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The Canadian Ballistic Missile Dilemma

by James Fergusson

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POLICY PERSPECTIVE

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Executive Summary

From its contemporary beginning with the U.S. Army roughly a decade ago, integrated air and missile defence (IAMD) as evolved to encompass air and missile defence assets across all domains and has been adopted by NATO and other U.S. allies. Its operational significance is the product of advanced artificial intelligence (AI) enabled computing and decision-making processes, and the complex air and missile threat environment as evident, in particular, by mass simultaneous air and missile strikes as evident in the Russo-Ukrainian War and the Middle East conflict. Its objective is to ensure the effective and efficient employment of limited air and missile defence capabilities. In an Executive Order by President Trump on January 27th, 2025, IAMD for the homeland has now been re-labeled as an Iron Dome for America (now "Golden Dome"), which includes the full range of air and missile defence capabilities.

In the 2024 Defence Policy Update, *Our North, Strong and Free* (ONSAF), the Canadian government identified IAMD as an important requirement for overseas and homeland defence. Even so, its existing non-participation ballistic missile defence (BMD) policy is a significant impediment, if not roadblock to full Canadian engagement in IAMD, and thus the Golden Dome initiative relative to North America, and the defence of critical Canadian infrastructure. This is the heart of the Canadian dilemma. Acquiring significant IAMD capabilities, such as ground and maritime air and missile defence systems, will be insufficient for Canada to engage fully in the Golden Dome. As the U.S. integrates strategic, theatre, and tactical capabilities as part of its global deterrence posture, Canadian access via NORAD will be significantly constrained unless it reverses policy. The net result will be a loss of Canadian access to U.S. air and missile defence thinking and operational planning, leading to the marginalization of NORAD in the U.S., the ceding of key Canadian defence decisions to U.S. unilateralism, and resulting in the implicit re-nationalization of North American defence contrary to Canada's longstanding defence and security strategy.

Following the initial reference to integrated air and missile (IAMD) by then Minister of National Defence (MND) Anita Anand, and then Chief of the Defence Staff (CDS) General Eyre, at the NORAD modernization announcement on June 22, 2022, IAMD has received significant attention. Most notably, in the Defence Policy Update, *Our North, Strong and Free: A Renewed Vision for Canada's Defence* (*ONSAF*), the government committed "to invest in integrated air and missile defence capabilities alongside NATO allies to continue to protect Canadians at home and abroad." Furthermore, the government in the context of potential contributions pointed to the new airborne command and control platform, the future Canadian Surface Combatant and a possible option of a ground-based air defence capability to "defend critical infrastructure."

In *ONSAF* and subsequent public government statements, the term ***ballistic*** is never referenced in the context of either IAMD or the threat environment. Instead, the statements are limited in the missile world to cruise missiles and hypersonics, even though the latter are launched by ballistic missiles and are not explicitly part of NORAD's aerospace control mission suite.[1] Moreover, the threat posed by shorter range ballistic missiles is also ignored.[2] Instead, General Eyre, the Chief of the Defence Staff (CDS), at the 2022 Press conference stated: "The concept of a stove piped standalone ballistic missile defence is increasingly irrelevant." MND Anand also noted that Canadian policy on non-participation "in the U.S. ballistic missile defence system has not changed". Further adding, however, that the government would "continue to look at this policy going forward…" and "engage in constant analysis of the policy to ensure that Canada has a proper response to missile threats across the board."

To suggest that current Canadian policy on BMD is an impediment, if not roadblock in the context of IAMD is clearly an understatement, especially with the recent Presidential Executive Order (PEO) to develop a next generation air and missile defence shield for America – the Iron (now "Golden") Dome. The implicit idea that Canada can easily pick and choose one or two elements of IAMD/Golden Dome capabilities and maintain access to the full scope of current and next generation of these capabilities within the context of North American defence cooperation, NORAD, and the defence of critical infrastructure is the core problem. Combined at various conceptual and operational levels, the continued attempt to differentiate between BMD and IAMD represents the core Canadian dilemma; an attempt to square the circle. Yet, there is also an air of

[1] For example, see Department of National Defence. Domestic and Continental Defence. Report to the House Standing Committee on National Defence. May 22, 2024. https://www.canada.ca/en/department-national-defence/corporate/reports-publications/proactive-disclosure/nddn-main-estimates-2-may-2023/domestic-continental-defence.html#toc3 ; Department of National Defence. Joint Statement on Canada-Australia Partnership on Emerging Missile Defence Research. November 22, 2024. https://www.canada.ca/en/department-national-defence/news/2024/11/joint-statement-on-canada-australia-partnership-on-emerging-missile-defence-research.html , and Defence Research and Development Canada. Research and Development for NORAD Modernization. Department of National Defence. November 27, 2024. https://www.canada.ca/en/department-national-defence/news/2024/11/joint-statement-on-canada-australia-partnership-on-emerging-missile-defence-research.html

[2] The distance from Russia to Canada flying over the Arctic Ocean is within range of medium and intermediate range ballistic missiles to Forward Operating Locations in the Canadian Arctic. These missiles can also reach North America from maritime launch points.

inevitability that the next government will have little choice but to jettison its current anti-BMD policy and negotiate with the U.S. the parameters of participation across the missile defence world. To fail to do so will amount to the marginalization of Canada and NORAD in the defence of North America, if not the re-nationalization of North American defence.

In order to understand the Canadian policy dilemma and the air of inevitability, it is useful to begin with an examination of the conceptual and operational parameters of IAMD as it currently exists. In so doing, attention needs to be paid to lessons drawn from the ongoing Russo-Ukrainian and Middle East wars in which missiles and IAMD have played a significant role. This sets the foundation for a detailed conceptual and operational analysis related to the implications of a Canadian failure not only to invest in advanced IAMD capabilities, with an emphasis on interceptors, kinetic and non-kinetic, but also any attempt to differentiate ballistic missiles from IAMD.

IAMD and Contemporary War

The concept of IAMD is simultaneously a relatively new and old one. As a new concept, it can be dated back roughly a decade, and originates with the U.S. Army, responsible for ground-based air and missile defences. As an old one, it can be traced back to the integrated air defence system developed by the British in World War Two and first employed in the 1940 Battle of Britain. It has also been long present, although not labelled as such, within the U.S. Navy in providing air and missile defence, along with surface and sub-surface defence, for its aircraft carrier task forces in particular. In the context of the 1980s' revolution in military affairs and 1990s' transformation, the naval concept was *netcentric warfare*.

The original US Army initiative was centered upon the PATRIOT high altitude air defence and short range ballistic missile defence capability.[3] The objective was to integrate the radars/sensors, command and control (C^2), and individual launchers within and across PATRIOT batteries within a C^2 system labelled the Integrated Air and Missile Defense Battle Command System (IBCS). In so doing, it permits one battery to access the radar of another to expand coverage area. The C^2 component is designed to ensure that two or more interceptors are not wasted on either a single target, or against a peripheral threat. From this basis, it integrated upper-level missile defences, the Terminal High Altitude Area Defense (THAAD), and lower-level defences, such as the Maneuver Short Range (M-SHORAD) system, and further extended to include air and naval defence assets.

Although discussions of IAMD are dominated by the technological side of the equation, especially related to advanced artificial intelligence (AI) computing systems, at the core of IAMD is the

[3] PATRIOT was initially developed as a high-altitude air defence capability to replace the HAWK system and then was developed to as a ballistic missile defence capability primarily designed to defeat short range ballistic missiles, (SRBMs) with also the capability to defeat shorter range medium ballistic missiles (MRBMs). Different interceptors are employed for its various capabilities.

importance of preparing the battlespace for the effective distribution and employment of air and missile defence assets. In this context, and especially in the case of Canada and North America, these assets are in limited supply, or what the United States Air Force (USAF) labelled in the late 1990s as high demand/low density (HD/LD). Not everything can be defended, especially in the context of multi-faceted, large scale swarm air and missile attacks, as discussed below in the case of the Russo-Ukrainian War and the Middle East conflict. Critical infrastructure must be identified and prioritized through the development of a critical asset list (CAL) and the defended asset list (DAL) as its subset based upon the available IAMD assets. The DAL is also not fixed *per se but* can be adjusted with a change of priorities and phases relative to the threat environment. In the case of Canada, Public Safety Canada (PSC) and DND jointly develop the CAL, with PSC in the lead for civilian and DND for military infrastructure. This is then distilled into the DAL based upon threat scenarios and whether the threat is either a symmetric or asymmetric one.

Central to an effective IAMD capability is the integration of the full range of space, air[4], land, and maritime sensors for all or pan-domain awareness to generate a common operating picture (COP) for C^2. This entails information from launch, though flight to target identification of the type of incoming air and missile threats.[5] This has led to the creation of U.S. global COP systems, which enables regional commands to drill down or focus only upon their area, regional or theatre area of responsibility. In the case of NORAD, this includes the integration of an estimated 1,000 sensors, including feeds from U.S. Federal Aviation Administration (FAA) and NAVCANADA civilian radars.

On the basis of this COP, AI is employed to prioritize the employment of defence assets and provides options to the command of possible responses. Combined in the NORAD lexicon, this system of systems provides all-domain awareness, information dominance and decision superiority. This, in turn is linked to the DAL, in which distributed air and missile defence assets are responsible for specific CAL within their respective DAL and can be computer automated to launch an intercept against an incoming threat within its area or local *bubble*. The net result of this complicated process employing AI enabled cloud-based C^2 (CBC^2) is to de-conflict multiple intercept possibilities (air, land and maritime) and thus avoid two or more intercepts being employed against a single target. Of note, especially in the context of drone threats, which are somewhat problematic for kinetic kill, this also includes the employment of electronic warfare assets to jam operator signals or spoof GPS guidance systems.[6]

De-conflicting intercept assets through geographically based DAL *bubbles* raises issues about the seams generated by the *bubbles*, and whether a forward deployed *bubble* should attempt an

[4] Within the air domain, this includes the significant role of airborne warning and command (AWACs) aircraft vital for tracking cruise and drone threats, and cueing intercept assets. In the past in the NORAD context, Canada relied entirely on access to U.S. AWACs but is now in the process of acquiring its own AWACs contribution. Hence, the aforementioned reference to this capability in ONSAF.
[5] The U.S. or NORAD employ the term all-domain, whereas Canada uses pan-domain.
[6] As drones are small and slow targets, they are difficult to intercept with most air-to-air missiles, and the cost ratio to employ, for example, an advanced AIM9-X missile is prohibitive. Such a missile costs millions per unit, whereas a drone costs thousands per unit.

intercept of a target flying through its area of responsibility. This has been the case, for example, in the complicated IAMD environment of the Middle East conflict. Coalition forces, headquartered in Qatar, have C² and air defence assets for DAL deployed in Iraq, in which Iranian cruise and medium range ballistic missiles have overflown towards targets in Israel and Jordan. Israeli assets, covering Israel and Jordon, supported by US naval assets, have to be coordinated with the coalition C².[7]

At the heart of IAMD is the recognition that air and missile defence intercept assets are a HD/LD capability. The development and proliferation of air and missile capabilities, ranging from ballistic missiles, hypersonics in the case of Russia, cruise missiles, and the family of drones, [8] create a multi-faceted, complicated air and missile threat environment in which all types may be employed in a mass attack designed to overwhelm air and missile defences. This has been clearly evident in the ongoing Russo-Ukrainian War and Middle East conflict. For example, on August 26th, 2024, Russia reportedly employed 127 missiles of various types, and 109 attack drones in a single attack on Ukrainian critical infrastructure, especially targeting Ukraine's energy grid. On December 13th, Russia employed 300 missiles and drones to attack the energy sector again. In the Middle East, Iran on April 13th, 2024, attacked Israel with 110 medium range ballistic missiles (IRBMs), 30 cruise missiles and 150 drones. On October 7th, a second attack entailed approximately 180 ballistic missiles.[9]

Besides these large-scale attacks, missiles and drones have been the constant feature in both conflicts. Notwithstanding the ground campaigns, they appear to be the weapon of choice against interdiction and strategic targets in both conflicts, with fighter bombers being employed in the case of Russia as stand-off launch platforms due to the lethality of the airspace over targets. According to the Center for Strategic and International Studies (CSIS), between September 2022 and September 2024, Russia is estimated to have employed 11,466 missiles against Ukraine.[10]

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[7] In the case of the October 1st Iranian missile attack against Israel, two U.S. guided missile defence destroyers, the USS Cole and the USS Bulkeley fired 12 interceptors in the defence of Israel, which included the advanced Standard Missile-3. Center for Strategic and International Studies. *Did the U.S. Defense of Israel from Missile Attacks Meaningfully Deplete Its Interceptor Inventory?* Critical Questions. Washington D.C. December 4, 2024. https://www.csis.org/analysis/did-us-defense-israel-missile-attacks-meaningfully-deplete-its-interceptor-inventory
For Israeli-Jordanian defence cooperation, see Ahmad Sharawi. *Security Cooperation with Jordan: Key to Protecting Israel's Eastern Front.* Policy Brief. Washington D.C.: Foundation for the Defense of Democracies. Nov. 27, 2024. https://www.fdd.org/analysis/2024/11/27/security-cooperation-with-jordan-key-to-protecting-israels-eastern-front/

[8] Drones have become a catch all phrase encompassing a wide range of types, and in the Canadian lexicon are labelled remotely piloted aerial systems (RPAS). Generally, they are broken down into two categories of remotely operated capabilities: unmanned aerial combat vehicles (UACV) such as the US Predator and Reaper, and first-person view (FPV) drones, which are much smaller, and cheaper (estimated at the lower level around US$20,000) and widely available from commercial off-the-shelf (COTS) suppliers. Whereas in both cases the operator obtains battlefield situational awareness with precision strike capabilities, UACVs employ air-to-ground missiles and FPV drones can be employed in a suicide or kamikaze role.

[9] Although specific numbers are not available, observers identify the 2020 Armenia-Azerbaijan War as the first pre-dominant employment of unmanned systems, including drone. Center for Strategic and International Studies. *Air and Missile War in Nagorno-Karabakh: Lessons for the Future of Strike and Defence.* Washington D.C. December 8, 2020. https://www.csis.org/analysis/air-and-missile-war-nagorno-karabakh-lessons-future-strike-and-defense

[10] The study does not include drone employment, and does not specify or differentiate between SRBMs, hypersonics and cruise missiles. Benjamin Jensen and Yasir Atalari. *Assessing Russian Firepower Strikes in Ukraine.* Washington D.C.: Center for Strategic and International Studies. October 23, 2024. https://www.csis.org/analysis/assessing-russian-firepower-strikes-ukraine . Bailey and Kagan provide a graphic representation of Russian drone and missile attacks between October 2023

Drones have also been employed by Ukraine to strike at Russian targets beyond the battlefield. In the case of the Middle East alongside Iran's two attacks, Iranian proxies have also employed drones and missiles to strike at coalition, shipping in the Red Sea, and Israeli targets.[11]

In both conflicts, IAMD has demonstrated an impressive success rate, roughly estimated at between 80 and 90%.[12] No defence, however, is perfect, but the lessons from both conflicts will be absorbed to enhance effectiveness and defeat ratios. In some ways, these lessons underpin the aforementioned January 27th, 2025, PEO to develop an Iron/ Golden Dome for America.[13] For all intents and purposes, the Golden Dome is simply a re-labeling of IAMD in the case of America. Among the capability requirements identified within this layered strategic to tactical shield are the development of advanced space-based tracking, cueing and interceptor capabilities. The PEO sets a sixty-day deadline for the Secretary of Defense, in conjunction with U.S. air and missile defence actors, including U.S. Northern Command (USNORTHCOM) and U.S. Strategic Command (USSTRATCOM), to provide "a reference architecture, capabilities-based requirements and an implementation plan for the next generation missile defence shield."

The Iron Dome PEO is framed strictly in national terms. No mention is made of Canada or NORAD.[14] Yet by virtue of geostrategic reality, the flight paths of air and missile threats over the Arctic on a north-south trajectory, and NORAD's responsibility for aerospace control (air-breathing threats), the Golden Dome is in reality a North American IAMD initiative and thus entails Canada. For now, Canada and NORAD are on the outside looking in, and this reality is significantly a product of Canada's non-participation ballistic missile defence (BMD) policy.

The Canadian IAMD/Golden Dome Dilemma

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and April 2024. Riley Bailey and Frederick W. Kagan. *Special Report: Russian Strikes More Effective as Ukraine Exhausts Ukrainian Defenses.* Washington D.C.: Institute for the Study of War. April 12, 2024. https://www.understandingwar.org/backgrounder/special-report-russian-strikes-more-effective-ukraine-exhausts-defenses. See also, William Alberque, et.al. *Russia's War in Ukraine: Ballistic and Cruise Trajectories.* Missile Dialogue Initiative. London: Institute for International Strategic Studies. October 5, 2023. https://www.iiss.org/research-paper/2023/10/russias-war-in-ukraine-ballistic-and-cruise-trajectories/

[11] The Houthis reportedly have employed cruise missiles acquired from Iran, as well as drones in their attacks. See International Institute of Strategic Studies. *Cruise Missiles in the Middle East.* Missile Dialogue Initiative. London. September 2021. https://www.iiss.org/research-paper/2021/09/cruise-missiles-in-the-middle-east/

[12] Caution must be employed in the estimates, especially in the case of the two Iranian attacks, Iran not only limited their target list, but also reportedly telegraphed their attack through different diplomatic channels that reached the United States and Israel prior to the strikes. See Sanam Vakil and Bilal Y. Saab. *Iran's Attack on Israel was not the failure many claim but it has ended Israel's isolation.* London: Chatham House. 2024. https://www.chathamhouse.org/2024/04/irans-attack-israel-was-not-failure-many-claim-it-has-ended-israels-isolation

[13] Just recently, the Pentagon re-labelled the Iron Dome as the Golden Dome to distinguish it from the short-range Israeli Iron Dome system, which is one part of Israel's layered IAMD capability, which includes David's Sling and the Arrow 2 and 3 interceptors. Whether the President will adopt the term Golden Dome remains to be seen. Steve Trimble. *Pentagon Rebrands Trump's Missile Shield to Golden Dome.* Aviation Week Network. February 26, 2025. https://aviationweek.com/defense/missile-defense-weapons/pentagon-rebrands-trumps-missile-shield-golden-dome

[14] The final part of the PEO raises allied contributions and participation strictly in the context of theatre air and missile defences linked to forward deployed US forces.

On two grounds, Canada is an anomaly amongst allies. First, it is the only U.S. ally possessing a BMD non-participation policy, and in the case of NATO's commitment to BMD at the 2010 Lisbon Summit, Canada's agreement was premised on limiting it to NATO Europe. Second, Canada is the only ally which cannot be abandoned by the United States as a function of its geo-political/strategic location. This latter underpins the misplaced assumption that Canada's BMD policy as having little bearing or relevance to the relationship.

Central to the problem posed by Canada's BMD *no* is the simple lack of clarity regarding its parameters. Some may incorrectly assume this enables Canada to pick and choose what elements of IAMD are necessary at no political or access cost. Beginning in 2005 when the Martin government announced the policy, no government has publicly explained the parameters, never mind the rationale of the Canada *no*.[15] By inference, one may assume in the context of the failed participation negotiations in 2003 and 2004, and subsequent references to BMD cooperation by President Bush in his visit to Canada in December 2004, that the *no* extends only to the U.S. strategic ground-based mid-course phase (GMD) system deployed in Alaska. This implicit differentiation between GMD and other non-strategic BMD systems is also evident in the aforementioned CDS' statement when he labeled the U.S. BMD system as a "stove-piped stand alone" system and then referenced the importance of IAMD. In other words, IAMD is apparently not BMD in Canadian thinking.

This is extremely problematic. First, strategic BMD– or GMD– is in reality, not a stove-piped system, especially in the context of the Golden Dome missile shield. Although initially a ground-based site, it has long been integrated with significant forward deployed sensors, Aegis naval and possibly THAAD intercept capabilities in the Pacific, and coordinated, if not, centralized C^2 under USNORTHCOM.[16] Although GMD is designed only to deal with long range intercontinental (ICBMs) and submarine launched (SLBMs) ballistic missile threats primarily emanating from North Korea, each of the other components of an IAMD system are similarly designed to deal with distinct threats, depending in some cases on the type of interceptors employed. For example, THAAD deals with medium and intermediate range ballistic missiles (MIRBMs), PATRIOT as a function of the type of interceptor can deal with short range (SRBMs), high altitude aircraft, and cruise missiles. This is similar with Aegis. Short range air defences are similarly limited, and drone defences include non-kinetic capabilities. Yet, all are integrated together within IAMD C^2.

Although IAMD has only been operationally employed for overseas, alliance/coalition missions, the same logic for integrating the full spectrum of IAMD capabilities for the defence of North America holds as part of the Golden Dome. This is reflected in the globalization of the American

[15] Prior to 2005, successive Canadian governments dithered in responding to U.S. missile defence initiatives. Only Prime Minister Trudeau linked a possible, but not formally enunciated no on the grounds of the threat missile defence posed to strategic stability. Although the Mulroney government rejected government, but not company, participation in the Strategic Defense Initiative (SDI) research programme, no formal explanation was provided. For details, see James G. Fergusson. *Canada and Ballistic Missile Defence 1954-2009: Déjà vu all over again*. Vancouver: University of British Columbia Press. 2010.

[16] The Alaska GMD capabilities fall under U.S. Northern Command (USNROTHCOM), whereas Aegis and THAAD fall under U.S. Indo-Pacific Command (USINDOPACOM). As both are focused primarily on North Korean long range ballistic threats, C^2 coordination and integration are essential.

deterrence posture of which its Global COP and joint all-domain command and control (JADC^2) are representative. Certainly, the North American air and missile defence threat environment is different in degree, but not in kind from overseas environments. For example, drones are much more prominent overseas, as evident in the Russo-Ukrainian and Middle East cases in part because of condensed distances involved from launch to target. Even so, the threat of a terrorist drone attack from a merchant ship off the eastern and western seaboards cannot be ignored. Nor can drone launches coordinated with cruise and ballistic missile launches from submarines be ignored in a potential mass attack. Finally, ICBMs and SLBMs with conventional warheads are also a potential option to strike at North America.[17]

In addition, warning to intercept times for overseas missions are very short, in some cases less than 2 to 5 minutes, whereas much greater time is available as a function the distances involved in North America.[18] Even so, defending the NATO area has significant variance depending upon the distance from launch to target. Its strategic BMD capability located with Aegis Ashore in Poland and Romania is a component of NATO's IAMD system, even though it was designed initially to deal with only the IRBM threat from the Middle East.[19] Whether Aegis Ashore also has the capability to intercept future ICBMs from the Middle East (Iran) is unclear, although there are indications that forward deployed Aegis in the Pacific employing the advanced Standard Missile -3 has this capability. Nonetheless, NATO's IAMD links strategic, theatre and tactical defence systems, and these are likely eventually, if they have not already been linked to North American IAMD as it unfolds as part of the U.S. global deterrence posture.

It would be folly to think that North American IAMD/Golden Dome will be structured differently from U.S.-led IAMD overseas, as a function of common equipment, training, operating procedures, and target handoff. Moreover, as U.S. IAMD/Golden Dome unfolds for North America, a significant C^2 problem exists. U.S. strategic GMD is under USNORTHCOM and separated from NORAD's C^2 at the operational level. On the principle of unity of command alone, as the U.S. drives the evolution of North American IAMD/Golden Dome, maintaining an operational division with one part U.S. only, and the other NORAD makes little sense. Instead, the failure of Canada to reverse publicly its *no* policy is likely to undermine significantly the relevance of NORAD in U.S. thinking, and Canadian access to U.S. IAMD/Golden Dome planning potentially leading to a unilateral U.S. only solution, with future Canadian components siloed into a small element. This is clearly evident in the Iron Dome PEO.

Throughout the history of NORAD, Canadian access to U.S. thinking and planning has ebbed and flowed, especially in the context of U.S. willingness to provide information that may affect Canada directly. It is difficult to know the extent to which the Canadian BMD *no* has been a key factor, simply because the Americans don't tell. Even so, for example, the 1985 Mulroney decision to

[17] The idea that IC/SLBMs only employ nuclear warheads is Cold War thinking. Except for drones, cruise, hypersonics and shorter-range ballistic missiles can employ nuclear warheads as well,

[18] For example, the estimated flight time of an ICBM warhead from Russia to critical targets in Canada and the United States is 30 to 35 minutes. Hypersonics provide more time even traveling at Mach 5, and sub-sonic cruise missiles even more, depending upon their launch points.

[19] With the collapse of the 1987 Intermediate Nuclear Forces (INF) Treaty in 2020, Aegis Ashore is likely also capable of defeating Russian IRBMs.

reject formal government participation in the SDI research project had disastrous effects on Canadian access. The U.S.' Strategic Defense Architecture 2000 study was closed to Canadian participation, even though it included aerospace warning and control elements within NORAD's purview. In other words, the Canadian belief that it could pick and choose what parts of defence to engage in cooperation with no impact on the relationship proved false. This has already occurred if one takes the PEO at face value, especially in the context of the President's overall nationalist policy posture. Canadian NORAD personnel may obtain some limited access as a function of their relationship with USNORTHCOM, but most of the development of Golden Dome will be U.S. eyes only. Whether a rapid public reversal of Canada's BMD *no* and entering into negotiations on Canadian participation will be sufficient to open the door to Golden Dome is difficult to know.[20] But, without doing so, the door will remain fully closed.

This is the core of the BMD policy impediment or roadblock. Even more, as evident in the Iron Dome PEO, there is a greater danger to NORAD/Canada with the increased likelihood that one of the first implementation steps will be to proceed with the deployment of a third GMD site in up-state New York. In the past on the BMD file, the U.S. had no need for Canadian participation/territory. A Canadian *no* thus had no major implications for U.S. continental defence, even though it made the relationship difficult and awkward. A third site is likely to require a forward deployed ground-based radar ideally on Canadian soil for tracking and cueing purposes.[21] While some may think Canada could agree under the NORAD early warning umbrella and maintain the BMD *no*, this is also very dangerous in potentially generating an American belief that Canada has become a liability in the defence of the U.S. and North America. Reversing policy now sends a strong signal that Canada wants to be a full partner in North American defence.

Failure to reverse policy will also drive greater U.S. unilateralism in decisions about operational IAMD/Iron Dome defence.[22] Being outside of GMD ceded decisions regarding the employment of GMD to defend critical assets in Canada to the U.S. alone. Canada has no access to American GMD defence strategy, and under what conditions the U.S, would protect Canadian critical infrastructure, if at all given the limited number of U.S. interceptors available. As GMD is integrated with other air and missile defence components into a centralized operational planning and C^2 system, full access for Canada will be highly unlikely, and, at best limited to whatever air and missile defence systems Canada acquires. Simply, the U.S. cannot completely abandon Canada without undermining its own national defence, but Canada needs to ensure that U.S. plans and decisions take into account Canadian interests and requirements. Specifically, each country develops its own CAL/DAL, whereas NORAD has a single DAL. Canada outside of BMD would likely limit the number of Canadian CAL within the NORAD DAL, because Canada could not be involved in part of decision, and the US would significantly define what is a Canadian

[20] Since 2005 at least, the U.S. has remained open to negotiate Canadian participation on the basis of a public Canadian request. President Trump has not indicated that this open door is closed now, and the absence of a reference to Canada in the Iron Dome PEO should not be inferred as such. Simply, Canada could not be referenced as a function of its BMD *no* given the scope of the initiative.
[21] The location usually identified is Goose Bay, Labrador.
[22] In addition, by having no role in GMD, Canada is vulnerable to an adversary selecting it as *the target of choice* as part of a strategy of escalate to de-escalate as evident in Russian strategy.

critical asset, if not shift the actual US DAL to USNORTHCOM. In other words, Canada needs to know the full scale and scope of operational US IAMD/Iron Dome planning, but unless Canada is engaged one way or another across the entire IAMD spectrum, Canada has no right to know about highly classified U.S. thinking and planning.

The net result would be the marginalization of NORAD. Acquiring limited IAMD capabilities without engaging across the full IAMD/Iron Dome spectrum from the strategic to the tactical may result in the implicit re-nationalization of North American defence, contrary to Canadian strategic interests. Canada needs to ensure that the US continues to think and plan for North America as a single defence entity. Besides, it makes no sense to defend critical infrastructure from some, but not all air and missile threats.

Of course, reversing policy does not in and of itself guarantee full Canadian access and participation in North American IAMD and the U.S. Golden Dome. Canada will also have to commit resources and acquire capabilities to contribute to an effective North American deterrent and defeat capability. It has long been the case in U.S. relations with its allies that access and influence opportunities, including positions at that command level are a function of allied capability contributions. In other words, rhetoric is one thing, contributions are something else. For Canada to engage fully and ensure the Iron Dome becomes part of NORAD, rather than a U.S. only mission, Canada will have to acquire significant IAMD capabilities, including potentially PATRIOT ground-based defences, and the full range of missile interceptors for its Future Combat Ship. The decision to acquire an AWACS is an important first step, especially given its vital role in defeating cruise missile threats, and possibly hypersonics. Regardless, thinking that Canada can rely upon these U.S. assets is also folly. As HD/LD assets located in the continental U.S., their priority will be to defend American critical infrastructure, not Canadian.

Conclusion

Elements of a Canadian existing and possible contributions to IAMD via NORAD, which also means the Golden Dome, to enhance the national defence of Canadian critical infrastructure are all present in ONSAF. Indeed, the government in agreeing to explore IAMD, whether understood or not, has opened the door to a BMD policy reversal. In particular, the references to homeland defence and critical infrastructure suggests the existing policy is basically bankrupt. Given the current state of political affairs in Canada with an election ongoing, a formal policy reversal as an initial first step to full Canadian engagement in North American IAMD, now defined as the Golden Dome, likely awaits the next government. Even so, MND Blair apparently informed top ranking Democrat Senator John Reed on the Armed Services Committee of Canada's interest in participating in the Golden Dome initiative.[23] Even so, time is pressing given the deadlines established by the President for Golden Dome.

[23] Alexander Panetta. *An 'Iron Dome' for North America? Talks heat up about Canada joining U.S. missile defence.* CBC News. February 20, 2025. https://www.cbc.ca/news/world/missile-defence-shield-canada-us-1.7463501

Of course, a quick policy reversal will not be politically easy, regardless of who wins the next election. President Trump is deeply unpopular in the Canadian public, reinforced by the emotional nationalist response to his tariff threats. To reverse Canadian policy, likely interpreted as caving into Trump, will require bold leadership which is not necessarily a hallmark of Canadian governments. In addition, the Golden Dome's space-based weapons components for boost phase defence runs contrary to Canada's longstanding non-weaponization of space posture, which will further ignite domestic opposition to participation.

Finally, on the capability acquisition side of the participation equation, Canada will have little choice but to acquire existing U.S. IAMD systems off-the-shelf, thus butting up against longstanding government preferences to seek industrial and technological benefits in defence acquisitions, especially with time pressing. In this context, a policy reversal is also an important first step to open the door for Canadian companies to identify and promote their abilities to contribute to the fast-moving Iron Dome process in the context of the immediate task given to the U.S. Missile Defense Agency.[24]

In the end, Canada is the victim of its own failure to confront strategic, political and technological reality as it unfolded over the past two decades. The pressing need for a BMD policy reversal as the first step is essential to maintain Canada's longstanding defence strategy of North American defence cooperation. In its absence, Canada and NORAD will be marginalized as U.S. continental defence is re-nationalized. Of course, a simple policy reversal will not be sufficient in itself. Canada will also have to move forward quickly to acquire key IAMD capabilities that are vital to the defence of Canada's critical infrastructure in cooperation and coordination with the U.S., thus cementing NORAD as the centrepiece. There are no guarantees on the final outcome. But failure on both the policy and acquisition front will ensure that Canada is left in the dark, and its defence ceded to unilateral U.S. decisions.

[24] See Government of the United States. *Missile Defence Agency (MDA) Capabilities in Response to Executive Order "The Iron Dome for America".* System for Award Management. January 31, 2025. https://sam.gov/opp/9da2ad63428b4ccd8aa4931c41071a3c/view

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