HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

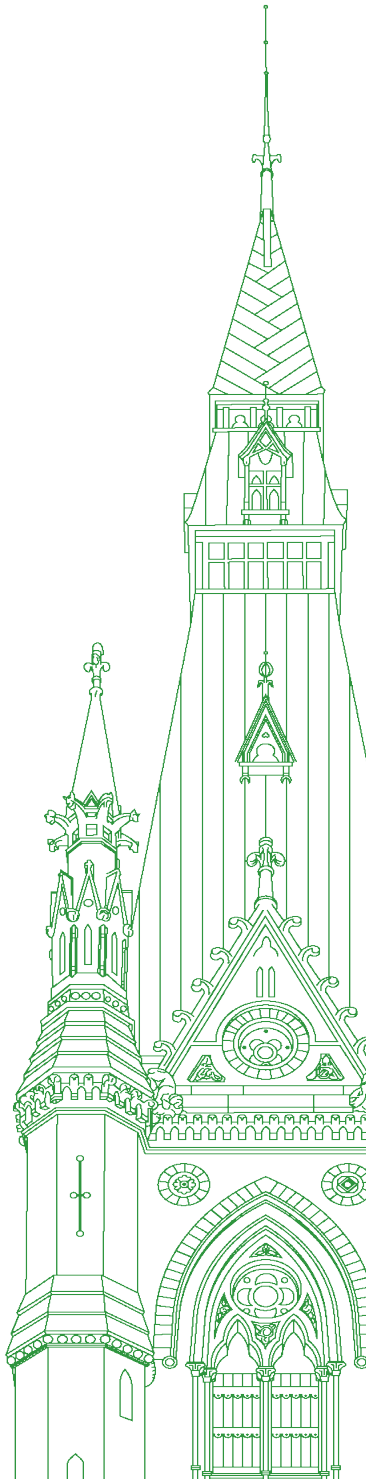
45th PARLIAMENT, 1st SESSION

Standing Committee on Industry and Technology

EVIDENCE

NUMBER 015

Wednesday, November 19, 2025



Chair: Ben Carr

Standing Committee on Industry and Technology

Wednesday, November 19, 2025

● (1630)

[*Translation*]

The Chair (Ben Carr (Winnipeg South Centre, Lib.)): Good afternoon, everyone. I hope you had a good few days in Ottawa.

[*English*]

Hello, everybody. I hope you've had a good start to the week.

We are here for one of our final meetings on the defence industrial strategy, which has been a fascinating and insightful couple of months of discussions for us.

We have three witnesses with us here today. As a friendly reminder to members and witnesses, should your earpiece not be in use—plugged in but not on your ear—please make sure to place it on the sticker in front of you to protect the health and well-being of our interpreters, who work so hard on our behalf.

There are three individuals in the room with us today. From L3Harris Canada, we have Richard Foster, the chief executive and vice-president. From the Canadian Corps of Commissionaires, we have Michael Langlais, the vice-president, risk development. From Quantum Industry Canada, we have Lisa Lambert, the chief executive officer.

Witnesses, you'll each have up to five minutes. I try to be generous if you go over, but if we start getting into the six- or seven-minute range, I may flag you down.

Following your five-minute introductory remarks, there will be a line of questioning from our colleagues around the table here. It's pre-assigned based on the number of seats allotted to recognized parties in the House of Commons.

With that, colleagues, we will get going.

Mr. Foster, I'll turn to you first for your introductory remarks. The floor is yours.

[*Translation*]

Richard Foster (Chief Executive and Vice-President, L3Harris Canada, As an Individual): Mr. Chair, members of the committee, ladies and gentlemen, good afternoon.

[*English*]

The government's commitment to work more closely with Canadian industry and to promote it to help develop a stronger defence industrial base is a welcome step.

After “Our North, Strong and Free”, I do not believe there has been an updated policy statement or other document on defence that outlines Canada's ambition from a defence perspective. Given the announcements on increased spending, I would expect such a document to guide how any defence industrial strategy would unfold and would assume that this is being completed in parallel. One should follow the other.

I have five recommendations on the defence industrial strategy that I believe are relevant to Canadian industry.

First, the Canadian government should commit to a 20-plus-year strategy that will survive election cycles. Companies need predictability in future contracts to enable corresponding investment risk and long-term viability. It is a long game, with long horizons. To diversify supply chains and build up domestic capacity will take time. It took our company over five years to set up our factory in Katowice, Poland, as we looked to compete in the European market.

We cannot forget our North American defence supply chain, as it is deeply integrated with many small and medium-sized enterprises dependent on larger primes or OEMs. Many of our suppliers have five-plus-year contracts to ensure predictability and stability.

Second, Canada should continue to develop strategic partnerships with trusted companies to enable sovereign readiness. “Sovereign”, to me, means being able to defend your country when you need to, with the right equipment to meet the threat and with the right personnel trained for the mission.

The “right equipment” does not necessarily mean it is Canadian, but rather that there is enough logistical support— spares, maintenance, knowledge—to enable the equipment to be used when we decide to use it and for it to be kept operationally relevant. To make this occur, Canada should look at certain companies to help ensure sovereign readiness. A strategic partnership is based on proven capability, trust and demonstrated performance.

A strategic partnership should last beyond the life cycle of specific equipment and enable future development of its replacement. In this way, industry and government can appropriately plan future supply chains, assist with transition planning, conduct longer-term R and D and mitigate risk to operational capability.

A strategic partnership should work both ways: Industry is welcomed into the tent, but is also prepared to open its accounting books for full transparency while still being allowed to make reasonable profit to incentivize performance. Similarly, off-ramps for poor performance should be baked into these contracts.

Third, Canada should always negotiate—always—in-service support on major equipment at the time of acquisition to include directing OEMs to use identified strategic partners and their suppliers when it is in the national interest and enables sovereign readiness.

In doing so, Canada will have more leverage on the OEMs to secure the necessary access to IP and technical data. In doing so, trusted strategic partners will also help to enable Canadian supply chains to be better developed. In doing so, Canada can work with industry to better focus on the next capability to be supported, invest in R and D early and plan for efficient transitions, rather than simply holding a competition for the next platform and starting over.

Fourth, Canada should identify where in the global export market Canada has a competitive advantage that supports the future defence industrial base and commit to developing it. Ninety-eight per cent of the revenues for two of our Canadian companies here comes from exports. Working with industry to transparently decide where our competitive advantage lies is something that should be entrenched in the strategy. We need the government to aggressively advocate for Canadian companies, like other countries that use their defence attachés, trade commissioners and other government officials.

Fifth, Canada should embed an industry-focused force development structure into the Canadian Armed Forces requirements organization. The CAF requirements remain a priority to ensure that our men and women have the right technology to defend our sovereignty. Having a more systematic approach to force development that looks at future requirements against Canada's industrial strengths and helps identify where Canada could have a competitive advantage so that we invest early and appropriately would be of benefit.

A defence industrial strategy for Canada is a long game with long horizons, one that will require a long-term commitment and closer engagement with industry to be successful.

Thank you.

● (1635)

The Chair: Thank you very much, Mr. Foster.

Mr. Langlais, the floor will be yours for up to five minutes.

Michael Langlais (Vice-President, Risk Development, Canadian Corps of Commissionaires): Thank you, Mr. Chair and members of the committee, for this opportunity to appear as part of this extremely important study.

My name is Michael Langlais. I'm an executive with the Canadian Corps of Commissionaires, and I'm also the managing partner of the resilience fund, which is our national vehicle for making large-scale investments in Canadian small to medium-sized businesses providing critical national security capabilities.

Commissionaires Canada has over 20,000 people in over 1,200 communities across Canada, including most federal government facilities and Canadian Forces bases. I'm here to underscore the importance of protecting our critical infrastructure and industrial base within the context of the defence industrial strategy.

Defending our nation necessarily requires national security. The former is impossible without the latter. In making investment decisions for the Canadian Armed Forces, it is important to look at home, as well, for the vulnerabilities in our communities using the exceptional talent pooled in Canadian small to medium-sized enterprises working in defence and in security.

A greater proportion of the globe is now subject to active conflict than at any time since the Second World War. Conflict rates have doubled in the past five years. Between 2023 and 2024 alone, conflict event rates grew by over 25%. At the same time, hybrid warfare threats are actively probing our defences. In 2025, drone incursions interrupted commercial flight operations in Denmark, Norway, Germany, Spain, Belgium, Sweden and the United Kingdom, and they prompted Poland to invoke article 4 of the NATO treaty—and the year is not yet complete. In the United States alone, 411 illegal drone incursions have been recorded near airports this year to date, forcing 11 aircraft to take evasive action.

Both the director of the Canadian Security Intelligence Service and the chief of the Communications Security Establishment publicly stated at the 2025 Ottawa Conference on Security and Defence that we are under attack every single day in cyberspace and that the volume and severity of these attacks continue to increase.

While the threats in cyberspace are well known, they sit at an intersection between security and defence, the public and private sectors and institutional and individual actors that is difficult to define and coordinate. These efforts must be greatly accelerated and supported by a defence industrial strategy that recognizes cyberspace as a domain of war that reaches deeper into our very homes than has ever been the case in Canadian history.

Finally, our communities and critical infrastructure are physically vulnerable. CSIS has publicly stated that it has deterred lethal Iranian actions on Canadian soil and warned of Russian and Chinese espionage activities in the Arctic. The experience with the former Nortel campus starkly illustrates how pervasive the threat of technical surveillance really is both in industry and in government. Just this week, vital Polish rail links with Ukraine were directly targeted with explosives.

To put it very bluntly, Canada and its allies are currently the targets of a hybrid war that continues to escalate in the context of a level of global conflict unparalleled in 80 years. Time is of the essence. We have an exceptional pool of talent and expertise in Canada that we can deploy against these threats, which is concentrated in Canadian small to medium-sized enterprises that have struggled to put their skills to work in service of the public sector.

Making use of these SMEs will require three things: simplified and accelerated procurement policies delegated to the lowest possible operational level; direct and continuous communication between actors in defence and public safety without fear of creating compliance issues; and clear mandates, guidelines and instructions for resilience in business continuity measures for the private sector to follow in parallel with the government.

Our allies are already being materially impacted by these threats. Let us learn from their experience. All of us in the defence and security communities, including the commissionaires, are willing to step up in service of our country. Use us.

● (1640)

The Chair: Thank you very much, Mr. Langlais.

Ms. Lambert, five minutes go to you.

[*Translation*]

Lisa Lambert (Chief Executive Officer, Quantum Industry Canada): Mr. Chair and members of the committee, thank you for inviting me to testify today.

[*English*]

I'm here on behalf of Quantum Industry Canada, or QIC for short. It's the national consortium representing more than 70 quantum firms and strategic partners across the country. Our aim is to translate Canada's remarkable quantum strengths and strategic advantage into commercial success.

Let me begin with something essential. Quantum is not a single technology. It's an emerging platform that will reshape our economy, security and defence. This platform spans sensing, communications, computing and the enabling systems that make quantum devices possible. Together, they form the foundation of the next technological era—and defence will feel the impact first.

Quantum is no longer theoretical. Some capabilities are already being deployed; others are advancing faster than expected. They're enabling entirely new ways to sense, to navigate, to secure and to interpret the world, unlocking dual-use capabilities that today's systems simply can't match.

Unlike many technologies that mature in civilian markets before reaching defence, quantum is moving in the opposite direction. Defence will be the earliest adopter because the missions demand it and the advantages are too significant to ignore.

The countries that act with urgency to develop and deploy these capabilities will shape the next era of economic and strategic power.

Canada enters this moment with real advantages. We recognized the quantum opportunity early, invested, built world-class institutions, trained top talent and commercialized quantum before most countries even recognized its importance. Because of those early bets, Canada now has one of the strongest, most complete quantum ecosystems in the world. We have the second-highest number of quantum SMEs globally and the highest number per capita. Our companies routinely compete against far larger, far better-resourced players.

Quantum is an extraordinary national asset, but early leadership is not the same as lasting advantage. If we do not convert Canada's quantum strengths into deployable capability and industrial scale, they will be captured elsewhere, along with the talent, IP and economic value that follow.

The global quantum race is accelerating. Quantum is being hardwired into both defence and industrial strategies. Allies and competitors alike are standing up defence innovation units, securing supply chains and using strategic procurement to expeditiously pull technologies into deployment.

The economic stakes speak for themselves. A study referenced in Canada's national quantum strategy estimates that quantum could contribute more than 3% of GDP by 2045, which is roughly the size of Canada's aerospace sector today. Global estimates run into the trillions. That value will be captured somewhere. The question is whether it will be captured here, for the benefit of Canadians.

Quantum's defence relevance is profound. Quantum sensing can detect what current systems cannot, including submarines beneath Arctic waters or stealth aircraft. Quantum navigation provides precise positioning without GPS, which is essential in contested environments. Quantum communications make command and control harder to disrupt and easier to trust. Quantum computing will transform materials discovery, logistics, advanced cyber-operations and complex decision-making. These capabilities will determine quite literally who can see first, who can act first and who can stay secure under pressure.

This brings me to the new defence industrial strategy. The DIS is a generational opportunity, not only for military capability but for Canada's industrial future.

Canada's quantum sector is built on SMEs, which are fast, innovative and globally competitive. With defence as an early partner and first customer, these firms can grow into neo-primes, next-generation integrators and future anchor companies. However, they cannot reach that scale through Canada's traditional approaches to public-private partnership and legacy defence procurement, which is built for large incumbents and moves far too slowly for frontier technologies.

If the DIS is to meet its ambitions, it must create modern partnership models that let DND and the CAF work directly with emerging industries like quantum—validating capabilities early, reducing friction and scaling sovereign technologies at the speed of relevance. This is how Canada strengthens both prosperity and protection: It's by ensuring the technologies that secure us also build our economic future.

Canada is unusually well positioned to do this. Through QIC, the quantum sector is already coordinated, making engagement simpler and more strategic.

Quantum is at a hinge moment and so is Canada. With the right approach, the DIS can turn Canada's early leadership into critical capabilities, ensuring advantage while helping homegrown SMEs grow into tomorrow's industrial champions.

● (1645)

[*Translation*]

Quantum Industry Canada and our community stand ready to help.

Thank you.

[*English*]

The Chair: Thank you very much, Ms. Lambert.

Colleagues, we'll enter into our line of questioning.

Mr. Falk, the floor will be yours for six minutes.

Ted Falk (Provencher, CPC): Thank you, Mr. Chair.

Thank you to our witnesses for coming to committee this evening. It's very interesting testimony.

Mr. Foster, I'd like to begin with you. First of all, thank you for your service and thank you for your presentation.

My understanding is that your company, L3Harris, has the current maintenance contract for much of our air fleet for DND. How long have you had that contract for?

Richard Foster: We've been in service for over 50 years. We were originally Canadair. If you know the Snowbirds aircraft that's flown by the aerobatic team in Canada, we're the original equipment manufacturer. We still hold all the drawings. We still repair them. We have the major structural contract on the F-18, which we've done for over 40 years.

Ted Falk: Do you know how much of our CF-18 fleet is currently airworthy?

Richard Foster: I couldn't give you the specific numbers, but I believe it's probably over 80.

Ted Falk: We currently have around 80 of them that are operational.

Richard Foster: It is about 80 aircraft, yes.

Ted Falk: Okay. How difficult was it to secure that contract?

Richard Foster: The F-18 contract...?

Ted Falk: Yes.

Richard Foster: We just renewed it about a year ago. I can tell you that the contractual negotiations with the government are very intense, to the point where we almost walked away, because it was coming to the point that we weren't going to make a profit. When you look at the strategic partnership and trust that we've developed with the Canadian Forces and the government over years, we can come to an agreement where they see the kind of profit that we're making and they can allow us to make a profit that will incentivize us to be more efficient. It's a continual renewal and evaluation of performance.

● (1650)

Ted Falk: When there's a change order outside of regular maintenance, how difficult is it for your organization to get a change order approved?

Richard Foster: It's not that difficult. We own all the IP and data rights, which we bought in the 1980s, which is different from the model we use today. That is why I think it's important for Canada, when it negotiates for major equipment, to negotiate the in-service support up front to get as many IP and data rights as it can.

From a structural improvement capability, we are better than Boeing at the moment. Boeing is looking to us to export some of our structural engineering capability to other F-18 fleets around the world as they sunset.

Ted Falk: Thank you.

You've also been named as a strategic partner to collaborate with the Government of Canada in the F-35 joint program office and also on defining requirements for the F-35 maintenance repair, overhaul and upgrade facility. How far along is the development of this sustainment ecosystem, as well as specific economic opportunities that you see such as work packages, long-term jobs and North American sustainment roles? Do you expect some of that to emerge in our Canadian aerospace industry?

Richard Foster: Yes, I do. We've contacted the joint program office. This is a good example of a strategic partnership. After it was announced last November, in six months, we started working directly with them to get a contract through the joint program office working with Lockheed Martin. We're at the point now where today, actually, we received the facility requirements document that outlines what is required in our facilities to upgrade them to accept an F-35. We expect that evaluation to be done at the end of March.

[*Translation*]

We have started discussions with Investissement Québec.

[*English*]

That's to look at how we would finance those improvements. I've asked the engineer who is in charge of the global sustainment for all of the depots around the world what it would take to upgrade our facilities. Would it be a lot? She said no.

Ted Falk: Some of those upgrades have begun already, at least in Cold Lake. That is my understanding.

Richard Foster: We're not part of that. That's a separate contract directly with the Canadian Forces. My understanding is that Bagotville is farther along than Cold Lake in developing the infrastructure for those aircraft.

Ted Falk: In the last week or so, there have been discussions emerging about the Gripen aircraft as an alternative to the F-35. What are your thoughts on that?

Richard Foster: I'm worried that the Canadian government is making a hasty decision. If we go to a mixed fleet, our concept of having a regional depot that would service not only Canadian but U.S. F-35s or NATO F-35s would be diminished. The likelihood, then, of our achieving that are less, to the point that we would probably lose about 1,600 jobs in the Quebec region, 500 direct and 1,100 indirect.

On the back side of that, if they choose to go with 88 aircraft, we figure we will have about 5,000 jobs in Quebec—1,500 direct and 3,500 indirect—over the course of the sustainment of those aircraft over 20-plus years. If you look at the production side, you would have to ask Lockheed Martin, but by my estimate, looking at the numbers across Canada in Winnipeg and British Columbia, is that those numbers are well over 5,000 now in terms of what we're producing for the F-35.

Ted Falk: Your advice would be to stay the course.

Richard Foster: Yes, it would.

Ted Falk: Thank you. I think I'm out of time.

The Chair: Thank you, Mr. Falk.

Mr. Bardeesy, the floor is yours for six minutes.

Karim Bardeesy (Taiaiako'n—Parkdale—High Park, Lib.): Thank you.

[*Translation*]

Ms. Lambert, the budget proposes investments in research dedicated to defence and the quantum industry. In your opinion, how will these investments benefit the Canadian quantum industry, and how will they help address defence challenges? What other funding could come from those investments?

● (1655)

[*English*]

Lisa Lambert: We're waiting to hear some more details about specifics within the budget. It did indicate that of the roughly $334 million that was announced for quantum under the defence industrial strategy, about a third would go to industry, and two-thirds of that would go to research on that side. For comparison, right now when we're looking at the rest of the globe, that's about an order of magnitude less than a lot of our comparatives in this space. It's a good start to see, but to build something competitive and build off the base that we have right now, we will have to see some further investment coming forward on that side.

Karim Bardeesy: Thank you.

This is a question for Mr. Langlais.

Happy anniversary. I know it's the 100th anniversary of the commissionaires. I appreciate everything the commissionaires do across Canada and in particular for the community here in Ottawa.

One of the things we know is that with lots of defence procurement and investment there's a potential of replicating patterns where the beneficiaries of that investment and a higher proportion of the people involved would be men rather than women. I wanted to ask from your perspective, especially from the workforce perspective, what are some things that this committee and the departments need to keep in mind to make sure that the investments that are being proposed have some benefit towards women?

Michael Langlais: The question is an excellent one.

There are imbalances between men and women, as represented in both the security and defence industries. A focus on small to medium-sized enterprises in Canada as part of the defence industrial strategy is an excellent way to be able to encourage women-owned and women-led small businesses, among which some have been represented in front of this committee in the immediate past, I believe, on behalf of businesses working towards creating drone capabilities in Canada. This focus on SMEs I think is the best way to be able to rectify at least some of that imbalance.

Karim Bardeesy: I will have a quick follow-up on that, and then for Mr. Foster a similar question will probably be coming.

How is our current ITB framework playing out with respect to that issue, do you think?

Michael Langlais: I have heard directly from small to medium-sized enterprises, including those that are led by women, that have experienced frustrations with being able to access the ITB framework and have characterized it as—these are not my words—Byzantine. Simplifying that as part of a wider strategy in order to encourage Canadian small to medium-sized enterprises' talent towards addressing pressing national defence and security concerns, again, is the best way to make sure that those women who uttered those words are involved in that conversation and are able to access those benefits and those offsets directly.

Karim Bardeesy: I have a question for Mr. Foster.

Thank you for your service and for your dedication to Canada through so many different parts of this work.

Again, this is a more open-ended question about the ITB framework and what you think needs to be addressed or improved in this defence industrial policy.

Richard Foster: I would say that a sovereign partnership or a strategic partnership would help in that regard. Instead of going directly to ITBs, if you look at the F-35, for example, we're already looking for cybersecurity partners. We're looking for logistic partners. We're looking for hangar developments because we see that coming. We've made a commitment to the Canadian government that it's not just about L3Harris and our having all the work; it's about looking to see who else needs to be part of this journey over the longer period.

That would also enable us to identify where research and development should be focused, whether it's in quantum companies or it's in UAV companies. If, competitively, we look at it and say this is where Canada is going to make a difference on the global export market, then we can work together and get expertise to say, that's where we should put our development.

The ITB process at the moment works the other way around. When you win a program, they say, "You won. Now you need to go and plan how you're going to spend that money and sprinkle it around." It's very difficult for us because our company, which is very large, competes on many programs. For me to invest in a small slice in maritime or in aerospace becomes difficult. From a business perspective, I'm not going to gain much out of doing that.

Karim Bardeesy: I want to stay on this...or come back to the workforce side. I think through your company and through the sector more generally, we've really benefited from having highly skilled aerospace mechanics, engineers and other maintenance workers.

How can we best ensure that we retain these highly skilled workers and continue to develop them, regardless of the choice that's being made in this forthcoming decision on aircraft procurement?

● (1700)

Richard Foster: I think that Canada needs to make long-term commitments to enable predictability in the workforce. I can tell you that there's some angst at L3Harris just on all the conversation that's gone on this week in terms of high-paid engineers going, "All right, maybe it's time to go somewhere else, or maybe I should be looking somewhere else," because the predictability is not there. They want to have stable lives with their families.

The second thing I would say is that I think Canada needs to invest more heavily in its universities and STEM programs and encourage high school students to be more educated in STEM. I think Canada is falling behind compared to other nations.

The Chair: Thank you, Mr. Bardeesy.

[*Translation*]

Mr. Ste-Marie, you have the floor for six minutes.

Gabriel Ste-Marie (Joliette—Manawan, BQ): Thank you, Mr. Chair.

Greetings to the three witnesses, and thank you for being here. I also want to thank them for all the information they are providing.

Mr. Foster, my questions are related to those of my colleagues Mr. Falk and Mr. Bardeesy.

This morning, La Presse published a very disturbing article in which you were interviewed. It talked about L3Harris. The article was written by Julien Arsenault and was entitled "*Un fleuron de l'aéronautique est en péril*", which in English would be "Aerospace Industry Jewel in Peril". Can you explain what this is about?

Richard Foster: As I already explained, the problem is that if Canada chose two fleets of fighter jets, it is highly likely that we would have to lay off 500 employees and lose 1,100 people who work for our suppliers. I will respect the government's decision, but I'm afraid that it's too hasty.

Gabriel Ste-Marie: I understand that half of the highly specialized L3Harris employees in Mirabel could lose their jobs. L3Harris maintains the aging CF-18s. The purchase of the 88 F-35s by Canada was an opportunity for L3Harris to become a North American heavy maintenance centre. However, the fact that the government has changed its mind means that jobs and expertise are at risk. Is that correct?

Richard Foster: That's correct.

In order for the project to be profitable, there have to be several F-35s at the same time in our facilities. If there were 88 Canadian F-35 aircraft, that would mean that there would only be about five F-35s at a time in our facilities. However, there would have to be between 17 and 22 for the project to be viable. We are therefore looking to obtain other F-35s from the United States or from our NATO friends, to ensure that we have enough aircraft at the same time in our facilities.

I would like to say something else, as a simple businessman. When we look at the figures, we see that 3,400 F-35 aircraft will be built around the world and that 14 NATO countries will share them. As for the Gripen aircraft, we're talking about two NATO countries, Sweden and Hungary. In terms of production, it is estimated that there may be 200 or 300 in the world in the future. As a businessman, I can say that the F-35 is a much bigger opportunity.

Gabriel Ste-Marie: On that subject, La Presse pointed out that, last June, Canadian Chief of Defence Staff General Jennie Carignan said that replacing the F-35s with a potentially mixed fleet was a questionable idea. What do you think of the idea of Canada having a mixed fleet?

Richard Foster: I think that it will be difficult. It would involve training two different types of pilots and two different types of technicians. I would also involve building two different types of infrastructure at the bases. It would be quite costly for Canada.

In terms of NATO operations, we either lead them or participate in them. If we have F-35s, we'll definitely take part in operations. I experienced this a long time ago with the F-18. If we have another type of aircraft, we'll just participate in operations behind the scenes.

● (1705)

Gabriel Ste-Marie: In your remarks, you focused on the need for predictability and stability and on the value of long-term contracts that extend beyond political cycles. We finally had a commitment for the number of F-35s, but the current government is now reconsidering its position. What message does this send to the industry?

Richard Foster: I respect the fact that the government wants to review its decision, for example. However, this raises concerns on our end. We need predictability and reliability to ensure the continuity of our operations.

Gabriel Ste-Marie: Noted.

Yesterday, Radio-Canada's English channel quoted the Minister of Industry. She said that Saab would create 10,000 jobs in Canada if we were to choose the Gripen. In one minute, what do you have to say to that? Where do you think these jobs would be? You spoke earlier about direct and indirect jobs related to the F-35. What comparison can be made?

Richard Foster: I know that Saab, at the time of the call for bids, spoke about creating 6,000 jobs in 2022. The current figure is 10,000 jobs. These jobs are in the support and production sectors. However, I don't know whether the goal is to create 5,000 jobs in each sector. That said, the production will last only three to five years, since the plan is to build 50 or 100 aircraft. I'm not sure anymore. The production jobs won't last long compared to the F-35-related jobs. A total of 1,000 of these aircraft have been built, and the plan is to build 2,000 more.

Gabriel Ste-Marie: Thank you.

The Chair: Thank you, Mr. Ste-Marie.

[*English*]

Mr. Guglielmin, five minutes go to you.

Michael Guglielmin (Vaughan—Woodbridge, CPC): Thank you to the witnesses for your opening testimony.

Ms. Lambert, I'd like to start with you because I believe the quantum platforms of technology are not only super important to industry, but also critical to our national security. Budget 2025 sets aside $334 million over five years under the defence industrial strategy for quantum, starting in 2025-26.

In a previous statement, you said that this was a meaningful step but that outcomes would depend on commercialization, scale and program design. In some of your previous statements, you highlighted three gaps. The first one was a refreshed industry-led quantum strategy. The second was a procurement pathway that moves lab results to real purchases, and third was seeing enough scale to anchor manufacturing and engineering here in Canada. Is that the right short list?

Lisa Lambert: It's a good short list, yes.

Michael Guglielmin: What changes would an industry-led refresh of the national quantum strategy need and what risks do we face if we delay, say, a year or two?

Lisa Lambert: I think the context that the original NQS came out in was quite a different world—just three years ago at that time—and the development of the national quantum strategy, or NQS, at that time was very much led by research in that world.

Since then, things have rapidly shifted over to industrialization, and that's the focus we need to give this. It's around what is needed for industrialization. That's more than just commercialization. Canada is one of the few countries in the world with quantum capabilities. We're one of even fewer countries in the world that has the capabilities or the foundations to have manufacturing of quantum capabilities here.

If you think in the context of Taiwan and what transformed that economy, it was the manufacturing and industrialization of semiconductors. That's the potential that can be here in Canada. We have incredible foundations. We can look over to Quebec, with the microelectronics and the photonics sector over there, and we can look at CPFC. There are talks about that right now, about refurbishing in some other areas.

Those are some key elements that we could be looking at, moving forward. I think it's about having a conversation with our industry that's here today, and with the team, the complement we have, and where we can build on their strengths.

We can't do everything—and I don't think we should be—but we should look at building what we have and really centring around where the puck is going for this. That's really the industry space, with research coming in to support that. It's not that we've solved all the science challenges to go forward. We do need research involved, but it needs to be from an industry-led perspective.

● (1710)

Michael Guglielmin: Some of the venture capital measures in budget 2025 only begin in 2026-27 and beyond. The quantum line starts in 2025-26. I'm just wondering if the timing gap causes any acute issues. What should be on our radar with the timing gap between the two mechanisms for funding?

Lisa Lambert: Urgency needs to be on the timing gap. Every day, I see new announcements coming out, from our allies and our adversaries alike, about how much they're prioritizing quantum. Just today, there was a U.S. commission on China that put forward a quantum-first national goal by the year 2030.

This is will have ripple effects across the globe and will really start showing who is not putting forward demand signals for this now. We see different countries actively reaching into their ecosystems to pull capabilities forward to deployment because they are so valuable. Having those as sovereign capabilities is so valuable to those nations as well because this really is going to be the next technology platform that's pervasive in everything we do.

Michael Guglielmin: You've also noted that our current scale in budget 2025 appears well below our peer countries, something you just mentioned a moment ago. What does scale mean in practical terms for Canada over, say, the next five years? How should government express that scale in a multi-year planning strategy?

Lisa Lambert: I think a multi-year strategy would be really helpful to have going forward. Just to set a vision, I would look at a five- or 10-year vision for this, looking at where we are actually seeking to go with this. Then, we can go back and say what would have to be true and could plan our investments accordingly. For a number, I can give a range within that, but we can qualify that range quite easily, and we could also de-risk that range considerably.

If we point things towards quantum with advanced manufacturing, it will also benefit what we call classical capabilities or conventional technologies and will help us be at the front edge with that. If we aim towards quantum, we'll actually pull all of our frontier technology sector forward together. It will benefit AI. It will benefit photonics. It will benefit our semiconductor capabilities as well. It can be a really smart, holistic investment that comes together on this side, but some thoughtful planning would be really helpful.

Michael Guglielmin: Thank you very much.

The Chair: Thank you, Mr. Guglielmin.

Ms. Acan, go ahead for five minutes.

Sima Acan (Oakville West, Lib.): Thank you, Mr. Chair.

Mr. Foster, in my riding of Oakville West, we have several advanced aerospace manufacturers. From your perspective, how does concentrating specialist manufacturing in specific regions strengthen the integrated supply chain and create economies of scale?

Richard Foster: Could you just repeat that question? I'm sorry.

Sima Acan: From your perspective, do you see the value of having concentrated specialist manufacturing in certain regions? Would that help strengthen the integrated supply chain and help create economies around the area?

Richard Foster: I think does. We've seen that in Montreal, and I think we've seen that in Ontario as well, in that cluster in the OAC. We work with them often. I think you just save time, and you have a lot of synergy with the industry working together in a close region.

Sima Acan: Thank you.

Building on that, a skilled workforce is also critical for scaling these operations. Could concentrating manufacturing plants geographically help to also maintain a robust pool of trained experts and professionals?

Richard Foster: Of course. I think of the relationship between business and universities, for example. I know we do that for WESCAM, where we actually recruit from Mohawk College on a regular basis. I think that really helps in terms of incentivizing students to learn early and to create that community involvement where businesses are working to incentivize new talent.

Sima Acan: Thank you, Mr. Foster.

Ms. Lambert, we were just discussing budget 2025, which introduced significant funding for quantum technologies, and the government is also preparing to launch Canada's first defence industrial strategy later this year. From your answer regarding the urgency of the funding, I understand that you are also happy that we were able to pass the budget and that we won't go to the polls during Christmas, which is money saving and time saving.

From an engineering perspective, how do you assess these initiatives in terms of positioning Canada as a leader in quantum technologies for defence and dual-use applications?

Also, within this strategy, do you see the role of quantum engineering evolving, particularly in developing the talent, the infrastructure and the technical capabilities needed for the industrial-scale development?

● (1715)

Lisa Lambert: Just so I understand the question, can you share what you mean by quantum engineering?

Sima Acan: How do you assess the initiatives that are coming with the budget in terms of positioning Canada as a leader of quantum technologies for defence and dual-use applications?

Lisa Lambert: Having quantum recognized under the defence industrial strategy was something we were very happy to see. When you look at all other leading countries in this space, they're driving this forward from the defence side. This is a very good first step to see, and we're very encouraged.

Within that, as I mentioned before, when we look at the scales of investment, there is a bit of a mismatch here, and we look at our global peers in this. There is a cost to do this. A lot of this is the deepest of deep tech. It is hardware-intensive for some of it, and we do have these hardware strengths, which I really hope Canada can keep because there's a lot of value in it, and it will underpin systems globally on that side. However, seeing the direction of this move under defence is a very encouraging signal.

Sima Acan: What specific initiatives should the DIS implement to develop and retain skilled engineers and technical professionals in quantum technologies, ensuring that Canada has the workforce to support industrial-scale development and deployment?

Lisa Lambert: A big part of retaining people is for them to see a future here in the sector and to see a growing and thriving sector. Supporting our SMEs and giving them the supports they need to become anchor companies and to scale up and grow is a key part of that. That will involve procurement. That will involve having some predictability and some demand signals going forward.

Those are some things we can move towards in terms of having all the conditions that are needed to industrialize and grow a sector from a nascent state.

Sima Acan: Thank you very much.

Do I have more time, Mr. Chair?

The Chair: You have 45 seconds.

Sima Acan: I can just skip, then. Thank you.

[*Translation*]

The Chair: Mr. Ste-Marie, you have the floor for two and a half minutes.

Gabriel Ste-Marie: Thank you, Mr. Chair.

Mr. Foster, given that the CF-18 fleet is aging, there will be less and less maintenance. L3Harris has a structuring project to become a heavy maintenance centre in northeastern North America for F-35s. This would help create jobs.

The government may opt for the Gripen aircraft rather than the 88 F-35s. In this case, there would no longer be any structuring project for maintaining current jobs. We could lose 500 jobs. However, if the government goes ahead with the F-35s, there could be additional hiring. Is that right?

Richard Foster: Yes. That's right.

As I said, if Canada decides to proceed with the 88 F-35s project, we would consider hiring 1,500 people. In addition, 3,500 jobs would be created by our suppliers. We're already assessing how we could work with our suppliers, especially our Quebec-based suppliers, on cybersecurity and logistics. We're also determining what type of infrastructure would need to be built. Lastly, we're looking at other aspects.

Gabriel Ste-Marie: You said that your facilities would need to be modified in order to service F-35s. You also said that you were carrying out a study on this matter. However, this will all depend on the government's decision. You must wait for the government's decision before taking action. Is that right?

Richard Foster: We're still going ahead with our study. We just received some documents from Lockheed Martin through the American Joint Program Office, which is responsible for the F-35s. We expect to finish our study by late March. This study will help us figure out how much it will cost to upgrade our facilities. Since structures are already in place for F-18s and security is quite high, the cost could be lower.

Gabriel Ste-Marie: This makes it an economically sound choice in terms of jobs and cost reduction, given that you already have the site. The government would need to make its decision before March 2026, since you're currently carrying out a study. Is that right?

Richard Foster: That would indeed be helpful.

Gabriel Ste-Marie: It would help improve predictability.

Does the government—

The Chair: Unfortunately, your time is up, Mr. Ste-Marie.

Gabriel Ste-Marie: I had many more questions, but I would like to thank the three witnesses.

● (1720)

The Chair: Thank you.

[*English*]

Mr. Guglielmin, you have five minutes.

Michael Guglielmin: Thank you, Mr. Chair.

Ms. Lambert, from your perspective, what's still missing in Canada's approach to move quantum from lab outcomes to consistent purchases and field use? How should responsibilities be divided between multiple departments so that hand-offs don't stall projects?

Lisa Lambert: It's a really good question. I think one thing that's missing, and I touched on it before, is having clear demand signals. As I mentioned, this is going to be a defence-first application in most contexts, so knowing what capabilities the CAF and DND are going to need would really help. This is tough to do for emerging technologies. If you went back to the 1900s and asked people what they wanted, they would say a faster horse. They wouldn't ask for a car or know that they could get a Ferrari. In this case, we need to figure out some new ways to do this. The traditional way of working with requirements doesn't tend to work very well for frontier technologies. They move too quickly. There are challenges in working with that.

I also think it would be encouraging for Canada to put forward a concrete mission, something like Canada being one of the best in the world for deploying quantum and frontier technologies for Arctic and maritime conditions. Something that aligns very much with our geography and what our needs are would be helpful on that side.

The other thing, too, is looking at the industrialization piece and having an advanced manufacturing strategy to look at what would be needed to build this out. This could be done in collaboration with industry and aligning it with what their needs are. It would help to look at how we build this ecosystem out. These are things that will take time as well. It would help them with their planning and their predictability as they move forward. It would also give confidence to investors and help crowd some private capital into the space to help accelerate it forward.

Michael Guglielmin: In a Globe and and Mail op-ed, you argued that Canada must industrialize quantum by building fabrication, integration, secure supply chains and deployment at scale, not just by funding research. Can you expand a little on your thoughts on that?

Lisa Lambert: I think this is something that's even more urgent right now. We're seeing this in other areas. The U.S. has an advanced manufacturing strategy. Europe is developing its advanced manufacturing strategy. We're seeing this across Asia as well. It's something that's lacking here. We're moving from a research space into, for a lot of these companies, a manufacturing game, going forward. How we go and build this out is also integral to introducing us and integrating us into global value chains.

No one company, let alone one country, is going to be able to do quantum on their own. It's too complex. There are supply chains, not just a supply chain for quantum. They're still emerging, and they're more complex than semiconductors. Having those plans also allows us to negotiate and partner with allies and figure out what parts of the ecosystem or which parts of the supply chain we are going to own, that we are going to specialize in, and then we can better co-operate with our allies in this space.

Michael Guglielmin: Thank you.

Mr. Foster, you spent some time talking about the F-35s, and you've warned previously that anything less than 88 F-35s or a mixed fleet will put Canadian jobs at risk. I think you've highlighted that quite well here.

Yesterday, Minister Joly said that Canada didn't get enough industrial benefits from the F-35 procurement and wants more jobs created, which is why they're looking at going a different way. I was just wondering if you could expand your thoughts a little further on that.

Richard Foster: From my understanding, the competition for the F-35 was done a little differently. I know that Lockheed Martin came up with a different way of doing the ITB process and still won. I know that our Canadian companies around Canada have competed and won the right to produce products for the F-35, and we continue to compete. If Canada was to decide to go to another fleet, when those competitions come up for renewal, I would be afraid that we'd probably lose more jobs on the production side.

Michael Guglielmin: Can you briefly define what role L3Harris was going to play in the planned F-35 centre at Mirabel?

Richard Foster: We believe that Canada needs a sovereign capability for its F-35s to make sure that, as I said in my remarks, when you need an F-35 to do an operational mission, it's ready. We've done that for over 40 years for the F-18. We're part of the team that ensures that, when you need an F-18, it's ready to go. If you don't have that depot, that means you're relying on another depot in another country to make sure your F-18 gets the service it needs.

Michael Guglielmin: If the government delays or reopens parts of the fighter plan, how long do you think it could push back the start of the full rollout in operation at the Mirabel sustainment centre? What does that mean for the CF-18 transition, for instance?

Richard Foster: I guess we could keep the F-18 going longer. We have the structural capability to do that, and it certainly is as capable as the Gripen. The longer we wait.... We think that the Americans are getting at capacity in their two depots. We're offering the flexibility for the U.S., specifically, to have an overflow capability to put their F-35s in our facility. At the same time, Canada would provide a national sovereign readiness capability for our own F-35s.

● (1725)

Michael Guglielmin: Thank you.

The Chair: Thank you, Mr. Guglielmin.

[*Translation*]

Ms. O'Rourke, you have the floor for five minutes.

[*English*]

Dominique O'Rourke (Guelph, Lib.): Thank you, Chair. I'm going to share my time with my colleague.

It's helpful to hear how urgent this defence spending is—the investments in SR and ED, the acceleration in manufacturing—and, from my perspective, how essential it is to pass the budget and then implement its measures. We are hearing that Canada is a target in a hybrid war that's unparalleled in 80 years. I think we need to hear that urgency and hear the solutions that you're bringing to us. It's interesting that the colleagues opposite are saying that we should be spending more. I tend to agree.

Mr. Langlais, I just want to come back to your comment about small and medium-sized enterprises. I'm curious if you are familiar with an American program. The Americans have a program called the WOSB, which is for women-owned or economically disadvantaged women-owned small businesses. The U.S. military has a specific procurement stream for them.

They also have what's called APEX accelerators. Are you familiar with the program? It allows for separate procurement and for women-owned businesses—or in Canada, it could be indigenous-owned businesses—to bid on smaller contracts. The big stuff continues to happen, and then, if those aren't successfully bid on, they go back to the larger pool. Are you familiar with that? Would you support that?

Would you support the concept of APEX accelerators, which help businesses procure to the defence department in the States?

Michael Langlais: I am generally familiar with it. You may have noticed that I borrowed some terminology from it. I am not familiar enough to speak to its details, but I believe similar programs would be beneficial in Canada, with a note of caution that we must focus on the capabilities first, given the urgency of the requirements that have been expressed and the spending that must be accomplished.

I believe that accomplishing these things in parallel is possible, but I believe that letting one hamper the other is a risk that must be carefully guarded against.

Dominique O'Rourke: That's fair.

I'll give the floor to Mr. Bains.

Parm Bains (Richmond East—Steveston, Lib.): Thank you to my colleague.

To our witnesses, thank you for joining us. I'm not sure how much time I'll have to get to everyone.

My first question is for Ms. Lambert.

There have been significant investments into quantum computing at the University of British Columbia in my home province. I wanted to get your thoughts on it. I'm not sure we talked about commercializing it. What would you recommend that government do to help scale the quantum computing sector so that we can effectively commercialize the R and D?

Lisa Lambert: Thank you. I also live in B.C., so I appreciate what's happening over there.

The global quantum industry was launched in British Columbia, and it was an incredible achievement. It was back in 1999, when D-Wave was founded. The global quantum software industry was also founded in Vancouver, with 1QBit, back in 2012.

A first piece to look at is that quantum technologies are much bigger than quantum computing. There's a whole platform within them. They do reinforce each other in some of their developments, so when we look at quantum research, I would really suggest that we look at quantum technologies broadly and encourage development and investment across that side of it.

There's still more work to do on the research front. I think right now some of the academics can be targeting research areas that would support the acceleration of our industry, recognizing that we're in a global race for this as well. They could be trying to get two steps ahead of where industry is. Solving some of those big challenges would be really helpful in that context if we were all pulling together towards a mission-led strategy and ensuring that research isn't trying to out-compete our own industry. That isn't happening intentionally, but if we really to put forward a national quantum strategy and pull together, I think we all need to be working from the same mission-led approach.

Parm Bains: I'm going to go into the rise of agentic AI. Maybe I'll stick with you on this one.

We see that it's transforming the cyber-threat landscape. Can you give us an idea of how we can use quantum computing to support the public safety authorities' efforts to counter cyber-attacks?

● (1730)

Lisa Lambert: I recently co-authored an op-ed that mentioned AI, agentic AI, the emerging cyber-threats that are happening and where quantum plays into it. I'm happy to share that and follow up more on that side.

What I will say is that quantum and AI are different technologies that will converge. We are seeing a lot of emerging cyber-threats right now. With quantum computing, we will get to a point—and there are timeline predictions for this coming sooner than originally anticipated—where we're going to get to something called a cryptographically relevant quantum computer. This is going to be a device that will be able to walk through most of the conventional cryptography that we use today. This is a threat that we know is coming. We have solutions against this. Many of them were actually pioneered in Canada and are available today on that side.

What we need to do is to ensure that all of our critical infrastructure, our government systems and our private sector are quantum-safe and ready for that potential threat to come, but we need to do more than that. We also need to ensure that we're cyber-resilient on that front as well, so that if we do face an attack, we're able to quickly move to another system or have defences in place. This will help protect against potential threats like agentic AI, like quantum computing or other threats that are coming.

We need to take a posture right now. I would suggest that we should actually anticipate that we will face technical surprise so that we will be able to respond and not be dead in the water when that happens.

This is a really serious thing that we need to move on, because our entire economy is built on the backbone of the digital world. If this attack is a targeted threat, it would undercut everything.

Parm Bains: Thank you for your time.

The Chair: Thank you very much, witnesses, for making yourselves available today, contributing to the insights of this study and providing us with some guidance.

Colleagues, we're going to do a strict five-minute suspension and get right back at it.

● (1730)

(Pause)

● (1735)

The Chair: Colleagues, we are going to continue with the second hour of our study here. We have two witnesses in the room with us, as well as one online.

I want to welcome, from my hometown and from the University of Manitoba, James Fergusson, senior research fellow at the Centre for Defence and Security Studies.

Welcome, Mr. Fergusson. We'll talk about home after the meeting here.

From the University of Calgary, we have Robert Huebert, professor, Centre for Military, Security and Strategic Studies, who's joining us virtually. From H2 Analytics, we have Hugo Hodgett, who is here with us today.

Witnesses, you will have up to five minutes each for introductory comments. For those in the room, if your earpiece is plugged in but is not in your ear, please place it on the sticker in front of you.

With that, we're going to get right into things. I will just confirm that those who are joining us virtually have had their earpieces and their headphones tested and verified. Thank you very much.

With that, Mr. Fergusson, you get a hometown advantage from my perspective, so you're going to go first. There are five minutes for you, sir.

James Fergusson (Senior Research Fellow, Centre for Defence and Security Studies, University of Manitoba, As an Individual): Thank you.

Good afternoon. While I had hoped that the government's defence industrial strategy would have been released by now, I shall direct my brief comments to some critical observations vital to a defence industrial strategy.

First, the strategy must be premised upon a detailed, systematic and empirical map of the global defence industrial environment. As Canada purchases the overwhelming majority of its major weapon systems and platforms from foreign defence primes, this environment significantly determines the possible and the optional.

Further, this environment is not monolithic. Instead, there are significant variants across defence industrial sectors—air, land, maritime, space and cyber. Thus, a single one-size-fits-all defence industrial strategy is problematic. Canada needs multiple strategies fit for the different sectors.

Second, the strategy must be premised on a realistic, systematic understanding of existing Canadian defence industrial capacity. Overall, this resides in the second tier of defence production—component or subsystem suppliers. Although evidence is limited, a significant portion is foreign-owned and, especially, American-owned. Systematic knowledge, despite attempts by government over time, is in relative short supply. Companies, for a variety of reasons, are reluctant to disclose proprietary information, compounded by the definition of what is and is not a defence company.

Nonetheless, it has long been the case that successful Canadian companies depend upon accessing the global marketplace. This is critical, especially in the context of offsets—industrial and technological benefits—in seeking primes to commit ideally 100% of contract value in Canada. In reality, however, no companies provide 100% offsets. Instead, the government employs an economic multiplier relative to investments. No company would stay in business if it signed a contract for a million dollars and then was expected to give the million dollars back to the consumer. Even so, this does translate to the establishment of prime subsidiaries in Canada and engagement with Canadian companies directly related to the defence product.

However, whether these commitments translate beyond the immediate purchase is an open question. While government does track offset commitments, serious questions should be asked whether Canadian offset programs over, say, the past 40 years provided significant returns on our defence acquisition investments and whether these investments have contributed to a sustainable defence industrial base. Unless subsidiaries in Canadian companies become fully integrated into the prime supply chain beyond the specific purchase or obtain licence to compete in the global marketplace, these companies become dependent on Canadian defence capital spending with a variety of economic and political implications.

While today, as a function of the unparalleled level of planned defence capital spending, this may prove relatively unproblematic, it won't last forever and Canada will find the capacity produced today will only be short term.

All governments seek domestic returns via offsets, which constrain global market access and to which primes must respond, which reduces their willingness to provide a global licence, especially in terms of technology transfer. In many cases, due to intellectual propriety and related corporate interests, offset commitments can simply amount to build-to-print work with little or no technology transfer. In addition, offsets significantly increase procurement costs estimated by some at roughly 20%. The degree to which these factors are present in the case of directed purchases employing the national security exemption, especially in government-to-government purchases, is a difficult question as well.

Finally, as a function of broader economic reality and the defence production sharing agreements with the United States, the Canadian defence environment is integrated with the United States defence industrial and technological base. Also—and this cannot be overstated—the U.S. remains by far the largest, most technologically sophisticated military market in the world, and this is unlikely to change dramatically over the next 10 to 20 years.

Current politics surrounding Canada's relations with the United States, along with misperceptions of U.S. defence reliability, have brought diversification back with indications, through a variety of agreements with Europe and the Asia-Pacific partners, of defence diversification. The implications of attempting to go down this path are major. Unless European and Asia-Pacific partners are willing to provide direct access to the procurement markets, the aforementioned offset dynamic will remain in place.

To conclude, one recent example of success and a model for a viable strategy is the F-35 consortium. Canadian companies involved, as long as they remain competitive per se, have obtained access to the global F-35 market of over 2500 platforms—the largest fighter production in the world.

● (1740)

There are numerous other considerations related to the Canadian defence industrial strategy, including overhaul and maintenance contracts and research and development investments, that need to be considered in the complicated world of defence. However, in the end, economic investment drivers should not undermine providing the Canadian Armed Forces with the best and most advanced capabilities.

I look forward to expanding on these observations and answering other questions the committee may have.

● (1745)

The Chair: Thank you, Mr. Fergusson.

Professor Hodgett, we go to you next for five minutes.

Hugo Hodgett (Chief Executive Officer, H2 Analytics Inc.): Good evening. Thank you, Chair and members of the committee, for inviting me.

My name is Hugo Hodgett. I am the CEO of H2 Analytics, and I am a Canadian Armed Forces veteran. H2 Analytics is an Ottawa-based technology company that has been supporting the Canadian Forces, the RCMP, federal departments and Canada's allies abroad. We've been supporting the CAF since, approximately, 2018, giving us a clear view into what accelerates and what slows the development of Canadian defence capability.

We all know that the global environment is becoming more uncertain, and many of my colleagues have talked at length about this in previous appearances. I want to focus on a topic that will provide direct recommendations that could influence the committee's recommendations against the structural barriers that are preventing Canadian defence-focused innovators from becoming globally competitive.

To build a real defence technology ecosystem in Canada, three pillars must be aligned: the innovators, the Crown and the capital providers. Today, these pillars are not aligned, creating unnecessary friction, most acutely felt by CAF end-users and by the innovators building the capabilities they need. Central to the problem, as has been pointed out time and time again, is the institutional risk aversion that's embedded within our procurement system. Small innovative firms simply cannot survive, let alone scale, when forced to navigate a drawn-out process and the Byzantine maze of rules that ultimately produce contracts of uncertain duration and value. The lack of predictability suppresses investor confidence, making capital providers hesitant to fund defence innovators. In many cases, this pushes companies towards foreign capital, where risk tolerance is higher, often resulting in intellectual property leaving Canada.

Canada has world-class talent in defence technology and is respected globally for its ability to produce novel high-impact capabilities, yet at home Canadian firms struggle to attract the capital required to scale, to mature their products and to enter export markets. If Canada intends to be a net exporter of defence technology, innovators and the Crown cannot achieve this alone. Canadian companies require both public and private capital in order to grow, commercialize IP and expand globally. What can the Crown do to encourage capital formation—with minimal additional cost, time and process—that will enable small and medium-sized businesses to take advantage of it?

The first is to prioritize a shift to multi-year contracts as the norm for early-stage innovators, giving both companies and investors the predictable revenue signals they need that the Crown intends to see procurement through. Rest assured, the Crown retains all of the capabilities it needs to cancel contracts for underperforming companies.

Second, apply national security exemptions more readily to innovation contracts, recognizing that a resilient domestic defence industrial base is itself a national security interest and warrants streamlined procurement. This will bias Canadian firms and provide much-needed revenue to Canadian innovators so that they can seek domestic rather than foreign capital.

Finally, review and modernize Treasury Board guidance on delegated and sole-source authorities, increasing the dollar thresholds and pushing decision-making as low is as practical so that military end-users can more directly influence timely procurement of the capabilities they need. Innovators and end-users are best placed to identify and fill gaps within military capabilities, and the addition of bureaucratic steps results in an invisible tax on business and a failure to feed capabilities quickly.

The overarching point is this: Innovators cannot grow and scale domestically or internationally if the Crown is not a consistent, reliable customer. When the Crown signals commitment through revenue to companies, capital flows into those companies, allowing job growth, international expansion, exports and high technology to be built in Canada. Canada already has world-class defence innovators. Our reputation abroad is strong, but it's built on the determination of innovators working around systemic friction at home. The scaffolding is in place for a robust defence technology ecosystem that delivers Canadian IP, high-skilled jobs and global influence. Innovators are doing their part. With targeted action on behalf of the Crown and properly aligned incentives for capital providers, Canada can truly build a world-class defence ecosystem.

Thank you. I look forward to your questions.

● (1750)

The Chair: Thanks very much, Mr. Hodgett.

I was wondering why you gave me a perplexed look when I called you professor and then I realized I was looking at Mr. Huebert. Congratulations on the Ph.D. that you earned here this evening.

Professor Huebert from the University of Calgary, you have not lost your Ph.D., so we'll go to you now for five minutes.

Robert Huebert (Professor, Centre for Military, Security and Strategic Studies, University of Calgary, As an Individual): Thank you.

I appreciate this opportunity to talk. I would also point out that I'm actually also a born-and-raised Winnipegger. In fact, Dr. Fergusson and I did our undergraduate together. That's, once again, to point out that Winnipeg element.

The Chair: Take as much time as you need then.

Robert Huebert: I figured that would happen. Thank you.

I have three major points to make in terms of the defence industrial strategy.

The first one is that, despite efforts to try to portray any form of strategy or any type of policy that the Canadian government over time has tried to develop when it comes to an industrial strategy pertaining to defence...it is an inherently political process and not a technical, economic process. You can come up with the very best design for how to allegedly streamline the process and how to ensure that the process is in fact working to the best of your ability, but it is the decision of the Prime Minister that ultimately determines how well or how badly the system ultimately works for the development of our defence capabilities.

We know of the good examples where things have in fact happened very quickly and where we've been able to receive a weapon system of very sufficient and sophisticated capability. I'm referring to the C-17 decision in terms of how fast we can actually move on decisions of defence and what it means for the obviously following defence and industrial capabilities.

For an example of where it was done very poorly, we can think about the efforts to replace the Kingfishers for the Canadian Navy, in terms of their helicopter replacement.

The second point that flows from the inherent political nature of any defence industrial strategy is the fact that almost the complete placement of this strategy is almost entirely focused on economics and not on strategic considerations. We see this again through the various examples. My colleague, Dr. Fergusson, made several references to the F-35. We can compare ourselves to the manner in which all of our Nordic allies, in fact, went through the process of making the decision for the F-35 with various types of industrial defence strategies, and that includes the Norwegians, the Finns, the Danes, the Brits and the Dutch, and the manner by which they were able to move very quickly—the Danes in particular, for example—to be able to achieve it.

If we look closely at their industrial defence strategy, despite being close to Sweden—and one would think that they would have a relationship that would be closer to them—we see that one of the driving features for their industrial strategy was strategic considerations, that is, how they had to have the best fighter for responding to what they saw as the growing Russian threat.

The third point that follows from this is, of course, that we do have examples where we've attempted to come up with a coherent defence industrial policy or something similar to it. The example that probably stands out the most is the Canadian shipbuilding strategy. That, of course, was created and finalized back in 2011. There's been a significant period of time so that we can have an evaluation of how well or how badly it has been implemented.

One of the key drivers of that industrial defence strategy was to break what was usually referred to as a boom and bust cycle in Canadian defence production. We've always understood that Canada has always had this difficulty. We tend to build and buy very large and very sophisticated defence systems all at once, which then creates all sorts of problems in terms of maintenance and their replacements. When we think about the boom and bust that the Canadian shipbuilding strategy, as an industrial defence strategy, was trying to break, it was trying to ensure that the construction of both naval and Coast Guard vessels was done on an ongoing basis.

Right now, even though the decision was made to make new icebreakers as far back as September 10, 1985, we are now building four big icebreakers all at the same time. When I say icebreakers, I'm including, of course, the two AOPS. We have one that is being built in Vancouver, and one that is going to be built in Finland and in Quebec. As a result, even though we know better, we have just determined a complete repeat of the boom and bust cycle.

Therefore, we're left with this realization that no matter how much we try to rearrange the deck chairs on the deck of the *Titanic*, we have to first of all realize that this is a political process. We can talk about a rational system all we want. It will determine what the Prime Minister wants to be moving on these issues.

● (1755)

Second of all, we cannot lose sight of the fact that ultimately, when we are buying defensive systems, we are trying to defend Canada in an increasingly dangerous international security environment. It's not about getting the best buck, I dare say. It is about ensuring that we have the best weapon systems to defend Canada and to ensure that deterrence is maintained, and if deterrence breaks down, then we are able to fight and defend Canadians, not make the best dollars.

Thank you very much.

The Chair: Thank you very much, witnesses, for your introductory remarks.

I will note as we go to the first line of questioning here that notwithstanding the fact that Mr. Falk is a Manitoban, I did not choose that he gets to go first.

Mr. Falk, the floor is yours for six minutes.

Ted Falk: Thank you, Mr. Chair.

Thank you to all of our witnesses who have testified here in the second hour of committee.

Mr. Fergusson, I will start with you.

First of all, I'd like to just say that I'm sure Raquel Dancho is very sorry that she's not here. She was looking forward to being able to question you here at committee. She fell ill today and was unable to attend.

James Fergusson: Give her my best.

Ted Falk: We will do that.

You previously gave testimony to the foreign affairs committee where you emphasized the importance of pragmatic, rational decision-making over emotionally driven choices. Considering the recent developments, such as the delays in the F-35 and the talks with Gripen, do you think these decisions are being based on a pragmatic basis?

James Fergusson: To be blunt, not at all. This is emotional, virulent nationalism in Canada, responding to statements by the President of the United States. We've gone down this path.

The F-35 purchase should have been done 15 years ago when it was started by the Harper government. Then it got derailed and it was stalled and stalled.

If you look at the fighter aircraft production environment for the Allied world and others, the F-35 was really the only choice. As my colleagues have pointed out here, you look at the list of countries that are all involved in the consortium and that is the model. We had that going, I would just add, back in the 1990s with the replacement of the Sea King, which fell apart as well and cost us companies. This is our only option.

I could go on at length as to why this would be a disastrous decision, from having two supply chains, two training chains and two sets of infrastructure that have to be equipped, maintained and spent.... That's notwithstanding exactly what the Gripen company...and by the way, it's not a Swedish company. British Aerospace now owns this company. Remember that.

Besides that, are we going to assemble it? That's what we're going to do? We're going to assemble 73...if I take 88 as the number with 15 F-35s. Are we going to assemble them here? That's what we call a screwdriver plant. There's no technology. There's no advancement—period. That's even if we go to a broader market for the Gripen, which is a market of hundreds, if that. It's not the market the F-35 is in.

There are a variety of other reasons that this has just become emotional nationalism that has been wrapped up in the diversification of general economic patterns for Canada. I would remind everyone that we've done this before. How well has it worked out for us? It hasn't. My answer is very simple. This has got to stop.

My colleague, Dr. Huebert, made this point as well. This is political beyond the realities. I'm not one who criticizes political involvement. This is taxpayers' money. The government is responsible and accountable for this. Politics have to play here, but when politics become emotional and nationalist-driven, with no insight into the reality of the marketplace, then we are heading down a path we've been on many times before. It didn't work out then and it's not going to work out now.

● (1800)

Ted Falk: Right now, the F-35 seems to be a clear choice from an ITB perspective, with the tail assemblies being manufactured at Magellan in our home province of Manitoba. There don't seem to be a lot of ITBs associated with any other considerations.

James Fergusson: It's difficult to know. As far as I know, this is what's in the public domain.

Saab has offered assembly here. It's going to marry itself with Bombardier. That is an interesting question and goes back to a long history of the Bombardier relationship on these things. To assemble it is fine.

Exactly what access do we get to the market, the limited global market, for the Gripen? Besides that, what technology transfers are we going to get?

We have to remember, for all major corporations and companies, intellectual property is the key thing for them. They're not giving this away unless you're willing to pay a lot of money for it. Even then when Canadian companies that get technology transferred to them, they are not going to allow you to go on the global marketplace.

Ted Falk: Can I switch gears for a moment?

James Fergusson: Yes.

Ted Falk: Thank you for that. I think it's very important for this committee and for the government to hear that.

You have been very critical of the DIA.

James Fergusson: That's the Defence Investment Agency, yes.

Ted Falk: Do you still hold that position?

James Fergusson: I do intuitively, but I'll be honest, I don't know. I haven't seen any details of this. I don't know if the czar, as I call them, has testified to the national defence committee or to this committee about how this is going to go. If we think that with the Defence Investment Agency we are somehow going to throw out, as my colleague said here...as much as I agree with his point.

Are we going to throw out all the procurement competitive rules? Are we going to throw out all the ISED issues involved here? Are we just going to streamline this and go ahead? I don't think so. It's going to remain in place. I've argued this for a long time over the years about defence procurement in this country. People say we need to reform this and we need to reform that. To be honest, forget it; you're not going to reform nothing. You're going to play in the margins. You might be able to tweak things and get a little faster and a little quicker, but unless there's a sea change, I just don't see that happening in the case of the Canadian system.

Ted Falk: I believe I'm out of time.

I had questions for the others as well, but I'll leave it to my colleagues.

Thank you.

The Chair: Thanks very much.

Mr. Bains, you have six minutes.

Parm Bains: Thank you, Mr. Chair.

Thank you to our witnesses for joining us here today.

I'll go to you first, Mr. Hodgett. Thank you for your service.

I want to talk a little bit about our defence ecosystem in Canada. We know that we have over 600 manufacturers in our defence ecosystem. How can we ensure that Canadian SMEs or new start-ups in the defence and national security sector remain a focus of the national procurement strategy and are not being sidelined by larger multinational firms?

Hugo Hodgett: Thank you very much for the question. I very much look forward to my parliamentary doctorate in the mail.

Voices: Oh, oh!

Hugo Hodgett: There are many ways in which small and medium-sized enterprises can be incentivized to, first, join the space and then, second, stay in the space. A fantastic start is a review of the ITB system that encourages a more effective collaboration among academia, prime contractors and small and medium-sized enterprises. Additionally, nationally mandated procurement requirements for small and medium-sized businesses is an opportunity that has been talked about recently.

Most importantly, the key to this is the provision of revenue to these companies in a way that actually gets them over what we in the technology industry refer to as the valley of death. It is very easy to get R and D money. It is very easy to get initial contracts that can get you to a point of productization. If the Crown is not willing to engage with small and medium-sized enterprises in a way that allows them to sign contracts that exist for a known duration at a known value, then the opportunity space reduces significantly for companies to join.

The last part of that would be the review of SR and ED. The applicability of SR and ED, especially in the capital expenditure space, is a huge benefit to companies in the area. As soon as small companies start playing in defence hardware, defence software and larger-scale capabilities, they are immediately priced out of the market, purely due to the cost of those items. Being able to roll that into SR and ED spending is an extremely powerful tool.

● (1805)

Parm Bains: Staying on the capital side of things, we've heard in this committee before from people in the banking and financial sector who've talked about the stigma around capital lending. The term “debanked” has come to the forefront. Can you maybe talk a little bit about that? Have you experienced any of that in what you're doing?

What are things that we as a government can do to ensure that there's the financial capital side of things to remove some of that stigma and assist with some of these new start-ups?

Hugo Hodgett: Absolutely.

Private institutions, of course, have their own risk processes that they need to undergo, and that's fair enough. On the capital provider side, last year we were engaging initially with venture capitalists, some of which said that defence was currently in the bucket of gambling and crypto trading. Obviously, we disagree with that.

In terms of banking itself, the reality is that it's not necessarily because of the stigma around defence. It is because, in many cases, the way the contracts are structured—i.e. usually one year plus option years—does not actually provide a capital provider the certainty so that they can say, “I know that you're going to be on contract for the next three years, so I'm willing to provide you with the loan that will carry you through this time and allow you to do that kind of investment.”

Going back to my point, a significant boost to small and medium-sized companies in the space would be to sign the multi-year contracts up front, as that allows for the certainty that they need. The second is when working with organizations like EDC and BDC, if there are opportunities to do things like enable.... For example, if you've signed a $1-million contract with the Government of Canada to provide a capability, you are also entitled to, through BDC, a $200,000 capital loan that allows you to basically have the credit against that procurement vehicle.

Those are some small efficiencies that could be found that would significantly increase the pace at which capital moves into the space.

Parm Bains: Thank you.

I'll stay with you for this one as well.

How can industry and government collaborate to periodically reassess and update the capability priorities? What you're mentioning here is that service contracts need to be long term. How do we determine how long we need this? There will be continued evolving needs around the capability. Could you expand on that?

Hugo Hodgett: My experience is that procurement requirements generally result from two levels. Either it's a strategic procurement of major capital capabilities, i.e. tanks, aircraft, ships, infrastructure, etc., or it's from the lowest levels possible, where the actual end-users are signalling requirements.

I have very little exposure to the process by which major capital procurements are put in place or how those are prioritized, so I'm going to decline to comment on that component. What I can tell you is that any soldier is absolutely screaming every day of their life about what they want to stop using and what they do want to use. Giving end-users the ability to have a direct say and giving delegating authorities, especially financial and procurement authorities, to the lowest levels possible will actually allow the trialling and, eventually, onboarding of capabilities much more quickly. That is much more suited to an innovation space as well.

I would also say that the way the government and the military can support that is by using that as an opportunity to see what works quickly and then to scale it across the institution rather than looking at multi-year projects of how we bring this on at the broadest scale possible and then push the requirements down.

The Chair: Thanks.

[*Translation*]

Mr. Ste-Marie, you have the floor for six minutes.

Gabriel Ste-Marie: Thank you, Mr. Chair.

I would like to extend my greetings to all the witnesses and to thank them for coming and for their remarks.

Professor Fergusson, you criticized the government's decision to put the purchase of the 88 F-35s on hold and to see whether it could be combined with the Gripen aircraft. You said that this was a bad decision.

Yesterday, the Minister of Industry said on CBC radio that Saab promised to create 10,000 jobs. What do you have to say about that?

● (1810)

[*English*]

James Fergusson: The first response I would have is to compare what she said to what I think it was that the vice-president of Lockheed Martin said about the thousands of jobs that have already been provided. You can provide 10,000...and the number, as far as I'm concerned, is like a rabbit pulled out of your hat. No one really knows until this moves forward.

The question is not how many you can provide now or a year from now. It's how many you can provide that are going to be sustained over 10, 20 or 30 years. If you look simply, as I said, in terms of the numbers of access we have in a global marketplace, I don't know what the arrangements with Saab would be. I know what they are with the F-35 consortium, and that's a huge market.

Remember, these platforms are going to be in place, if we take the CF-18 example, the frigate example or the Sea King example, for 40 or 50 years. Over that time, there will be upgrades, modernization programs that are brought in and, of course, the overall maintenance contracts that'll have to go. With our companies that are involved with the F-35, what that means is not just dealing with 88 Canadian. That means we are engaged as long as we're competitive. I don't worry about that with our companies, because they have always been competitive. The problem has always been getting access to the global market. You now have a global market for the next 40 years to maintain that job base, depending, of course, on technology and labour versus technology resolutions, but that's the long term.

In my view, the F-35, already the bird in the hand, provides us with a long-term, sustainable capability for the Canadian defence industry with global access to a global marketplace that is going to expand, I would suggest, over time, and that is really doing what we want to do with a defence industrial strategy. The Gripen side of the equation is, in my view, a big question mark, but it's never going to be as big, it's not going to be last and it's not going to be sustained, in my view.

[*Translation*]

Gabriel Ste-Marie: Thank you. Your comments were quite clear and eloquent.

You spoke about commitments, maintenance and upgrades, for example. These things could span a number of decades, say 40 or 50 years. There are also the strategic military issues. For example, what should be done with the current equipment? You said that there were more industrial benefits in a partnership involving F-35s, particularly in terms of access to the global market.

During the first hour of the meeting, we met with Mr. Foster from L3Harris Canada, the company responsible for maintaining CF-18s. Today, the Quebec newspaper, La Presse, reported that the government's potential decision to order Gripen aircraft instead could jeopardize the company's future. The paper also reported that half the jobs could be lost in the short term. Do you have any comments on job preservation at L3Harris in Mirabel?

[*English*]

James Fergusson: Exactly, and it's not there. It's Magellan Aerospace in Winnipeg. I don't have a list of the companies. I believe there are 30 Canadian companies involved in this. If anyone here thinks that if we buy the Gripen, this won't have implications for their firms.... The Americans will decide: “Who are the leads on this? You're not buying. We're going to now push you out.” They'll all go. I'm convinced of it.

Even more, which we don't talk about, are the strategic political implications. How is the U.S. Department of Defense...? I'm not telling you that we should be kowtowing to the Americans, but how are they going to respond to this? What does this mean to them? What does it mean for the companies when suddenly we're signalling to them that we still want access to their market through the DPSA? By the way, the deal we struck back in 1956 was that Canadian companies would be treated like American companies in DOD procurement and, in return, we would buy major military systems from the United States. There have been exceptions, and those have been understandable for a variety of reasons in terms of product capability at the time. Do you think they're just simply going to sit by and say, “Oh that's fine. We don't mind”. I don't think that's a proper reading and understanding of the American administration.

If you're going to go down this path, and this is the broader path—and I'll end here—in terms of diversifying to the European marketplace and the Asia-Pacific partners, despite the agreements we've signed with them...which are very nice agreements. There's no meat on them at all. We don't know what they really mean. If they cannot promise access to a global market and to their procurement systems, it's not worth going down that path at all. We'll get nowhere. Even then, if we go down and they promise access, you have to remember that, overall in past decades, when we've gone to the Europeans...and they've talked about this. The Europeans are as protectionist as everyone else is, and they're going to privilege their companies, not us, at the end of the day.

● (1815)

[*Translation*]

Gabriel Ste-Marie: Once again, you were quite clear. Thank you.

Thank you, Mr. Chair.

The Chair: Thank you.

[*English*]

Ms. Borrelli, the floor is yours for five minutes.

Kathy Borrelli (Windsor—Tecumseh—Lakeshore, CPC): Thank you, Chair.

Dr. Huebert, the F-35 is used by 19 non-U.S. partners. The integration with allies is a necessity. Could you explain the importance of choosing the F-35?

Robert Huebert: Absolutely. Thank you.

Again, I'll start off with the reality. As we are going through this discussion, people are wondering if we are going get the 10,000 jobs from Saab or if we are going to somehow escape, as Dr. Fergusson says, the American wrath when and if we were to do it.

What that misses is the core of your question. What is the strategic purpose of getting the F-35, or the Gripen, for that matter? We see, from a strategic perspective, why Norway, Finland and Denmark have all made the decision to go for the F-35. It is the manner in which it fights and meets the expected enemy. Let's face it. We are talking about meeting a potential conflict with Russia.

The reason that these countries say that they want to go with the F-35 and the reason it has such an international appeal is that, of course, you are talking about trying to respond to a new battlefield with a new type of weapon system, and it's referred to both in our defence update and in the Arctic foreign policy. The stealth and the speed of the new missile systems are such that the old days of tactical war fighting are gone in any major war. We're talking about a very different type of ability to respond and defend.

The reason the F-35 is put at the forefront is that it is a fifth generation that is dedicated to a system response. In other words, it's not just simply one aircraft out there and able to dogfight with a Russian or a Chinese aircraft, because those are the two enemies identified in the defence update. You're talking about being able to talk to each other, knowing where the threat is coming from and when in fact the threat is speeding at about a thousand kilometres or even faster.

In order to engage in that war environment...and this is what Canadians always have such difficulty trying to think about: We buy weapons because we may be at war. As our defence update says, that possibility has increased. Therefore, the F-35 works with our allies. It is integrated to a level that the open literature suggests the Gripen isn't.

I'll add one other factor that hasn't come into the discussion yet. If we find ourselves actually at war with the Russians, does any Canadian really think the Swedes would ever be able to resupply any damage or loss that we could suffer in that conflict? The reality is that, as soon as that conflict goes kinetic, you can forget about any resupply from the Swedes. They will be dealing with a frontline attack from the Russians. Therefore, rather than wondering whether Montreal, Winnipeg or whatever municipalities are going get the weapons, you have to think about the best way to maintain ourselves in a war. A resupply from Sweden simply is not going to happen in such an event.

Kathy Borrelli: Thank you.

Do you agree that procuring F-35s would help with recruitment of fighter pilots?

● (1820)

Robert Huebert: We have to do something about fighter pilots. This is one of the frustrations that we in academia face. We hear from all of our colleagues, and we hear from people about how badly the number of pilots we have has been allowed to deteriorate. This is why we have such difficulty engaging in this conversation.

Would pilots come? Pilots are going to come if, in fact, you give them any platform. We know that from when we got the CF-5. That was clearly an inferior fighter that was made for particularly political reasons rather than for strategic reasons. Pilots are pilots. They're going to say that it's fine, and they're going to come in.

If you get the F-35, the advantage of that is, of course, the technological challenges are such that it appeals to the people with that type of mentality—the Billie Flynns, the Stephen Fuhrs—who want to be fighter pilots and want to come in. If you were to talk to Stephen or Billie and ask if it mattered if it was an F-35 or a Gripen, they would say that it didn't, as long as they could be a pilot. That would be the first response. If you asked them, if they had a choice, which of the two they would pick, I think you'd probably find them both going for the higher technology as pilots, not as politicians.

Kathy Borrelli: Thanks so much.

The Chair: Thank you very much.

[*Translation*]

Ms. O'Rourke, you have the floor for five minutes.

[*English*]

Dominique O'Rourke: Thank you, Chair Carr.

Again, I'm going to reiterate my amazement. Federal budget 2025 proposes historic investments in defence because of the position that we are hearing our witnesses describe. What we're hearing across the way is, “How quickly can we buy these planes?” and “How can we recruit more people?” However, just on Monday they voted against that, so I want to state my profound discomfort with a lot of the conversation.

I also want to say that with respect to the F-35s, we are here for a broader conversation on the whole defence industrial strategy, not just the F-35s. However, President Trump said publicly that he would reduce capacity for F-35s by 10%. His tariffs on Canada, which are part of our conversation about finding other trading partners, on such critical minerals as aluminum put a huge strain on the F-35 supply chain in Canada, with the intent of bringing Canadian jobs to the U.S. We have no reason to believe that this would not continue.

Those are practical, realistic concerns. I don't believe those are emotional concerns. I'd like to park that for the moment, because we're deep in a procurement conversation here, when really the topic is the broader defence industrial strategy.

Mr. Hodgett, we had a witness here a few weeks ago who told us about plans to create a defence bank that is a multinational bank. Do you think that would be helpful? What considerations should we be thinking about in that regard?

Hugo Hodgett: The defence security resilience bank is in concept a very effective way of securing the overall capital buttressing, I guess you could say, for large-scale providers. There is no doubt that this organization and its flow-throughs to, really, the major banks would be an extremely powerful capability in terms of enabling a greater depth of wallet that allows for these organizations to accept more risk in things like deep tech, defence procurement and some of the more capital-intensive capabilities that come with the defence industrial strategy.

It is very likely that having that organization, especially if it were centred in Canada, would not only increase the amount of defence investment but also attract a significant amount of additional tech talent and intellectual property into the country, as it would be a magnet for organizations that seek high amounts of capital in order to create very high-tech capabilities.

I hope that answers your question.

Dominique O'Rourke: It does, thanks. The goal here is to make recommendations on the defence industrial strategy. If that's a new source of capital, then it should be explored.

Canada is trying to diversify our defence partnerships beyond the United States, but not excluding the United States, obviously. We're highly integrated with the U.S. through NORAD and the international traffic in arms regulations-controlled supply chains. How does that reliance on U.S. markets shape the opportunities and risks facing Canadian defence companies? How can Canada balance the advantages of that U.S. market through NORAD with the need to diversify into other allied emerging markets?

I'll direct my questions to Dr. Huebert.

● (1825)

Robert Huebert: Thank you very much.

I think at the heart of your question is the realization that the North American continent needs to be defended, of course, by the two North American countries. Now, the problem...and to a certain degree it comes from what you said in your opening commentary, of course, on the challenges we're facing with Trump. There is no question whatsoever that Trump has posed one of the most difficult challenges to the Canadian-U.S. defence relationship that we've had since the 1940 Ogdensburg agreement was reached between the two countries.

The reality is that, on the other hand, as the threats we are facing from both China and Russia start developing—we can see the weapons technology back to 2008—and as we try to respond and meet it, we have to say, okay, we have the Americans who are very destabilizing under Trump, no question whatsoever. The supply chain and all the very good things that you said are very true, but Trump will be gone in three years or he will be dictator, in which case that completely changes our defence relationship with the Americans, and that's part of the reality.

The point of how NORAD co-operation is working is the fact that we will—regardless if Trump is a dictator or he is gone in three years—still be facing the ongoing, growing, strategic threat of Russia and China. I suspect what that will cause is that Americans will come back to the realization that, yes, to protect themselves, they have to work with us. This is something that Trump has done very significant damage to, but it will return to us.

Now, getting back to the crux of your question, the NORAD modernization, as was released in that Globe and Mail story that talks about how much Canada is participating already with the northern shield and into their golden shield, illustrates this understanding. That is going to have to drive a lot of the co-operation and business opportunities at the same time, because that threat will exist regardless of the overlay of the politics. The question is whether or not the politics and the reaction to these three years of Trump does enough damage to actually do a favour for our enemies in that context.

The Chair: Thank you very much.

[*Translation*]

Mr. Ste-Marie, you have the floor for two and a half minutes.

Gabriel Ste-Marie: Thank you, Mr. Chair.

I have a question for the two or three university professors here. My question concerns the contribution of universities to the objectives of the new industrial strategy. How do the witnesses view the role of BOREALIS?

My time is limited. I would like Mr. Huebert to respond first, in one minute or less. Afterwards, if I have any time left, I would like Mr. Fergusson and Mr. Hodgett to respond as well.

[*English*]

Robert Huebert: BOREALIS demonstrates the fact that the universities, if they're properly engaged, are dying to get into this discussion. I see this at my university. I see the discussions both amongst the social scientists who have continued and who did very well, by the way, through the former program, the security and defence forum, which provided us the means into that...but at the same token, with the arrival of BOREALIS, with the government taking this seriously, I see my science and STEM colleagues very interested in raising this issue. First, they do important work on it, and second, they believe in the context of being able to provide for Canadian security. Anywhere government can provide this type of leadership is something that has to be encouraged and sustained.

[*Translation*]

Gabriel Ste-Marie: Thank you.

Mr. Fergusson, do you have any comments?

[*English*]

James Fergusson: Very briefly, I want to make two quick comments.

Defence products moving between Canada and the United States are tariff-free. There are no tariffs on them. Exactly how critical material and aluminum and steel tariffs in the commercial sector apply when you get into the defence world, I don't have the answer to that, but be very careful to think that those follow. It's a different situation.

Secondly, I would like someone to give me some evidence on why our defence relationship with the United States has been hurt at all despite the tariffs and Trump's announcements. There's no evidence of that. You talk to DND and you talk to Canadian military personnel in NORAD, everywhere, and defence co-operation continues outside or what I call under the radar.

Now, to your question—very briefly—before this came out, the interest in universities in defence security and spending was zero—they couldn't care less. Now they smell money. Let me be blunt. They smell money that can be used, and that's what they're interested in. Turn the tap off, and they will go back to where they were before.

I'm sure my colleague, Robert Huebert, knows this. They're keen now. They weren't keen in the past. I worked with them, trying to get support for the university for our research and our centres. We got nothing except, “Great work. Thanks, but go away. Don't bother us.” That's the reality, and I understand that reality. It's the way the world works.

● (1830)

[*Translation*]

The Chair: Thank you, Mr. Ste-Marie.

Gabriel Ste-Marie: I want to thank the three witnesses.

[*English*]

The Chair: Mr. Ellis, You have five minutes.

Ellis Ross (Skeena—Bulkley Valley, CPC): Thank you, Mr. Chair.

My question is for Mr. Fergusson.

Our U.S.-Canada relationships are at an all-time low. We have increased tariffs and new tariffs. Everything we do angers the Americans, such as the digital services tax or ads running on American networks that are characterized as foreign interference.

What kind of a message are we sending to America when we talk about buying jet fighters from Sweden, namely the Gripen? You commented on this earlier. What kind of a message are we sending to our American counterparts?

James Fergusson: We have to be very careful about confusion or spillover from the general economic and political issues surrounding our relationship with the United States and the defence relationship with the United States.

For decades, that relationship with the United States has been very close. Politically, no one really pays attention to it. It doesn't run at the executive level. I doubt that President Trump has any idea about the level of defence co-operation, but DOD knows. Despite the problems politically and economically on the commercial and civilian side, etc., the defence relationship continues to work. We cannot allow that part and the problems we have to spill into that relationship.

Let me put it to you bluntly: We can't awaken Trump to this because if we do, we all know how he just goes off the deep end every now and then. I always tell everyone to stop listening to Donald Trump. Don't listen to him anymore. See what the Americans are doing.

On the defence co-operation level, wherever we go, it has continued to move along as it's always moved along. I don't think this is a problem unless we make it a problem, and if we make it a problem, you will get a response and it won't be in our interest. The Americans will act in their interest, and for now, the United States DOD, the military and the defence world believes Canada is a vital partner in the defence of North America. As long as we keep that insulated, this will continue and integration with them will continue, because we are integrated with them. We have to recognize that. It's reality.

Ellis Ross: Because of licensing, the U.S. has the ability to block export sales of the Gripen to other countries, and that includes the motor that drives this jet. I'm not really talking about the efficiency of having an agreement to buy F-35s, but if we do anger the American government again through some other mechanisms apart from the tariffs, the digital services tax and the ads, for instance, as you make clear, if Trump finds out we angered them again and then he finds out we're going to buy a Gripen from Sweden, is there going to be an issue with licensing with Canada buying a Gripen fighter jet from Sweden?

James Fergusson: You are correct. As far as I understand, the Gripen uses U.S. engines, which are under U.S. export controls. Therefore, with those engines, where the Gripen gets sold will be under U.S. export controls. They have to follow the licences of the Americans with consequences.

It's important to understand, with regard to our relationship with the United States, we aren't under or we don't need.... Normally, export controls have to go from the department to the State Department and then through the process there. We are exempt from that. They have reliable trust in our export controls so those goods come back and forth because we're similar on these things. It makes for a much more amenable environment for Canadian industries because we get exempted from lots of things. We get treated differently.

There are always hiccups in this. It's always been little things, like Congress gets involved, etc., but no matter what you do, we have to recognize American technology is under American export controls. Companies violate those controls at their peril, and there will be implications.

As for your final point, I don't know what the punishment would be. I don't know how the United States would treat this. They may do nothing about it. Companies will be concerned about investments here and about reliability on our part. The real question is not American reliability. Sometimes I start to think it's our reliability. How trustworthy are we going to be—and we have been—and what's the impact?

I can't predict this, but there are enough indicators to think there are going to be concerns. Independent of buying the F-35, there are simply strategic economic reasons why we need to buy that and not have two supply chains. That's a major waste of money.

● (1835)

Ellis Ross: Thank you.

The Chair: Ms. Acan, the final five minutes go to you.

Sima Acan: Mr. Huebert, considering the F-35's lockdown operating architecture limiting the ability for domestic modifications or incorporating domestic technology without relying on external partners, the F-35 is essentially a flying computer and Canada does not have access to the source code. This means Canada cannot independently modify the software, update the threat libraries or fix bugs without U.S. permission or assistance.

Could you clarify to what extent Canada can independently implement changes or customizations to these systems?

Robert Huebert: Your point answers itself. We have limited ability to do it on our own. That's the whole design of this technology. The reason why the technology is developed in that context, of course, is that the Americans ran into certain difficulties with some of the technology from their F-22s getting into the hands of their adversaries.

What we have to come back to is that, theoretically, the Americans could cut off this technology. We come back to the central point, which is that we're heading into a much more dangerous international environment where the physical protection of North America is increasingly coming into question. Ultimately, what balances any theoretical discussion is, yes, the Americans have the theoretical ability to cut off the supply of that information, but from their own personal domestic requirements, why would they do that?

If they are ultimately trying to defend North America and they have realized the growing threat from the new weapon technologies—particularly the missiles that both the Chinese and the Russians have—there is really little way of understanding any motivation for the Americans to turn around and say they're not going to let the Norwegians, the Finns, the Danes or the Canadians have this technology.

As long as the international system is becoming more dangerous, even with somebody such as Trump in charge, the Americans have no motivation whatsoever for cutting that off in the event of a growing crisis and everybody agrees that we are facing that growing crisis.

Sima Acan: Thank you very much. It's still based on somebody else's decision at the end of the day.

Mr. Huebert, I'm not a military expert and I don't have a preference based on the systems—a defence professional would have the expertise on that—but based on my quick calculation, for a hypothetical fleet of 88 fighter aircraft operating over a 50-year lifespan with an average of 180 flight hours per aircraft per year, the total life-cycle operating cost appears to be approximately $26 billion for the F-35s compared to $6 billion for the Saab Gripen.

From an industry and defence perspective, could you comment on the factors driving this difference in operating costs and how these figures should influence procurement and long-term fleet management decisions?

Robert Huebert: It's an excellent question.

One of the problems we face, though, is that it's very difficult to get a proper understanding of those terms. If you trace how the Auditor General, for example, has tried to come up with full-life costing of what these units are, of course, now there's push-back saying that full-life costing doesn't take into effect what military units have to do.

I would stand your question and say, from an economic perspective, I don't know if I can say enough on the specific numbers to have confidence. My question would be, out of those two, which one is more likely to provide Canadian security in the event of a war? In other words, we have to look at what we're buying defence equipment for. It is either to deter or to fight a war.

We're left with this situation. Perhaps the argument may emerge that over an entire 50-year period, the Saab ends up being cheaper, but two assumptions have to come forward. One is, in fact, that we don't have a war in that period with the Chinese and the Russians. Second of all, ultimately, when it comes to the ability to deter those two countries from fighting, which of these two weapon systems is going to be better at doing it? For me, that becomes the important question, rather than if we can figure out, in a 50-year life cycle, which one ultimately will have cost us the most.

● (1840)

Sima Acan: Thank you very much for your answers.

The Chair: Thank you, colleagues.

Witnesses, thank you for making yourselves available to us today and contributing to our study on the defence industrial strategy.

Colleagues, I hope you have a great rest of your week. We will see you again on Monday.

The meeting is adjourned.