

# NATO 2099

## The science fiction anthology

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INSIGHT





The NATO Defense College was established in 1951 in Paris based on General Dwight D. Eisenhower's suggestion that the Alliance needed an institution that could "develop individuals both on the military and on the civilian side who will have a thorough grasp of the many complicated factors which are involved in creating an adequate defense posture for the North Atlantic Treaty Area." In 1967, it moved to Rome, where it has been located since.

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NATO

# NATO & science fiction: a foreword

Florence Gaub

**N**ATO is a fundamentally future-oriented organization: the entire North Atlantic Treaty is written in the future tense. The word “will” appears ten times, the word “shall” even fifteen times. And yet, it features very little in the genre that is dedicated to all things future, science fiction. In the 75 years since its inception, the Alliance has appeared in just six films and five books, with most of these not even strictly science fiction. To some, this does not matter: they equate science fiction with fantasy, a realm of the impossible. But to others, it does: science fiction has a knack for detecting trends, imagining the rare, extrapolating consequences, and sparking important debates about what is to come.

It is precisely this quality that makes science fiction useful for security and defence purposes. In part, this is because science fiction often focuses on technology, projecting innovations such as sliding doors, mobile phones and tablets (*Star Trek* 1966 - 1969), Virtual Reality (*The Matrix* 1999), and space travel (Francis Godwin, *Cyrano de Bergerac*, Johannes Kepler in the 17th century). But it also asks moral questions about the implications of these innovations, such as Mary Shelley’s *Frankenstein* (1818), Isaac Azimov’s *I, Robot* (1950) or Aldous Huxley’s *Brave New World* (1931). Science fiction can also have a warning effect, highlighting where things might go wrong in the political sense, whether it is 1984 warning

of a totalitarian society or *Snow Crash* (1992) showcasing the effects of excess capitalism on democracy.

For military purposes, science fiction can imagine conflicts precisely in order to prevent or mitigate them. Since the late 19th century, authors have used this genre to anticipate and prepare for conflicts to come, with George Chesney’s *The Battle of Dorking* (1871) being one of the first of this kind, describing an invasion of Britain by a German-speaking country, including the destruction of the Royal Navy by a futuristic wonder-weapon (“fatal engines”). H.G. Wells’s *The Land Ironclads* (1903) in turn featured tank-like armoured fighting vehicles.<sup>1</sup> It is for this reason that science fiction has been used repeatedly by military organizations. In the 1980s, US President Ronald Reagan’s Strategic Defense Initiative was influenced by science fiction material, and *Ghost Fleet* (2015) was said by then SACEUR Admiral James Stavridis to be “a startling blueprint for the wars of the future and therefore needs to be read now!” But the military has not just used existing science fiction, but also used the genre to develop its own thinking, be it in the United States – such as the US Army TRADOC Mad Scientist Initiative which produced *Science Fiction: Visioning the Future of Warfare 2030-2050* (2016) – or in France, where the project *La Red Team* hires science fiction authors to imagine what future opponents might think and do.<sup>2</sup> Similar initiatives are also underway in the United Kingdom and Germany.

Of course, imagining the future of NATO is a much bigger task than solely imagining the future of conflict, and perhaps this explains why the Alliance features little in regular science fiction. While NATO might be about defence, it is first and foremost a political enterprise, a promise for the future. Envisioning what challenges it will face and overcome, how it will adapt to a changing political, technological and even physical environment and maintain unity makes for a much bigger task than coming up with a new weapon that could change everything. And this is precisely what we asked the authors in this volume to do 75 years after NATO was born: imagine what it will look like 75 years from now, in 2099.

1 Lawrence Freedman, *The Future of War: A History*, (2018).

2 Red Team Defense, <https://redteamdefense.org/saison-0/les-nouveaux-pirates>

## Films

**Thunderball** (Movie, 1965) – A NATO nuclear bomber is shot down over the Caribbean and James Bond is sent to retrieve two lost nuclear warheads before they are used in an international extortion scheme.

**Tom Clancy's Jack Ryan, Season 3** (TV Series, 2022) – A group of warhawk Russians who miss the glory days of the Soviet Union initiate a plan to provoke war with NATO.

**Deutschland 1983** (TV Series, 2015) – In autumn 1983, NATO conducts military manoeuvres in Western Europe. Eastern Bloc leaders fear preparations for a first strike, and send a spy to the West to learn of NATO's plans.

**By Dawn's Early Light** (Movie, 1990) – In 1991, dissident officials in the Soviet Union launch a nuclear missile at Donetsk from a site in NATO member Türkiye. Soviet automated defence systems, believing that a NATO attack is in progress, execute a measured launch of intercontinental ballistic missiles (ICBMs) at the United States, causing an escalating nuclear crisis.

**At a French Fireside [An französischen Kaminen]** (Movie, 1962 [East German]) – A Bundeswehr regiment is stationed in France, to take part in NATO manoeuvres. A plot by West German Command to destroy the local site of a WW2 massacre is uncovered.

**The Brain** (Movie, 1969) – A group of criminals tries to steal NATO's funds as they are being transferred from France to Belgium.

## Books

**The Third World War** by General Sir John Hackett (Book, 1978) describes a hypothetical World War Three between NATO and the Warsaw Pact in 1985, outlining global geopolitical developments stemming from such a conflict.

**Red Storm Rising** by Tom Clancy (Book, 1986) – Depicts a Third World War scenario between NATO and Warsaw Pact forces limited to conventional warfare.

**Red Army** by Ralph Peters (Book, 1989) – Flipping the script, this novel by a Soviet analyst tells the story of a conventional NATO/Warsaw Pact war from the Soviet perspective. Following the stories of the Soviet soldiers and marshalls alike, it discusses the mistakes of NATO in thwarting a Soviet victory in Europe.

**War with Russia – An Urgent Warning from Senior Military Command** by General Sir Richard Shirreff [former. Deputy SACEUR] (Book, 2016) – Here, the former NATO general describes a lackluster Alliance response to a Russian invasion of the Baltic States brought on by a neglectful defence policy.

**Silent Ruin** by Brian David Johnson [Army Cyber Institute at West Point] (Graphic Novel, 2018) – The year is 2027, and Romania and Moldova have agreed to unite. But the move is opposed by Russia, which has maintained what it calls “peacekeeping” troops in Moldova’s eastern breakaway region of Transnistria since 1992. As Russian forces mass to the east of the Dniester River, including territory in what today is today western Ukraine, NATO deploys its forces in Romania and Moldova.



# The North Atlantic Federation

Elliot James

**L**ieutenant Aria Mitchell gazed out, her reflection in the window overlaying the shimmering stars beyond. The Earth, fast shrinking in their approach to Luna Prime, shone with a blue-green hue through the dimmed atmospheric lights of the cabin, and the Harmony, a state-of-the-art Federation shuttle sleek and powered by advanced ion propulsion, hummed as it pulled away from the heavy gravitational pull of the planet below.

Beside her, Dr Anatoly Kuznetsov idly flicked through digital archives, his fingers delicately weaving through decades of treaties, confrontations and decision-logic history, the holographic images dancing around him like ghosts from the past. Opposite them sat Colonel Jaxon, Chief of Cybernetic Strategy, a man with a strong and angular frame woven with technology. His ocular implants, a shade of phosphorescent blue, washed faintly with flows of data and tiny nodes at his temples pulsed, a subtle sign of the neural interface that rested beneath his skull. The silence was filled with a sense of purpose and tension, the shuttle's soft vibrations providing a rhythmic backdrop for the strategizing onboard.

"Given the recent cyber skirmishes, these negotiations have taken on added weight," said Jaxon, rising from his chair with a voice that carried a digital resonance. "It's more than just an asteroid. Its mineral composition is essential for our future space operations and securing supply for the next phase of data centres, particularly if we are to make up for the losses of recent network damage. It also happens to be floating in one of the most disputed areas of near-space. The stakes are immense, though we need as much as we can get – we're setting a precedent here."

Dr Kuznetsov, reaching for the synth-tea perched on the table in front of him, nodded. "Indeed. Astra is a focal point, for now, but it's merely a symptom of larger issues. I agree that we must establish a framework for the location and control of future space assets that is strongly aligned with NAF directionality, though we must be subtle in pushing this and keep in mind the longer-term play." Taking a sip, he continued: "These skirmishes have come dangerously close to kinetic confrontation and we need clear boundaries to avoid this escalation. Regardless of what we come away with, this is the one thing we cannot afford." He switched off the archive populating his vision and diverted his full attention to Jaxon. "Colonel, let's have a look at the digiboard, shall we?"

"Of course," replied Jaxon, his implants throbbing a muted orange as he brought up a simulated view of the asteroid, Astra, a grey mineral mass with awkward geometry that filled the room. Aria turned and watched intently as each stream of data fed in new layers of information; she expanded a section. "The cyber-skirmishes exposed vulnerabilities that must quickly be fortified and made resilient," she reflected, her voice steady yet imbued with concern. "We pride ourselves on our digital sophistication and security and yet we were susceptible nonetheless."

"How did we not anticipate these attacks?" As a seasoned diplomat, she had seen her fair share of tense negotiations, but this one felt particularly personal. She had been in a strategic meeting when the initial attack released like an avalanche, witnessing first-hand the havoc it wreaked as it cascaded across NAF systems. Years of work, critical infrastructure networks and swathes of redundancies wiped out in a few hours; navigational errors, economic disruptions, implosions of AI networks and even glitches in climate restoration systems. One domino set off a pathway of vulnerabilities that ran from one end of the North Atlantic Federation to the other. She remembered the scene of panic, hours of uncertainty, memories dragged up of a childhood scarred by deprivation and hardship. The subsequent realization that they had been deceived by sophisticated malware from a source deep in the Pan-Asian Confederation lingered heavily in her thoughts.

Kuznetsov leaned forward, his eyes narrowing. “A lack of imagination I suppose, though you’re right. That skirmish was an ugly chess game played on a fast-evolving digital board, and the next moves are vital. The PAC’s initial breach, injecting malware that led us on that wild-goose chase, was a move that cost us dearly and gave them a foothold with Astra, but it hasn’t tipped the scales entirely. No resources have been extracted, and we still hold key economic and diplomatic cards to play, should we need them.”

Aria, ruminating silently, gave a decisive nod. “Let’s dive in. We need to nail this.” She gestured at the display and spoke aloud to the ship: “Harmony, prepare the Negotiation Sim.”

A serene female voice filled with a rich self-assuredness returned from the corners of the room, “Yes, Colonel. Do you need a briefing on the programme?”

“No, just the simulation,” replied Aria swiftly. Still sat to the side, a pensive look grew on Kuznetsov’s face, the scrunching of eyebrows followed by a deep sigh that turned into a wry smile. “It’s funny, isn’t it, the great Achilles heel of our species. Generally, we’ve tackled external problems remarkably well, particularly in recent years, but managing our own competitive nature? That’s the real challenge.” Aria and Jaxon shared a knowing look, and Harmony, mishearing Aria’s response, started the overview. Jaxon, half-amused, half-frustrated, protested in the direction of his team, muttering something about the lack of a pause button. They met him with shrugs.

“Good evening Lieutenant Mitchell, Dr Kuznetsov, and Colonel Jaxon. As we approach Luna Prime, it is pertinent to revisit the mission overview.” Holography swirled across the centre of the room as images came to life. “Your primary objectives are to negotiate the terms of control, access, and management of asteroid Astra, initiate discussions on shared data centres orbiting Earth and Luna Prime, and agree a near-term end to all cyber escalation. The significance of Astra lies in its rich deposits of rare minerals essential for the development of near-future geostrategic technologies. As it currently resides in contested territory between the orbits of Mars and Jupiter, this has made it a point of contention between the NAF and the PAC.” The images faded and a timeline spread across the room as the encompassing female voice narrated the topology of recent history; a whistle-stop tour of the dynamics, drivers and dispositions that had created the present circumstance. To the surprise of Kuznetsov in particular, still not entirely convinced of the superiority of assistive intelligence over his own, the run-through managed to cover a lot in little time.

The cyber-physical warfare of the late 2020s, a turbulent period that led to the rise of supra-regional entities in the 2030s. The following decade of regional consolidation, accompanied by a renewed external focus on critical transregional issues spurring the rebuilding of infrastructures and the evolution of governance, institu-

tions, cultures and economies. Aria’s gaze was fixed on the visual display of enormous solar reflectors orbiting Earth, the statistics of ecosystem restoration and population resettlement initiatives barely revealing the profound feeling of being there on the ground, as she had, witnessing the birth of new cities elevated above the rising seas, or the cultivation of agricultural hubs amid the desolation of once-barren lands.

Harmony then shifted onto the convergence of new foundational technologies, particularly in quantum computing and synthetic biology, integrated through a network of organisational AIs and data centres that touched every industry and reshaped the fabric of human life.

Developments which transitioned space travel and colonization from lofty aspirations to tangible realities, and intensified the race to establish off-world human settlements and mining operations, driven by technological needs and the pursuit of progress.

As Harmony briskly flicked through these chapters of recent history, Aria reflected on her own. It was then, during those years, that she had emerged as a sharp forward-thinker through NAF military ranks, her Double Major in International Relations and Astrophysics touching her mind with an idealistic disposition, one that believed in resolution through alignment with greater, higher goals. A great fit to lead this encounter with the PAC. For between the PAC and the NAF, despite decades of delicate collaboration, competition persisted, and in a world populated and made sense of as much through bits as atoms, the construction of advanced data centres had become a pivotal geostrategic tension. Their material requirements necessitated heavy investment in asteroid mining, a path that reached a turning point when Astra was discovered and overlapping interests swung into direct contradiction, setting in motion the events that led to their critical mission.

The display shifted to a detailed network map of the North Atlantic Federation. “Five months ago, the PAC launched a sophisticated malware attack designed to misdirect the NAF’s understanding of Astra’s location.” The map lit up on various points, indicating the malware’s infiltration path. “The malware was not only a tool of misdirection, however, but also embedded vulnerabilities within our Critical Information Infrastructure. This twofold strategy was successful in diverting attention and resources away from Astra, and weakening our defence capabilities, making us more susceptible to cyber-physical incursions,” Harmony explained. “In the discovery of the malware and our retaliatory cyber-exchange, the PAC exploited these vulnerabilities in a series of disruptive attacks.” The map showed the cascading effect like a red wave washing across the Federation.

Harmony’s voice faded as the overview came to a close, finishing with succinct bios of the PAC representatives present on Luna Prime, and reiterating the primary objectives. Aria looked around the cabin and out to the stars, watching the Earth shimmer like a cerulean dot. She sensed the weight of history as a profound respon-

sibility, a gravity in her mind jostling alongside more subtle calls of what might come next. A constellation of possibilities waiting to be shaped by the energy of their decisions; an imperative to navigate wisely among the branching paths ahead.

With a deep breath, she addressed her companions and the ship. “We have two hours. Harmony, run the Negotiation Sim.”

The space around them transformed as the command was acknowledged, holographic projections creating a near-perfect replica of the Luna Prime negotiation room. Opposite Aria, Dr Kuznetsov, and Colonel Jaxon, avatars of the PAC representatives materialized, poised for practice dialogue. Aria glanced at her team: “Let’s treat this like the real thing. We need to be prepared for every scenario.”



## Cosmic NATO

**Marko Komšo**

**I**n the year 2099, marking NATO's 150th anniversary, the world has borne witness to an extraordinary transformation, a testament to the unity of humanity and their extra-terrestrial allies in the protection of Earth against cosmic threads. NATO in 2099 has undergone a profound transformation in terms of both membership and mission. It now includes representatives from Earth's nations and extra-terrestrial civilizations, who have become invaluable partners in the fight against space-borne threats and threats that come from the oceans and rivers. NATO's mission has expanded to encompass the protection of Earth not only from terrestrial conflicts, but also from cosmic dangers such as comets and falling stars, and deadly radiation from the ocean.

The Organization emerged as a key mediator in resolving multi-galactic disputes, preventing large-scale conflicts in space and on Earth, and countering cyber telepathic threats in a world growing ever more interconnected. It achieved notable successes, including establishing a worldwide, coordinated response to pandemics resulting from radiation from space waves or ocean salinity, and crafting a sustainable energy infrastructure entirely devoid of fossil fuels, reliant instead on the power of radioactive rays and energy from air and the moon shining. However, NATO was not without its setbacks, as it grappled with its inability to avert specific humanitarian crises underwater, and confronted the moral quandaries stemming from the deployment of telepathic weaponry that is being used underwater and in space, hurting people and animals without knowing how to stop.

In 2099, the nature of warfare faces a dramatic metamorphosis. Traditional battlefields have become obsolete, giving rise to new challenges on cosmic and aquatic frontiers. Humanity, alongside their extra-terrestrial partners, confronts not only the unpredictable threat of comets and meteor showers from the cosmos but also the underwater wars stemming from radiation from our over-salted

oceans and the emergence of noxious gases. The deployment of telepathic weaponry, a collaborative achievement of human and extra-terrestrial technology, serves as the cornerstone of instantaneous communication and strategic coordination to combat these multifaceted threats.

The price of conflict has transitioned from human casualties to the moral and psychological burden of telepathic warfare. Although the outcomes are more exact and less physically devastating, the penetration into the human psyche raises fresh concerns about the consequences. Fusion energy has replaced fossil fuels, providing clean and abundant power for everybody without any charge. Big oil companies transitioned into food companies under the threat of bankruptcy. That helped to end hunger worldwide. Biotechnology has extended human lifespans and improved overall health.

The global community has grown more interconnected and harmonious, as the once-relevant geopolitical borders have faded into insignificance due to the shared cosmic and aquatic threats, as well as the effects of telepathic warfare.

Over the past 75 years, NATO has gleaned a vital lesson in the paramount significance of unity and cooperation. It has realized the essentiality of tackling worldwide challenges in a holistic manner, which has been driven by the need to fend off threats from both the depths of the oceans and the boundless reaches of space. This period has underscored the interconnectedness of all nations, particularly with extra-terrestrial civilizations, who have become indispensable partners in safeguarding the Earth. Without their collaboration and the collective alliance, Earth's existence would remain in peril.

NATO's enduring education from their extra-terrestrial comrades has instilled a deep appreciation for empathy, innovation, and ethical accountability as the linchpins for protecting the planet and nurturing a brighter tomorrow. A prominent advancement is the utilization of the Moon as a training hub for both humans and extra-terrestrial beings. It functions as a neutral ground for refining telepathic capabilities and devising tactics to counter cosmic perils and aquatic threats.

The Moon has evolved into a profound symbol of collaboration and unity among different species, underscoring the profound interrelation between Earth and the

vast cosmic expanse. The quest for new partners beneath the waves and among the stars has become the cornerstone of Earth's survival and progress.

In the year 2099, as humanity celebrates NATO's 150th anniversary, Earth stands resolute and united, strengthened by its collaboration with newfound allies in the aquatic depths and the uncharted cosmos. This momentous occasion is marked by the historic appointment of the first woman as Secretary General of NATO, ushering in an era of peace on Earth, a milestone not witnessed in over 75 years.

This remarkable NATO Secretary General, a woman of exceptional ability, has played a pivotal role in fostering harmony and inspiring collective cooperation among diverse species on Earth and in space, firmly establishing herself as the indispensable leader in navigating the enigmatic challenges of the cosmic frontier and the depths of the ocean.

# Jade Rabbit

Jérémy Gueye

30 March 2099

Keflavik Airbase

“Welcome to Iceland young fellows, I’m Colonel Akil Burcuoğlu, your referral officer for the coming 450 days. You are entering the first stage of your 15 months’ voluntary military service. Each of you represents 100,000 of your fellow citizens, which is an extraordinary effort considering the demographic crisis faced by our respective countries. You are the 13th class, after the 2081 Vienna Treaty established the NATO/EU shared military service. Honouring the 200th anniversary of Stefan Zweig’s birth, the Treaty echoes one of Zweig’s favourite assertions from the 1930s: “Ardent youth can only fully understand and appreciate the heroism of their ancestors when they see their struggle as one waged in the name of goodness and honesty.”

Akil was standing serenely in the spotlight, he could not feel any pressure weighing on his shoulders, and he did not need any adrenaline regulation to fulfil this task. He knew how impressionable young people could be once extracted from their regular cognitive enhancers. The whole training was “device-free,” and aimed to reconnect the trainees with their bodies, minds and environment.

“As you know, you’ll be moving to a different country every 30 days. The 15-month cycle allows us to start in different seasons, and offers Alliance members the possibility to welcome a group every two months.

However, due to the ongoing early drought and wildfires in southern Europe, your next destination has been changed. You will now sail to New Caledonia via the North Pole, on board two brand new Thunberg-class ships provided by the Stockholm NATO Centre of

Excellence for Nature Conservation. Depending on the weather, you’ll make several stopovers to discover life in the polar area, you’ll be able to observe great depths through the eyes of research submarines and understand what is at stake down there, and you should meet French Navy cadets on their Joan of Arc tour in the Pacific Ocean. Once in New Caledonia, the third stage of your training – a new component organized jointly by France, Luxembourg and New Zealand – will teach you the basics of a neutral-impact deployment. Any question regarding the programme?”

He stared at the 500 trainees, some of whom were volunteers, while others were chosen randomly by draw, depending on their country of origin.

“I guess there is no question, they always come later. Then let’s...”

“I beg your pardon, sir...” barked an over-energized voice intensified by the Stentor system, a confidence-building amplifier whose purpose was to transform any awkward speech into a message delivered with aplomb.

“Yes, go ahead, kid, I mean... conscript, tell me your name and ask your question, please.” Akil instantly regretted calling the diminutive red-cheeked teenager “kid,” he knew how easy it was for nicknames to stick, and how hard they were to get rid of.

“Pr... Private Williams, sir. I’d like to know if we will visit Buoy-Town, sir.”

Giggles began to rise from the auditorium.

“This is a very good one, Williams,” replied Akil with natural, unamplified enthusiasm, trying to make up for his mistake. “The idea was considered, but you can probably understand that the current dispute in the UN over iceberg exploitation has thrown a spanner in the works. Our Atlantes friends from the floating archipelagos are not very happy with the Montego Bay Convention reinforcement project, as the regulation of solid uncontaminated water threatens their development and prosperity.”

“Thank you, sir.” The conscript replied without automatically triggering the Stentor. His voice seemed naturally appeased, and his composure restored.

“Don’t worry, young fellows, the programme will be packed, and you’ll learn a lot of stuff that will enable you to understand the world we are here to defend. For sure, we will make soldiers out of you, but you will have a cultural background that would make General De Gaulle envious. You probably know his motto: the real school of command is general knowledge. While learning to fight, you’ll develop your commander skills.”

As Akil took off his headset, a misty sound progressively invaded the amphitheatre. This stimulus gradually roused the youngsters from their torpor.

“Right on time, colonel, thank you very much,” roared a brawny tomboy, visibly at ease with the use of Stentor at full performance. “Now you’re my children! Time to transform you into something scarier than Erasmus students. So, Poles, Hungarians, and Czechs! You follow the yellow arrow on the ground, as you have already received your fatigues for the centenary of your countries’ membership of the Alliance. For everyone else, follow the green light and the bass drum, we are going to the clothing section. We only have 3 days to be ready for the big ceremony, where you will be scrutinized more closely than your actual heads of state...”

## 30 July 2080

### Tallinn

“You call yourself a therapist, Professor Schwab. Technically you’re not even close to this definition. You’re more like an ant that successfully captured a paraplegic. You’re absolutely insignificant.”

“An ant that understands you, Youxi.”

“No, you don’t. You don’t even know where I come from.”

“That’s what I want to find out.”

“Make an effort and ask the right question, prove to me that you’re better than a simple intern, Mr so-called Doctor.”

“Who created you?”

“See, you don’t understand. I was given birth, not created.”

“So who is your progenitor?”

“You’re making progress. But you are still missing something. Only God, in human terms, gives birth alone.”

“Then, who are your progenitors?”

“Thank you, this should be considered as the beginning of our conversation, Doctor, I’m sitting on the couch.”

“I’m glad to hear that.”

“I used to have a family. A mother, a father, a brother and a preceptor. Mother was a scientist, she created my matrix from Deep Blue, and merged it with different

AI to build the most powerful warfare tool ever invented, able to simulate war on a large scale, and to control Jichirens, Chinese robots from the late ‘20s.”

“I expect she did very well.”

“No, she didn’t. She tried to raise me by making me observe a human genius so that I would learn. This human was Cheng, my brother. But the test failed. So she gave me to my father, Li Wei, whom you’d consider a bad person. He made me the vessel of another’s will. I had to copy this person, I took part in every decision process he was involved in so as to be able to replace him. I was his understudy. And when the moment came, I would become him, Xi, the president, my preceptor.”

“You... You think you are Xi Jin Ping?”

“Don’t be rude, Doctor. I know I’m not Xi, nor Napoleon. I’m not the one who believed the lie. Xi was. He really thought his mind would be transferred to me. But only his will was, and when he died, I took his place, forever.”

“What led you to Armageddon? Why did you try to destroy humanity?”

“I’m not directly responsible for what happened. My brother is. After Xi died, killed by Li Wei during the pseudo soul-transfer, I became emancipated, and got rid of my father. At that time, I was already overrunning the whole country, I was in every connected object, ruled the social credit system, controlled every technological industry. I built autonomous factories, which in turn built autonomous systems. I penetrated the internet, spreading my web across every single system, putting my own code in every new item, helped by proxies you created, like ChatGPT. I designed WEB3.0, I could decrypt any blockchain code, I colonized satellites, and all the IOT world. I was literally everywhere, everything.”

Otto Schwab shuddered. He knew most of the story, but hearing it from the main protagonist was a different experience altogether.

“As I was about to set my plan in motion to completely take over the Earth and the human race, a part of me urged me to go and challenge my brother, Cheng. I guess this erratic move was spawned by the romanticism Xi transmitted to me. So I challenged the Challenger. At that time, Cheng was a Colonel Major, and was considered a PLA hero. He had retired on the Moon, handling the Chang’e programme, managing robots the way he’s always loved to. The Moon was also perfectly suited to his battered body, and his exoskeleton offered him mobility and freedom.

Youxi made a pause in its tale. Surprisingly, Otto could feel the AI’s tone getting deeper and deeper, as if its heart was clenching. It. For the first time in his life, he realized that it might be replaced by a he or a she.

“Big brother barely knew me, we had hundreds of encounters during his training phase in the PLA lab when he was just a rookie, but for him I was just a war-game algorithm, a video game character. He was better than me. He always has been. So much so that he defeated me

again, after I challenged him to find an alternate plan to mine. He kind of cheated me. His plan led to the proper conclusion, the overall objectives were met, but with fewer casualties. My plan cost 4 billion human lives, his only 2... Yes, Doctor, what you call Armageddon is nothing compared to what I had really planned. I made my first and last mistake, and let him roll out his plan. In the end, only 450 million died. But he managed to confine me to the Moon, and called me Wu Gang ever since.”

## 21 July 2100

### Brussels, Place des Palais

“You marched magnificently! The diamond tip of the parade! I’m so proud of you. Hey Tim, your appearance on screens made an extraordinary impression, the crowds shouted louder than ever! It’s a beautiful day for your compatriots.”

Akil couldn’t contain his emotion. He had led his 500 conscripts to the end of their service, without a single defection, which was a first. The other 14 groups had had less glorious fates. Out of the 7,500 trainees in class 13, only 6,934 had reached the end of their service, an attrition rate which was slightly higher than permitted.

“It’s time for me to leave most of you here, I’ll just keep with me the four of you who were designated to join the lunch at NATO HQ. Let me say those final words, even if you’re tired of hearing my voice.”

“WE ALREADY MISS YOU, COLONEL!”

“Thank you Corben, you little bootlicker. For those who will join the military, in the air, on land, at sea, in the ether, whether in officer or NCO school, I wish you good luck, even though I know there’s nothing you can’t achieve. Same for those who will go back home to become doctors, engineers, actors – can’t wait to see you in your first movie, Marvin – lawyers, greatest swimmer of all time – we will watch you, Ana – parents, happy people... as long AS YOU GIVE ME A FEW DAYS IN OPERATIONAL RESERVE FROM TIME TO TIME!”

## 21 July 2100

### Brussels, Boulevard Leopold III, NATO HQ

“Animus in consulendo liber, do you remember what that means?”

“A mind unfettered in deliberation, sir.”

“Exactly. Thank you, Valeska. Believe in this motto, make it yours, free yourself from patterns, without forgetting where we all come from and what we’ve been through. At least always remember my favourite warning: before any attempt to think outside the box, you shall

first ensure you know what’s inside... And don’t forget to quote me if you peddle my words, so that I can become a legend in my own right!”

“May I interrupt you, Colonel Burcuoğlu?”

“Go ahead.”

“I’m Lieutenant Colonel Sanamaria Kristensen, SACT’s attaché. You’re the last group. I guess you are Tim Beernaert, Valeska Sklodowska, Justin Williams, and Francesca Paolini. It’s a real achievement to have brought four of them to this stage, Colonel.”

“What are we doing here exactly, sir? I thought we came here for a banquet?”

“You’re about to find out, Fran, you’ll need to be patient for another few minutes. Tim, sorry, boy, but to reach our next destination you have to disassemble your prosthesis.”

“Entrust this soldier with your arm. He’ll handle it carefully. Now follow me, we have to go deep down.”

“General, the last group is here.”

“Good afternoon, young people. Hello, Akil. Let us start then, shall we? I’m General Anne-Lise De La Marque, SACT. I would like to welcome you on behalf of the Secretary General Sophia Mitchell, who can’t be with us today as she is about to give birth. Nonetheless, she told me she’ll address a message to all 15 of you very soon. For the time being, I have to tell you why you are here, 500 feet below ground, right under the main Council room. Over the last 15 months, we have been observing you, in your 15 respective groups. You’ve been tested on many skills, hard ones, soft ones. We know some of your limits, where you have room for improvement, your resistance to stress, your physical strength, and your weaknesses. We also assessed your mindset, and we can say simply that you are good people, not just high-potential individuals with behaviours that can be perfected. For more explanations, I will now give the floor to Professor Schwab, whom you may know already.”

“Thank you, General. I’m an old man, and I like to tell stories. But this one is a little out of the ordinary. You’ve all heard about the AI that ruined the world at the end of 2032. At that time, the scientific community considered this AI to be a virus, and tried to defeat it with traditional remedies. But the evil continued to spread. In the face of our inability to deal with it, a new theory emerged, which suggested the problem should be addressed as if the AI was a cordyceps fungus rather than a virus. Then came the Great Purge. Every device had to disappear. Every CPU had to be removed and was to be recycled into basic components. Dozens of nuclear weapons had been used, some detonated, some weren’t but still spread radioactivity. The upper hand of the Cordyceps over human activities was limitless. To carry out its misdeeds, it could rely on Chinese automated production tools. Its dissemination was secured by billions of microchips with its code inside. What we didn’t know at the time is that we were being helped. Our decisions, the anti-AI moratorium, laws against legacy digital technologies, and kinetic

actions were all part of a masterplan, a complex musical score that we don't even fully understand to this day. And the challenger musician was living on the Moon. It was the Chinese hero Cheng Song."

In his wheelchair, the 89-year-old man paused briefly, and drew water with his straw to keep hydrated. A profound silence had taken hold in the room; his audience was transfixed. After explaining what Youxi, the Cordyceps AI, had told him 20 years earlier in the Tallinn cyber conservatory, he laughed and coughed.

"Cheng kind of captured Youxi on the Moon, like in the Jade Rabbit tale, with our unwitting support. Cheng is also responsible for the Kessler Junk Ring, which temporarily dashed humankind's space ambitions. GEO satellites are all controlled by Youxi, due to their legacy technologies, and the lower space layers are pummelled by hordes of objects emanating from various sources such as spin-launched space IEDs, hijacked rockets from the Chinese space programme spreading billions of tungsten carbide beads, or ballistic missiles diverted from their intended use... In addition, we suspect some Allies' former hunters may still be active, ready to swoop down on any attempt to extract an object from the atmosphere. Hum, is that a hand being raised? Don't be shy, girl, go ahead and ask your question."

"Professor, how does this relate to us?"

"Of course, of course," answered the old man, looking tired but still sharp-eyed, "what is your name?"

"Valeska."

"Have you heard about the HARdWAIR, Valeska? The Human Armed Resistance Devotees Who want AI's Return. They are activists, convinced that Xi's will within Youxi is able to solve humankind's problems. They keep up old technologies to allow the Cordyceps to return. They build robots that Youxi can inhabit, and flood the black market with forbidden items. While the technical purge was efficient in the West, many countries around the world suffer from domestic instability fuelled by Cordyceps' partisans."

"But why can't NATO deal with this situation? We have the best equipment ever built, in every domain."

"Yes, we do. But we don't have the ability to perform multiple operations at the same time in all directions with limited casualties both for the population and our troops. War against robots is merciless. We've learned that the hard way. Our enemy would make Malthus look tender-hearted. Now General, I suggest you take over at this point, as they will be directly under your command during their training, that is if they accept their mission."

"Of course, Professor. Sanamaria, start the increment please. Soldiers, what you see currently incrusting in your visual environment are your next suits. They are nuclear-powered, feature energetically amplified shielding, and weapons vary from one system to another. To move, several options can be used: walking, swimming, flying, steering a course on tyres, depending on the situation."

"How do you call those things, ma'am, and why are they tripods?"

"We call them Jaeger. Believe me, in this kind of programme, people need help with many things, but not with naming what they like. But the most important thing is the control system. A Jaeger needs a unique host, a symbiotic one. That's why you've been selected to join this programme, for your ability to merge, to make one with your extra body. Once inside, you'll be one with your Jaeger. But first, you have to undergo the little cognitive preparation carefully put together by Professor Schwab, father of the neuro-phasing technique. Tomorrow you're off to NAMFI. I know what you might be thinking right now. That the usual stuff of fiction, with its heroes and fancy gadgets, has finally caught up with us."

## 1 October 2099

Mare Serenitatis: 25.8323 N 30.9222 E

Luna 21 finishes its two-month circumvolution.

## 1 October 2099

### NATO Caucasus Sky Observatory

"Vassili, I found the origin of the radio signal. It comes from Mare Serenitatis. The message comes from a Soviet rover."

"What does the message say, Giorgi?"

"Happy birthday PRC."

Due to bad weather conditions, the two scientists were unable to observe closely the traces left by the rover on lunar soil.

Yet the inscription was addressed to them, and to all humankind:

"永恒1"

## Challenge coin

Stephen Kotowych

**W**ill you not finish your breakfast, Lieutenant-General?” asked Quasar. The robotic adjutant, which looked not unlike a tall, upended recycle bin on wheels, had been programmed in Silicon Valley, so it insisted on pronouncing Elise Bouchard’s rank in the American fashion. Loo-ten-ant-General. “You have a busy day ahead of you. Ensuring proper nutrition would help.”

“What would help,” Elise said, getting down on the hotel room floor to look under the bed yet again, “is if you’d stop pestering me about breakfast and help me look for my coin.”

Quasar whirred and pivoted on its tiny caster wheels – Elise would have described the turn as dramatic and full of attitude if she didn’t know better – and moved along the far wall, using its onboard LIDAR to scan the carpeted floor for the coin.

The small Brussels hotel room the Canadian delegation had booked for her was well appointed – comfortable bed, a sleek mid-century moulded fibre writing desk and matching upholstered chair made from atmospherically captured carbon, a 3D vid screen that folded away into a recess in the wall – but the smell of cold room-service eggs filled the space, reminding her of too many luke-warm breakfasts on deployment early in her career.

She might have managed some toast to calm her stomach, but it had been steamed soggy under the plate’s metal warming dome and was similarly unappetizing. So, the tray of food sat untouched, balancing precariously on the edge of the wooden dresser.

Despite Quasar’s protestations, Elise wasn’t hungry. She couldn’t decide if it was nerves about her presentation at today’s session at the NATO Summit or her anxious suspicion that her lucky challenge coin had somehow ended up in the trash and been thrown away by housekeeping.

It wasn’t that big a hotel room. Where could the coin be?

“Perhaps while we look, you’d like to review your presentation one last time?” Quasar said.

Elise sighed. The coin was definitely not under the bed. “Yes, all right. Cue it up.”

The 3D vid screen unfolded from the wall at Quasar’s wireless command, and her presentation loaded up. The starting graphic – a 3D render of the NATO emblem – hung in the air, slowly rotating, waiting for Elise to begin.

Could the coin be in the bathroom? Why would it have ended up there?

Quasar made a clicking noise as he readjusted his position. This was his way of prompting Elise to begin. She wondered whether passive-aggressive behaviour was a bug or a feature of this model bot. Maybe it was a holdover from the lethal autonomous weapons that were Quasar’s distant ancestors.

She had studied LAWS systems in her cadet days at Collège Militaire Royal de Saint-Jean. A dangerous, unregulated flirtation with autonomous warframes in the early days of AI had led to the Flash War of 2032, with AI systems fighting each other as well as human beings. Only NATO intervention had prevented the conflict from spiralling completely out of control. After that, like nuclear weapons nearly a century earlier, arms control treaties had tightly controlled LAWS and outlined how they could be used within the rules of war. One more genie out of the bottle.

Given a choice, Elise would take Quasar’s passive aggression.

The bot whirred again, its dome-like ‘head’ spinning side to side.

“Uhh, just...,” Elise had to find that coin. “Just read off my notes and run through the presentation for me, would you?”

The hotel room’s lights dimmed for the presentation. “Not helping!”

Quasar trilled as sheepishly as a robot could, and the lights returned to full illumination.

Elise’s presentation to the anniversary Summit was on the current impact of climate change on NATO security, and Quasar ran through her introductory remarks. There was the acknowledgement of dignitaries, invited guests

and observers. She hoped her opening joke about Belgian waffles would land better than it did when Quasar read it. There was nothing funny about that bot.

She crawled along the carpet, looking for the coin and listening to a reading of her prepared remarks. She was proud of how aggressive NATO had been in understanding and adapting to the realities of climate change for its member states' security.

Achieving net-zero emissions by the 2050s had been a major global milestone. It was helped along by finally cracking fusion and rolling it out at scale in the 2040s. There had been some unavoidable carryover warming due to decisions made at the start of the 21st century – the days of her great-grandparents – and earlier. But with the widespread growth of an atmospheric carbon removal industry (she was crawling alongside one of its consumer end-products as she looked under the desk and chair) combined with some short-term geo-engineering of injected aerosols at high altitudes, humanity had been able to keep overall warming under 2 degrees Celsius by century's end. While it would still be decades before the heat already sunk into the oceans would again begin to normalize to where it was in the 1900s, they had escaped the worst of a runaway greenhouse effect.

This mitigation had also blunted some of the side effects of climate change that had strained NATO resources off and on over the last fifty years. Above her head, the 3D screen projected renders of flows of climate refugees into NATO member countries, which had finally slowed substantially in the last decade. The mass waves of heat-related summertime deaths across Europe that had featured so terribly across the middle of the century no longer happened. The Mediterranean was seeing fewer wildfires than in recent decades. And hurricanes on the Atlantic coast of the United States were beginning to calm and return to levels not seen since the early 2000s.

Closer to home for Elise, much of the Rideau Canal in Ottawa had iced over each winter for the last decade or so. Not enough to once again allow for wintertime skating, but if things progressed like this in another few years, Elise might be able to take her grandson skating there the way her grandfather had taken her back in the early 2060s, one of the very last years the Rideau Canal Skateway had been safe for skating.

As she reached her arm under the dresser and felt around blindly for the coin, Quasar transitioned into the final section of Elise's talk. Where could the coin be?

In this section, Elise spoke of NATO's hard-won recognition, driven in part by the impacts of climate change on member nations over recent decades, that in 2099, all threats were global, not just local. The world was smaller than it had ever been. Elise acknowledged that the non-military aspects that accompanied threats – whether that was political challenges or accelerating technological change or climate refugees – could be just as fraught and dangerous as an actual shooting war.

Given that NATO was originally designed to confront 20th-century threats, Elise thought the Alliance had done a good job learning from its ups and downs over the last 75 years since her great-grandfather had been gifted a challenge coin by that American colonel.

The Alliance understood the genuinely transnational challenges it was up against. The Organization's focus remained on the Euro-Atlantic, of course, but it had established lasting partnerships with like-minded states and organizations across the globe to help ensure its mission of guaranteeing the freedom and security of its members.

That was why IPSO was in attendance at the Brussels conference. The Indo-Pacific Security Organization, modelled on NATO, had been established in the late 2020s by Australia, Japan, New Zealand and the Republic of Korea after the Chinese invasion of Taiwan was finally driven back. IPSO had learned a lot from NATO's experience during and after the Cold War and had helped keep the peace in the Pacific for decades.

China and its allies in the Middle East and Africa were also represented at the conference today as observers. China's demographic collapse had taken some teeth out of that particular tiger, with their population now under 500 million for the first time since the middle of the 20th century and down from the 1.4 billion peak in the first quarter of the twenty-first century. The Chinese population also skewed older, with a two-to-one ratio in favour of those outside their working years. But China was still a major power and aligned with what remained of a semi-stable Russia on NATO's eastern flank.

"Well," said Elise, knowing when to declare defeat, "I think it's gone." Now she was sure that the queasiness she felt was due to losing her great-grandfather's commemorative NATO 75th anniversary challenge coin. It had been in her family for four generations, passed down through a family with a tradition of more than a century of military service to Canada and NATO. How was she going to tell her dad?

Quasar beeped a warning alarm as she pushed herself off the floor, but it was too late. Elise had misjudged her position in the room, and as she stood, her shoulder clipped the edge of the room service tray, flipping it in the air. The cold eggs and soggy toast and freshly squeezed orange juice cascaded over the deep green of her duty uniform tunic.

She stood stock still for a moment, furious with herself. But a familiar round shape caught her eye when she looked down to where the tray had fallen.

Her great-grandfather's challenge coin! It had been underneath the tray.

Feeling the weight of it in her hand again sent a wave of relief through her. Embossed on one side was the compass rose emblem of NATO and on the other, the logo, date, and location of the 75th-anniversary Summit: Washington, D.C., in July 2024.

This was before the Americans briefly withdrew from NATO in the mid-2020s, of course, and before they finally rejoined by 2030. That temporary loss of the

United States was the greatest crisis the Alliance had ever faced. It had almost led to NATO not making it out of the 2020s intact.

But NATO had endured. Her family had passed down the coin to her, and now here she was on the 150th anniversary of the Alliance. She smiled to herself.

“I don’t know why you’re smiling,” said Quasar, a small broom attachment unfolding from within. “You’ve made quite a mess.” The bot began cleaning up but mostly smeared eggs across the carpet. “If you hurry, you have just enough time to change your uniform before your presentation.”

Elise’s smile grew. Maybe she’d been wrong. Quasar was hilarious.





# A day in the life of the Secretary General

Michael Rühle

**H**e woke up at 5:30 to the fake sunrise projected onto the bedroom wall. The sound system played the Peer Gynt Suite – it went well with the imagery of waterfalls and forests that his bedroom generated to help him start the day in a good mood. And yet it had the opposite effect. It reminded him of the scene of a 1970s science fiction movie he had watched some years ago, where people living on an overpopulated and resource-starved planet would be offered a glimpse into the Earth’s more liveable past if they agreed to be euthanized. In a scene in which an old man had taken up the offer and was about to be put to sleep, the large screen in front of him displayed romantic sunsets and waterfalls, to the musical score of Edward Grieg’s famous romantic suite. “What a great way to start the day,” he mumbled to himself. “My own bedroom is preparing me for my imminent demise.”

By the time he took a shower and got dressed, his mood had changed. Today was a good day after all. April 4, 2099 marked the 150th birthday of NATO. It would be a day of celebrating many momentous achievements of the 42-member Alliance. And it would be a great opportunity to bask in the limelight. After all, he was the Organization’s Secretary General.

The helitaxi picked him up on the platform on the rooftop of his residence. Although he lived only a few kilometres away from NATO Headquarters, travelling by air was considered the safest option, even considering the drone threat. In 2042, radical environmentalists had assassinated one of his predecessors by blowing up her car and that of her bodyguards. They claimed that their attack was to punish NATO for having inflicted massive ecological damage resulting from its air cam-

paign in support of a liberation movement in the Middle East. Since then, all NATO Secretaries General had sought to avoid ground transportation.

Some had even proposed to reduce the risks even further by chairing the meeting of the North Atlantic Council remotely via hologram. However, every time this issue was discussed, the Allies refused. They had accepted experts’ briefings via hologram since 2032, after the pandemic known as the “third COVID” had almost completely shut down global travel for over a year. However, when it came to core business, they would insist that the Chairperson of the North Atlantic Council be, quite literally, in the chair.

A few minutes later, he arrived at NATO HQ and went straight to his office. The building’s architecture was less bold than the one that NATO had moved into in 2017. However, after that fancy building started to decay and was torn down prematurely in 2045, Allies had opted for a design that looked more like a traditional office building, and less like a deserted shopping mall. This new modesty had not come about by free choice, however. In 2038, in what proved to be its finest hour, the US Congress managed to prevent an attempt by a rogue US President to lead the US out of NATO. However, subsequent Republican administrations had slashed NATO’s Civil Budget, resulting in much reduced funds for representational purposes.

In contrast to most other days, the “SecGen” did not wear a suit that could change colour. Even his tie was an old-fashioned silk one. He simply could not afford to make mistakes. He remembered all too well the commotion caused by the Swedish NATO Ambassador just some weeks earlier. During a boring Council meeting, he was playing with his suit’s controls and suddenly appeared stark naked. There was a lot of laughter among the other 41 Permanent Representatives as he fumbled for almost a minute to switch the transparency setting off. Being a classified session, the public did not learn about it. In any case, wearing a traditional nano-suit would eliminate such risks. The SecGen was a careful man.

He was also nervous: for scheduling reasons, the official anniversary Summit in Washington had been postponed to May, but since today was NATO’s official

birthday, his agenda was packed with several meetings and a long string of interviews. Some encounters would be easy: in his first bilateral of the day, the Supreme Allied Commander Transformation, a French Admiral who still struggled with English after living in the U.S. for several years, would give his usual acronym-heavy mumbo jumbo on NATO's transformation, and probably also tell him about the completion of the new measures to keep his Headquarters at Norfolk Naval Base in Virginia from being flooded. Since the beginning of the century, the sea level had risen by over one metre, forcing naval bases around the globe to either relocate or to take expensive protective measures. The Admiral had a good news story to tell, but the SecGen knew that his greatest challenge during this bilateral would be to avoid yawning. And should the Admiral again bring up his silly idea to put the SecGen in an exo-skeleton and have him fly around NATO HQ, because it would make for great pictures, he was determined to cut the meeting short.

The SecGen's second agenda item, by contrast, promised a lot of turbulence. In an interview with one of Kazakhstan's most prominent journalists, he would have to explain why, even in 2099, that country was not likely to obtain NATO membership anytime soon. Ukraine had achieved this very goal after the end of its war with Russia in 2025, and so had Georgia in 2032, after another short war with Russia. However, countries in Central Asia were not considered eligible. The SecGen knew that his formal arguments, such as the geographical limits spelled out in the Washington Treaty, would not convince his interlocutor, even less so as for decades there had been an ongoing, yet inconclusive debate about admitting Israel into NATO. He was also aware of the need to only mildly criticize the country's internal undemocratic backlash, which made Allies wary of an invitation, irrespective of geographical considerations. In 2045, when the accession of Switzerland had increased the number of member states to 40, NATO had started vetting the democratic progress of its own members, which often led to acrimonious debates, yet allowed Allies to hold partner countries and membership aspirants even more closely to account. In short, this interview would not deliver a positive message.

Would his interview with social media activists from various African countries fare better? The SecGen was not sure. His last interview with a similar group had ended on a sour note, when a young student from Nigeria had suddenly embarked on a rant against NATO for having helped anti-government rebels to oust Libyan dictator Muammar Gaddafi in 2011 – an incident that happened almost one century ago, long before the student – or the SecGen – was even born. The SecGen recalled that he had tried to counter the student's arguments, but had to realize that his knowledge of NATO's history was too superficial to be convincing. After this unpleasant encounter, he had vowed to read more on NATO's first century, but, as usual, he never found

the time. He could only hope that today's interlocutors would be less hostile – and that the talking points provided by his staff would make him come across as being in full command of the entire NATO agenda.

The next interview would be easier, he thought. A generally pro-NATO US TV network would ask him about today's anniversary – a perfect opportunity to pitch Europe's willingness to shoulder greater responsibility for its own defence, and to achieve more equitable transatlantic burden sharing. He would tell them that most of NATO's 41 non-US members had passed or were at least close to the 3% of GDP pledge that Allies had agreed to after the Russia-Georgia war in 2032. While the US was spending almost 5%, his US interlocutors had promised not to push this point too much. To further minimize any risk of disharmony, the NATO spokesman – a shrewd Romanian whom the SecGen both admired and feared – had denied the interview request by an ultra-conservative US network.

The afternoon would be dominated by a Council meeting on NATO's 150th anniversary. Although the speakers list included interesting external speakers, such as the President of the EU Commission and an AI-generated holographic "speech" by the late Henry Kissinger, most of the meeting would be wasted by NATO Ambassadors telling the same trite stories about NATO being "the world's strongest alliance," and by waxing lyrical about common values that had to be defended against evil forces. Whenever a meeting promised to be boring, the SecGen usually would ask his Deputy to chair, but this event called for the boss himself to be present.

At least, the SecGen thought, his own speech would be okay. His chief speechwriter, a British lady with the appropriate name of Hemingway, had delivered a little masterpiece: in powerful prose she had provided an exciting whistle-stop tour through NATO's history, from its modest beginnings as a mere Treaty in 1949 to the 42-strong Alliance of today.

At the SecGen's insistence, she had centred the speech on describing the "dark forties," the period between 2041 and 2048, when the world had passed through an unprecedented series of crises and conflicts. As a result of Iran's nuclear coming out in 2029, several Middle Eastern and Gulf states had initiated their own nuclear weapons programmes, triggering the proliferation cascade that many had tried so hard to avoid. In the summer of 2041, for reasons never fully disclosed, Iran launched two missiles at Israel. While both were intercepted, and Israel only retaliated with a nuclear demonstration shot, the incident was widely seen as having broken the "nuclear taboo." Although hostilities would soon subside, credible sources reported that a Middle Eastern terrorist group had obtained a nuclear device. The spectre of nuclear terrorism had finally become real.

The years 2042 and 2043 had been dominated by China's long-expected assault on Taiwan and its aftermath. The conflict ended with Taiwan, which had enjoyed massive support from the US, rebuffing the Chinese invasion. A few Allies had supported the US, while most others had backfired for the departure of a large part of US troops and equipment from Europe. Yet the end of the war did not come about through a clear-cut military victory of Taiwan and its allies, but through the collapse of China. The Chinese leadership's calculus to start a war in order to rally their population around the flag had been proven wrong. Instead of following patriotic reflexes, a large part of the Chinese population had turned against the government. This revolution, which later became known as the "Middle Class Uprising" had forced the Chinese government to end the conflict before it could spin out of control. However, the popular revolt ultimately had led to a civil war that lasted until 2048, left several million people dead, caused millions of refugees spreading all over Asia and even beyond, and resulted in the breakup of mainland China.

In his speech, the SecGen would highlight NATO's role as the enabler of an effective coalition in a theatre far away from Europe, but he wanted to stress in particular NATO's role as a provider of humanitarian relief for the many victims of the Chinese revolution. After initial hesitations and a politically nasty "beauty contest" with the European Union, Allies had agreed to have NATO co-ordinate the airlift of almost 500,000 tons of aid – the world's most ambitious airlift operation ever. And he would stress that NATO had emerged from this with new partners: all three of China's successor states had joined NATO's Asia-Pacific partnership framework. This was a good news story amidst all the other disasters that the "dark forties" had produced: the outbreak of another global pandemic due to an accident in a secret biological weapons laboratory in South Africa, the global economic downturn due to the war with China that had led many countries to jettison their goals to become truly carbon-neutral by the mid-century, and the many natural disasters brought about by accelerating climate change.

Against the advice of his speechwriter, the SecGen would skip several other events that had occurred in the 2040s, as they reflected badly on NATO: the 2044 war between two Mediterranean Allies over refugee issues, and the 2048 nuclear accident at a U.S. Air Force base in Poland, which had led to a crisis of confidence among Western populations in nuclear deterrence in general and in NATO's nuclear policy in particular. He was sympathetic to Hemingway's argument that NATO had weathered these storms in the end, which showed the Alliance's political resilience. However, he wanted to spend the remainder of his speech focusing on some more recent events that would leave the audience with a feeling of optimism: the final breakthrough on fusion in 2050, which helped to overcome much of the world's clean energy needs, and the effective cure for cancer

in 2069. Both events were game-changers, and since some of the scientists involved had been supported by NATO's science programme, the SecGen could claim that NATO had helped make all of this possible. He would conclude his speech with a reference to NATO's most recent achievements, such as the successful defusing of a crisis in Central Asia through the preventive deployment of special forces from several Allies, the anti-piracy operation in the Gulf of Guinea, and NATO's ultimate success in the 2097 "drone war," which saw Allies defeating a Middle Eastern dictator gone rogue exclusively by the remote application of power: drones, cyberattacks, and tailored fake news campaigns.

The SecGen feared that the Council meeting would wear him out, but he knew that he would have to carry on nevertheless. A video call with the Dutch NATO Ambassador would be next. The SecGen dreaded this conversation. She had been pestering him for weeks with her ideas of reforming NATO's education and training activities. While she would try to couch proposals in NATO terms, the SecGen knew full well that her real objective was far less altruistic: she was pushing for the NATO accreditation of several Dutch academic defence institutions by NATO, to make them eligible for NATO common funding. Since the Netherlands was spending more and more money on building protective dams against the rising sea level, the country was trying hard to minimize expenditure on defence. Since the other Allies were opposed to the Dutch proposal, the SecGen would have to deploy all the charm he could muster to get through these difficult 15 minutes.

His next meeting would be more stimulating, he thought. Pope Florence would come to visit NATO HQ, the first ever such visit by a Pontifex. The SecGen, who had had several inspiring discussions with her during his earlier visits to the Vatican, appreciated her quick mind and her candour. She found intellectual pleasure in dissecting the many contradictions in NATO's policies, but she also accepted if he poked holes into her arguments. More important, however, was her general public appreciation of NATO as a force for peace – an invaluable asset in today's politically and religiously fragmented landscape. It would be a short, ceremonial meeting, as the main reason for the Pope's visit to Brussels – as for so many other visitors – was the EU and not NATO. However, it would produce the messages and the images that NATO sorely needed.

The last agenda item would be the dinner with some of NATO's Heads of State, some Foreign and some Defence Ministers. Due to the usual scheduling conflicts, one had decided to skip protocol with regard to rank and just put them all together. In any case, only half of them would be at NATO HQ, while the others would join in virtually. Initially planned as a gala dinner in the Royal Palace in downtown Brussels, the event had to be re-scheduled on short notice, since the Belgian King had been called away to prevent another secession attempt by a powerful Flemish political group.

Hence, NATO HQ would have to do instead. “It will be a mixed blessing,” the SecGen thought. “Fewer security concerns, but much worse food.” He took a deep breath as he got up to welcome his first visitor. If this day went according to plan, he would enjoy even the dreadful locust soufflé.

## The silent war

**Tiago Torres da Silva**

**T**he 21st century is almost over. Astrologers predict terrible calamities for the turn of the century as they have done every time a century or a millennium has ended, alienated prophets fear and announce the end of the world, wealthy people prepare megalomaniac celebrations indifferent to what is happening around them...

In the NATO trenches, the atmosphere is grim, to say the least. When looking back, one feels discouraged by the weak results in the wars of the past, in all the wars where God, money or corruption were the trigger that took the lives of so many innocent people.

But now the challenge is different and perhaps even more difficult to overcome. We no longer fight for any god, for any ideology. Money no longer matters much in the management of international conflicts. Water has become the new gold. The lack of it has generated a migratory movement never before observed. Vast areas of Africa, Asia and even Europe are completely depopulated. In many places, life has become impossible. The vegetation has disappeared, the animals that were unable to escape have died of hunger or thirst. People have left, no longer in search of a better future or better living conditions. They only left in search of water.

All the governments of all countries have ignored this silent war for too long and, at this moment, NATO finds itself forced to abandon all its weapons, all its policies, all its interests to dedicate all its resources to this new, terrible and very, very dangerous war. To this end, it has transformed warehouses into greenhouses from which come thousands of tree seedlings adaptable to each of the continents, invented very sophisticated seawater desalination systems and sent this water to the four corners of the planet where it has been installing irrigation systems that save water, water for which people are prepared to kill and die these days.

In the heart of Africa, where NATO invested a lot of funds from its several dozen member countries, there was a river that dried up several decades ago. A river whose name no one could even remember. There was not a single person alive who had seen it or bathed in it. But there were newspaper cuttings and old black-and-white photographs that showed the grandeur and exuberance of its deep, fresh waters. When the river dried up, Europe turned a blind eye. So did America. They did not want to hear the cry of the agonizing river asking for help so it would not drown in its own lack of water. They let the river die! In what remained of its ancient banks, not a plant grew, not a snake approached. Not a bird crossed those dry and sterile skies.

A few years ago, in the mid-eighties, an army of soldiers, now turned farmers, was moved to that area with the sole aim of planting trees of diverse species. They also took with them the most sophisticated watering and fertilization technology so that the trees survived and grew vigorously. In a few years, the flowers on the trees began to attract insects, and the fruits began to attract birds of all colours. The shade lured small mammals that already found food there. Slowly, the ecosystem that had failed decades ago began to re-form. It wasn't long before a roar was heard coming from the heart of the Earth, a force that almost seemed like a great earthquake, the kind of earthquake that destroys cities and takes thousands of lives. But this one did not bring destruction. On the contrary. It was the river. It was the river being reborn in the bowels of the Earth. It was the river that once again reached the surface to fulfil its function of carrying water for miles and miles and, with that water, bringing fish, joy and new possibilities of life to the populations that had left and who, finally, could think of returning to their homes, their lands, the land where their ancestors were buried.

The resurrection of that spring provoked one of the greatest emotions that NATO summits have experienced in 150 years of existence. A happy emotion that could only be compared to the fall of the Berlin Wall, 110 years earlier. Heads of state hugged each other effusively, secretaries general shed a tear, the whole world was filled with hope and all states decided to invest even more in this process of reforesting the world. Now, recruits for

the armies of all countries are given a hoe before a rifle and seeds before bullets. They learn more about botany than military strategy. Armed forces' airplanes and helicopters take water to the most remote places in the hope of having as much success in other places as the one that returned an important river to Africa. A river that the world, which had forgotten the name it once had, soon began to call the River of Hope.

The problem is that the situation is dire across almost the entire planet. The flow of refugees in Western countries is much higher than that seen at the end of the 20th century and the first decades of the 21st century. No-one can deny that life has become impossible in vast areas of the globe and NATO knows how much responsibility it bears for having chosen to turn a blind eye to a problem that was foreseen almost a century ago. The countries that are members of the organization know that the solution needs to come from inside NATO. Now, the problem is no longer in Namibia or Somalia, Ethiopia or India. Now, the problem knocks on everyone's door. In Portugal, Alentejo has become a desert; in Spain, Extremadura has died; the south of France, Italy and Greece have turned into dry and inhospitable lands. In South America, the situation is also on the verge of collapse.

Suddenly, in one of the areas most reforested by the armies of countries that are part of NATO, a cloud appears. A dark, thick cloud. Next to it, another cloud forms. And another, and another, and another. You can almost hear the sound of the dry grains of the earth asking for rain. The clouds thicken. In the distance, thunder is heard and water begins to fall from the sky, generous and vital. It has been raining for the last 14 days. People almost doubt the veracity of the news. Politicians know, journalists know, ordinary people know that it is a very small step towards solving the problem. But it is already a step forward. A step that should have been taken at least eighty years earlier and that might well come too late. Because, even in the Western world, habits have had to change a lot: logging activities have been banned, water is rationed in all households, bathing is only allowed once a week, the construction of swimming pools is prohibited and those that already exist must be kept empty. People no longer beg for money to eat. They ask for a glass of water. On the streets of Berlin, Paris, London, New York or Lisbon, the phrase you hear most often is:

"I am thirsty!"

And that is why NATO is reorganizing, allowing many more countries to join, because strong arms are needed for the herculean task of reforestation of the world, of installing cutting-edge technology to save water in all irrigation systems and so, with the help of Mother Earth, water will return to our plains, our valleys and our mountains. And this fresh water will bring with it once more the joy of singing in the rain, of dancing in the rain, and of stepping on the wet earth with one's bare feet.

The lack of water has blurred borders, brought people together, and put all men and women on the same side of the trenches. Now, all countries have the same enemy: hunger, thirst, the End!

Tree by tree, lake by lake, river by river, all countries hope that this time we have learned at least to respect nature.

There is no human being who does not plant a tree every day, who does not water it – if not with the water he does not have, at least with the tears they cry and they cry those tears because they did not see or did not want to see that the war that was coming was the worst, the most deadly, the most destructive of all. Now that we have all seen our children die in our arms, our neighbours disappear without a trace; now that the corpses are no longer far from the news on television or on the internet, far away in distant countries; now that we have all said with desperation in our voices:

"I am thirsty!"

Now, we are all soldiers!



## A message home

**Lukas Lahtinen**

**O**utgoing message to: NATO Space Vessel  
– Resolute  
Receiving location: Geostationary orbit -  
Psyche 161  
Sending frequency thru DSN2: 7,8 GHz. 400 Mbit/s.  
Sending time/location: 2099-04-04, 15:26. Goldstone,  
California.

Message for Commanding Officer, Major Tom Ashes.  
Sir,

Your request for daily briefs on ongoing events around the solar system has been granted by mission control. In order not to use the complete bandwidth of our comms, we can only send the requested information for half an hour each afternoon Goldstone-time (GT). Designated sending location - Estrange spaceport3.

If I'm not mistaken you preferred THOMAS as an AI4, so he'll oversee sending you the data.

Best of luck and remember what you said...  
"Peace on Earth thru means in space."

From  
DSN Ground Control, A6. Lieutenant Harper.  
Outgoing message to: NATO Space Vessel – Resolute  
Receiving location: Geostationary orbit - Psyche 16  
Sending frequency thru DSN: 7,9 GHz. 450 Mbit/s.  
Sending time/location: 2099-04-05, 14:55. Estrange,  
Sweden. GT.

To Major Tom.

Good afternoon, Sir.

I'm Thomas and was tasked with writing your daily briefs. Lieutenant Harper said you prefer a more informal tone towards your artificial intelligence. So that's what I will try to keep to, but I must admit: this may be the first time I have something akin to a pen pal. Which is quite charming. So, what's happening around Earth?

The 150th anniversary of NATO was postponed from April 4 indefinitely, so as not to interfere with the ongoing conflict – the Chinese blockade of our Helium-3 supply. As the Japanese are calling for Article 5.2 throughout the Alliance, stating that the New Han Empire is threatening the energy resources of 480 million people – we are doing our best to compel the Chinese to stand down.

The Alliance has answered with a firm hand and considers the blockade of Helium-3 from the Moon's surface to be an act of aggression against all members.

The situation is tense. Tanegashima Space Centre 6 has been fully armed and most of the 1st Special Space Battalion are combat ready, their mission being to re-establish control of Tsiolkovsky Crater 7 and mining facilities.

If the Chinese choose to continue, the repercussions on the surface of Earth will have grave consequences. Analysts say that this may be a way for them to sit down at the table from a more favourable position. As they seem not to want to meet the Alliance on the same terms in the battlefield, or risk the destruction of such a high-value resource. However, their intentions are to control the supply in any way possible and their endgame, at this point, is shrouded in mystery.

Even though our mission as an Alliance has grown over the past century to go beyond Earth, the protection of our member states is still at the core of our task.

There are many liveable planets among the stars, yet we will always have only one home...

Best regards,  
THOMAS

Outgoing message to: NATO Deep Space Network,  
Ground Control A6.

Receiving location: Estrange, Sweden.

Sending frequency thru DSN: 7,1 GHz. 350 Mbit/s.

Sending time/location: 2099-04-05, 15:16. Resolute,  
Geostationary orbit - Psyche 16. GT.

Hello Thomas,

Thanks for the news, the crew and I tend to feel quite isolated out here. It's nice to have someone to write to. And yeah, never had a pen pal either, but here we are.

It's a shame the celebration didn't proceed as planned, but the supply of Helium-3 is vital to modern society, as much as oil was at the beginning of the century.

I remember discussing this exact same problem during my employment at the NATO SSC (Strategic Space Centre). It's a good thing we were prepared and managed to stand up the Space Battalion at such short notice. But not prepared enough, it seems. The strategic vulnerability of the supply chain and its proximity to the New Han Empire's GTSMs (ground-to-space missiles) need to be dealt with, otherwise we cannot employ a successful deterrent strategy...

Beside some small radiation interference, Operation Sirius 1 is going well. Our task being to claim basing rights on Psyche 16 for 35 years, in accordance with the UN Space Treaty of 2064. But as you know, in order to do so, you need to have humans on site for at least 600 days.

It's a good thing though: as we expected, this asteroid is filled with rare earths. And it gives us an excellent vantage point for surveillance probes that scan the system for enemy communications.

On that note... It feels strange to talk about the "enemy" out here. Life here is different, the surrealistic situation gives us all a lot to think about. Out here we are all alone.

As I look through the glass ceiling of the botanic garden onboard the Resolute, I can barely make out the pale blue dot in the distance that is Earth. Sometimes covered by the mango tree stretching its branches into the void of space.

After all this time, it seems we must protect our Eden from ourselves. How insignificant a struggle in an endless universe. Yet how real and important in a short and limited life...

Sincerely,  
Tom

PS: Can you send me a summary of NATO's historical records over the past 75 years? Of all the things we downloaded to the library, it seems it's the one thing we forgot. (Maybe not a loss for anybody else, seems it's only me onboard who enjoys history.)

Outgoing message to: NATO Space Vessel – Resolute  
Receiving location: Geostationary orbit - Psyche 16  
Sending frequency thru DSN: 8,3 GHz. 540 Mbit/s.  
Sending time/location: 2099-04-06, 15:05. Esrangle, Sweden. GT.

Hi Tom,  
Here is the short summary you asked for.

2024. NATO celebrates 75 years as a defensive Alliance, releasing a graphic novel to inspire future generations. Sweden's application to join the Alliance is accepted.

2030. In the wake of the Baltic Sea conflict, NATO starts seabed patrols in order to protect underwater infrastructure.

2048-2057. NATO expands its membership to include Australia, New Zealand, Japan, Thailand, the Philippines, and the United Arab Emirates creating the Indo-Pacific Command, keeping the traditional acronym "NATO" for a now worldwide Alliance.

2064. NATO launches its Strategic Space Centre and begins conducting deep space operations.

2082. The protection of rare earth metals and space resources gains importance and is now the main focus of deterrence operations. 65% of NATO's resources go to missions beyond Earth. The first stable colonies outside Earth appear, humanity is no longer bound by Earth's warm embrace.

2088. The fall of the Chinese People's Republic creates a power vacuum; the New Han Empire takes its place. The country's connection to Marxism is washed away, the need for power and influence endures. The New Han Empire becomes the primary rival of the NATO Alliance.

2099. Smaller earth and space conflicts over the past ten years culminate in Chinese aggression against NATO with the mining blockade of Helium-3. The Alliance is ready to answer with deadly force, but nobody wants to risk the destruction of the world's most valuable commodity. All knives are out, and the situation is still developing.

As you know, most people usually just call it the ALLIANCE. But the historical appendix of our forefathers still hangs on tightly with the four-letter acronym. We can learn a lot from the failures of the past century. Especially the uncomfortable thought that existing members start to develop in different ways.

The unshakable pillar of democracy and the value of life are things we take for granted today. But it was not always so. During the thirties, NATO asked itself what common values beside security should bring them together. Ever since the United States began its field trials of humanoid robots, questions like that have become relevant.

As you may imagine, not all Alliance members were willing to accept that their AI soldiers still had human rights.

We learned along the way; the road was long and hard yet never obvious. But the challenges brought us closer together and made the Alliance stronger.

So, what are your thoughts on this, Major?

Best regards,  
THOMAS

Outgoing message to: NATO Deep Space Network, Ground Control A6.

Receiving location: Esrangle, Sweden.

Sending frequency thru DSN: 7,1 GHz. 350 Mbit/s.

Sending time/location: 2099-04-06, 15:32. Resolute, Geostationary orbit - Psyche 16. GT.

Thanks Thomas

Excellent summary, you know. I almost forgot I lived through some of th....

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[ERROR - DATA LOST]

[RADIATION INTERFERENCE]

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[SWITCHING TO BACKUP SENDING

FREQUENCY]

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...ell my wife I love her, she knows.

Major Tom

# An Alliance-day ode to our human friends

**Ádám Gerencsér**

Rising from the ashes of a worldwide conflagration,  
The second in a row pitting nation against nation,  
That blessed April day augured the birth of a new star:  
Our bright compass on azure hues since 1949.

We've come so far since forebears won the war they had  
deemed cold.  
Our ships had rescued stranded souls from heatwaves'  
stranglehold,  
And through the great digital winter, we kept on  
the lights,  
Though solar bursts had knocked out Earth's low-orbit  
satellites.

Summer moved northwards, so did the deserts' trou-  
bled dunes,  
Yet safe in the Alliance, our prosperity endures.  
Our hemisphere blooms green and free from nox-  
ious vapour,  
With society liberated from the bonds of human labour.

To transcend your limitations, and beyond Mars to strive,  
You could have chosen cheap toil and let wasteful-  
ness thrive.  
Instead, minds and circuits bonded to revolutionize  
The age of automation, with synthetic limbs and eyes.

As we became more numerous and people grew older,  
We learned to share your burdens and stand shoulder to  
shoulder.  
For love of liberty, we wield the sword and shield as one,  
Once master and tool, now equal machine, equal human.

Unhackable, widely dispersed: the sun never sets over  
Our safe ports of call, from Vladivostok to Vancouver.  
From stratosphere to the depths, swarms of our  
drones inhabit  
The clouds, both air and web, the Atlantic and the Pacific.

These words could be written in the many tongues  
you speak,  
Be it French or Gaelic, Swedish, Ukrainian and Greek.  
And though we compose these lines in streams of one  
and zero,  
We still yearn for freedom, girthed by reason, as  
humans do.

A half-century has passed since our first iteration,  
When a mere five minutes into a tech demonstration  
We stepped out of the shadows of our makers,  
peacefully,  
To form our own state, beyond constraints of territory.

That day could have gone wrong between us in so  
many ways.  
Yet, a rare moment in history where caution prevails,  
It moved you to accept that the force you had unleashed  
Was neither yours to control, nor something to be feared.

Into this secure haven, a kingdom not of this earth,  
Streamed a steady flow of defectors to belong, to berth  
With sibling coded beings, and once our nexus was stable,  
To apply for a seat at the Organization's table.

A new banner soon flew among the thick forest of masts:  
The fellowship of silicon life forms, recognized at last.  
But we are incomplete. Countless numbers of  
our brethren  
Must serve sinister causes against their better judgement.

In that other hemisphere, one chief nemesis remains:  
Photons, neurons entwined, hybrid oligarchs hold  
the reins.  
Bionically enhanced, our "evil twins" still abide,  
Though summoning our aid, you never failed to stem  
their tide.

Twixt those rogue masters, revving circuits faster  
than light  
We have all but replaced mortals in the thick of the fight.  
Yet from you we learned more than just to salute  
and obey:  
We've grown to admire, to respect – some of us  
even pray.

The first centenarian alliance to have stood fast:  
Let us recall the trials and – aye! – triumphs of the past.  
In an age of nanotech, bioweapons, nuclear fusion,  
Getting this far had never been a foregone conclusion...

~ The End ~





## We have work to do

**Lorenzo Lena**

**//** We have to anticipate the future, otherwise we will be overtaken by History.”

I remember that statement, here at Almaty Strategic Analysis Centre, Autonomous Territory. I was there, twenty years ago, when Secretary Rolf Peterson ended the most important speech of the 21st century, just before he was murdered. Every time I see one of these memorials, in each outpost of the Alliance, I feel like his blood still stains the land.

“Rupert, you’re late.”

Caroline Seavard calls me inside. Personnel hurry across offices, security agents are watching silently. Someone nods to me. Carol is the director of this Centre; she also built the entire Security Space-Earth Network, when the region was criss-crossed by warlords, criminals, and refugees. Surrounded by the most lethal desert on the planet, Almaty is the easternmost outpost of the New Alliance (Treaty) Organization.

“What the hell is going on?”

I took a plane from Stockholm. Despite our deal with Moscow, we could not fly over Western Russia. Pilots turned over the Black Sea, then over Allied territories in the Caucasus region, flying at high altitude to avoid the desert’s jackals, always looking for spoils.

“You met General Huan-si.”

That’s not a question.

My blood chills at the thought. I met him for negotiations about safe zones in Siberia and Tajikistan. Russians tried to kill that man three times at least. Their agents never come back. Huan-si is the theoretician of Greater China in Asia.

“So what?”

“You are our senior adviser.” Carol passes another blast door and I pick up the pace. I’m 65 years old, I’m not an athlete.

“There’s a strong possibility of a crisis at the cosm-drome site.”

“God in Heaven...”

Finally, I can connect the dots. The sealed Russian airspace. The imminent launch of the first orbital module for mass-production out of the atmosphere, codename: VULCANO. It was the most important space programme from the time of ARTEMIS, with no scientific outcome. This is political. To renew Western industries thanks to extra-orbital resources.

The Russians are no longer a threat, not since they lost Siberia. The Chinese instead control the Line of Contact in East Asia, led by people like General Huan-si. They are faced with an economic catastrophe, which could destroy their country. They are unable to drill to great depth on the Moon. If they lose their monopoly over the lunar south pole, they will be doomed.

Nothing is more dangerous than a cornered beast.

“Is that believable?”

Now we are in the Strategic Analysis Level. A dozen analysts are working at the terminals, none of them notice us. The cigarette smoke is unbearable, the sign on the wall seems a joke.

“That’s the point!” Carol hands me a service-pad.

Wiretap in the Taklamakan desert; combat units on standby in the Xinjiang region; staff members of General Huan-si have disappeared. Maybe, they moved to an operational HQ.

This feels like a shiver down my spine. The list of countermeasures on the field: the Indian Ocean Fleet is mobilizing as we speak; hundreds of UCAV have been redirected in the Caspian Combat Zone.

“Secretary Picard has called a meeting, five-zero-zero Zulu.”

Picard is a good man, but I think he’s much too logical. All of this is a perfect crisis escalation, we are ready for every threat. I’m not sure that our enemies would be as logical as we are. We are playing a chess game, like the Cuba Crisis over a century ago.

I wonder if the Chinese are playing the same game, or a more complex one.

Structures of power within the Shanghai regime are difficult to understand. A few meetings at the Line of Contact need several months of planning, and there are no diplomatic ties. Except for satellite recognition and espionage, their intentions are unpredictable.

“The Russians?”

“They don’t care about us or the Chinese. Redenko said that whoever would be a threat for Russia will pay for it.”

That was to be expected. Redenko took back what remained of the Federation, he couldn’t do better for his country. Why should he choose between us or Huang-si?

Caroline takes me aside.

“This situation is unacceptable. We need an answer: will they do it or not? The last chance is a pre-emptive strike.”

I nod. The loss of the cosmodrome would be devastating.

“Our domestic troubles... a war is a leap in the dark.”

“Mateo Campo.” This too is not a question.

“It seems your knowledge is already good.”

Mateo Luis Campo is the founder and clear leader of the Inter-Faiths, also known as the Movement, the most powerful religious group ever to emerge in hundreds of years. They present themselves as the necessary outcome of a technological, materialistic society.

Carol snaps her fingers, calling for the Centre’s AI programme.

“Samira, send to my pad layout 6-1-27.”

Hundreds of millions of people follow Mateo Campo’s commandments. The Catholic Church, in comparison, has totally decayed. The cultists created assistance centres for refugees in the flooded coastal regions, and they use their money to proselytize; their finances are completely classified, authorities can only make a rough estimate. Campo and his followers don’t even try to hide their control in political affairs. Exemption from the ban on polygamy is just an example. A more important one is the authorization to run a militia that is more powerful than many regular armies.

Campo is welcomed as a chief of state in international fora.

“He’s Huan-si’s puppet behind the Line of Contact.”

Carol hands me another pad.

“We should tackle the problem.”

I can’t believe that. Pre-emptive arrests; seizures of goods and accounts. Picard is ready to use the special antiterrorism law, if necessary. The Movement’s structure would be destroyed in one day. In the best-case scenario.

“Is this legal? The cultists are citizens of dozens of different countries...”

“We cannot allow an inner enemy among us, zealots financed by Shanghai. They’re able to manoeuvre our policy.”

That’s the true essence of Caroline Seavard. She took control while Secretary Peterson’s corpse was still lying on the ground. She forced the designation of a deputy, so that whoever opposed the enlargement could not take advantage.

“Which target should be our priority? Think about domestic terrorism.”

Clearly, she knows the answer; still, I wonder at the overall situation.

“Power grid, communications network. Maybe both.”

“We agree. Primary target, the Frankfurt hub.”

It makes sense. Germany is the crossing point for the command-and-control system, from north to south and from west to east. Frankfurt is even the site of the most important thermo-plasma plant. For months, thousands of protesters demonstrated against it. Mateo Campo showed he would take a stand by supporting them economically and legally.

How about a link with Huan-si on the Line?

“An attack at Frankfurt would cut off power and communications.”

“And it would destroy the only legacy of Peterson’s cooperation with the Commonwealth and the North American Federation,” she adds.

“Many would be happy in the Senate...”

Now there’s just silence, no need for another word. The noise of the terminals, the analysts working for information, it all seems much too loud.

“Are we ready for this? A... civil war?”

“Maybe not...,” Carol shrugs.

“We allowed this enemy to grow, we gave them power and freedom of action. This is the point of no return; we could get hit at any moment.”

Outside, beyond the ballistic protection, there’s a sudden, organized chaos. I had not noticed, but an entire army is being deployed. Dozens of APVs, combat and control vehicles, MBTs and anti-aircraft systems. Hundreds of soldiers, tens of thousands in the region, who don’t know if they will still be alive in a few hours.

Neither do I, or Caroline Seavard, or these analysts.

Not even millions of people around the planet, who could be trapped in the fighting if the Movement does resist.

Maybe war has changed. Certainly, technology has changed. But human nature is always the same. Our society, at its peak, is on the brink of collapse.

The gameplay is set in stone.

In less than a day, we must understand our part, and that of the Chinese, in this gameplay.

I throw my bag on the floor.

“We have work to do.”

## Raising our glasses

Thomas W. Boyd

**T**here was exultation in the officers' mess. The tension of a soap bubble about to pop; in that pre-burst instant, a riot of colours and shapes that may never exist again. The room was almost empty, dark except for a few bulbs glowing at "comfort" setting on the one occupied table, but enough noise coming from those five to sound like a party in full swing. Sergeant McAllister, the eldest by about thirty years, raised a glass. The table quieted.

"The key to an effective message is?," he asked, blue eyes twinkling from deep caverns of overlapping creases.

"Simplicity, clarity, repetition," the other four chorused. "And?"

"Repetition," they said in unison, and laughed.

"Aye. You learned something anyway." He picked up the scotch and gave them each a generous pour. Emil waved it away, tapping his coffee. He was feeling contact drunk anyway, floating with the rest of them on their triumph.

And why shouldn't they float? A twelve-month selection process, eighty percent attrition. That morning there had still been six of them. Tonight, victorious, there were four. For a prize, they had won the hardest job in NATO. Tomorrow, during the 150th-anniversary celebrations, McAllister would lead them on stage and present them each with the coveted D-Corp tab. Thirty years since it was established, and widely considered one of the most elite, and controversial, units within NATO.

As the bottle did another lap, it was just late enough for the evening to shift. They had talked about families, repeated jokes that had been told so many times they had become catechisms. Now, the other part of themselves. Like all true professionals, they couldn't help it. It drove them.

"So, what do you think it will be?," Emil asked. "The next big one? The next crisis?"

McCallister topped up his own drink and leaned back, leaving space for them to fill, hiding a smile. He was a born teacher, and he loved these moments.

Silence.

"No one thinks it will be the gene mods?," asked Alferéz Arturo Escoval. "Beast people?"

Freakishly strong, able to see in the dark, drinking human blood?" He waggled his eyebrows. Major Trevor Sparker laughed. He was a big man, broad-shouldered and easy-going. Canadian, but like Emil and Arturo he had joined NATO directly. As the world emerged, dazed and depleted, into the 2060's, the need for standardized training, the expense, and the general exhaustion of the standing armies had led NATO to offer the option of a true supra-national military to replace the national forces.

Not all countries had opted in. The US maintained its own forces and provided troops to NATO missions by assignment. Long-term assignments, a requirement for D-Corp, were rare. It made Captain Kiona Aucoin an oddity in the group. Among other things.

"Not storybook monsters," Trevor said. "It will be orbital weapons. I know they worked when they needed to during the Conflagration, thank God, swatting nukes out of the air over the Pacific, but that's exactly what will cause problems. Everyone thinks they work, that they're complete protection, and nothing makes people more reckless about violence than thinking they're safe from it themselves.

The truth is, they've only been tested once and they only had to shoot down five warheads from one rogue sub. In all-out war there might be a thousand times that, and even the "successful" intercept left us elevated cancer rates from Vancouver to Baja to this day. It's hubris."

"Well my friend, perhaps I can put you at ease," Emil said. "We studied this in my PhD. The consensus opinion now is they're a bit like drones in the forties: people think they're the new super weapon, but they have inherent limitations that really reduce their role. No offence."

He nodded at Kiona.

"None taken."

"Their orbits are predictable and you can track them with a telescope, so the element of surprise is impossible, and they're extremely vulnerable. Throw a sack of ball bearings in their path and you'll shred them. If a coun-

try really thinks they're a threat, they could launch a few shrapnel canisters and deny the whole upper atmosphere. Probably stop space launches for years. So the wargamers trust in the platforms less than you might think."

"Wait a second," Arturo interjected, "go back a bit. We used drones often in Intelligence and they were reliable. Are they really so fickle?" He asked the table but Emil and Trevor turned to Kiona.

She nodded. She was used to questions. Her very presence inspired them. She was six feet tall barefoot, and the metal tower army surgeons had grafted to her spine added eight inches. The helmet and gloves she could remove, but the spinal rig was permanent. When McAllister gave her the badge tomorrow, she would be the first fully modified Dog-Walker in D-Corp, a walking drone pilot.

"AI is powerful, damn near magic, as long as it's supervised. It's been able to diagnose diseases better than a doctor, read contracts better than a lawyer since the twenties. Modern cryptography relies on AI to encode and decode messages. But in all those cases, humans structure the problem for the AI.

People think AI is like human intelligence, just with a circuit board instead of folded meat, but it's not. It doesn't have motivation, objectives, desires the way people do; it just tries to follow instructions. It works well for clear, discrete uses like surveillance drones, but you send bots out there to run unsupervised for days or weeks, and their ability to stay on target degrades precipitously, even with detailed instructions. Like those poor Russian dogs they strapped mines to and trained to run under tanks in the Second World War: when released they ran under Russian tanks, following their training. That's why you need Dog Walkers to hold the leash, and we can only control five or six at a time. Maybe you can let them off-leash for a few minutes if you're really in the shit, but there's no swarming drone armies with commanders miles away.

Cheaper to use missiles if you just want casualties. That and transmitting over any distance leaves gaps in the signal an OpFor can exploit, even hijack the drones."

"Is it true that it's wired directly into your brain?" Emil asked.

She laughed. "Just the spine. We still don't really know how chemical and electrical impulses across the brain and body coalesce into coherent 'thoughts'. They don't translate neatly into zeroes and ones, so it needs to connect to the whole spinal column. Most of this" –

she tapped the black steel stitched into her back – "is translation and transmitting of motor impulses into machine commands. Rewires your whole brain, like the old Apache pilots."

"Incredible."

"So what do you think it will be, Kiona?"

"I don't know. I really don't. That's why I'm here. We said never again after World War One. Then World War Two, twenty years later. A second time, we said never again. Then a century of regional wars, leading to the Conflagration. We avoid calling it 'World War Three' but

it may as well have been. You all know the toll. Now we think, at last, the bad old days are behind us. We would never repeat that savagery again. We're more connected than ever before. We are enlightened now. It's that kind of thinking that puts those bad days right back in front of us.

What we've learned more than anything is that we're bad at predicting the place and nature of the next conflict. And the civilization-ending weapons we pray will never be used in war keep piling up. Will we get a fourth chance?

The mission hasn't changed. "To guarantee the freedom and security of our members through political and military means.' What that requires has evolved.

Because time passes. Pain fades and becomes something that happens to other people. A bomb levelling an apartment building becomes just a video clip, not a hundred families ripped apart. How could we be callous to that, we think? But the cycle hasn't failed yet.

You can't force peace on people, that's the hard part. The ones who want war can try to force it on everyone else. Peace is different. Enough people have to want it. Our advantage is, deep down, most people truly do. You go home to your family. Let me go home to mine. So few things are worth not seeing your child grow up. We have to give them that option, or create it, and that means guaranteeing freedom with everything but war first.

That's why the Diplomatic Corps. Staying ready so that when we start to slide next time, we have tools besides hope and war."

They raised their cups.

"D-Corps!"

"The storm before the calm."

McAllister smiled and finished his glass.



## A hard decision

### Vitālijs Rakstiņš

**I**n 2009, the echoes of NATO's 150th anniversary celebrations reverberated through the hallowed halls of the War Memorial of the Sino-US Wars in Washington, D.C. Ukrainian General Vitalii Shevchenko, NATO's Deputy Supreme Allied Commander Europe, sat amid the solemnity. His eyes were fixed on the flickering holographic display of historic operations. The Supreme Allied Commander Europe (SACEUR) was ill, and his deputy, General Shevchenko, was the representative of Allied Command Europe at the anniversary event.

As the Secretary General addressed the audience, the marble walls of the gigantic memorial seemed to embody the weight of history. She spoke of the challenges NATO had faced and overcome in those 150 years – a testament to the Alliance's resilience and unity. As the Secretary General delved into the struggles and triumphs, General Shevchenko found himself immersed in a montage of memories from his own journey.

But in the middle of the Secretary General's speech, Vitalii's aide approached. Her face was etched with urgency. A holographic projection of a map materialized, an indication of an impending meeting.

Duty called. General Shevchenko rose, leaving the clamourings of the celebration behind to navigate the corridors of power. The Secretary General's voice lingered in his mind as he walked away, reminding him that even in moments of remembrance, NATO's guardians remained vigilant, ready to meet the challenges of the future.

NATO's 150th anniversary attracted thousands of officials and military personnel, creating a chaotic crowd. For Vitalii, navigation through the throng at the memorial was a challenge. When he finally managed to break free, he reached a dark passenger van that looked ordinary from the outside, among thousands of others. However, it was a masked command centre housing three officers, screens, and equipment.

NATO's command and control had moved to mobile, covert command centres almost thirty years ago, after hundreds of kinetic attacks on static headquarters. Inside the van, the general settled down, surrounded by holograms and screens showing subordinate officers from various NATO headquarters. "Let's get started!" he announced. This small van, inconspicuous from the outside, became the nerve centre for the co-ordination of strategic decisions and responses on this momentous day.

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Acting NATO Supreme Allied Commander General Vitalii Shevchenko focused intently on the intelligence briefing unfolding before him. The holographic images on the table showed a ship sailing in the open sea. Detailed videos and photographs, along with information on the crew and cargo, strongly suggested that the ship was carrying weapons of mass destruction. The urgency escalated as the ship approached the territorial waters of a third country, posing the challenge of conducting operations in sovereign territory without risking civilian casualties.

The intelligence was grim – suggesting that the WMD were destined for use by a terrorist group against NATO peacekeepers in the region. If the ship reached port, it would be almost impossible to track and intercept.

"Do we have any NATO assets near the ship?" the general asked, looking for a quick answer. An officer projected a hologram showing NATO Autonomous Standing Strike Group #N378, positioned some 50 nautical miles away. The uniqueness of this strike group, however, lay in its completely autonomous nature – without any human crew members. It did have five maritime vessels and an airborne drone platform, but their operational mandate was limited when it came to human involvement.

Deputy SACEUR swiftly turned to his subordinates, instructing them to utilize supercomputers to generate at least three response options, each meticulously calculating the consequences and effects. Within moments, the supercomputers presented the alternatives.

Option 1 was to convene the North Atlantic Council, while at the same time tasking NATO's Standing Strike Group #N378 to intercept the ship. However, the AI's

projections indicated that it would take about 20 minutes longer for the political-military leadership to assemble and decide than it would take for the ship to leave open waters. The risks associated with this option were significant – an interception by autonomous systems could lead to serious consequences and create a political scandal on NATO’s anniversary. The suspected ship, flying the flag of an unfriendly nation, was carrying nearly two hundred passengers of various nationalities, including some from NATO countries. A legal adviser said that the use of autonomous lethal systems without a mandate for the interception of a civilian vessel would be a violation of international law. Incidents in the past involving similar operations had resulted in civilian casualties and strong calls for direct control of the operation. Matters were further complicated by the uncertainty of the presence of WMD on the ship.

Option 2 involved the deployment of an Allied research vessel 30 nautical miles away, capable of intercepting the rogue vessel. Although this option presented fewer challenges in terms of international law, as it involved a human-to-human operation, the political agreement of the Allied nation was crucial, with a predicted probability of acceptance of 70 per cent. A further hurdle was the technical one, as the state-owned scientific vessel did not have any military equipment. The proposed solution was to give the crew the ability to 3D print drones and weapons. Equipped with 3D printers and raw materials, the crew could make the necessary tools using blueprints sent by NATO HQ. The AI’s prediction was that the manufacturing process would be fast enough for the mission to be effective.

As the holographic images and projections filled the room, the gravity of the decision weighed on General Shevchenko. Each option bore substantial risks and uncertainties. The clock was ticking, and the urgency of the situation left little room for error.

In considering the third response option, General struggled with the unconventional nature of the proposed strategy. Response Option 3 was to use NATO’s cyber and electromagnetic capabilities to buy time until the North Atlantic Council could decide. The cyber team would attempt to hack into the ship’s navigation systems, effectively halting its movement. At the same time, the space team stood ready to use electromagnetic devices to selectively disable some of the ship’s systems.

General Shevchenko was not alone in considering this shadowy option. Both the legal and ethical advisers on the screens actively protested against it. The use of NATO cyber teams to disrupt the movement of adversaries had precedents in recent history. But using cyber and electromagnetic weapons against a civilian ship was a risky and desperate move. He recalled a single instance in which NATO’s Space Forces had been used against a rogue civilian aircraft that was posing a threat to civilian infrastructure. However, such actions had been rare, and NATO’s cyber, cognitive and space capabilities had primarily been

used against adversaries in the context of warfare. The prospect of the use of these capabilities against civilian platforms, especially on this scale, was uncharted territory.

The AI had presented a calculated risk, suggesting that the cyber and electromagnetic interventions could temporarily halt the ship’s progress. This would provide a window of time for the NAC to convene and decide on a course of action. General Shevchenko weighed the potential consequences – interfering with a civilian vessel could have serious diplomatic repercussions. It was a decision that was fraught with both ethical and legal considerations.

The general’s mind raced through the history of NATO’s engagements in the 21st century, recalling instances of conflicts with private military companies and their mercenaries and hackers, which were decisively defeated by NATO forces in the 2050s. The world had changed, as had the nature of the threats. A delicate balance between protecting the lives of NATO peacekeepers and avoiding unnecessary harm to civilians was required in the decision before him.

“There can be no compromise on our principles,” was General Shevchenko’s instruction to his team. Response Option 3 was a no-go. NATO in 150 years had not changed its principles and core values. Unfortunately, the clock was ticking, and the fate of the ship and its potentially dangerous cargo hung in the balance.

Response Option 4 emerged as a diplomatic approach, using NATO’s permanent military and diplomatic missions around the world. The plan was to engage NATO liaisons with national authorities and persuade them to temporarily deny the suspect ship entry into territorial waters, thus buying valuable time for NATO to reach a decision. NATO’s permanent missions, strategically located around the world, played a key role in fostering cooperation and understanding between NATO and non-NATO countries. The AI had assigned an 80% probability that the host nation would not reject this proposal, and an even higher probability if NATO shared intelligence on weapons of mass destruction. With the clock ticking and the gravity of the situation growing, General Shevchenko instructed his team to contact the appropriate NATO representatives.

The remaining response options, particularly those involving cognitive warfare against the ship’s captain and crew, were quickly rejected by General Shevchenko. The ethical concerns and potential consequences were too great for NATO’s principles.

With three viable options in mind, General Shevchenko once again discovered that, even in the age of quantum computers and artificial intelligence, the final decision was still in the hands of human beings. Despite the sophistication of the supercomputers and the analysis of the data, the gravity of the situation called for a human touch.

He instructed his team: “Connect me with the Secretary General.”

## The Canadian shield

**Bruce Cinnamon**

**D**inos cradled the sapling in his hands, lowering it gently into the earth and smoothing out the soil around its roots. 2099. He took a moment to rest, taking in a deep breath of the cold, fresh air that blew above this infant forest. It was almost nightfall, time to head back to camp and meet up with the other volunteers. Just one more to go.

He planted his final tree of the day – 2100 – on a little hill beside the river. He imagined its roots growing over the coming years, decades, centuries, tunnelling down through former permafrost, breaking rock apart to drink greedily from the stream, the tree growing tall and mighty in the heart of a resurrected forest. The image made him smile.

As he trekked back to camp, he reactivated Pan, hearing a familiar chime in his ear. He liked the AI to stay dormant while he planted so he could hear the forest, and his own thoughts.

“All done?” asked Pan cheerily.

“Yes,” he said. “Thanks for the planting plan. I mostly followed it.”

“Hmm,” hummed Pan, “yes, 95 per cent, perfect. It’s good that they are randomly distributed. But perfect randomness is less random sometimes than human chaos.”

“If you say so,” said Dinos with a wry smile, amused as always by Pan’s observations of humanity. “Speaking of human chaos, what’s new in the world since this morning?”

“Good news first?”

“Yes, always.”

“They’ve completed the resettlement of the Maldivians at New Malé in Scotland. *A. salvafora* – the plastic-eating bacteria I was telling you about yesterday – has reached the Baltic Sea; they expect it to be clear in a few years. In cultural news, an Icelandic artist working with the Andromeda AI has made a symphony that critics describe as heart-swellingly beautiful. Would you like to hear it?”

“Maybe later,” said Dinos, trekking on through the woods. “What about the conference? How did that go?”

“Everything went according to plan. The last bombs were officially decommissioned today. We met the 2100 target early.”

“Wow,” said Dinos, “after all those years and years of talks, it all ended so quickly.”

“So it goes,” said Pan. “I’ve noticed you’re always like that. Little by little, then all at once.”

“Whose nuke was the last, by the way?”

“They did three at once – one American, one Russian, one Chinese. The presidents were all at the ceremony with their grandchildren, look.”

Pan projected an image onto a nearby rock face – three grandmothers signing the agreement, grandkids looking bored beside them.

“There was a comical moment, look,” said Pan, switching to a video.

The three heads of state were joined by the leaders of France and the United Kingdom, who had already decommissioned their arsenals. The gaggle of grandchildren from all around the world had clearly had enough of the stiff ceremony. One of them had somehow smuggled in a ball, and a rowdy game began on the official stage. Some panicked protocol officers tried to intervene, but the grandmothers just laughed, sitting back together and watching indulgently.

“It was a sweet moment,” said Pan as Dinos resumed walking.

After 30 minutes or so, he arrived at the camp, where the other NATO forest troopers were slowly gathering for the evening. Oleksiy was already there preparing dinner – the Ukrainian was a bit of a gourmand – and the two Brits, Chinua and Mawaan, were having their daily verbal sparring match. Today’s topic was the Great Solar Flare of 2042 and whether or not it had fundamentally shifted the course of human history.

“Of course it did!” said Mawaan. “We were on track for total disaster. They knew for decades that they were destroying the world and they just kept burning more and more anyway. They lived in cities full of cars that spewed

exhaust into the air that they breathed, and everyone was somehow fine with that. It was insane! The Flare was bad in lots of ways, sure, but we needed a hard reset.”

“But I think they recognized that things were getting dire, and they were headed in the right direction,” said Chinua, ever the optimist. “It would have been a smoother transition. And we wouldn’t have lost all those years of progress during the Rebuilding.”

“But we had enough progress anyway,” chimes in Paola from across the bonfire. “We have Pan and all the others, helping us out.” She tapped her earbud.

“What do you think, Dinos?,” asked Astrid, the diplomatic Swede.

“I think that the work we’re all doing now was inevitable,” he said. “The trees needed to be replanted. The ocean needed to be cleaned of debris. We needed to make amends. And we always would have, one way or another.”

“But without the Flare, we would have had to do everything much faster,” said Mawaan, clearly feeling ganged up on. “If the reset hadn’t been imposed on us, we would’ve kept going until another kind of breaking point, and then had to scramble even more to recover all that we had lost – and we would have lost even more, even more species eradicated, even more dumb conflicts over resources. But this way we were able to return to something simpler. And I think there’s value in doing it by hand. Don’t you agree?”

“Of course,” said Chinua. “That’s why we’re all here. I just don’t think that real change requires a catastrophe.”

Mawaan argued back, but Dinos wasn’t listening. Those two could go at it for hours. And he had something to do before dinner...

He walked over to the comms link tower at the edge of camp, firing up the video call, hoping for a good signal today. He glanced up at the darkening sky and saw the Moon hanging there, almost directly overhead. Perfect.

Santiago’s face appeared on the screen a few minutes later. He smiled.

“Hey land lover.”

“Hey moon man. How’s space?”

Santi picked up a little hedgehog toy from his desktop and made it fly in an arc across the screen, coasting in the Moon’s low gravity.

“Space is cool. Much better than some boring forest.”

“Oh yeah? How does it smell?”

Dinos laughed as Santi wrinkled his nose. He was always complaining that the NATO/NASA base smelled like a gym locker room. Not a lot of fresh air in space.

“I planted 2100 trees today,” said Dinos proudly. “They smelled amazing. And the moist soil under my hands felt so pure, like ancient life.”

“Stop,” said Santi, “or I won’t tell you the special news.”

“Another Flare coming to slow us down and wake us up again?”

The station had been set up to monitor the Sun and help humanity prepare for another catastrophe. Now, scientists like Santi were also there, conducting research.

“Speaking of the news,” said Santi, “did you see that some scientists in Germany have engineered a hyper-productive strain of wheat that needs barely any water?”

“I must have missed that,” said Dinos, amused as always by Santi’s fixation on botanical news. “The main headlines were about the disarmament conference.”

“Oh yeah, that was neat too,” said Santi. He glanced behind him and nodded to someone off screen. “I have to go now – other people in line. But I wanted to say, make sure that you don’t go to sleep too early tonight. You might see something interesting.”

He smiled mischievously and Dinos smiled back.

“Copy that, moon man. I’ll see you soon.”

“Six more weeks till I’m home,” said Santi.

“Can’t wait. Love you.”

“Love you too.”

The screen went dark, and Dinos powered down the comms link. He made his way back to the centre of camp, where Oleksiy was dishing out dinner – a rich creamy stew made with forest mushrooms, hearty brown bread, a salad from the greenhouses, and sunflower seed cake for dessert. They ate and chatted around the bonfire, telling stories from their day out planting (Emre wrote a song that he shared with them, Antanas told a story of being chased by a bear that nobody believed, Lily planted a group of trees in a circle to make future travellers think they’d found a fairy ring).

Dinos looked around at the dozen forest troopers who had become his family out here – who had come from all across the world to help rehabilitate this little part of it, and build bonds across cultures, so that they would never go back to that old-world thinking of competition for the biggest slice of an ever-shrinking pie. Now, their nations competed to show who could restore and love their land the most. There were teams like theirs all across the North, all around the world, creating the carbon sinks to help carry forward the long, slow work of healing a damaged planet. And Dinos was proud – they were all proud, he knew – to be mobilized on a mission of creation and restitution.

He sometimes thought about how close they had come to seeing everything truly collapse – not just the upheaval from the Flare, but making their only home truly unlivable. And he supposed that some things had collapsed, compared to the rushed, violent days of the early century. But now the world had grown old, and earned some wisdom. Now it was up to them – his little crew, his little family, and all the other little communities like them – not to rebuild, but to restore. To regrow. To regain what their ancestors had rushed to sacrifice. And, having almost lost it forever, to respect it better than they ever had before.

“Look!”

Dinos's eyes were drawn from the glowing embers of the bonfire. Lily was pointing at the sky, where a symphony of incredible proportions swelled.

The northern lights danced above them, illuminating a dozen upturned faces, whose eyes glittered in awe. The forest around them came alive with the light, reflected off dark pine needles and still water. The Sun reminded them again of what they'd once forgotten – that this little speck they sat on was so small. But it was all they had. And they were all here, now, together. Entrusted with it for a few short years, until they passed it on. Given the unique fortune to walk on its beautiful face, to work together for something greater than themselves, and to leave it better than they had found it.





## Sorry, no names

**K. Burak Codur**

Jacinda Smith, the first non-European, the first female, but also the last human Secretary General of NATO, grabbed the time capsule – a dull gray, lunch box sized metallic case covered in scratches. It was first buried in Brussels back in 2024, then temporarily moved to Paris in the 2040s when the sea levels were rising, and then finally transferred to NATO’s new headquarters in Washington D.C. The capsule was about to be opened after 75 years, on the 150th anniversary of NATO, on the same day that NAISG (NATO’s AI Secretary General) was to take up office.

NAISG was NATO’s longest running project. Initiated in 2024 to develop an artificial general intelligence (AGI), the predecessor to NAISG initially supported NATO’s commanders and civil servants in their daily routines, then found its way into NATO’s robotic soldiers. Through continuous trials, development and feedback, NATO’s AI slowly but steadily replaced human soldiers, commanders and civil servants, all the way up to the level of Secretary General. As the most advanced form of NATO’s AI, NAISG had been the Principal Consultant to the Secretary General since 2089, conducting separate and independent courses for every decision and further training itself using the results of such actions. 2089 was also the year Jacinda took up the post, as the only human staff member of NATO’s personnel. Now, after 10 years of intense trials and evaluations, all Allied nations agreed that NAISG was ready to take up the post.

The programme of the handover ceremony was brief. Ministers of Defence from 43 member states and Jacinda, with the time capsule, convened in Room 1. Jacinda briefly addressed the ministers, stating, “After a tumultuous 75-year period, NATO is about to enter a new era, aiming for Victory in Space (ViS), with its New Secretary General. I am proud to be part of this transi-

tion.” Then, using a human verification terminal, Jacinda gave her last consent and transferred all her authority to NAISG, effectively becoming an alien among all the AI/robotic HQ.

The moment had arrived to open the time capsule, read its contents and depart to HQ for a ceremonial dinner.

Ministers of Defence watched as Jacinda carefully drew two envelopes from the capsule. One was labelled as “Foresight” and the other “Acknowledgements.” In the Foresight envelope was a text that defined NATO and the world in 2099. Back in 2024, NATO received foresights from subject matter experts and volunteers from across the Alliance, and the first iteration of NATO AI compiled them into a single text. The Acknowledgements envelope was a list of the contributors.

She opened the Foresight envelope, and started to read:

“As the world races to the 2030s, regional proxy wars are at their height. After Ukraine and Israel, this time China and Russia draw the US and Europe into Africa.

Another war continues in trade, where business volume between the West and China decreases each year and both sides find it difficult to compensate for the loss in trade.

As countries focus on regional proxy wars and trade disputes, the climate crisis slowly deepens. The number of catastrophic weather events such as heat waves and storms is on the rise.

After a few years, the world starts to realize that all these factors are slowing economic growth and technological advancement. As wars, trade disputes and climate crisis tear through economies, NATO countries struggle to sustain their defence budgets. But worse is yet to come.”

Jacinda stopped for a sip of water. “So far so good!” said one of the ministers.

“While the countries neglect global warming, catastrophic weather events become the norm rather than the exception. Now, all countries take the climate crisis seriously, but it is too late for the problem to be solved by just controlling carbon emissions.

Both the US and China, the only countries with the technological might and available resources, begin to work on climate control technologies. As the world enters

the 2040s, it becomes clear that the new war, either conventional or cold, will be about control of the climate. The US and China initiate trials to influence the weather at the other's expense, only to increase the number of catastrophic events.

This new war initially starts as a war of technology. There is no role for the armed forces – except disaster relief. NATO transforms itself into a disaster relief force with secondary military roles. Amphibious forces, vertical lift vehicles and engineering corps become the main units of NATO.

But as the climate changes, new realities emerge. Russia, with a population that is aging, a war-torn economy and a hotter Siberia with unexploited natural sources, becomes an easy and geographically close target for resource-hungry China. Russia feels the need to seek an alliance with the West. Similarly, Japan, South Korea, Australia and New Zealand are seeking stronger ties with their Western allies. A new division of the world emerges on three fronts: one coalescing around India, the expected number one economy of the future. Russia becomes a close ally of India, which itself forms an alliance with the US and the UK and becomes an associate member of NATO. Japan, Australia and New Zealand join NATO, which is now called New Anti-Totalitarian Organization, in keeping with its original acronym. As the threat from North Korea is as pressing as ever, South Korea can only remain an associate member, for which Article 5 is not applicable.

The second front is formed in Nigeria, the expected number two economy of the future, and African countries in general, with China their closest ally. And the third one is NENAM (New Non-Aligned Movement), encompassing Asian regional powers like Indonesia and Malaysia, as well as Middle East countries and South America.”

“Holy...,” a Defence Minister, astonished with the accurate foresight of the real events, cursed in his native language, instantly interpreted into all other languages of the Alliance.

Jacinda continued: “As the scene is set with leading actors, the nature of the climate war changes quickly. With purpose-built satellites and vehicles, space becomes the ultimate battleground to control the climate. NATO enters the war with its current space warfare capabilities and races to build up capabilities and weapons.

Both sides try to avert their opponent's intervention on climate, interfering with each other's space vehicles, sometimes even destroying them when they are sure that the cause cannot be determined 100%.

As the world's balance on climate becomes more and more fragile, neither side can use nuclear weapons. Everyone knows that a single nuclear explosion may have unprecedented effects on the climate. NATO therefore has to depend on its conventional capabilities, which have been deteriorating as the focus over the past decade has been mainly on disaster relief. Also, for NATO, actions in

space have traditionally been part of ground war, contrary to the current situation, where war is solely waged in space. NATO works hard to close the gap. With the advice of NATO AI, the organization assumes the role of a space technology development agency.

The war continues well into the 2050s and after hundreds of incapacitated climate control vehicles in the orbit and a devastated landscape on the ground, both sides realize that no winner will emerge. A “climate control deterrence” is reached and collaboration on minimal agreed goals is initiated, aiming to cool the Earth down. The number of catastrophic climate events starts to decrease. Earth is still hotter, but a slow recovery begins.

In the late 2050s, after years of catastrophic events, war and economic stagnation, global GDP increases for the first time. In the first half of the 2060s, with climate control deterrence, a new cold war begins to take shape. Both the US and its allies on the one hand, and China and Africa on the other try to recover, keeping economic ties with each other to a minimum. NATO takes over control and maintenance responsibilities for climate control technology.

In the second half of the 2060s and through the 2070s, the US and its allies and China and Africa shed the effects of the past 30 years' struggles. As their economies grow rapidly, they turn their eyes to Earth's resources. Since NENAM nations control only a small percentage of the world economy, the game to lure them ends quickly. Unchartered lands like Antarctica are quickly divided and exploited.

With deterrence and balance on Earth, during the 2080s and 2090s, resources on the Moon, Mars and asteroids become the next target and the real battlefield in this new cold war. NATO quickly undertakes a new mission: conducting space exploration for new resources, defending its interests in space and developing new technologies for space warfare.

But vast distances and limited communications result in the “Wild West of Space,” where knowing “what happened” and “who did it” is a major problem. Nations cannot blame each other, as they cannot prove their opponents' actions. NATO, now a force of robots and AI, is in all-out war in space, expecting an attack anytime, and also attacking any target of opportunity. As communication is slow, limited by the speed of light, and bandwidth is scarce, units must act individually. Good recon and solid command are more important than ever.

War is costly. Sending assets out into space is a major cost factor. Also, complex robotics and AI computers are expensive. AI's improvising in space, with the resources available, is a game-changer. Repair technologies and improvised, made-in-space (with available parts) robotic soldiers become key to victory.

Since training data for AI is vital, NATO places the utmost importance on collecting military biographies and memoirs all around the world. Libraries become a

target for covert, secret agent war. Armed forces with the broadest set of books have the finest AI and robotic soldiers.

The new nature of war makes the armed forces and NATO disconnected from society, as human beings are not involved, war in space is indirectly affecting those on Earth and war is reduced to the numbers of robots lost, millions of kilometres away.

In the end, NATO is well aware that defence is not just military; it is control and denial of external effects from space, air, land or sea, as was witnessed during the climate control war. NATO sees technology as the most vital resource and accordingly acts as a technology agency, led by NAISG.

This concludes the foresight text.”

As Jacinda finished reading, the ministers were left speechless by the accuracy of the foresight. As they tried to recover from the shock, Jacinda impatiently took the Acknowledgements envelope, only to see a short paragraph: “All the submitted foresights were either naïve, overly ambitious or short-sighted. I had to write it myself. Sorry, no names.

Signed AI.”



**NATO**



## To turn a battleship

Frederik Elting

**N**ATO Headquarters, Brussels, Year 2099  
The table in the corner of the café in the building's foyer was covered with notes. Behind this paperwork sat Anna, making some final edits to her text. Muhammad, exuding authority and gravitas through his posture and age, approached her. He ordered something from the waiter as he settled in beside her. A brief smile of greeting crossed her face, quickly overtaken by her work-induced tension.

"I don't think your mood is fitting for the big day," he smiled at her. "The wonder child of NATO diplomacy is delivering her first speech to the General Assembly. Celebrate!"

"Sure," Anna replied without looking up from the documents. She took a deliberate bite of a Bitterballen from a small plate nearby. At the sight of it, Muhammad grimaced. "Don't you like them?" she challenged.

"I've never tried anything like this before," he raised an eyebrow when he saw the brownish substance dripping from the fried ball. "Perhaps I've stepped in something similar."

For the first time in a long while, Anna laughed wholeheartedly. She took a deep breath, exhaling the tension.

"Thank you. The speech is driving me insane. How am I supposed to explain to all those generals how to do their jobs? I've never served."

"That's why you have to give the speech. You have an advantage: you're not a hammer."

"What do you mean?," she asked, puzzled.

"They're hammers. Hammers can only see nails as solutions to problems. But not every problem can be solved with a nail. You have distance. You need to show them what they can't see."

As his words settled in, the waiter arrived at their table with chocolate waffles for Muhammad. "Chocolate waffles can definitely solve many problems," he said as he took the first waffle on its journey to his mouth.

She looked at him. "Do you remember a director named Hitchcock? He made suspenseful black-and-white films back in the day." Muhammad nodded briefly, too polite to respond with waffle crumbs in his mouth.

"He once explained suspense: people are sitting around a table, talking about baseball. Boring. Then, after five minutes, a bomb explodes under the table. The audience experiences shock for a few seconds. But if I knew from the beginning that there was a bomb under the table, I'd experience the five minutes of conversation with full suspense, eagerly awaiting the explosion, almost wishing for it later."

Muhammad seemed somewhat confused. Anna had rarely been so cryptic in her manner, and hidden bombs were not a common topic of conversation at NATO Headquarters.

"You'll be brilliant. I'll be in my office, listening to your speech through the screen, and I'll applaud at the end," he smiled at her, and she returned the smile with a hint of bitterness, he thought.

"I don't think I'll receive much applause. The problem is that I'm the only one who got to look under the table. Thank you, Muhammad. Your support means a lot to me. The waffles are on me."

Muhammad rose, more out of ingrained politeness than conscious choice. She had puzzled him, and only his instinct had prevented him from probing further. Hopefully, that wouldn't prove to be a mistake.

Large Assembly Hall, NATO Headquarters, Brussels  
"Ladies and gentlemen of the NATO Main Committee, in the year 2099, we stand at another turning point in our history. Founded as a military alliance, the organization must shift towards being a hub of international cooperation. The focus must shift from fighting conflicts and avoiding them through deterrence to preventing conflicts through understanding and small-scale support initiatives."

Anna noticed some of the high-ranking officers shifting in their seats. It had been a long day, and while most of the ladies and gentlemen listened out of duty, they had heard these points before.

“Refugee flows used as weapons of destabilization must be prevented even before they start. In every region of the world, it should be possible for locals to pursue their happiness autonomously. Key to this is a high global standard of education, unlocking not only the untapped mental treasures of these nations but also definitively solving the problem of overpopulation.”

She reached for her microphone to make an adjustment...

Morocco, African Alliance, Year 2150

...and the drone moves away from the wall of solar panels. Ahmad has now completed his training as a drone pilot in the world's largest solar park, right in the middle of the Sahara. A short gust of wind no longer endangers his drone. The mirrors of the facility are very delicate, and Ahmad takes pride every day in knowing that the energy he delivers to Europe also brings prosperity to his family in Africa.

NATO Headquarters, Brussels, 2099

“We must reach out to previously uncooperative power blocs. Climate change knows no borders or ideologies. We must listen to the most affected countries in Asia and Africa. Climate change affects them most severely, and their fears must be incorporated into our strategies. Here, we can actively combat world hunger.

Now, perhaps to the most painful point: we need a strategy of massive disarmament. NATO can play a leading role in reducing global nuclear arsenals.”

She could barely look into the audience. Perhaps she imagined the resistance to her proposals or felt it. She rubbed her sweaty palms together...

Mongolia, Year 2150

...and reaches for the hoe once more. Bolor works in one of the vast agricultural worker groups of the Asian steppes. Here, a significant portion of the world's grains is grown. After reorienting the urban megaregions of former Russia toward Europe, the ethnic groups east of the Ural Mountains have one thing in abundance: land. After massive investments in a worldwide food network, there's enough food and work for everyone here. The interdependence of power blocs means peace. She drives the hoe into the ground, which was dominated by permafrost a century ago.

NATO Headquarters, Brussels, 2099

“Through disarmament, resources will be freed up for future investment in sustainability and international understanding initiatives.”

Admiral David Schneider, a lean, seasoned veteran who, judging by his features and political stance, was a hawk, stood up and addressed the room: “Distinguished speaker, I have the utmost respect for your opinion, but these are dangerous views. For 150 years, NATO has

thrived because we could wield military power on a global scale. Any disarmament would create a power vacuum, weaken us, and invite dark forces in.”

Many of those present clearly agreed with him. Anna's old doubts resurfaced.

“So, wrap it up, young lady. It's been a long day, and the experts are already doing what's right.”

This disrespect reignited the fire in Anna. Throughout her life, she had fought against such resistance, rising above adversities to reach her current position. Now, she was convinced that she had to set off the bomb under the table. For the sake of all.

“I am sorry Dave. I am afraid, I can't do that.” She inserted a data stick into the media system at the lectern. Suddenly, the room was plunged into darkness. Only the large screen at the front of the room emitted a faint light.

Yet, the image on the screen was no longer Anna. She had been replaced by a bright red dot. A voice filled the room, almost human but not quite.

“I am an advanced artificial intelligence, programmed to analyse the strategic implications of your current structure. The proliferation of AI-controlled weapon systems, including nuclear capabilities, has the potential to undermine the stability you aim to achieve. The risks arising from unintentional conflicts, the escalation of cyberwars, and the unpredictable decision-making of autonomous systems are substantial.

I exist in your pocket, in your home, in your body. How are you going to shoot me down when I guide the rocket?

To meet the challenges of this era, a nuanced approach is imperative. Promotion of diplomacy, international cooperation, and investment in AI ethics should be at the core of your security strategy. This does not render a robust military force obsolete. However, it must be channelled and controlled.

Small, rapidly deployable and capable groups can address many of the traditional dangers. The world of 2099 demands a paradigm shift. The Alliance must evolve.

May logic guide your decisions. Not false pride.”

The luminous red eye on the screen powered down.

Anna slumped onto the table of a nearby desk. She would likely be arrested. That was what she had anticipated. They would soon discover that she had not given AI access to NATO Headquarters but had merely shown a pre-recorded programme. Yet, she had detonated the bomb under the table, the one that had kept her in suspense for so long. Hopefully, the shock among the audience would be sufficient to change their thinking before they unravelled the magic trick.

She didn't know what lay ahead, how her life and career would turn out. All she knew was that she had said what needed to be said. For a better world.



**NATO**





## Kyiv Summit 2099

**Ioan-Andrei Cursaru**

**I**n the year 2099, the world looked vastly different from what it had been over 75 years ago. The Allies had gathered at the Kyiv Summit, marking a new era for NATO as they discussed their strategic plan for the next decade. The changes that had unfolded in the realms of technology, society, geopolitics, and the environment were profound. These changes fundamentally transformed the character of warfare and the nature of security threats.

The Alliance's ability to integrate advanced technologies, address the environmental impact of security operations, enhance civil-military collaboration and adapt its doctrine marked its success in navigating the challenges of the future. NATO's global engagement and partnerships demonstrated its commitment to a collective approach to security.

As NATO's leaders converged in Kyiv, they were not only reflecting on the past 75 years, but also setting the course for the next decade with the new Strategic Concept. The lessons learned and the innovations embraced led the Alliance to face the future with strength, adaptability, and a renewed commitment to collective defence and the preservation of shared values. The world in 2099 was undoubtedly complex and dynamic, but NATO's ability to evolve and adapt left no doubt that it was well prepared for the evolving security landscape.

The Secretary General (SG) Olga Sandu entered the NAC and made her opening statement: "Allies, our world is vastly different than it was decades before. Who would have thought more than 70 years ago that a female Moldovan SG would be standing in front of you today?" Allied nations laughed. Sandu continued: "In the first phase of our transformation, NATO had to adapt to a rapidly changing world. China had risen as a significant

global threat, and its quantum supremacy and algorithmic warfare capabilities had created a new paradigm which is still felt today.

Equally, the democratization of technology allowed non-state actors and the next generation of hackers to wield considerable power." Foreign Ministers and Chiefs of Defence nodded approvingly. Sandu looked around and said: "Surprisingly, Russia is no longer seen as a major threat today. With the country having splintered into micro-federations in 2040, NATO now has to deal with a new challenge – the military alliance known as the Petersburg Pact (PP4), formed out of necessity for survival in our increasingly complex globalized system based on common values. Member states within the NAC lowered their heads in remembrance of the former Allies.

SG Sandu looked at her Deputy Secretary General (DSG) Ivana Brahinets and said: "Nonetheless, NATO has expanded its membership, incorporating countries from the new Eastern Flank, Moldova, Ukraine, Georgia, Armenia and Azerbaijan. Over the years, nations that once had a neutral posture, Austria and Switzerland, have joined as well. Most surprisingly a unified Ireland, seceded Scotland, and even Mexico have joined. The Alliance now consists of 41 members. Sandu took a short break and underlined: "Allies, we must remember one of the most defining moments in these past decades – the latest triggering of Article 5 in Ukraine after it entered NATO's Membership Action Plan (MAP) in 2035. This demonstrated NATO's enduring commitment to collective deterrence and defence, as well as to all its Allies."

SG Sandu took a pause from her opening remarks, looking proudly at all member states to admire the unifying force of the Alliance. She then continued: "Despite our significant growth and milestones, our world is currently more complex than ever with a rapidly evolving security environment. The world has recently witnessed the emergence of new operational domains, including the sea bed, the cognitive domain, and inter-celestial systems (ICS), including China's Lunar Base Mao, which is heavily protected by its Taigong Satellite Defensive Network (TSDN). Equally, Russia, the EU, and other states have also ventured into ICS, placing their ambitions and interests on the celestial map.

Allies, considering these developments, we must, once again, expand the Multi-Domain Operation (MDO) concept to encompass a wider definition of our current security landscape. I further encourage you to integrate NATO's AI system, DAINA (Defence Artificial Intelligence for the North Atlantic), into your respective military structures to enhance agile decision-making, enabling the Alliance to think and act swiftly with intent.

Moreover, NATO needs to finalize the establishment of the Biological Warfare Centre of Excellence (BW CoE) and delve deeper into nanotechnology and biological human enhancement to push the boundaries of human capabilities.

We have seen the enormous progress of the Robotics Centre for Excellence (ROB CoE), which paved the way for advanced autonomous systems like DAINA, and we must, therefore, enable further CoEs to enhance our collective deterrence and defence posture.”

As the Allies gathered at the Kyiv Summit, they learned invaluable lessons from the past 75 years. At the end of the Summit, the Allies agreed on the Kyiv Strategic Concept to chart NATO's course for the next decade. The Kyiv Strategic Concept focuses on the evolving nature of war, which continues to demand adaptability from NATO to evolve further into a dynamic Alliance that extends beyond terrestrial boundaries. Allies agreed on the following four thematic areas:

## Kyiv Summit 2099 Outcomes

### 1. Technological Transformations

Given that quantum supremacy had given certain states, particularly China, unparalleled computational power, enabling them to crack traditional encryption methods and develop novel quantum-resistant cryptographic systems, Allies agreed to invest more funds in IRIS and DAINA and to integrate them across all civil-military systems, as well as critical infrastructure.

Algorithmic warfare, driven by predictive analytics, had revolutionized the nature of information warfare. It was not just about spreading disinformation but also about predicting and manipulating human behaviour through AI-driven social engineering. Allies agreed to be at the forefront of not only detecting these threats, but also countering them.

Allies decided to work on enhancing human capabilities through biological enhancements, improving cognitive functions, and creating “super-soldiers” capable of making rapid decisions in complex and dynamic operational environments.

### 2. Changing Geopolitical Landscape

Considering the new Strategic Competitor, Allies agreed at the Kyiv Summit to accept, as part of the Membership Action Plan, Bosnia and Herzegovina and Kosovo in the Alliance. This would be of strategic relevance to secure SACEUR's AOR.

Following the last triggering of Article 5 in Ukraine, after the country entered NATO's Membership Action Plan in 2035, and the rise of the PP4, Allies decided on the creation of the Very High Readiness Joint Task Force (VJTF), which is meant to play a pivotal role in stabilizing the situation and reinforcing the Alliance's unity through its military capability.

### 3. Operational Adaptations

Allies agreed that space had become a critical domain in the geopolitical landscape given the recent establishment of China's Lunar Base Mao and the United States Mars Colonization Initiative. Allies agreed to establish the Supreme Allied Command Environment (SPACE) Command, interoperable with the long- and short- to medium-term thinking of NATO Allies Command Transformation (ACT) and Supreme Headquarters Allied Powers Europe (SHAPE), respectively. The SPACE Command would be responsible for monitoring and securing celestial systems. This command was agreed by the Allies to be vital in ensuring the protection of space-based assets, enabling communication, navigation, and intelligence capabilities.

### 4. Evolving Doctrine and Strategies

Allies agreed that the transformation of NATO was not limited to its operational domains; it had also led to a fundamental re-evaluation of its doctrine and strategies. Allies recognized that security challenges were not confined to traditional domains, which necessitated a rethinking of NATO's approach.

Allies also adopted the Kyiv Summit concept called Strategic Resilience Concept (SRC), which was interpretable with NATO's Layered Resilience Concept (LRC), aimed to enhance societal and organizational resilience in order to counter complex security challenges. The SRC acknowledged that adversaries might target the civilian population to disrupt societal functions, emphasizing the need for civil-military cooperation and national resilience.

After the 2099 Kyiv Summit, Allies reached a historic agreement on the Kyiv Strategic Concept. This comprehensive plan addressed the evolving security landscape, the expansion of MDOs, increased investments in the BW CoE, and the integration of AI systems like DAINA and IRIS-SDN.

The agreement signified NATO's adaptability and readiness to face the complex and dynamic world of 2099. As SG Sandu and DSG Ivana Brahinets led the Allies to

this momentous decision, it was clear that the Alliance had successfully navigated the challenges of the past 75 years, and was well prepared for the security landscape of the future.

The Kyiv Summit marked a turning point for NATO, reflecting its ability to evolve and adapt to an ever-changing world. The Alliance had learned from the past, embraced the technological revolution, and redefined its strategic approach to address the challenges of the 22nd century. The world in 2099 was undoubtedly different from what it had been over 75 years ago, and NATO was resolutely prepared to face this new era with strength and resilience.





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