

# THE NEW SPARTA: MODELLING THE STRATEGIC OUTCOMES OF NEW ZEALAND'S CYBER ARMAMENT PROGRAM 2020-2040

Mr Leonardo S. Milani | Victoria University of Wellington | Leonardo.milani@vuw.ac.nz

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The exponential growth in the general potency of cyber-electromagnetic (CEM) weapons against an adversary's critical infrastructure nominates advanced strategic cyber technology as a new instrument of power accumulation and power projection. Due to the CEM warfare's extraordinary features, a geographically-confined state of limited material resources, such as New Zealand, is potentially enabled to overcome previously-insurmountable geopolitical barriers to accumulate/project coercive power via the proliferation of CEM weaponry. Considering the rapid decline of the US hegemony and the increasing hunger of industrial powers for Antarctica, New Zealand must exploit and militarize the new technology to engineer a robust system of unilateral cross-domain deterrence vis-à-vis regional and trans-regional powers. Such deterrent apparatus can be gradually developed within a maximum timeframe of two decades at an extremely low cost to exponentially increase New Zealand's coercive and bargaining powers in international affairs.

## Key findings

- The present tactics to ensure stability and national security shall fail to produce either stability or security. Numerous modelling endeavours conducted by the author, operating under controlled conditions, register the same aggregate result: the emerging security environments shall critically reduce New Zealand's general degree of security.
- Strategic CEM-capability can be effectively utilised to engineer a stable system of cross-domain unilateral deterrence vis-à-vis all states whose socio-economic and military critical infrastructure is dependent upon the electronic blanket.
- The development of offensive CEM-capability is much more economical compared to the cost associated with conventional or nonconventional armament. The CEM weapon systems are primarily non-kinetic, and if deployed with tact, could result in effective de-escalation of crisis situations.

## Executive summary

The imminent demise of the US-led unipolar order, and the probability of future transformation of the Antarctic into a shatterbelt zone (i.e. zones associated with interstate rivalry over the control of the



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continent's vast mineral resources), expose New Zealand to 3 destabilizing possibilities: a) reduction in the credibility of de-facto alliances to provide extended defence; b) decline of the norm-oriented order and the intensification of the international system's chaotic nature; and c) proximity to conflict zones, especially in terms of conflict overflow. In the absence of a credible conventional or hybrid military capabilities to prevent coercion and/or aggression, New Zealand's national security cannot be guaranteed in the aftermath of a severe crisis. Outside crises scenarios, the convergence of the outlined destabilizing dynamics with New Zealand's lack of credible military capability shall effectively eliminate the state's bargaining power in international negotiations to reach optimal settlements or facilitate compromises.

The optimal policy to counter such a hazardous future is to engineer a system of cross-domain deterrence via a rapid and systematic cyber armament program. The program must concentrate on generating the localised intellectual capital and technical capability to rapidly produce any class or type of CEM weapons requested by the political leadership or the Ministry of Defence. The primary focus of the armament program must remain on the proliferation of *high-intensity offensive* CEM capabilities, especially designed to infiltrate the target's military command and control systems with the primary aim of 'assuming system control'. The central function of such offensive CEM operations must be to deactivate or destroy the nervous system of an adversary's offensive and retaliatory capabilities. The deployment of CEM payload with the intention of inflicting severe physical damage upon the target, which may also result in the loss of human life, must remain as the last resort, and must only be contemplated when the adversary has unquestionably committed itself to a policy of armed aggression.

### What is the Problem?

One of the most resilient constants in the grand equation of small states' strategizing is the ever-present reality of 'power imbalance'. Imbalance of power vis-à-vis regional and transregional powers is defined in terms of material and military inferiority, and has resulted in small states to desperately turn to weaponizing alternative and far less reliable means of attaining security. In the case of New Zealand, the primary alternatives are: a) norm-oriented international order, b) de-facto alliances to provide extensive defence, and c) the comfort of geographic isolation. Small states have a clear tendency to rather cunningly weaponize such desperate measures, despite the fact that such mechanisms of producing security are prone to failure and can rapidly lose credibility. The centrality of these axioms to our way of thinking about our national security is not hard to detect.

However, a simple question remains: what if these mechanisms fail? Indeed, such mechanisms are either already failing or will fail in a near future: the rapid decline of the US hegemony and the resurgence of revisionist states to defy the frail order have already challenged the norms-oriented regime with enviable efficiency; the growing isolationist tendencies in the US and its reluctance to 'commit' has made the practice of collective defence a matter of mere optimism. And of course, the growing hunger of great powers, especially those in possession of strategic naval forces, for the Antarctic mineral resources shall deprive us of our precious 'geopolitical comfort' sooner or later. Complex modelling of the aggregate consequences of such dynamics for New Zealand has resulted in one persistent outcome: the gradual reduction in New Zealand's general degree of security within a timeframe of 2020-2035.

So, keeping the frailty of these security-attaining tactics in mind, what feasible policy options are available to New Zealand to maintain its national security? Should we resort to an extremely costly



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'conventional armament' policy? Should we request the US to station a specific quantity of its nuclear warheads on the NZ soil? Should New Zealand detach itself from its declining ally and attach itself to the proximate threat, thus forcing a pseudo-alliance with China? The brazen irrationality or infeasibility of such strategic risk-mitigation tactics leaves us with a conundrum: in the absence of material, financial, and political means to pursue radical policies, what is the most utility-maximizing policy solution to counter such a crisis-ridden future?

### What should be done?

New Zealand must immediately initiate a systematic and intense CEM-armament program, specifically designed to produce mid to high-intensity CEM weaponry, as the most elegant policy solution to the outlined problems. Initially, the accumulation of CEM-power asymmetrically reduces the grave power imbalance between New Zealand and its potential adversaries, as well as all potential rivals, resulting in significant increase in New Zealand's deterrence capabilities and bargaining power in negotiations. As the national CEM-power reaches such high levels that the degree of advancement constitutes a de-facto state of CEM primacy for New Zealand, the power imbalance may even dynamically shift in favour of New Zealand vis-à-vis the majority of states regardless of their conventional power status. In modelling terms, the introduction of the CEM-capability variable to the utilised model has fundamentally reshaped the dynamics of interaction: under controlled conditions, all assertions and extrapolations of forces kept same, New Zealand's general power imbalance with states of interest is expected to reduce by the year 2033 IF an intense CEM-armament program is initiated now. By 2040, under controlled conditions, IF CEM primacy is within sight, New Zealand may claim degrees of coercive superiority over states of regional power status.

### Analysis:

A strategic CEM-capability offers the following utilities: first, it partially compensates for the absence of conventional force structure, especially as CEM warfare is effective against a wide range of weaponry, including but not confined to aircrafts, mid-weight to heavy-weight naval vessels, submarines, orbital weapons, automated drones, missiles, and intercontinental ballistic missiles. The electromagnetic component of CEM warfare exponentially increases its lethality against the electronic control and navigation units of conventional weapon systems.

Second, CEM warfare can be waged, with astonishing efficiency, against the command and control units of either conventional or nonconventional weapon systems. This specific feature of CEM-nuclear nexus is of critical importance, policy-wise, when offensive CEM operations are to be conducted against nuclear command, control, and communication (NC3) systems. If a nuclear state ever threatens a CEM-empower small state, the state may use the veiled threat of causing instability in the aggressor's NC3 systems at the initial stages of the brinkmanship. The possibility of loss of either positive or negative control of nuclear weapons is sufficient to deter a nuclear state from escalating the situation, resulting in a win situation for the small state. However, such a veiled threat must never be used in a crisis situation as the agitated aggressor may submit to the dreaded 'use it or lose it' mentality, and initiate a pre-emptive nuclear or conventional strike against the CEM-empowered state, thus breaking the cross-domain deterrence. Third, the costs associated with the proliferation of CEM weaponry are significantly lower than those required for conventional arms procurement and personnel training. The primary costs of CEM-proliferation are of intellectual nature, as all stages of proliferation (i.e. embryonic development, testing, evaluation, enhancement, experimental deployment, final modification) are conducted in a virtual-conceptual domain. Fourth, the range of



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offensive CEM operations is almost infinite, thus effectively expanding the operational reach of a CEM-empowered state to the level of 'global'.

Therefore, New Zealand must rapidly establish a New Zealand Cyber Command (NZCYBERCOM) as a subservient unit to the Ministry of Defence. The NZCYBERCOM must be comprised of 3 atomic units to ensure an organic functionality: a) the central command, to coordinate all actions; b) reconnaissance, to systematically collect information on potential targets' vulnerabilities; and c) research and development, to deliver the CEM weaponry. In terms of the proliferation program's human resource management, it is paramount that all involved personnel obtain the highest security clearance.

### Policy Advice Points

- New Zealand must initiate a systematic CEM-armament program to engineer a stable system of cross-domain deterrence. The armament program requires an approximate timeframe of ten to twenty years to produce its primary objectives: a localized capability to rapidly proliferate CEM weapons, and the ability to deliver the payloads effectively to any designated target in any battle domain.
- A prudent and skilful diplomacy is required to operationalize the strategy, especially in terms of communication of capability, and to avoid the risks of unintended escalation.
- The pre-schedule completion of New Zealand's CEM-armament program requires the technical assistance of the US, the world's sole CEM superpower. Otherwise, all technical and intellectual obstacles on the New Zealand's path to researching and developing CEM technologies can be unilaterally overcome within its outlined timeframe.



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