Defence Procurement and Production Sector," *Military Technology*, Vol. 40, No. 3, 2016, pp. 45–47.
33. "India Confirms Procurement Restructure," *Jane's Defence Weekly*, Vol. 57, No. 5, 29 January 2020. See also Rajat Pandit, "[New department of military affairs takes shape under the CDS](#)," *The Times of India*, 10 January 2020; and Dinakar Peri, "[Proposal on structure of Department of Military Affairs sent to Defence Ministry](#)," *The Hindu*, 14 February 2020.
34. See Jordi Díez, "Legislative Oversight of the Armed Forces in Mexico," *Mexican Studies*, Vol. 24, No. 1, Winter 2008, pp. 129–132; Mexico, Secretaría de la Defensa Nacional, [Secretaría de la Defensa Nacional](#); Mexico, Secretaría de la Defensa Nacional, [Adquisiciones y Enajenaciones](#); and Mexico, Secretaría de Marina, [Secretariat of the Navy–Mexican Navy](#).
35. New Zealand, Ministry of Defence, [Delivering Defence Capability](#).
36. New Zealand, Ministry of Defence, [Capability Delivery](#).
37. New Zealand, Ministry of Defence, [Delivering Defence Capability](#).
38. New Zealand, Ministry of Defence, [Capability Delivery](#).
39. The Armaments and Acquisition Division within Czechia's Ministry of Defence is the main entity responsible for defence procurement in the country. See Czechia, Ministry of Defence and Armed Forces, [Armaments and Acquisition Division](#).
40. In Finland, the Materiel Unit within the Ministry of Defence is the main entity responsible for administering and overseeing defence materiel policies and the procurement of defence products for the country's Defence Forces. The Materiel Unit is also responsible for international defence materiel cooperation and control of the country's exports of defence products. See Finland, Ministry of Defence, [Materiel Policy](#); Finland, Ministry of Defence, [Materiel Policy and Procurement](#); Finland, Ministry of Defence, [Materiel Policy and Project Steering](#); Finland, Ministry of Defence, [Defence Materiel Procurement](#); Finland, Ministry of Defence, [Materiel Unit](#); and Finland, Ministry of Defence, [The Steering Group of Materiel Policy](#).
41. See Australia, Department of Defence, Capability Acquisition and Sustainment Group [CASG], [About CASG](#); Australia, Department of Defence, CASG, [Who we are](#); Australia, Department of Defence, CASG, [Our leadership team](#); Australia, Department of Defence, CASG, [Our structure](#); and Australia, Department of Defence, [The CASG Business Framework: Working together to deliver Defence capability to our customers](#), 2017. For information about the disbanding of the Defence Materiel Organisation [DMO], see "Australia Disbands DMO," *Jane's Defence Weekly*, Vol. 52, No. 27, 8 July 2015.
42. See France, Direction générale de l'armement, [Présentation de la direction générale de l'armement](#); and France, Département d'histoire de l'armement, [Les origines de la Délégation générale pour l'armement](#), Comité pour l'histoire de l'armement, Paris, 2002.
43. See Germany, Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support [BAAINBw], 1 May 2018. See also Germany, BAAINBw, [BAAINBw](#).
44. United Kingdom, Ministry of Defence, "[What Defence Equipment and Support does](#)," *Defence Equipment and Support*.
45. See United Kingdom, Ministry of Defence, "[About us](#)," *Defence Equipment and Support* [DE&S]; United Kingdom, Ministry of Defence, [DE&S Organisation Chart 2020](#); and United Kingdom, Ministry of Defence, [Corporate Plan 2019–2022: Defence Equipment and Support](#).
46. For information about Brazil's Secretaria de Produtos de Defesa, or Secretariat of Defence Products [SEPROD], see Brazil, Ministério da Defesa, [Secretaria de Produtos de Defesa \(SEPROD\)](#); Brazil, "Ministério da Defesa," Organization chart, accessed April 2020; and Laxman Kumar-Behera et al., *Defence Acquisition: International Best Practices*, Pentagon Press, New Delhi, 2013.

47. For information about the Equipment Development Department of China's Central Military Commission [CMC], which was established in 2016, see China, Ministry of National Defense, [CMC](#); China, Ministry of National Defense, [Equipment Development Department](#); and "China Announces Move to Centralise Military Procurement," *Jane's Defence Weekly*, Vol. 53, No. 3, 20 January 2016.
48. For information about Denmark's Forsvarets Materieltjeneste [Defence Acquisition and Logistics Organisation], see Denmark, Ministry of Defence, [Danish Ministry of Defence Acquisition and Logistics Organisation](#).
49. For information about Estonia's Centre for Defence Investment, which was established in 2017, see Estonia, Ministry of Defence, [Centre for Defence Investment](#); Estonia, Ministry of Defence, [Defence Procurement](#); and "Lithuania Prepares to Launch Procurement Agency," *Jane's Defence Weekly*, Vol. 54, No. 12, 22 March 2017.
50. For information about Greece's General Directorate for Defense Investments and Armaments [GDDIA], see Greece, Ministry of National Defence, [General Directorate for Defense Investments and Armaments \(GDDIA\)](#).
51. For information about Hungary's Defence Procurement Agency, which was established in 2019, see "New Hungarian Defence Procurement Agency Prepares to Begin Operations," *Jane's Defence Weekly*, Vol. 57, No. 5, 29 January 2020.
52. For information about Italy's Segretariato Generale della Difesa e Direzione Nazionale degli Armamenti [Secretariat General of Defence/National Armaments Directorate], see Government of Italy, Ministry of Defence, [The Secretariat General of Defence/National Armaments Directorate](#).
53. For information about Japan's Acquisition, Technology and Logistics Agency [ATLA], which was established in 2015, see Japan, Ministry of Defence, [Missions of ATLA](#); Japan, Ministry of Defence, [Main Organizations of ATLA and their Functions](#); "Organizations;" "New Japanese Procurement Agency Chief Outlines Collaboration Vision," *Jane's Defence Weekly*, Vol. 52, No. 42, 21 October 2015; "Japan to Launch New Defence Procurement Agency," *Jane's Defence Weekly*, Vol. 52, No. 39, 30 September 2015; "Japanese MoD to Establish New Defence Agency," *Jane's Defence Weekly*, Vol. 52, No. 26, 1 July 2015; and "Japan Proposes Agency to Lead Procurement, Industry Development," *Jane's Defence Weekly*, Vol. 52, No. 12, 25 March 2015.
54. For information about Lithuania's Defence Materiel Agency, which was established in 2018, see Lithuania, Ministry of National Defence, Defence Materiel Agency under MND, [Structure and Contacts](#); and Lithuania, Ministry of National Defence, [National Defence System public procurement reform to be presented at the US-Lithuania Defense Forum](#), 28 February 2018; "Lithuania Prepares to Launch Procurement Agency," *Jane's Defence Weekly*, Vol. 54, No. 12, 22 March 2017; and "Lithuania Looking to Single Procurement Agency," *Jane's Defence Weekly*, Vol. 54, No. 3, 18 January 2017.
55. For information about the Netherlands' Defence Materiel Organisation [DMO (Netherlands)], see The Netherlands, Ministry of Defence, [Organisation](#); The Netherlands, Ministry of Defence, [Defence Materiel Organisation \(DMO\)](#); and The Netherlands, Ministry of Defence, [The tasks of the Defence Materiel Organisation](#).
56. For information about Norway's Forsvarsmateriell [Norwegian Defence Materiel Agency, or NDMA], which was established in 2016, see NDMA, [The Norwegian Defence Materiel Agency \(NDMA\)](#); and [Norway Establishes New Defense Procurement Agency](#), *Defense News*, 15 January 2016.
57. For information about Spain's Dirección General de Armamento y Material [Directorate-General of Armament and Materiel], see Spain, Ministerio de Defensa de España, [Dirección General de Armamento y Material](#); and "Spanish Government Approved Defence Procurement Reforms," *Jane's Defence Weekly*, Vol. 51, No. 27, 2 July 2014.
58. See President of Russia, [Executive Order Abolishing Rosoboronpostavka and Rosoboronzakaz Signed](#), 8 September 2014; and "Russia Scraps Defence Procurement Agencies," *Jane's Defence Weekly*, Vol. 51, No. 38, 17 September 2014.
59. See Pakistan, [Ministry of Defence Production, About Us: Mission and Functions](#); Pakistan, [Ministry of Defence Production, About Us: History](#); Pakistan, [Ministry of Defence Production, About Us: Federal Minister](#); and Pakistan, Ministry of Defence Production, [Year Book 2017–2018: Part – I](#).
60. See Singapore, Ministry of Defence, [Defence Procurement](#); Singapore, Defence Science and Technology Agency [DSTA], [Overview](#); Singapore, DSTA, [DSTA Board](#); Singapore, DSTA, [Management Team](#); Singapore, DSTA, [Overview of Defence Procurement](#); and Singapore, DSTA, [People Excellence Award 2016: Executive Summary Report](#).

61. The eight organizations were the Ministry of Defense, the Joint Chiefs of Staff, the Army, the Navy, the Air Force, the Marine Corps, the Coast Guard and the Defense Procurement Agency. See South Korea, Defense Acquisition Program Administration [DAPA], "[Introduction](#)," *About DAPA*; South Korea, DAPA, "[Minister](#)," *About DAPA*; and South Korea, DAPA, "[Organization](#)," *About DAPA*.
62. Turkey, Presidency of the Republic of Turkey, Presidency of Defence Industries [SSB], [Turkish Defence Industry Product Catalogue](#), 2019, p. 7.
63. Before July 2018, the SSB was known as the Undersecretariat for Defence Industries. See Turkey, SSB, "[About Us](#)," *Corporate*; Turkey, SSB, "[Defence Industry Executive Committee \(SSIK\)](#)," *Corporate*; and Turkey, SSB, [Organization Chart](#).
64. For information about Saudi Arabia's General Authority for Military Industries [GAMI], see "GAMI, SAMI: The New Defence Procurement Decision-Makers," *Intelligence Online*, 11 April 2018; and "Saudi Government Outlines 11 Functions of New Procurement, Industry Body," *Jane's Defence Weekly*, Vol. 54, No. 34, 23 August 2017, p. 20.
65. For information about Iraq's Military Industries Authority, see "Iraq Establishes Procurement Authority," *Jane's Defence Weekly*, Vol. 56, No. 40, 2 October 2019.
66. See Armaments Corporation of South Africa SOC Ltd. [ARMSCOR], "[Historical Overview](#)," *History*; ARMSCOR, [Corporate Information](#); ARMSCOR, [What We Do](#); ARMSCOR, "[Board of Directors](#)," *BOD*; and ARMSCOR, "[Executive Committee](#)," *Exco*.
67. See ARMSCOR, [Vision & Mission](#); and ARMSCOR, [Acquisition](#).
68. See ARMSCOR, [Annual Report 2018/19](#), 2019, p. 96.
69. Swedish Defence Materiel Administration [FMV], [About FMV](#).
70. See FMV, [The Swedish Defence Materiel Administration](#); and FMV, [About FMV](#).
71. See FMV, [About FMV](#); FMV, [Procurement](#); and FMV, [Supplier Information](#).
72. See FMV, [About FMV](#); See also: FMV, *Questions and answers about FMV*, consulted December 2019.
73. See Switzerland, Armasuisse, [Organization](#); and Switzerland, Armasuisse, [The Competence Sectors](#).
74. See Switzerland, Armasuisse, [Organization](#); Switzerland, Armasuisse, [The Competence Sectors](#); Switzerland, Armasuisse, Factsheet 2019; Switzerland, Armasuisse, [Brochure armasuisse: armasuisse – the Competence Sectors](#); and Switzerland, "Armasuisse for Defence Procurement," *Military Technology*, Vol. 34, No. 7, 2010, pp. 118–120. For information about *Rüstungs Unternehmen Aktiengesellschaft* [RUAG], see RUAG, [About RUAG](#).
75. Switzerland, Armasuisse, *Factsheet 2019*.
76. For general studies of defence procurement reforms outside Canada, see Ugurhan G. Berkok, ed., *Studies in Defence Procurement*, Queen's University, Kingston, Ont., 2006; Ross Fetterly, *Defence Procurement Reform in Other Nations*, Defence Management Studies Program, School of Policy Studies, Queen's University, Kingston, Ont., 2009; and Laxman Kumar-Behera et al., *Defence Acquisition: International Best Practices*, Pentagon Press, New Delhi, 2013.
77. See PSPC, [Defence Procurement Strategy](#); and Alan S. Williams, *Reinventing Canadian Defence Procurement: A View from the Inside*, McGill-Queen's University Press, Montréal/Kingston, Ont., 2006, pp. 95–96 and pp. 159–160.
78. See Martin Auger, [The Evolution of Defence Procurement in Canada](#), Publication no. 2016-09-E, Parliamentary Information and Research Service, Library of Parliament, Ottawa, 4 February 2016; Martin Auger, [Canada's Defence Procurement Strategy](#), HillNotes, Library of Parliament, 25 February 2016; Martin Auger, [National Shipbuilding Procurement Strategy: An Update](#), HillNotes, Library of Parliament, 2 July 2015; Martin Auger, [The National Shipbuilding Procurement Strategy: A Five-Year Assessment](#), Publication no. 2015-35-E, Parliamentary Information and Research Service, Library of Parliament, Ottawa, 15 June 2015; and Martin Auger, [Defence Procurement Organizations: A Global Comparison](#), Publication no. 2014-82-E, Parliamentary Information and Research Service, Library of Parliament, Ottawa, 14 October 2014.
79. DND, [Strong. Secure. Engaged: Canada's Defence Policy](#), 2017, pp. 74 and 112. See also PSPC, [Defence Procurement Strategy](#).

80. According to DND, about “90% of procurements are delivered within their planned scope and budget.” On average, DND manages more than 12,000 contracts annually. See DND, [Defence Investment Plan 2018: Annual Update 2019](#), 2019, p. 13.
81. For example, see Office of the Auditor General of Canada, [Canada’s Fighter Force](#), Report 3 in *Reports of the Auditor General of Canada – Fall 2018*, 2018; Office of the Parliamentary Budget Officer, [The Cost of Canada’s Surface Combatants: 2019 Update](#), Ottawa, 21 June 2019; and David Perry, [2016 Status Report on Major Equipment Procurement](#), School of Public Policy Publications [University of Calgary], Vol. 10, No. 22, September 2017.
82. For example, see Jeffrey Collins, [Defence Procurement Canada: Opportunities and Constraints](#), Canadian Global Affairs Institute [CGAI], December 2019; Charles Davies, [Canada’s Defence Procurement Strategy: An End or a Beginning?](#), Conference of Defence Association [CDA] Institute, September 2014; Vern Kakoschke, [Financing Capital Assets: The Missing Link in Defence Procurement](#), CGAI, February 2020; Ian Mack, [A Single Canadian Defence Procurement Agent](#), CGAI, December 2019; Jon Mack, “Defence Procurement – Is it Broken?,” *Frontline Defence*, Vol. 16, No. 1, 2019; Kim Richard Nossal, *Charlie Foxtrot: Fixing Defence Procurement in Canada*, Dundurn, Toronto, 2016; David Perry, [The Defence Procurement Outlook for Canada’s 43<sup>rd</sup> Parliament](#), CGAI, December 2019; Dave Perry, [Putting the ‘Armed’ Back into the Canadian Armed Forces: Improving Defence Procurement in Canada](#), CDA Institute, January 2015; David Perry, [Fixing Procurement](#), CGAI, July 2016; Elinor Sloan, [Something Has to Give: Why Delays Are the New Reality of Canada’s Defence Procurement Strategy](#), Canadian Defence and Foreign Affairs Institute, October 2014; Elinor Sloan, “Organizing for Defence Procurement,” *Frontline Defence*, Vol. 14, No. 4, 2017; J. Craig Stone, “[Improving the Acquisition Process in Canada](#),” *SPP Research Papers*, University of Calgary, School of Public Policy, Vol. 8, No. 16, April 2015; J. Craig Stone, [The Demise of the National Shipbuilding Strategy: Is it Inevitable?](#), CGAI, October 2019; and Alan Williams, “Fixing Defence Procurement (It’s Not Rocket Science),” *Frontline Defence*, No. 2, 2014.
83. Justin Trudeau, Prime Minister of Canada, [Minister of Public Services and Procurement Mandate Letter](#), 13 December 2019. See also Justin Trudeau, Prime Minister of Canada, [Minister of National Defence Mandate Letter](#), 13 December 2019; and Justin Trudeau, Prime Minister of Canada, [Minister of Fisheries, Oceans and the Canadian Coast Guard Mandate Letter](#), 13 December 2019.
84. Martin Auger, [The Evolution of Defence Procurement in Canada](#), Publication no. 2016-09-E, Parliamentary Information and Research Service, Library of Parliament, Ottawa, 4 February 2016.
85. Australia, [Going to the Next Level: The Report of the Defence Procurement and Sustainment Review](#), 2008.
86. See Australia, Department of Defence, [The Response to the Report of the Defence Procurement and Sustainment Review: The Mortimer Review](#), May 2009, pp. 1–46; and Australia, DMO, [Implementing the Mortimer Review](#), Fact Sheet, May 2009. Also see DMO, “Defence Procurement Reform Update,” 18 June 2012.
87. Australian National Audit Office [ANAO], [Defence’s Implementation of the First Principles Review](#), 2018, p. 7.
88. Australia, Department of Defence, [First Principles Review: Creating One Defence](#), April 2015, p. 35.
89. Ibid.
90. See “Australia Disbands DMO,” *Jane’s Defence Weekly*, Vol. 52, No. 27, 8 July 2015; and “Australia Signals Major Shake Up of ‘Wasteful and Inefficient’ DOD,” *Jane’s Defence Weekly*, Vol. 52, No. 14, 8 April 2015.
91. See ANAO, [Defence’s Quarterly Performance Report on Acquisition and Sustainment – Department of Defence](#), 2019, pp. 7–11; ANAO, [Defence’s Implementation of the First Principles Review](#), 2018, pp. 46–55; ANAO, [Defence’s Management of Materiel Sustainment – Department of Defence](#), 2017, p. 11; and Australia, Department of Defence, [Defence Procurement Policy Manual](#), Version 1.5, 1 July 2019, and Australia, Department of Defence, [Defence Industrial Capability Plan](#), 2018.
92. ANAO, [2018–19 Major Projects Report – Department of Defence](#), 2019, pp. 11–15; and “Cost of 26 Major Australian Defence Projects Rises by 38%,” *Jane’s Defence Weekly*, Vol. 57, No. 1, 1 January 2020.
93. See Louisa Brooke-Holland, [An introduction to defence procurement](#), Briefing Paper Number CBP 08486, United Kingdom House of Commons Library, 28 January 2019; and Ross Fetterly, *Defence Procurement Reform in Other Nations*, Defence Management Studies Program, School of Policy Studies, Queen’s University, Kingston, Ont., 2009, pp. 15–23.

94. See United Kingdom, House of Commons Defence Committee, [Defence Equipment 2010: Sixth Report of Session 2009–10](#), 23 February 2010, pp. 1–64; and United Kingdom, National Audit Office [NAO], [Ministry of Defence: The Major Projects Report 2009](#), 15 December 2009; United Kingdom, NAO, [Ministry of Defence: The Major Projects Report 2009: Appendices and Project Summary Sheets](#), 15 December 2009; United Kingdom, NAO, [Ministry of Defence: The Major Projects Report 2010](#), 15 October 2010; and United Kingdom, NAO, [Ministry of Defence: The Major Projects Report 2010 – Appendices and Project Summary Sheets](#), 15 October 2010.
95. Bernard Gray, [Review of Acquisition for the Secretary of State for Defence: An independent report by Bernard Gray](#), October 2009.
96. United Kingdom, Ministry of Defence [MOD], [The Defence Strategy for Acquisition Reform](#), The Stationery Office Limited, London, February 2010.
97. See United Kingdom, MOD, [Defence Equipment and Support: Framework Document](#), 13 May 2014; and United Kingdom, MOD, [Defence Equipment and Support: Corporate Plan 2014–2017](#).
98. See Louisa Brooke-Holland, [An introduction to defence procurement](#), Briefing Paper Number CBP 08486, United Kingdom House of Commons Library, 28 January 2019, pp. 6–14; Lord Levene of Portsoken et al., [Defence Reform: An independent report into the structure and management of the Ministry of Defence](#), June 2011, pp. 50–52; and United Kingdom, MOD, [Better Defence Acquisition: Improving how we procure and support Defence equipment](#), June 2013.
99. United Kingdom, NAO, [Ministry of Defence: The Equipment Plan 2019 to 2029](#), 27 February 2020, p. 6.
100. United Kingdom, MOD, [The Defence Equipment Plan 2019: Financial Summary](#), 27 February 2020, p. 50.
101. See Ross Fetterly, *Defence Procurement Reform in Other Nations*, Defence Management Studies Program, School of Policy Studies, Queen’s University, Kingston, Ont., 2009; J. Ronald Fox, [Defence Acquisition Reform, 1960–2009: An Elusive Goal](#), U.S. Army Center of Military History, Washington, D.C., 2011; Amanda L. McGowin et al., “[A Text Mining Analysis of Acquisition Reforms and Expert Views](#),” *Defence Acquisition Research Journal*, Vol. 25, No. 3, October 2018; and Moshe Schwartz, [Defence Acquisitions: How DOD Acquires Weapon Systems and Recent Efforts to Reform the Process](#), CRS Report for Congress, Congressional Research Service, United States Library of Congress, 23 May 2014.
102. See Moshe Schwartz and Heidi M. Peters, [Acquisition Reform in the FY2016–FY2018 National Defense Authorization Acts \(NDAA’s\)](#), CRS Report for Congress, Congressional Research Service, United States Library of Congress, 19 January 2018; Jim Garamone, [Transformational Change Comes to DOD Acquisition Policy](#), DOD, 21 October 2019; and United States, DOD, [Undersecretary of Defense Lord Holds Press Briefing on Acquisition Reform and Innovation](#), 26 August 2019; United States, GAO, [DOD Acquisition Reform](#), June 2019, pp. 1–80; Amanda L. McGowin et al., “[A Text Mining Analysis of Acquisition Reforms and Expert Views](#),” *Defence Acquisition Research Journal*, Vol. 25, No. 3, October 2018; Carlo Munoz, “Pentagon unveils cybersecurity standards for defence acquisition,” *Jane’s 360*, 5 February 2020; Moshe Schwartz, [Defence Acquisitions: How DOD Acquires Weapon Systems and Recent Efforts to Reform the Process](#), CRS Report for Congress, Congressional Research Service, United States Library of Congress, 23 May 2014, pp. 15–18; and Kimberly Underwood, “[DOD Targets Acquisition Reform](#),” *Signal*, 10 May 2019.
103. United States, GAO, [Weapon Systems Annual Assessment](#), May 2019.
104. For example, see Jose Higuera, “Chile suspends new procurement funding legislation and keeps Cooper Law going,” *Jane’s 360*, 24 April 2020; “Chile’s New Procurement Funding System Initiated,” *Jane’s Defence Weekly*, Vol. 56, No. 38, 18 September 2019; and “Chile Prepares for Long-Term Procurement Under New Funding System,” *Jane’s 360*, 25 January 2019.
105. For example, see “France Reorganises DGA,” *Jane’s Defence Weekly*, Vol. 55, No. 29, 18 July 2018.
106. For example, see Marc Selinger, “Germany’s defence procurement reforms become law,” *Jane’s 360*, 2 April 2020.
107. For example, see “New Hungarian Defence Procurement Agency Prepares to Begin Operations,” *Jane’s Defence Weekly*, Vol. 57, No. 5, 29 January 2020.

108. For example, see "India Confirms Procurement Restructure," *Jane's Defence Weekly*, Vol. 57, No. 5, 29 January 2020); "India to include 'innovation' scheme in procurement procedures," *Jane's 360*, 22 January 2020; "India Set to Review Defence Procurement Processes," *Jane's Defence Weekly*, Vol. 56, No. 35, 28 August 2019, p. 19; "Defence Procurement Procedure: The Latest Changes," *Geopolitics*, Vol. 9, No. 10, March 2019, pp. 46–49; "India's DAC Updates Defence Procurement Processes," *Jane's Defence Weekly*, Vol. 55, No. 4, 24 January 2018; "India Considers Dedicated Defence Procurement Agency," *Jane's Defence Weekly*, Vol. 54, No. 12, 22 March 2017; Gurmeet Kanwal and Neha Kohli, eds., *Defence Reforms: A National Imperative*, Pentagon Press, New Delhi, 2018, pp. 187–188; and Prakash Katoch, "[New Defence Procurement Organization – payoffs?](#)," *Indian Defence Review*, 31 May 2017.
109. For example, see "Iraq Establishes Procurement Authority," *Jane's Defence Weekly*, Vol. 56, No. 40, 2 October 2019.
110. For example, see "Japan to Launch New Defence Procurement Agency," *Jane's Defence Weekly*, Vol. 52, No. 39, 30 September 2015; "Japanese MoD to Establish New Defence Agency," *Jane's Defence Weekly*, Vol. 52, No. 26, 1 July 2015; and "Japan Proposes Agency to Lead Procurement, Industry Development," *Jane's Defence Weekly*, Vol. 52, No. 12, 25 March 2015.
111. For example, see "Lithuania Prepares to Launch Procurement Agency," *Jane's Defence Weekly*, Vol. 54, No. 12, 22 March 2017; and "Lithuania Looking to Single Procurement Agency," *Jane's Defence Weekly*, Vol. 54, No. 3, 18 January 2017.
112. For example, see Jon Grevatt, "New Zealand updates defence procurement rules, maintains ban on offsets," *Jane's 360*, 11 July 2019; and "New Zealand Names New Chief for Reorganised Procurement Division," *Jane's Defence Weekly*, Vol. 53, No. 5, 3 February 2016.
113. For example, see Jon Grevatt, "Philippines signals procurement reform," *Jane's 360*, 21 March 2019; and "Manila Rolls Out Procurement Plans," *Jane's Defence Weekly*, Vol. 52, No. 19, 13 May 2015.
114. For example, see Ben Vogel, "New Saudi procurement law comes into force in November," *Jane's 360*, 7 August 2019; and "Saudi Government Outlines 11 Functions of New Procurement, Industry Body," *Jane's Defence Weekly*, Vol. 54, No. 34, 23 August 2017.
115. For example, see "Spanish Government Approves Defence Procurement Reforms," *Jane's Defence Weekly*, Vol. 51, No. 27, 2 July 2014.
116. For example, see "South Korea Passes Legislation to Support an 'Export-Oriented Defence Industry,'" *Jane's Defence Weekly*, Vol. 57, No. 4, 22 January 2020; Jon Grevatt, "South Korea's DAPA launches 'cost structure' reforms," *Jane's 360*, 18 July 2019; "DAPA Announces Defence Contract Reforms," *Jane's 360*, 29 January 2019; "South Korea to Revise its Defence Contracting System," *Jane's Defence Weekly*, Vol. 55, No. 51, 19 December 2018; "South Korea Announces Defence Procurement Reforms," *Jane's Defence Weekly*, Vol. 55, No. 33, 15 August 2018; and "South Korea Introduces Procurement Reforms," *Jane's Defence Weekly*, Vol. 53, No. 1, 6 January 2016.
117. For example, see "Vietnam Issues Defence Procurement Directive," *Jane's Defence Weekly*, Vol. 57, No. 6, 5 February 2020.
118. See Office of the Comptroller and Auditor General of India, [Performance Audit Report of the Comptroller and Auditor General of India on Capital Acquisition in Indian Air Force](#), February 2019; and Rahul Bedi, "India's CAG criticises defence procurement procedures," *Jane's 360*, 14 February 2019.
119. See Jeffrey A. Drezner et al., [Are Ships Different? Policies and Procedures for the Acquisition of Ship Programs](#), RAND, 2011; Mark V. Arena et al., [Why Has the Cost of Fixed-Wing Aircraft Risen? A Macroscopic Examination of the Trends in U.S. Military Aircraft Costs over the Past Several Decades](#), RAND, 2008; Obaid Younossi et al., [Is Weapon System Cost Growth Increasing? A Quantitative Assessment of Completed and Ongoing Programs](#), RAND, 2007; Mark V. Arena et al., [Historical Cost Growth of Completed Weapon System Programs](#), RAND, 2006; and John Birkler et al., [Differences Between Military and Commercial Shipbuilding: Implications for the United Kingdom's Ministry of Defence](#), RAND, 2005.

## APPENDIX – DEFENCE PROCUREMENT MODELS USED BY SELECTED COUNTRIES

Defence Procurement Model	Selected Countries Using the Model
Multiple government departments	<ul style="list-style-type: none"> <li>▪ Canada*</li> </ul>
Individual armed services	<ul style="list-style-type: none"> <li>▪ Ireland</li> <li>▪ United States*</li> </ul>
Defence department	<ul style="list-style-type: none"> <li>▪ Czechia*</li> <li>▪ Finland</li> <li>▪ India</li> <li>▪ Mexico</li> <li>▪ New Zealand</li> <li>▪ Russia</li> </ul>
Centralized defence organization	<ul style="list-style-type: none"> <li>▪ Australia</li> <li>▪ Brazil</li> <li>▪ China</li> <li>▪ Denmark*</li> <li>▪ Estonia*</li> <li>▪ France*</li> <li>▪ Germany*</li> <li>▪ Greece*</li> <li>▪ Hungary*</li> <li>▪ Italy*</li> <li>▪ Japan</li> <li>▪ Lithuania*</li> <li>▪ Norway*</li> <li>▪ Spain*</li> <li>▪ The Netherlands*</li> <li>▪ United Kingdom*</li> </ul>
Separate government organization	<ul style="list-style-type: none"> <li>▪ Pakistan</li> <li>▪ Saudi Arabia</li> <li>▪ Singapore</li> <li>▪ South Korea</li> <li>▪ Turkey*</li> </ul>
Independent civilian corporation	<ul style="list-style-type: none"> <li>▪ South Africa</li> <li>▪ Sweden</li> <li>▪ Switzerland</li> </ul>

Note: \* Denotes a North Atlantic Treaty Organization (NATO) member state.

Source: Table developed by the author using various sources listed in the endnotes.