



CANADIAN ASSOCIATION
OF DEFENCE AND SECURITY
INDUSTRIES

ASSOCIATION DES INDUSTRIES
CANADIENNES DE DÉFENSE
ET DE SÉCURITÉ

The State of Canada's Defence Industry, 2014

The Canadian Defence Industry: Overview

The State of Canada's Defence Industry, 2014 confirms that Canada's defence industry is high wage, export intensive, technology rich, and pan-Canadian. Some key findings include:

- The Canadian defence industry accounted for some 63,000 jobs spread throughout Canada, and contributed \$6.7 billion to GDP in 2014.
- Engineers, scientists, researchers, technicians and technologists comprise over 30 per cent of the workforce, which is an important barometer of the sector's innovative nature.
- Defence industry compensation is 60 per cent above the manufacturing sector average; and 60 per cent of Canadian defence industry revenues are from export sales.

These findings are all strong indicators of the innovative and globally competitive nature of Canada's defence industry.

Roughly two thirds of firms in the industry have significant commercial/civil business lines, which speaks to the dual capacity of many defence technologies and products.

This report reveals that companies that make up the Canadian defence industrial base and the types of jobs they offer are what Canada needs and what governments should value in today's highly competitive global economy.

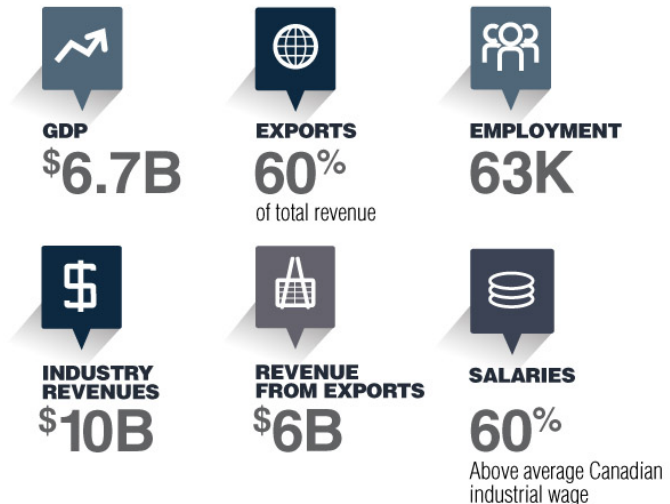
The Canadian defence industry is spread throughout Canada with strong regional specialisations and niche capabilities:

- 17 per cent of total employment is in Atlantic Canada;
- 24 per cent is in Quebec;
- 44 per cent is in Ontario; and
- 15 per cent is in Western & Northern Canada.

Canadian owned firms accounted for over 50 per cent of the defence industry's direct employment.

The Canadian defence industry has a strong manufacturing base with 39 per cent of the sector's workforce engaged in production with average compensation close to 60 per cent above that of the manufacturing sector.

Canadian Defence Sector's Economic Impact: At a Glance



About *The State of Canada's Defence Industry, 2014*

The State of Canada's Defence Industry, 2014 is the report resulting from a rigorous and comprehensive economic study conducted by the Department of Innovation, Science and Economic Development Canada and Statistics Canada, in collaboration with the Canadian Association of Defence and Security Industries (CADSI). It is the result of a strategic and valued partnership between ISED and CADSI, on behalf of Canada's defence industrial base.

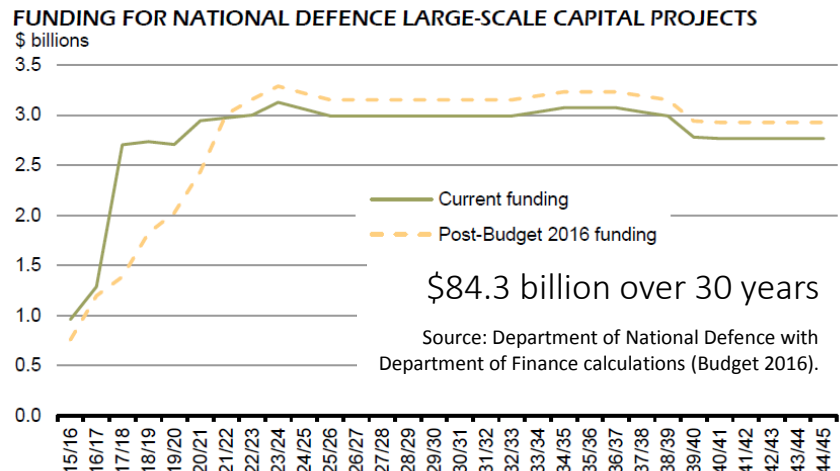
The full report can be found at: www.madeacrosscanada.ca

The Re-Capitalization Opportunity

Canada is in the midst of a once in a lifetime opportunity as the Canadian Armed Forces (CAF) undertakes its first major re-capitalization in over a generation. This began more than ten years ago when the Department of National Defence (DND) received its largest funding increase in three decades.

The funding infusion required by this re-capitalization is starting to have an impact on DND's equipment re-capitalization. Much more is to come in the near future. Two projects alone,

the Canadian Surface Combatant and the Next Generation Fighter—which taken together are valued at \$35 billion or more for the equipment purchase and billions more for the longer-term sustainment work—will impact the defence industrial base in this country for the next thirty years. How the government structures these procurements will shape the Canadian defence industry's technological reach and labour force for the foreseeable future. This shaping should not occur by unintended consequences. For example, the government could mandate that foreign owned firms maximize sourcing from Canadian suppliers, strongly support technological innovations that are Canadian and world-class, and have Canadian Armed Forces fleets supported and repaired by Canadian firms. The re-capitalization of the CAF represents a once in a generation opportunity for Canada to adjust its thinking about defence procurement and its relationship to Canadian sovereignty and economic interests.



Realizing the Opportunity

Canada has something to learn from its allies, all of whom manage their defence sector for both national security and domestic economic reasons. This is the main reason defence is exempt or carved out from international trade agreements. For example, the United Kingdom and Australia both have formal defence industrial policies, which benefit their governments, their armed forces and their industry.

To realize Canada's defence sector's potential as a real source of innovation-led growth and address Canada's unique security challenges and economic opportunities, the Canadian defence industry recommends that the government develops, in collaboration with industry, a made in Canada defence industrial policy. This would serve to strengthen Canada's defence posture, as well as link two of the government's key priorities, the Defence Review and the Innovation Agenda, ultimately bolstering Canadian prosperity. Together, government and industry can build on a solid industrial foundation that is high wage, export intensive, technology rich, and pan-Canadian.

Supporting Documents

1. CADSI's submission to the Minister of National Defence's Advisory Panel on the Defence Review, *At a Crossroads: Canadian Defence Policy and the Canadian Defence Industrial Base*. April 2016 (https://www.defenceandsecurity.ca/UserFiles/File/Events2016/DefenceReview/CADSI_Defence_Review_2016_Submission.pdf)
2. Christyn Cianfarani, Globe and Mail Report on Business, *Military procurement can help break Canada's innovation logjam*, April 21, 2016. <http://fw.to/MGen6uM>



STATE OF CANADA'S DEFENCE INDUSTRY

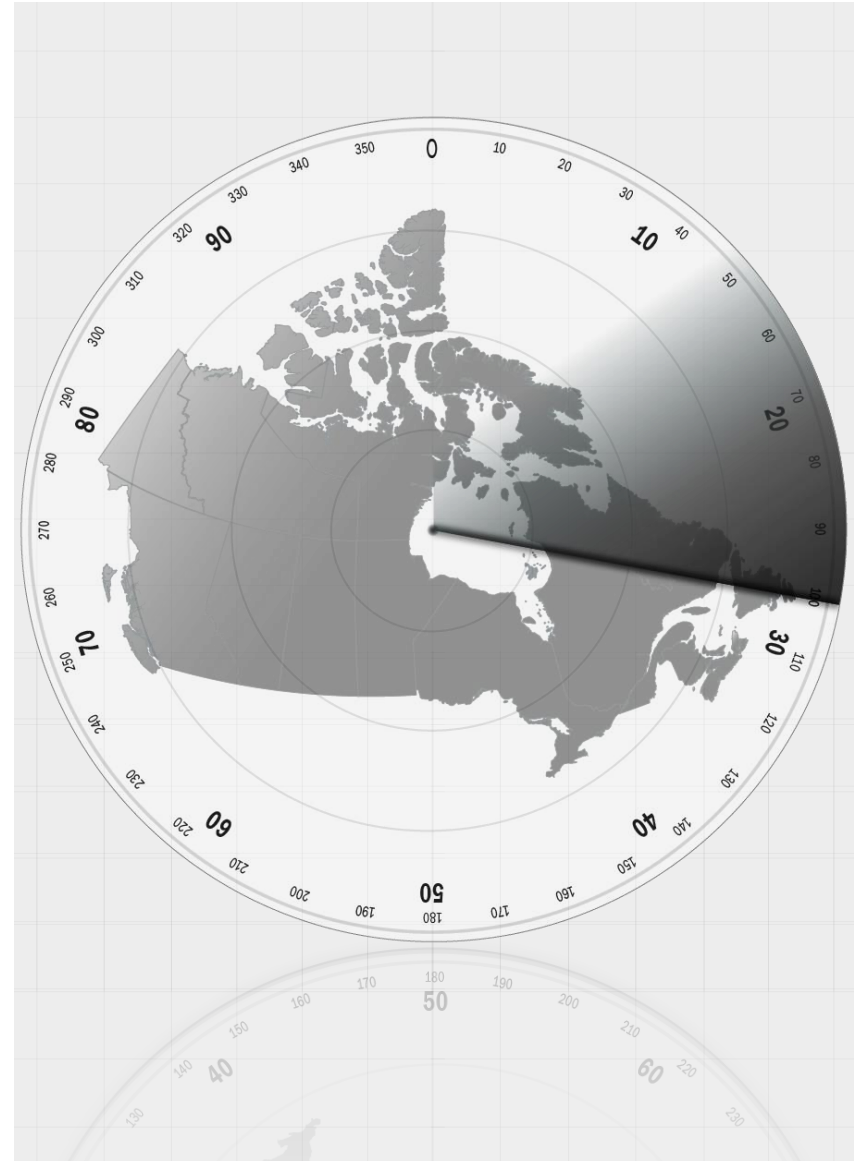
2014

PRESENTED BY



Innovation, Science and
Economic Development Canada

Innovation, Sciences et
Développement économique Canada



FEATURES OF CANADA'S DEFENCE INDUSTRY, 2014



Building Analytic Capacity
through Collaborative Research



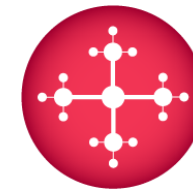
Economic
Impact



Innovation



Exports



Supply
Chains



Key Findings



Annexes

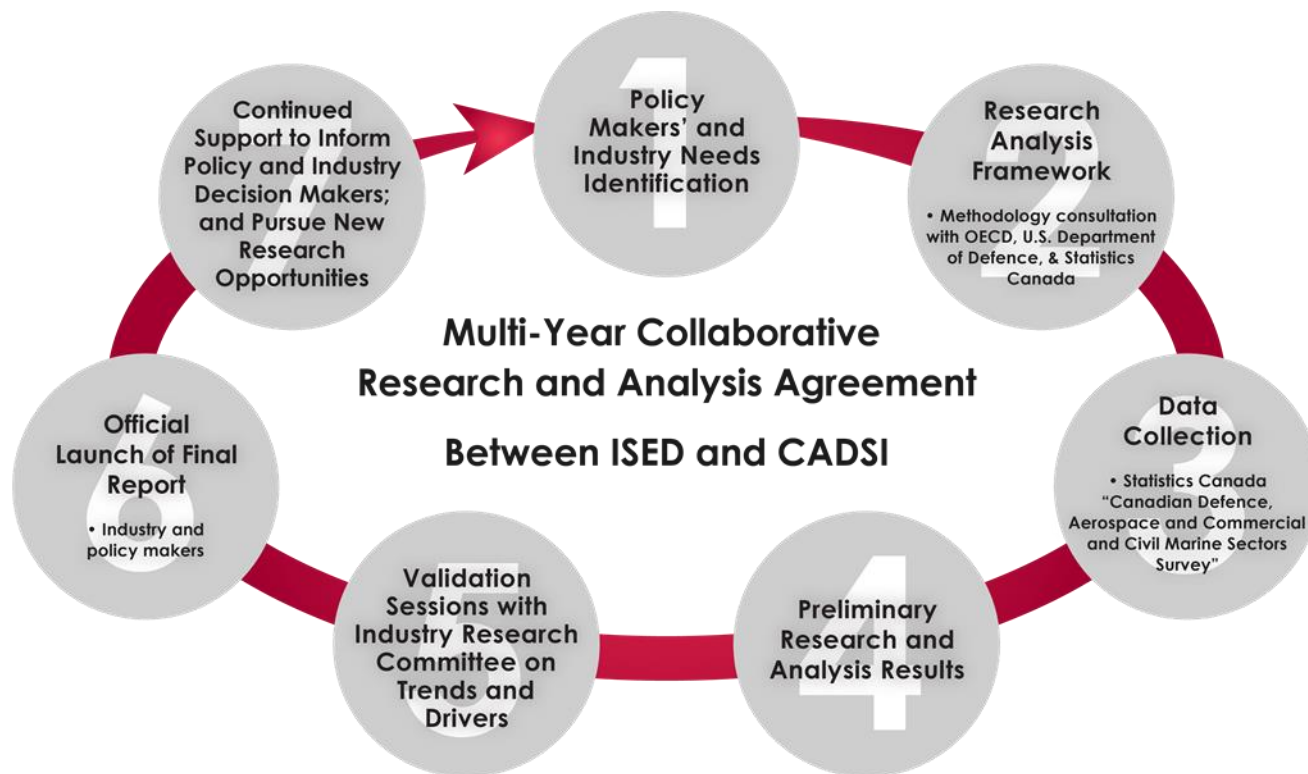
CANADIAN DEFENCE INDUSTRY METRICS

- Relevant, quality and timely data on Canadian defence industrial activity informs effective development and implementation of policies, programs and practices related to defence procurement, industrial economic development and innovation
- Standard industrial classifications mix non-defence and defence activities and cannot be used to effectively identify and measure defence goods and services
- Firms' activities vary significantly, and publicly disclosed firm-level data has been insufficient for accurate and comprehensive defence industry estimates
- The development of statistically reliable survey-based estimates was required to establish a shared understanding of defence industrial activity by businesses' operations in Canada
- ISED collaborated with industry and government stakeholders to refine its latest multi-sector survey done through Statistics Canada*

* Statistics Canada "[*Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014*](#)" (Released 2016).

COLLABORATIVE PROCESS TO BUILD ANALYTIC CAPACITY

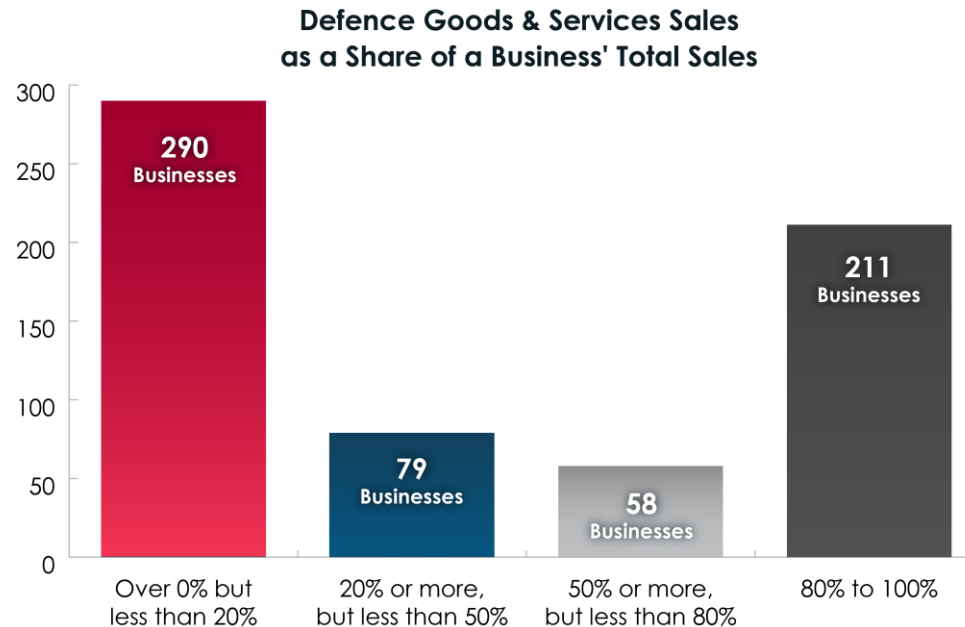
- ISED joined forces with CADSI to publicly release a new report on Canada's defence industry for decision makers
 - *Defence industry results reflect activities relating to 18 categories of defence goods and services produced in 2014 by business operations in Canada**



* See Annex A for the listing of the 18 defence goods and services categories with their full official titles.

THE CANADIAN DEFENCE INDUSTRY HAD SALES OF ALMOST \$10B* IN GOODS AND SERVICES, PRODUCED BY CLOSE TO 640 FIRMS IN 2014

Commercial/Civil - Focused ← → Defence - Focused

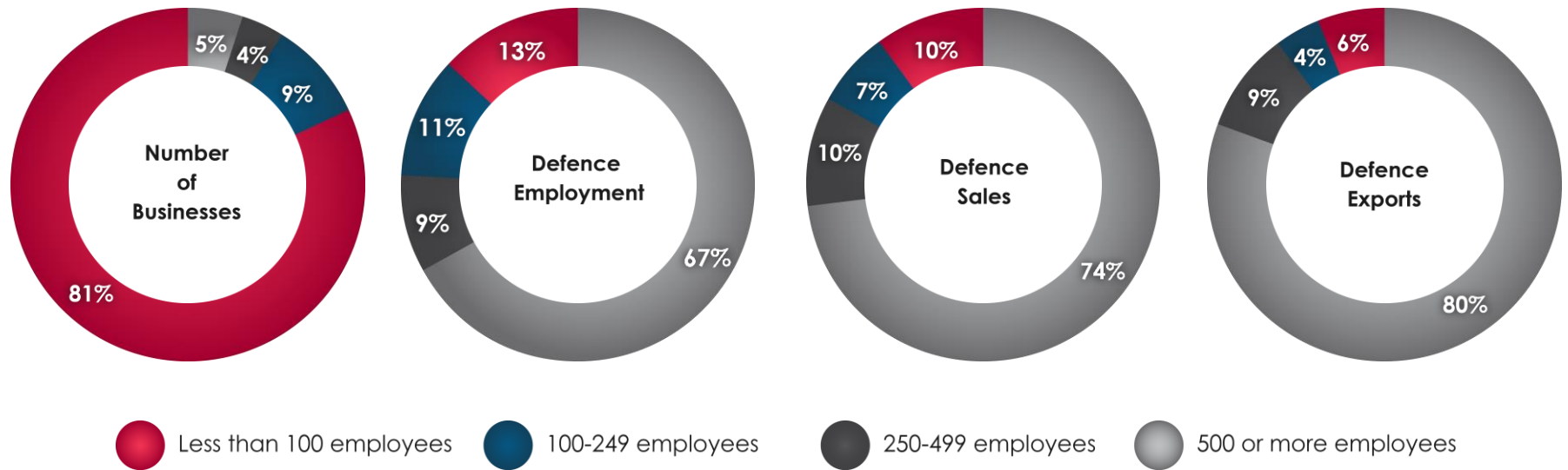


- Of 638 firms**, a third (211) were more defence-focused, with defence goods and services (G&S) accounting for 80%-100% of their own respective total sales
 - The 211 more defence-focused firms accounted for 72% of total defence sales
 - In contrast, 8% of total defence sales were by the 290 commercial/civil-focused firms for which defence accounted for less than 20% of their own sales

* Defence goods and services sales only. ** Businesses/firms under the survey referred to in this presentation are units at the 'enterprise level', not the level of individual establishments, facilities, or plants.

Source: Statistics Canada "*Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014*" (Released 2016).

MORE THAN 90% OF FIRMS HAD LESS THAN 250 EMPLOYEES—WHILE OVER 80% OF DEFENCE SALES AND 90% OF EXPORTS WERE BY FIRMS WITH 250 OR MORE EMPLOYEES*



- Firms with less than 250 employees accounted for about 17% of defence industry sales, 24% of employment, and 10% of exports

* Businesses/firms under the survey referred to in this presentation are units at the 'enterprise level', not the level of individual establishments/facilities/plants.

THE ECONOMIC CONTRIBUTION OF THE DEFENCE INDUSTRY IS REFLECTED BY GROSS DOMESTIC PRODUCT (GDP) ESTIMATES

GDP metrics measure Canada's domestic value-added and associated employment by excluding double counting, as well as the value of foreign content

Defence industry sales contributed to the economy through three main effects:

1) Defence Industry Production of Defence Goods and Services [Direct Effects]*

- Impact on jobs and GDP from defence industry firms' own direct employment needed to generate their defence goods and services (G&S), and their own value-added *beyond* the non-defence material inputs/purchases they sourced from other industries to make the defence G&S that they sold

2) Non-Defence Suppliers Production for the Defence Industry [Indirect Effects]*

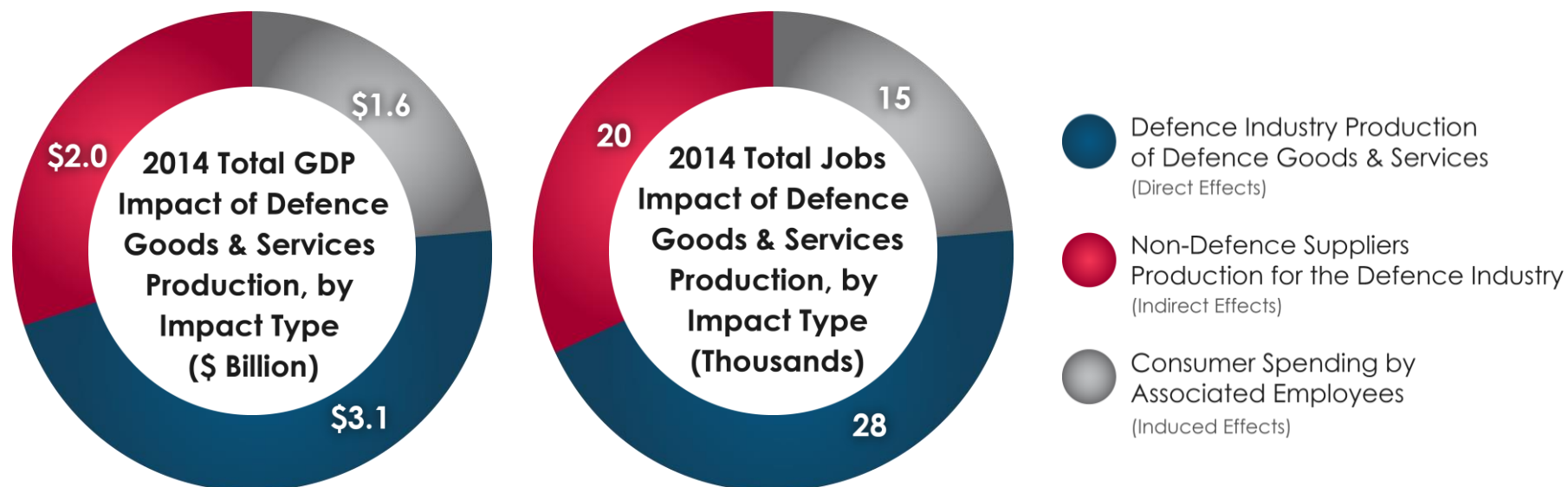
- Impact on jobs and GDP due to inter-industry purchases and *other* firms/industries providing the defence industry with non-defence G&S (like steel, chemicals, tools, electricity, etc.) not under the survey's 18 defence G&S categories, but needed for the production of those defence G&S

3) Consumer Spending by Associated Employees [Induced Effects]*

- Economic impact resulting from consumer spending induced by labour force incomes derived from production under the above 'direct' and 'indirect' industrial activities*

7 * NOTE: The meanings and use of the terms "Direct", "Indirect" and "Induced" in this context are in accordance with the Canadian System of National Accounts and Input-Output related concepts, terminology and practices relating to economic impact multipliers, and economic impact estimates; they do NOT relate to the Industrial and Regional Benefits (IRB) policy, nor the Industrial and Technological Benefits (ITB) policy and their concepts of 'direct' vs. 'indirect' activities. See Annex B for further details.

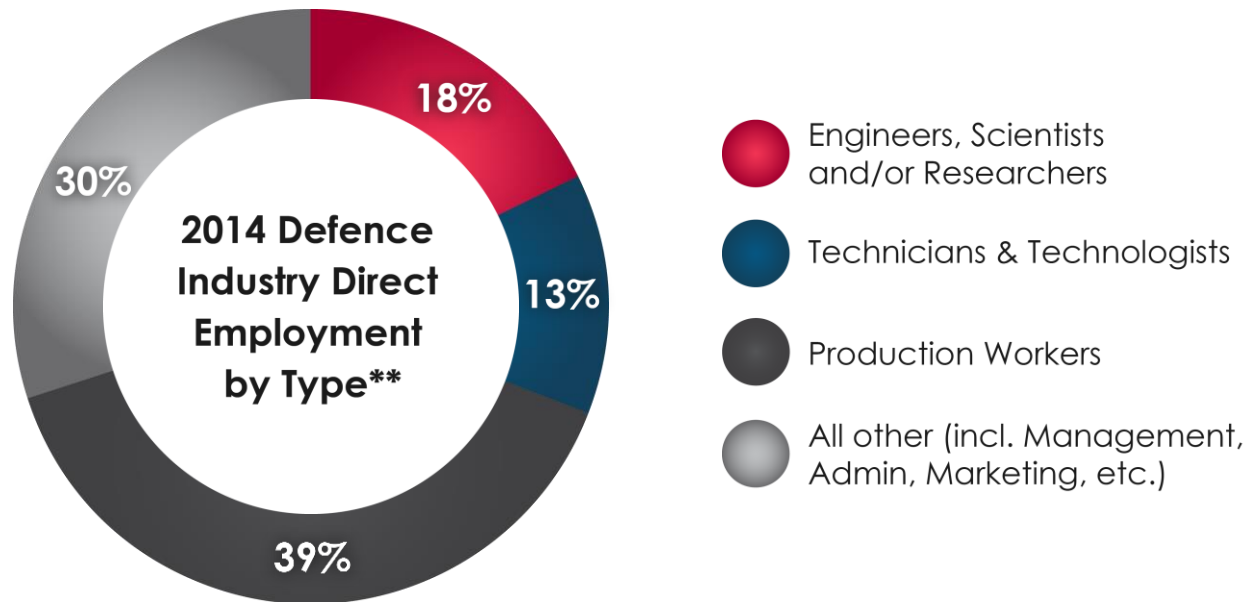
DEFENCE INDUSTRY SALES CONTRIBUTED ABOUT \$6.7B TO GDP AND CLOSE TO 63,000 TO EMPLOYMENT TO THE CANADIAN ECONOMY IN 2014*



- Total GDP impact from industrial production of defence goods and services up from \$6B in 2011, to almost \$6.7B in 2014

* Based on results the Statistics Canada "*Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014*" (Released 2016), Statistics Canada Input-Output multipliers and ISED modelling. NOTE: The meanings and use of the terms "Direct", "Indirect" and "Induced" in this context are in accordance with the Canadian System of National Accounts and Input-Output related concepts, terminology and practices relating to economic impact multipliers, and economic impact estimates; they do NOT relate to the Industrial and Regional Benefits (IRB) policy, nor the Industrial and

INNOVATION-RELEVANT OCCUPATIONS ACCOUNTED FOR OVER 30% OF THE DEFENCE INDUSTRY'S DIRECT EMPLOYMENT*

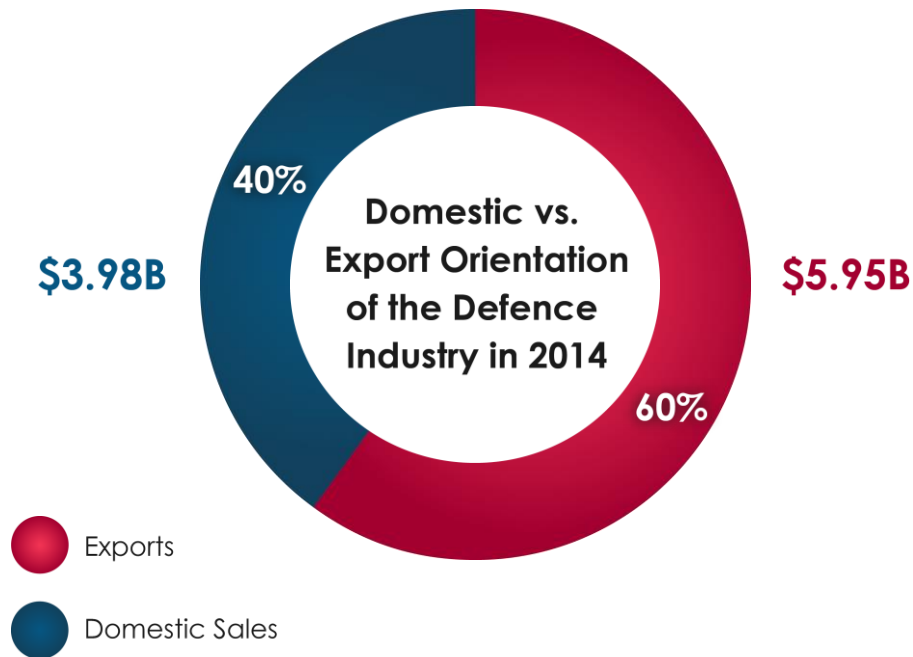


- Total defence industry employees'* average annual compensation was close to 60% above the manufacturing sector average
- The defence industry invested more than \$250M in R&D in 2011, led by larger firms***

* The occupation estimates relate only to the defence industry's own direct employment and do not necessarily reflect the occupational nature of 'Indirect' and 'Induced' jobs supported by defence industry sales. ** Estimates of the employee type breakdown of total direct defence industry employment are based on the relative breakdown indicated by the 80% of the industry's employment whose type was clearly specified for 2014. *** A 2014 R&D estimate could not be published because several key firms chose to not provide necessary data. The 2011 R&D estimate is based on the results of Statistics Canada's "[Canadian Commercial Aerospace, Defence, Commercial and Civil Marine and Industrial Security Sector Survey, 2011](#)" (Released 2013); as with 2011 sales, larger firms (250 or more employees) accounted for 81% of 2011 defence R&D.

Source: Statistics Canada "[Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014](#)" (Released 2016); and Statistics Canada, CANSIM, 2016

THE CANADIAN DEFENCE INDUSTRY WAS EXPORT DRIVEN, WITH CLOSE TO 60% OF SALES (\$6B) ATTRIBUTED TO EXPORT SALES



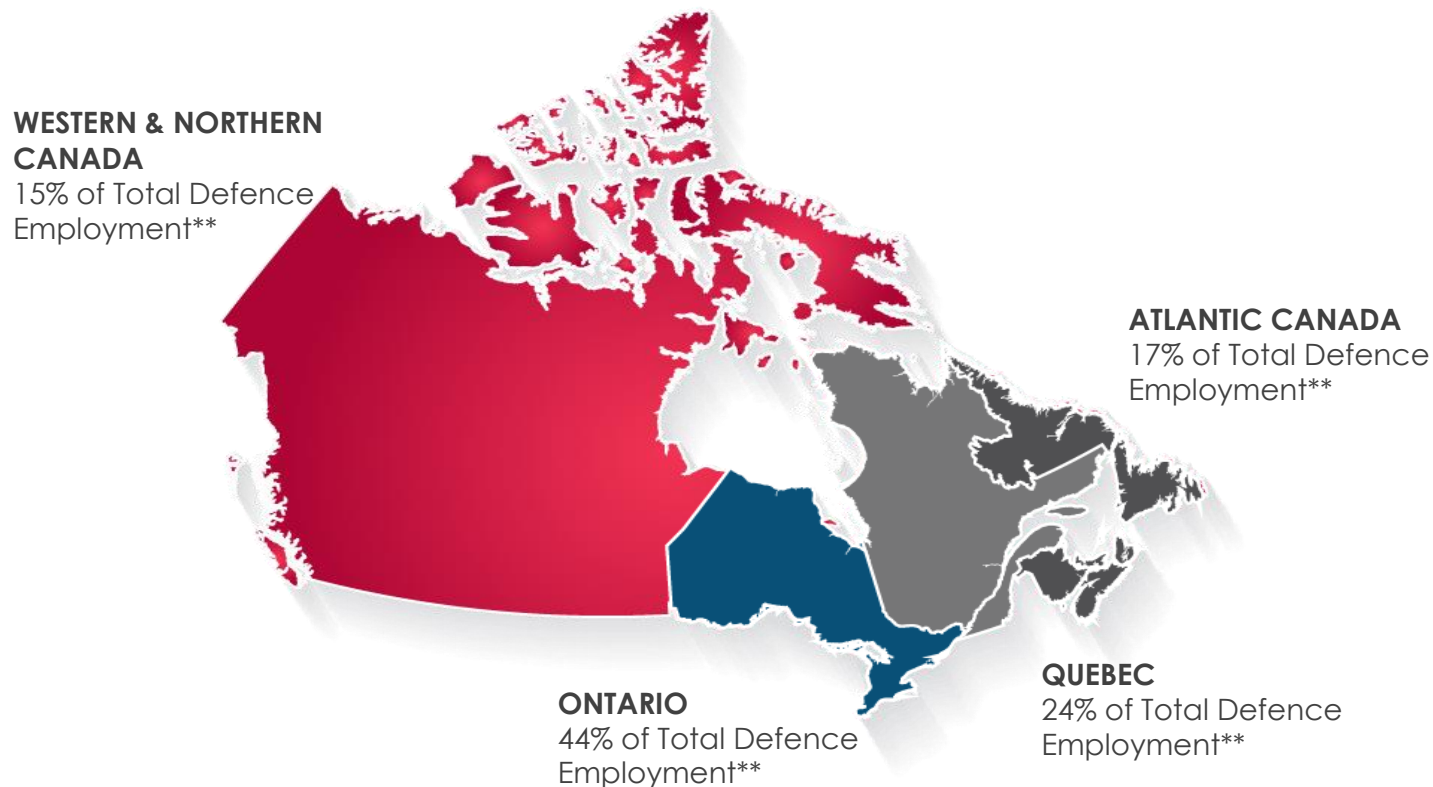
- Overall, defence sales rose from over \$9.4B in 2011 to over \$9.9B in 2014
- Export intensity (% of sales that were exports) increased by close to 20% over the period
- The defence sales export intensity was close to 20%* higher than that of the overall Canadian manufacturing average

- Collectively, firms with 250 or more employees were more export oriented with about 65% of their defence sales being direct exports, as opposed to about 37% of the sales of firms with less than 250 employees

* Total Canadian manufacturing sector export intensity estimated at 51% in 2014, vs. 60% for the defence industry.

Source: Statistics Canada "Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014" (Released 2016), "Canadian Commercial Aerospace, Defence, Commercial and Civil Marine and Industrial Security Sector Survey, 2011" (Released 2013); and Statistics Canada non-survey data.

THE CANADIAN DEFENCE INDUSTRY IS NATIONAL



- MRO* services are important defence activities across all regions of Canada
- Each region has specific specializations in defence industrial activities

* MRO represents 'Maintenance, Repair and Overhaul'.

11 ** Canadian defence industry total direct employment of 28,000 in 2014. Estimates of the regional breakdown of total direct Canadian defence industry employment are based on the relative regional breakdown indicated by the 86% of industry employment whose location was clearly specified for 2014.

Source: Statistics Canada "[Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014](#)" (Released 2016).

WESTERN & NORTHERN CANADA: 15% of TOTAL EMPLOYMENT**



Top 5 Defence Industrial Activities in 2014*

1. Military Aircraft Maintenance, Repair and Overhaul Services
2. Naval Ship Fabrication, Structures & Components
3. Aircraft Fabrication, Structures & Components
4. Combat Vehicles & Related Maintenance, Repair and Overhaul; and 'Other Defence'
5. Naval Ship-Borne Systems (i.e., Mission Systems) and Components

* Defence goods & services category rankings within regions are based on estimates of regional distributions of associated employment.

12 ** Canadian defence industry total direct employment of 28,000 in 2014. Estimates of the regional breakdown of total direct Canadian defence industry employment are based on the relative regional breakdown indicated by the 86% of industry employment whose location was clearly specified for 2014.

Source: Statistics Canada "Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014" (Released 2016).

ONTARIO: 44% of TOTAL EMPLOYMENT**



Top 5 Defence Industrial Activities in 2014*

1. Combat Vehicles & Related Maintenance, Repair and Overhaul; and 'Other Defence'
2. Airborne Communications, Navigation, & Other Information Systems, Software, Electronics
3. Aircraft Fabrication, Structures and Components
4. Airborne Sensor/Information Collection; and Fire Control, Warning & Countermeasures Systems
5. Land/Man Portable Sensor/Information Collection; and Fire Control, Warning & Countermeasures Systems

* Defence goods & services category rankings within regions are based on estimates of regional distributions of associated employment.

13 ** Canadian defence industry total direct employment of 28,000 in 2014. Estimates of the regional breakdown of total direct Canadian defence industry employment are based on the relative regional breakdown indicated by the 86% of industry employment whose location was clearly specified for 2014.

Source: Statistics Canada "Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014" (Released 2016).

QUEBEC: 24% of TOTAL EMPLOYMENT**



Top 5 Defence Industrial Activities in 2014*

1. Combat Vehicles & Related Maintenance, Repair and Overhaul; and 'Other Defence'
2. Firearms, Ammunition, Missiles, Rockets, and Other Munitions & Weapons
3. Military Aircraft Maintenance, Repair and Overhaul Services
4. Airborne Communications, Navigation, & Other Information Systems, Software, Electronics
5. Aircraft Fabrication, Structures and Components

* Defence goods & services category rankings within regions are based on estimates of regional distributions of associated employment.

14 ** Canadian defence industry total direct employment of 28,000 in 2014. Estimates of the regional breakdown of total direct Canadian defence industry employment are based on the relative regional breakdown indicated by the 86% of industry employment whose location was clearly specified for 2014.

Source: Statistics Canada "Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014" (Released 2016).

ATLANTIC CANADA: 17% of TOTAL EMPLOYMENT**



Top 5 Defence Industrial Activities in 2014*

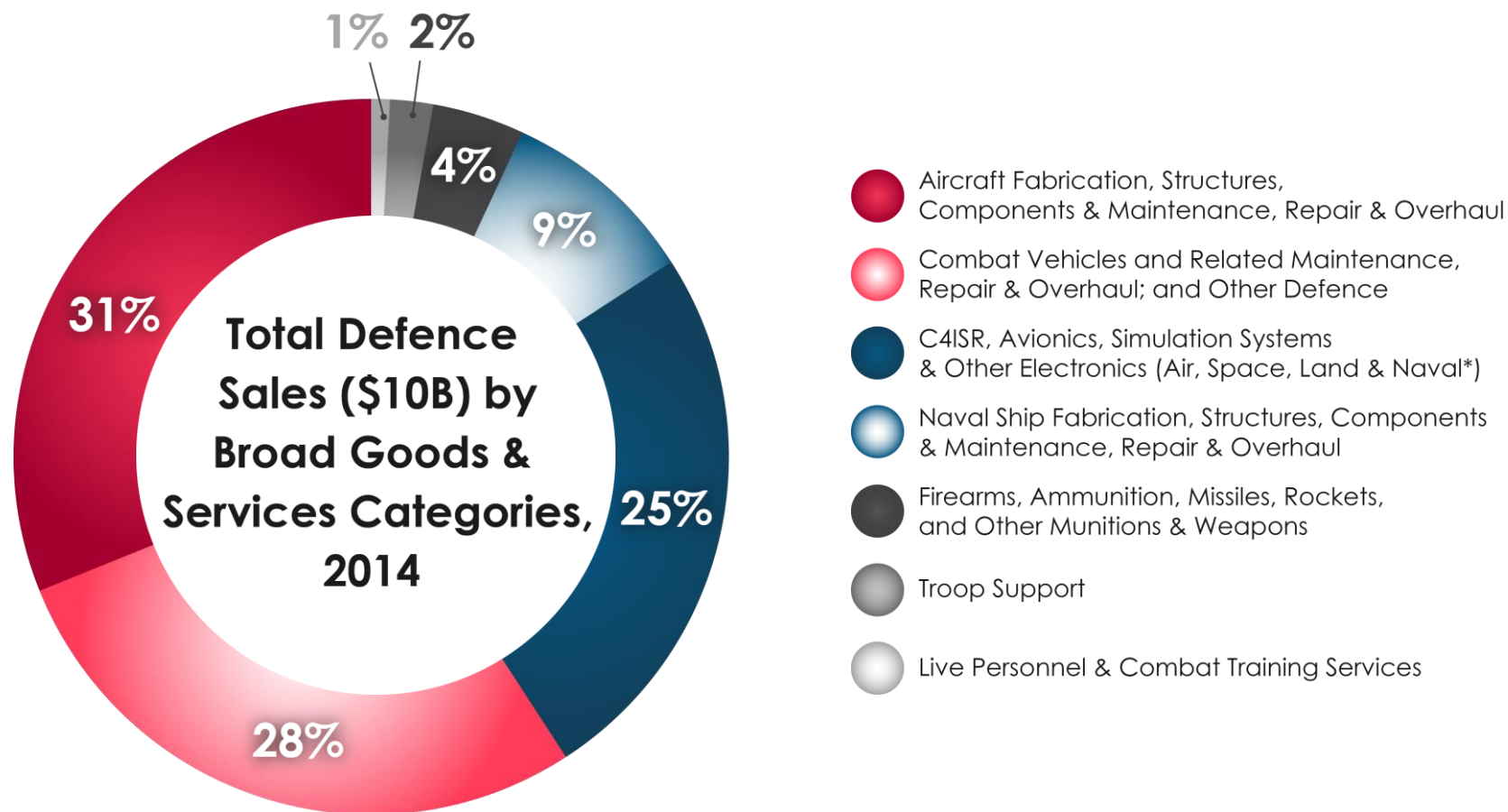
1. Military Aircraft Maintenance, Repair and Overhaul Services (MRO)
2. Naval Ship MRO
3. Naval Ship-Borne Systems (i.e., Mission Systems) and Components
4. Combat Vehicles & Related Maintenance, Repair and Overhaul; and 'Other Defence'
5. Aircraft Fabrication, Structures & Components

* Defence goods & services category rankings within regions are based on estimates of regional distributions of associated employment.

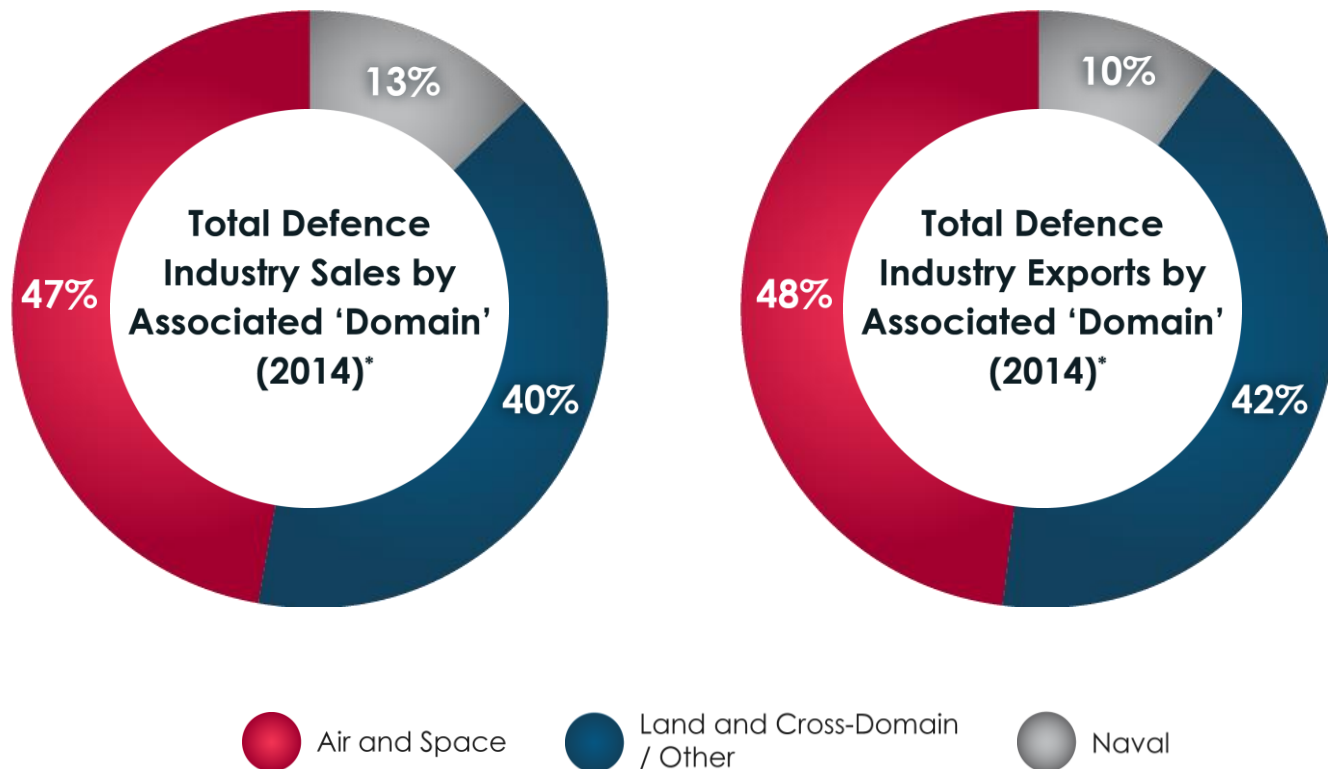
15 ** Canadian defence industry total direct employment of 28,000 in 2014. Estimates of the regional breakdown of total direct Canadian defence industry employment are based on the relative regional breakdown indicated by the 86% of industry employment whose location was clearly specified for 2014.

Source: Statistics Canada "Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014" (Released 2016).

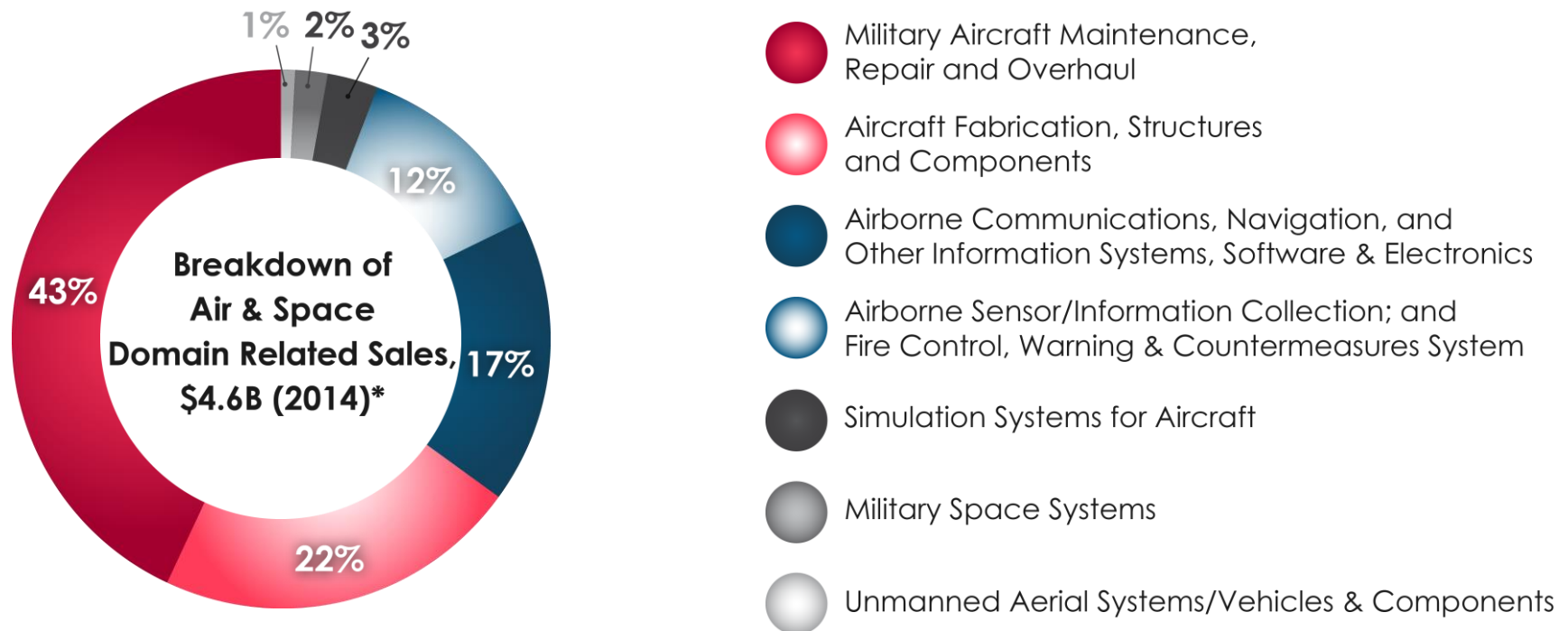
CANADIAN CAPABILITIES CROSSED A BROAD RANGE OF DEFENCE GOODS AND SERVICES*



CANADA'S DEFENCE INDUSTRY SPANNED AIR & SPACE, NAVAL, AND LAND & CROSS-DOMAIN ACTIVITIES*



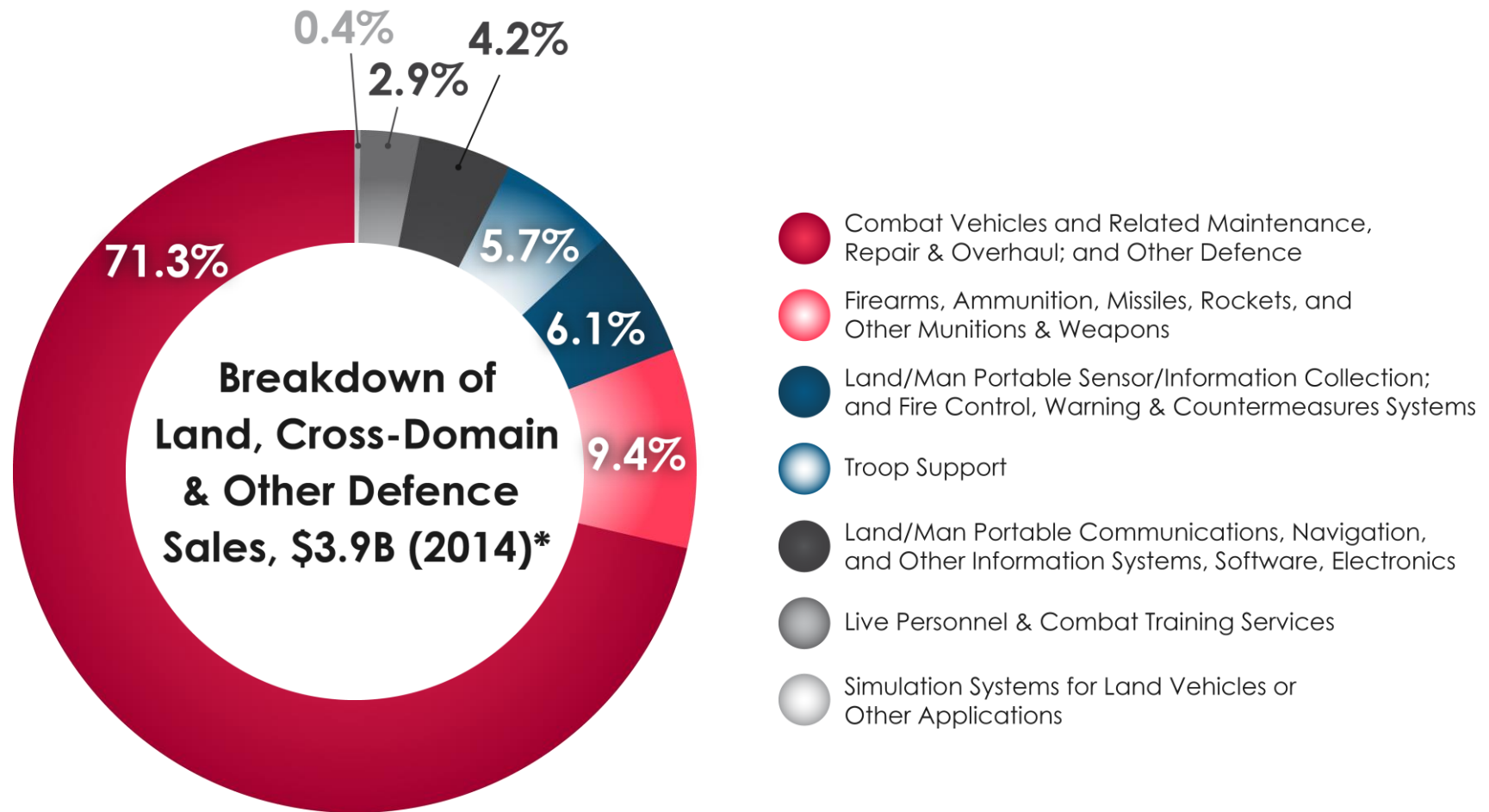
SALES IN THE AIR & SPACE DOMAIN WERE LED BY MILITARY AIRCRAFT MRO SERVICES WITH OVER 40%*



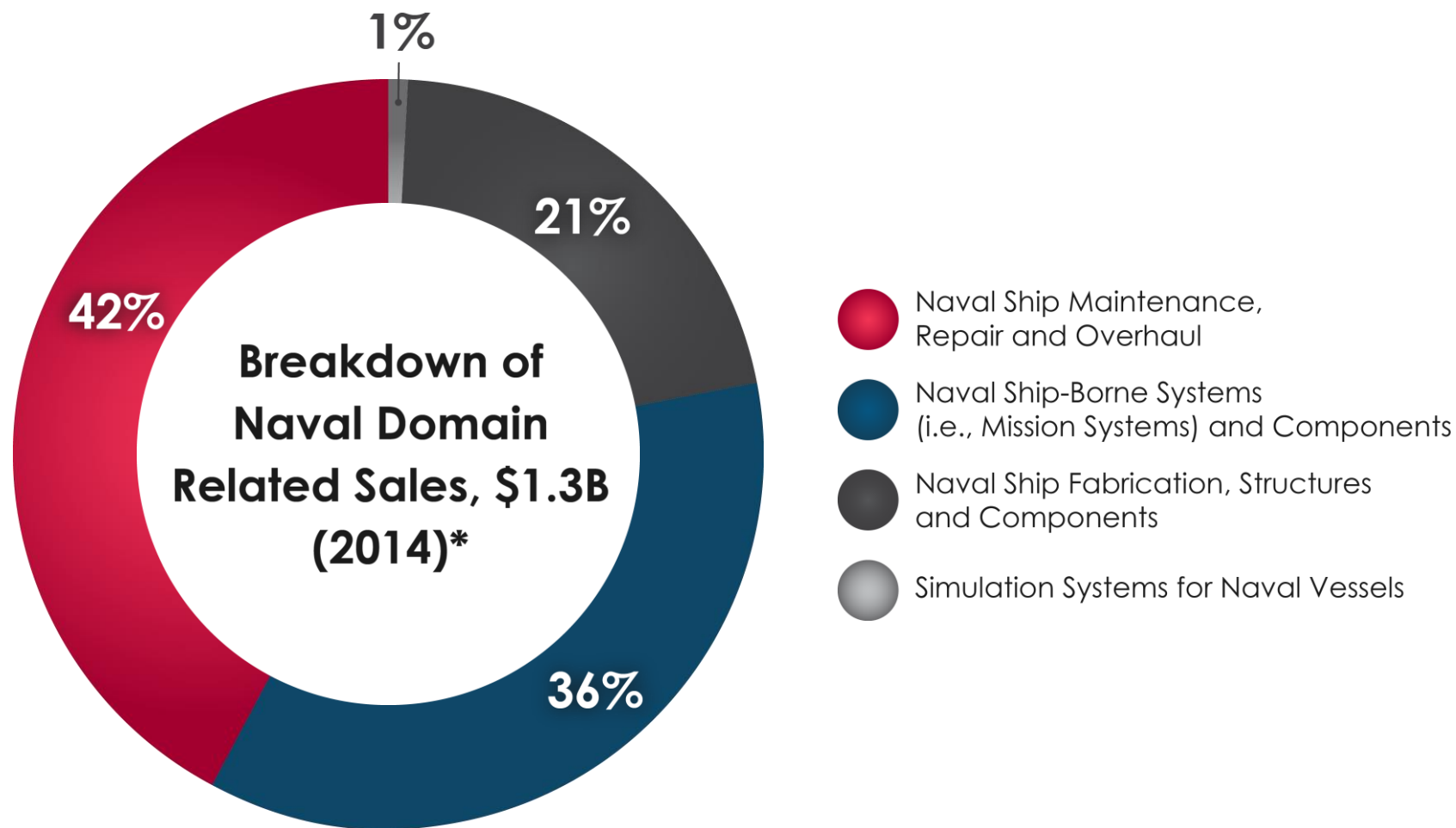
- C4ISR, Avionics and Simulation Systems* related sales of goods and services captured 34% of overall air & space domain sales

18 * See Annexes A, D, E and F for further details on the defence goods and services categories related to Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance (C4ISR), Avionics and Simulation Systems; the categories under the various broad G&S categories groupings and 'domains'; and for the full actual titles of the survey's 18 published defence goods and services categories.
Source: Statistics Canada "*Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014*" (Released 2016).

AMONG LAND & OTHER CROSS-DOMAIN ACTIVITIES, COMBAT VEHICLE GOODS AND SERVICES DOMINATED SALES*



IN THE NAVAL DOMAIN, GOODS AND SERVICES SALES WERE LED BY NAVAL MRO* WITH 42%, FOLLOWED BY SHIP-BORNE (MISSION) SYSTEMS AT 36%

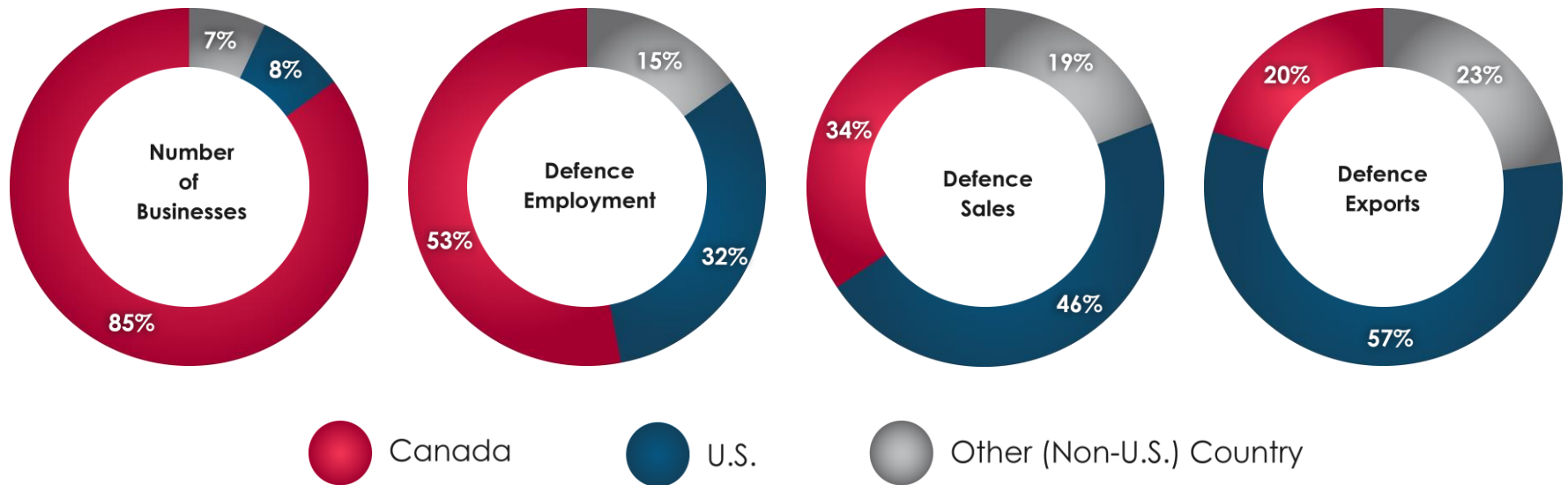


20 * MRO represents 'Maintenance, Repair and Overhaul'. See Annexes A, E and F for further details on the defence goods and services categories related to C4ISR, Avionics and Simulation Systems; the categories under the various 'domains'; and for the full actual titles of the survey's 18 published defence goods and services categories.

Source: Statistics Canada "Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014" (Released 2016).

THE MAJORITY OF CANADIAN DEFENCE EXPORTS AND SALES CAME FROM CANADIAN OPERATIONS OF FOREIGN-OWNED FIRMS IN 2014

Shares of Key Defence Industry Variables Relating to Domestic vs. Foreign-Owned Businesses*



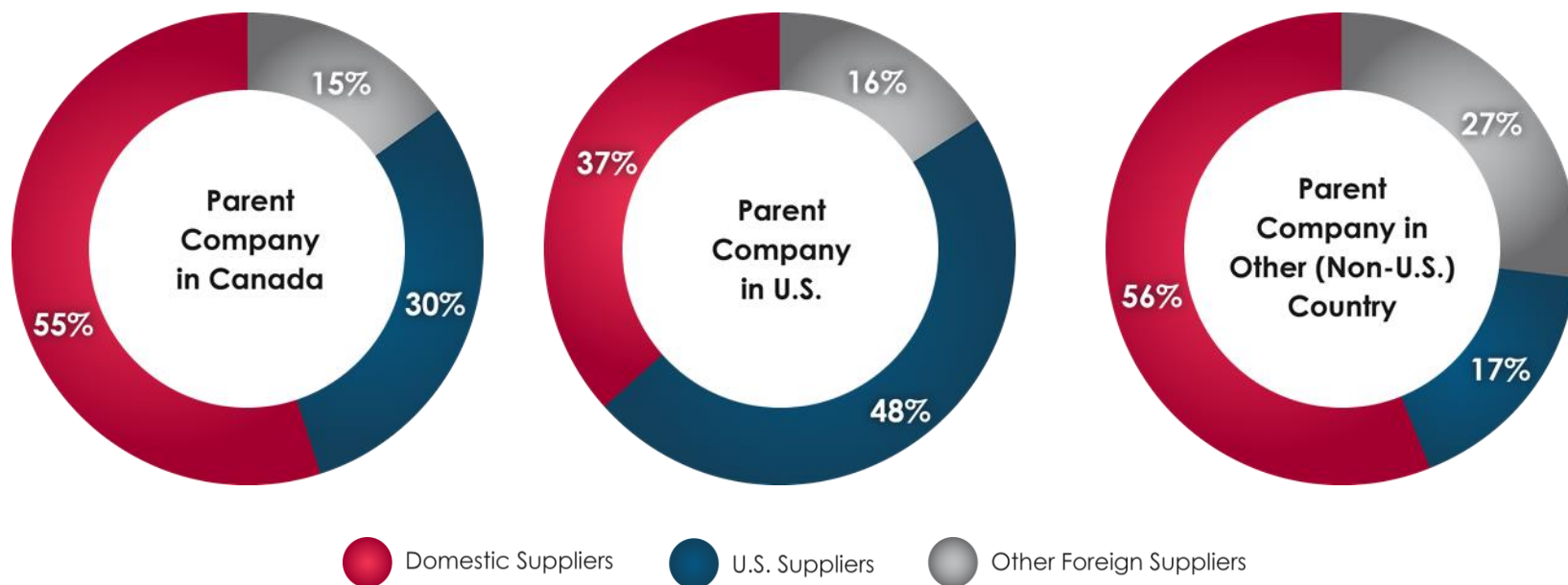
- Canadian-owned firms accounted for over 50% of the defence industry's direct employment in 2014
 - Canadian-owned firms accounted for 60% of defence industry R&D spending in 2011*

* A 2014 estimate for R&D could not be published because several key firms chose to not provide necessary data.

Source: Statistics Canada "[Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014](#)" (Released 2016).

SOURCING PATTERNS VARY ACCORDING TO FIRMS' COUNTRY OF OWNERSHIP

Sourcing Patterns of Domestic vs. Foreign-Owned Businesses*



- U.S.-owned firms in Canada sourced mainly from U.S. and other foreign suppliers

KEY FINDINGS

- Close to 640 Canadian firms sold almost \$10B in defence goods and services
 - The defence industry's sales and its linkages to other industries contributed about \$6.7B to GDP and close to 63,000 to employment to the Canadian economy
 - The Canadian defence industry is national with regional specializations in specific defence industrial activities
 - MRO services are important to all regions and across air, naval and land domains
 - Canada's defence industry was export intensive, with almost 60% of sales being exports - over 20% higher than the manufacturing sector average
 - Innovation-relevant occupations accounted for over 30% of the defence industry's direct employment
 - Defence industry direct employees' average annual compensation was close to 60% above the manufacturing sector average
 - The majority of Canadian defence exports and sales came from Canadian operations of foreign-owned firms
 - Canadian-owned firms accounted for over 50 percent of direct employment and 60 percent of R&D spending
 - Sourcing patterns vary according to firms' country of ownership; U.S.-owned firms in Canada sourced mainly from U.S. and other foreign suppliers
-

ANNEXES

ANNEX A:

Defence Industry Sales Across 18 Defence Goods & Services Categories Published for FY2014

Total Defence Industry Sales, 2014	\$9,931,524,542
<i>Full Official Titles of the 18 Published Defence Goods & Services Categories</i>	Share of Total Defence Industry Sales (%)
Firearms, Ammunition, Missiles, Rockets, and Other Munitions and Weapons	3.7
Military Systems Deployed in Space, Space Launch Vehicles, Land-Based Systems for the Operation, Command and Control of Space Launch Vehicles or Systems Deployed in Space and Related Components	0.9
Primarily Airborne Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems and Related Components	5.8
Primarily Land-Based or Man-Portable Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems and Related Components	2.4
Primarily Airborne Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics and Components	7.7
Primarily Land-Based, Man-Portable or Non-Platform Specific Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics and Components	1.7
Naval Ship-Borne Systems (i.e., Mission Systems) and Components	4.9
Naval Ship Fabrication, Structures and Components	2.9
Naval Ship Maintenance, Repair and Overhaul	5.7
Combat Vehicles and Related Maintenance, Repair & Overhaul; <u>and</u> Other Defence	28.4
Aircraft Fabrication, Structures and Components	10.2
Military Aircraft Maintenance, Repair and Overhaul Services	20.2
Unmanned Aerial Systems/Vehicles (UAS/V) and Components	0.4
Simulation Systems for Aircraft	1.5
Simulation Systems for Naval Vessels	0.1
Simulation Systems for Land Vehicles or Other Applications	0.1
Live Personnel and Combat Training Services	1.1
Troop Support	2.3

ANNEX B:

Estimated Economic Impacts of the Defence Industry*

	Direct Defence Industry Impacts	Indirect Impacts in the Broader Economy	Induced Impacts in the Broader Economy	Total Impacts Across the Economy
Jobs	27,975	19,927	14,831	62,733
GDP	3,067,184,125	2,020,969,360	1,581,087,608	6,669,241,093

Direct Effects: Impacts on employment and GDP from defence industry businesses' own direct employment required to generate their defence goods and services (G&S) sales, and their own value-added beyond the material inputs/purchases they sourced from other industries;

Indirect Effects: Impacts on jobs and GDP due to inter-industry purchases and other firms/industries providing the defence industry with non-defence G&S (like steel, chemicals, tools, electricity, etc.) not under the survey's 18 defence G&S categories, but needed for the production of those defence G&S;

Induced Effects: Economic impacts resulting from consumer spending induced by labour force incomes derived from production under the aforementioned direct and indirect industrial activity.

*NOTE: The meanings and use of the terms "Direct", "Indirect" and "Induced" in this context are in accordance with the Canadian System of National Accounts and Input-Output related concepts, terminology and practices relating to economic impact multipliers, and economic impact estimates; they do **NOT** relate to the Industrial and Regional Benefits (IRB) policy, nor the Industrial and Technological Benefits (ITB) policy and their concepts of 'direct' vs. 'indirect' activities.

ANNEX C:

Rankings of Defence Goods and Services Activities Within a Given Region

Approximate Rankings of the 18 Defence Goods and Services Categories According to Their Relative Importance Within a Given Region's Own Defence Industry—Based on Employment Metrics*				
Full Official Titles of the 18 Published Defence Goods & Services Categories	Atlantic Canada	Quebec	Ontario	Western and Northern Canada
Firearms, Ammunition, Missiles, Rockets, and Other Munitions and Weapons	16	2	11	11
Military Systems Deployed in Space, Space Launch Vehicles, Land-Based Systems for the Operation, Command and Control of Space Launch Vehicles or Systems Deployed in Space and Related Components	17	17	13	13
Primarily Airborne Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems and Related Components	7	8	4	8
Primarily Land-Based or Man-Portable Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems and Related Components	10	11	5	16
Primarily Airborne Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics and Components	9	4	2	9
Primarily Land-Based, Man-Portable or Non-Platform Specific Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics and Components	8	9	10	10
Naval Ship-Borne Systems (i.e., Mission Systems) and Components	3	7	7	5
Naval Ship Fabrication, Structures and Components	6	14	12	2
Naval Ship Maintenance, Repair and Overhaul	2	12	9	7
Combat Vehicles and Related Maintenance, Repair and Overhaul; and Other Defence	4	1	1	4
Aircraft Fabrication, Structures and Components	5	5	3	3
Military Aircraft Maintenance, Repair and Overhaul Services	1	3	6	1
Unmanned Aerial Systems/Vehicles (UAS/V) and Components	13	16	15	12
Simulation Systems for Aircraft	11	6	14	17
Simulation Systems for Naval Vessels	14	18	18	18
Simulation Systems for Land Vehicles or Other Applications	18	15	17	14
Live Personnel and Combat Training Services	15	13	16	15
Troop Support	12	10	8	6
*The rankings are considered approximate, as they are based on estimates of associated employment shares derived from breakdowns of sales as related to the various defence goods/services categories, and breakdowns of employment across regions. As these are simple rankings, the gap between one category and a following category could be relatively small or relatively large.				

ANNEX D:

18 Defence G&S Categories Published Under the FY2014 Survey as they Correspond to Broad G&S Groupings

Broad Groupings of Defence Goods & Services Categories	Correspondence with the 18 Detailed Defence G&S Categories for Which Results Were Published Under the Survey
Firearms & Other Weapons; and Expendables like Ammunition, Missiles, Rockets, and Other Munitions	Firearms & Other Weapons; and Expendables like Ammunition, Missiles, Rockets, and Other Munitions
Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance (C4ISR); Avionics; Simulation Systems and Other Electronics (Air, Space, Land & Naval)	Primarily Airborne Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics, and Components
	Primarily Airborne Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems; and Related Components
	Primarily Land-Based or Man-Portable Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems; and Related Components
	Primarily Land-Based, Man-Portable or Non-Platform Specific Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics, and Components
	Naval Ship-Borne Systems (i.e., Mission Systems) and Components
	Simulation Systems for Aircraft
	Simulation Systems for Naval Vessels
	Simulation Systems for Land Vehicles or Other Applications
Naval Ship Fabrication, Structures, Components and Maintenance, Repair and Overhaul	Military Systems Deployed in Space, Space Launch Vehicles, Land-Based Systems for the Operation, Command & Control of Space Launch Vehicles or Systems Deployed in Space; and Related Components
	Naval Ship Fabrication, Structures and Components
Aircraft Fabrication, Structures, Components and Maintenance, Repair & Overhaul	Naval Ship Maintenance, Repair and Overhaul
	Aircraft Fabrication, Structures and Components
	Military Aircraft Maintenance, Repair and Overhaul Services
Combat Vehicles and Related Maintenance, Repair & Overhaul; and Other Defence	Unmanned Aerial Systems/Vehicles (UAS/V) and Components
	Combat Vehicles and Related Maintenance, Repair & Overhaul; and Other Defence
Live Personnel & Combat Training Services	Live Personnel and Combat Training Services
Troop Support	Troop Support

ANNEX E:

FY2014 Defence G&S Categories Corresponding to Broad 'Technology/Functional' Type Groupings

Firearms & Other Weapons; and Expendables like Ammunition, Missiles, Rockets, and Other Munitions	Ammunition and Other Munitions
	Firearms and Other Weapons
	Missiles and Rockets
Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance (C4ISR); Avionics; and Other Electronics	Primarily Airborne Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics, and Components
	Primarily Airborne Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems; and Related Components
	Primarily Land-Based or Man-Portable Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems; and Related Components
	Primarily Land-Based, Man-Portable or Non-Platform Specific Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics, and Components
	Naval Ship-Borne Systems (i.e., Mission Systems) and Components
	Military Systems Deployed in Space, Space Launch Vehicles, Land-Based Systems for the Operation, Command & Control of Space Launch Vehicles or Systems Deployed in Space; and Related Components
Platform Fabrication & MRO; and All Other Defence	Aircraft Fabrication, Structures and Components
	Combat Vehicles and Components
	Naval Ship Fabrication, Structures and Components
	Unmanned Aerial Systems/Vehicles (UAS/V) and Components
	Combat Vehicles Maintenance, Repair and Overhaul
	Naval Ship Maintenance, Repair and Overhaul
	Military Aircraft Maintenance, Repair & Overhaul Services
	Other Defence
	Troop Support
Simulation Systems	Simulation Systems for Aircraft
	Simulation Systems for Land Vehicles or Other Applications
	Simulation Systems for Naval Vessels
Live Personnel & Combat Training Services	Live Personnel and Combat Training Services

ANNEX F:

FY2014 Defence G&S Categories Corresponding to the 'Domain' Type Groupings

Air & Space	Aircraft Fabrication, Structures and Components
	Military Aircraft Maintenance, Repair & Overhaul Services
	Military Systems Deployed in Space, Space Launch Vehicles, Land-Based Systems for the Operation, Command & Control of Space Launch Vehicles or Systems Deployed in Space; and Related Components
	Primarily Airborne Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics, and Components
	Primarily Airborne Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems; and Related Components
	Simulation Systems for Aircraft
	Unmanned Aerial Systems/Vehicles (UAS/V) and Components
Land, Cross-Domain and Other Defence	<i>Combat Vehicles and Components</i>
	<i>Combat Vehicles Maintenance, Repair and Overhaul</i>
	Primarily Land-Based or Man-Portable Electro-Optical, Radar, Sonar and Other Sensor/Information Collection Systems; Fire Control, Warning and Countermeasures Systems; and Related Components
	Primarily Land-Based, Man-Portable or Non-Platform Specific Communications and Navigation Systems; and Other Information Systems (Including Processing and Dissemination), Software, Electronics, and Components
	Simulation Systems for Land Vehicles or Other Applications
	<i>Ammunition and Other Munitions</i>
	<i>Firearms and Other Weapons</i>
	Live Personnel and Combat Training Services
	<i>Missiles and Rockets</i>
	Other Defence
	Troop Support
Naval	Naval Ship Fabrication, Structures and Components
	Naval Ship Maintenance, Repair and Overhaul
	Naval Ship-Borne Systems (i.e., Mission Systems) and Components
	Simulation Systems for Naval Vessels

ANNEX G:

Summary of Defence Industry Basic Industrial Metrics and its Impacts on the Broader Economy*

Direct Activity of the Defence Industry and its Broader Economic Impacts*						
	Defence Industry Total G&S Sales (\$B)	Defence Industry G&S Exports (\$B)	Total GDP Impact in the Canadian Economy [<i>Direct + Indirect + Induced GDP Effects</i>] that Resulted from Defence Industry G&S Sales	Defence Industry R&D (\$M)	Defence Industry Direct Jobs (K)	Total Jobs Impact in the Canadian Economy [<i>Direct + Indirect + Induced Jobs</i>] that Resulted from Defence Industry G&S Sales
2014 Estimates	\$9.93	\$5.95	\$6.67	N/A	27.98	62.73**
2011 Estimates	\$9.42	\$4.64	\$5.99	\$251	26.54	63.55**

Direct Effects: Impacts on employment and GDP from defence industry businesses' own direct employment required to generate their defence goods and services (G&S) sales, and their own value-added beyond the material inputs/purchases they sourced from other industries;

Indirect Effects: Impacts on jobs and GDP due to inter-industry purchases and *other* firms/industries providing the defence industry with non-defence G&S (like steel, chemicals, tools, electricity, etc.) not under the survey's 18 defence G&S categories, but needed for the production of those defence G&S;

Induced Effects: Economic impacts resulting from consumer spending induced by labour force incomes derived from production under the aforementioned direct and indirect industrial activity.

*NOTE: The meanings and use of the terms "Direct", "Indirect" and "Induced" in this context are in accordance with the Canadian System of National Accounts and Input-Output related concepts, terminology and practices relating to economic impact multipliers, and economic impact estimates; they do **NOT** relate to the Industrial and Regional Benefits (IRB) policy, nor the Industrial and Technological Benefits (ITB) policy and their concepts of 'direct' vs. 'indirect' activities.

Based on results from Statistics Canada "*Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey, 2014*" (Released 2016), Statistics Canada, "*Canadian Commercial Aerospace, Defence, Commercial and Civil Marine and Industrial Security Sector Survey, 2011*" (Released 2013), Statistics Canada Input-Output multipliers, and ISED modelling. **While direct defence industry employment rose somewhat since 2011, employment in other industries resulting from indirect and induced effects fell, lowering the total economy jobs impact by about 1%. This would mainly be due to changes in the relative mix of types of defence goods and services over time, and changes in Canadian Input-Output based GDP and Employment multipliers used in the modelling of broader economic impacts.

ANNEX H:

Defence Industry's Own Direct Employment by Region

	Estimated Regional Distribution of the Defence Industry's Own Direct Jobs, (2014)*
Atlantic Canada	17%
Quebec	24%
Ontario	44%
Western and Northern Canada	15%
<i>Total</i>	<i>100%</i>

Canada 